The Effects of Vacation On Work-Related Rumination and Sleep in School Teachers

by

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A thesis submitted to the University of Surrey for the Degree of Doctor of Psychology
Contents

Introduction to the Portfolio 3
Copyright Statement 3
Acknowledgements 4

1. Academic Dossier 5
   Literature Review 6
   Professional Issues Essay 28
   Problem Based Learning Reflective Account I 50
   Problem Based Learning Reflective Account II 59
   Summary of Personal and Professional Learning 68
   Discussion Group I
   Summary of Personal and Professional Learning 70
   Discussion Group II

2. Clinical Dossier 72
   Overview of Clinical Experience Gained During Training 73

3. Research Dossier 79
   Service Related Research Project 80
   Major Research Project 108
   Abstract of Qualitative Group Project 248
   Research Log 251
Introduction to the Portfolio

This portfolio consists of a selection of research work completed during the Doctorate of Psychology (PsychD) clinical training course.

The portfolio is comprised of three sections: (1) the academic dossier; (2) the clinical dossier; and (3) the research dossier.

The academic dossier contains a literature review, a professional issues essay, two problem-based learning reflective accounts and two summaries of the personal and professional learning discussion group process accounts.

The clinical dossier contains an overview of the clinical experience gained across the five placements during the three years of clinical training.

The research dossier consists of the service related research project, the major research project, the abstract of the group qualitative research project and the research log check list.

All names and details of clients, services and locations have been changed or removed to preserve anonymity and maintain confidentiality.

Copyright Statement

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1. Academic Dossier
Literature Review

Self-representation in Bipolar Disorder: beyond self-esteem

Year 1

December 2010
Abstract

Objective:
To investigate the aspects of self-concept and self-esteem as representative of measures of self-representation in individuals with Bipolar Spectrum Disorder.

Method:
Quantitative studies investigating group differences in adult populations for Subjects “Bipolar Disorder” and keywords regarding self-esteem and self-concept were selected. Exclusions included single case studies.

Results:
Studies regarding self-esteem show mixed results dependant on group definition and current mood state but demonstrate a pattern of Bipolar Disorder showing higher self-esteem than Unipolar Depression but lower than Control groups. Mood state also appears to mediate discrepancy between perceptions of self. Participants with Bipolar Disorder show greater compartmentalization but similar complexity in descriptions of self-concepts compared to controls and Unipolar depression.

Conclusions:
Self-representation in areas other than self-esteem is less widely studied and so caution must be taken in interpreting these preliminary findings. Self-representations in Bipolar Disorder can be interpreted by both psychodynamic and cognitive theories.
Introduction

Bipolar Disorder and Cognitions.

Bipolar spectrum disorder is an affective disorder which affects 1% of the population (Cavanagh, 2004; cited in Power, 2005). Bipolar disorder (BD) is characterised by affective episodes either of depressed mood, mania or hypomania, or mixed episodes consisting of both manic and depressed symptoms. NICE Guidelines for Bipolar Disorder recommend that 16 sessions of Cognitive Behavioural Therapy (CBT) are used in the long term management of BD. To date whilst several psychological models of Bipolar have been posited, there is no current consensus (Mansell, Morrison, Reid, Lowens & Tai, 2007). This may reflect the focus of research of self-cognitions in individuals with depression, although this research is being increasingly applied to populations with Bipolar spectrum disorder. Self-cognitions are thought to be of importance in BD according to the integrative cognitive model conceived by Mansell et al, (2007), as they propose that over attendance to appraisals regarding internal states lead to behavioural changes which may counterproductively result in an affective episode occurring.

Self-concept and self-esteem.

That conceptualisations and views of the self are relevant to cognitive therapies are based on Beck’s theory (1967) that cognitions are available to exploration and manipulation as part of therapy including cognitions about the self, the world and the future. Self-concept or self-representation is the way an individual organises their view of themselves (see Rogers, 1959 for fuller explanation) and is based on the individual’s perception. Campbell (1990) suggests that self-esteem and self-concept represent the “evaluative and knowledge components of the self” respectively p538. Much of the research regarding how individuals with Bipolar disorder (BD) view themselves has explored self-esteem as a measure of self-concept, however other aspects of self-concept including organisation and discrepancy has emerged within the last 10 years. This
literature review will firstly review the literature on self-esteem to provide context before moving on to more recent exploratory research on organisation of self-concept and self-discrepancy. The review will seek to synthesize these newer areas with the existing body of work on self-esteem in order to gain an integrative view of self-representation in BD.

Relevance to role

In my current placement I work as part of an early intervention service for clients between the ages of 17-35 following a first episode of psychosis. I am working with a client who experienced particular grandiose ideas regarding her own intellect whilst in her first manic episode. It is of interest to me whether this is a reflection of the grandiose ideas and elated mood commonly experienced in Bipolar mania or whether this represents an exaggeration of her self-representations held while euthymic and depressed. Additionally, if the research suggests a common theme in self-conceptualisation, this would be useful in tailoring CBT to the client in that specific unhelpful elements in self-concept could be targeted for intervention.

Literature selection

Whilst self-concept and cognitive style in Bipolar is a wide area, this review seeks to synthesize only information where appraisals related to a self-view rather than to others. Search terms of “Bipolar Disorder” as a subject along with keywords of “Self-Concept”, “Self-Esteem”, “Self-Appraisal”, “Self-dispositional” and “Self-Evaluation” were used within the Psych Info database. Other relevant studies quoted in the sourced literature were also included. From this search the following exclusions were made; under 18s as it was theorised that self-concept maybe less developed in non-adult populations, qualitative and single case studies as focus is on common themes of differences between diagnostic groups, mood disorder groups and controls rather than individual differences. Studies were sourced through Psych Info database, NHS evidence and only full text articles available were used.
Self-esteem and self-appraisal

Self-esteem is often taken as an evaluative measure of self-view (Campbell, 1990). Several studies looking at self-esteem including a recent meta-analysis will be discussed in order to give a context to the more recent exploratory work.

Self-esteem between diagnostic categories:

Studies of self-esteem have given mixed results on levels of self-esteem in Bipolar and appear to be dependent on the comparison group and definition of Bipolar. Pardoen, Bauwens, Tracy and Martin (1993) found that individuals with remitted Bipolar (BD-R) had significantly higher global self-esteem than a remitted Unipolar group (UD-R) but did not differ significantly from controls on the Rosenberg Self-esteem Scale (SES; Rosenberg, 1965). The SES consists of 10 items and creates both a global self-esteem score from two subscales; positive self-esteem and negative self-esteem. Whilst the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) and the Bech-Rafaelsen Mania Rating Scale (BRMRS; Bech et al., 1978) were used to confirm remitted symptoms, current mood scores were not controlled for and it is therefore unclear whether subclinical symptoms may have influenced the differences between groups. Additionally a small sample size in each group was use ($n < 27$) so the power of the study would have been limited. A similar pattern was found in Shapira et al. (1999).

In a larger study using the same diagnostic categories Serretti et al (1999) found a differing pattern. The BD-R group ($n = 99$) and UD-R group ($n = 86$) both had significantly lower self-esteem than a control group ($n = 100$) but did not differ from each other. Similarly mood was measured and only scores below 8 on the HRSD were accepted, although mania symptoms were confirmed only by diagnostic interview. In similar results, Blairy et al (2004) investigated 144 individuals with BD matched to 144
controls on age, gender and geographical location. Those diagnosed with BD had significantly lower self-esteem than controls on the SES.

Jones et al (2005) used well defined and robust diagnostic criteria including rating by 2 clinicians on Schedules for Clinical Assessment in Neuropsychiatry (SCAN; Wing et al. 1990) on a study of larger numbers of Unipolar depression (n=258) and individuals with Bipolar I (n=116) with healthy controls (n=264). In this study current symptoms were measured by the Beck Depression Inventory (BDI; Beck & Steer, 1987) and Altman Self-Rating Mania Scale (ASRM; Altman et al. 1997). On the SES participants with a diagnosis on Bipolar I showed significantly higher self-esteem than those with Unipolar depression but lower than controls. This study gives surprising results as the diagnostic group of BD-I represents a greater severity of symptoms than BD-II or BD-NOS which were included in other studies yet they differed significantly from the individuals with Unipolar depression. However when current symptoms as measured by the BDI were controlled for no difference was found between either affective disorder group. It is unsurprising that both affective groups differed from controls as the latter group were 'supernormal' in that they represent the bottom 20% of scores on the Sham Composite Index of Liability to Depression and Anxiety (Sham et al., 2000 as cited in Jones et al. (2005).

The studies cited show that although similar methods of measuring self-esteem (e.g. SES) have been carried out, differences in sample size and group definition have shown that while self-esteem in BD is lower than controls, it is similar or higher than those with UD. However, significance between these groups is not consistent. A meta-analysis of 12 studies of self-esteem with individuals with BD-R compared to Major Depressive Disorder and/or healthy controls was carried out by Nilsson, Jørgensen, Craig, Straarup, and Licht (2010). Individuals with BD were found to have significantly lower self-esteem than controls with a large effect size of Cohen’s d -0.83. Those with BD had significantly higher self-esteem than those with UD but the effect size was moderate (Cohen’s d 0.54). Whilst
this study, due to its statistical power, gives a clearer sense of the
differences between the larger diagnostic groups, and shows similarities
across different countries, it does not show differences within a Bipolar
spectrum diagnosis.

**Self-esteem within diagnostic groups**

as part of a wider study looking at dysfunctional attitudes. The study
comprised of 16 individuals with Unipolar depression (UD) and 77
individuals with BD which were subsequently divided into three subgroups
of current mood state according to scores on the Internal State Scale (ISS;
Bauer et al. 1991). The subgroups consisted of 26 individuals with remitted
BD (BD-R), 38 individuals with BD depression (BD-D) and 13 individuals
with BD hypomania (BD-H). Self-esteem was measured by the SES and the
authors reported both subscales of the SES: positive self-esteem and
negative self-esteem. When current symptoms were controlled for, the UD
group showed significantly higher negative self-esteem than the BD group
but they did not differ on positive self-esteem. Within the Bipolar
subgroups, those with BD-R group had significantly higher overall self-
esteeem than the BD-H group who in turn were significantly higher than the
BD-D group. Interestingly the BD-H group scored the highest mean scores
on the negative and positive self-esteem subscales. Additionally, all
participants were on mood stabilizing medication at the time of the study
and so this may have mediated more extreme self-judgements. They suggest
that self-esteem may be characterised by both increases in positive and
negative affect. Additionally they report the findings in light of Winters and
Neale’s (1985) paper which suggest that the higher levels of reported self-
esteeem are a reflection of higher levels self-deception and social desirability
in those with BD, and are purposed to minimise the discomfort of negative
self-attitudes.
Stability of self-esteem

Van der Gucht, Morriss, Lancaster, Kinderman and Bentall (2009) measured the stability of self-esteem. Completion of the SES was repeated alongside a self-esteem diary twice daily for 4 days. Controls and BD-M groups showed less variability in self-esteem than the BD-R or BD-D groups. Over a seven day diary period, Knowles et al. (2007) found that participants with BD showed fluctuations in self-esteem although the self-esteem level was in normal ranges.

Conclusions about self-esteem

The studies above suggest that self-esteem in BD is generally below that of healthy controls and often above that of those with Unipolar depression regardless of whether the latter are in remission. However, it seems that the discrepancy may be in part due to methodology. Whilst similar measures such as the SES were used across studies, definition of category inclusion was the main variable between studies, in terms of remission measurement or DSM category. Additionally not all studies controlled for current mood state so it may be possible that subsyndromal characteristics partially account for the variability. Whilst Nilsson et al (2010) have synthesized these studies, a study that reports on differing mood categories in BD, compared to UD and control, whilst measuring current mood, has not as yet been carried out. Given the instability of mood states in Bipolar and the number of participants needed for sufficient statistical power, this may not be possible without meta-analysis of several studies. Whilst fewer studies have investigated stability, it appears that this may be an important factor in differentiating self-esteem in BD from other affective disorders.

Self-Discrepancy

Bentall, Kinderman and Manson (2005) investigated self-discrepancy within different mood states in BD in comparison to controls. Their study uses concepts from Higgins’ (1987) theory of self-discrepancy where individuals organise self-characteristics into three categories – or
'guides' for behaviours; the 'actual-self, 'ideal-self' and the 'ought-self'. They theorised that as UD and BD-D have shown similarities on measures of attitudes and attribution styles, those with Bipolar depression would show discrepancies between representations of their actual-self and ideal-self, whereas those in a manic phase would show very low discrepancy between their actual-self and ideal-self as they are "highly intolerant of discrepancies" (p460.) Four groups were used in this study; 27 healthy controls, BD-D group, BD-R group and BD-H. Group assignments was by the Present State Examination (PSE; Wing, Cooper, & Sartorius, 1974 cited in Bentall et al. 2005) to determine current symptoms whilst diagnostic classification by DSM-IV diagnoses was confirmed by case note review. The BD-R group were significantly older than both the BD-H group and controls and verbal intelligence scores as measured by the NART (Nelson, 1982) were significantly higher for those in the control group compared to the BD-H, however these were controlled for during analysis. For depressive symptoms, both self-report (BDI) and observer report (HRSD) were used. For mania symptoms were measured, The Mania Scale (Plutchik, Platman, Tilles, & Fieve, 1970) was used for self-report and for observer rating the Young Mania Rating Scale (Young, Biggs, Ziegler, & Meyer, 1978). Results showed that the BD-D group scored significantly higher in both depression measures, whilst the BD-H group scored significantly higher only on the YMRS. The authors modified the original Selves Questionnaire (Higgins, Bond, Klein, & Strauman, 1986) to form a Personal Qualities Questionnaire (PQQ). The new version asks individuals to assign 10 attributes to each of 4 categories: actual self, ideal self, self they should be (ought-self) and how others would describe them (other-actual). Participants had to complete this in above order so self-views were not contaminated with 'others' views. Self-discrepancy was analysed by matching synonyms and antonyms within descriptions using a thesaurus and were rated by two raters who showed significant agreement. BD-D group showed discrepancy between actual self and ideal self-compared to controls, BD-H and BD-R representing similarity with those with Unipolar depression. The authors state the BD-D group also showed discrepancy
between actual-self and ought-self similarly to previous findings with individuals with anxiety and agitation. However anxiety was not measured as a mood mediator in this study. The BD-H group showed higher actual-self/ideal-self and actual-self/ought-self consistency than other groups which the authors suggest signify discrepancies being 'inaccessible' whilst manic p468. BD-R and controls did not differ significantly on discrepancies. It seems that the BD-D group had the most negative descriptions compared to other groups whereas the reverse effect was not seen in BD-H compared to BD-R which suggest only low mood influenced content of self-descriptions. The authors interpret these finding as a support to Neale’s (1988) hypothesis that manic phases are a defence against depression. However with sample sizes of less than 25 in each group, it seems interpretation should be cautious.

In a further study Alatiq, Cran, Williams and Goodwin (2010a) investigated discrepancies between concepts of the self in UK students with BD compared with controls. They argue that self-esteem has been studied as a full representation of self-concept, however the self is a ‘multi-dimensional, multifaceted, dynamic phenomenon’ p135. This study draws upon Higgins’ (1987) theory and included Carver, Lawrence, and Scheier (1999)’s update to include the ‘feared self’. The BD population were selected for having had an episode of hypomania or mania and qualifying for DSM-IV diagnosis of BD-II or BD-NOS. Those with a BD-I diagnosis suggesting evidence of bipolarity, rather than more severe and problematic manifestations of the disorder, were not considered. Scores on the Mood Disorders Questionnaire (MDQ; Hirschfeld et al., 2000) were used to select participants; low risk assignment score was 2 or less and a high risk group assignment score was 7 or more. Assignment was confirmed with the MINI diagnostic interview. Exclusions and attrition from the study left a participant pool of 27 controls and 23 students stated as having Bipolar disorder II or NOS, 9 of which had experienced depression. The authors justify their selection of the experience of hypomania and its effect on self-discrepancy, although their attribution of a supportive diagnostic category is
questionable. All participants completed mood measures including the
HRSD and the YMRS as well as the modified Self Discrepancy
Questionnaire (Carver et al., 1999). In this, participants generate views of
their ideal self and feared self and then rate on a 7 point scale how each
element is similar to their present self (self-similarity) and how likely it will
represent their future self (likelihood). Current mood differentiated between
the groups as the BD group reported more depressive and hypomanic
symptoms than the control group, although these were in the non-clinical
ranges. In terms of participant’s ideal self–similarity and likelihood, no
significant differences were found between the group, although ideal-self
similarity for BD compared to controls approached significance. There were
no differences between groups on feared-self similarity or likelihood. The
authors interpret these finding as possibly being mediated by residual effects
of prior affective episodes or sub-threshold affective symptoms. In further
analysis they found that the BD participants with no prior history of
depression perceived a high similarity between feared-self and feared-
likelihood compared to controls. Again the authors argue that this evidence
may be useful in exploring the ‘manic defense’ theory as “a perception of
 proximity to the feared-self will provide a strong avoidance motivation”
(p138) and therefore they will seek out disconfirmatory experiences. The
participants were a student population and although they stated they were
suitable for diagnostic categories, they had not experienced any treatment.
Consequently the feared self cannot be seen as a cognitive effect of
memories of past depressed episodes. However in contrary to the authors’
view it also be argued that there may be a similar effect from any affective
episode where the individual may have felt out of control of their ability to
manage or change their mood.

The studies reported here represent preliminary work in self-discrepancy
in individuals with BD. However it appears that self-discrepancy may be
mood related as those with BD-D showed similar patterns to those with
depression in that their view of themselves current and who they should be
differed. As the Alatiq et al. (2010a) study does not constitute a similar
population to Bentall’s et al. (2005) study, comparison may be tentative. Although there were few differences between groups, this may be due to the small numbers and replication may show if self-discrepancy in BD could partially account for the disposition into hypomania episodes.

**Structure and Compartmentalization**

Power, de Jong and Lloyd (2002) investigated the organisation of self-concept in individuals with BD as measured by compartmentalization on a card sort task. 14 participants with a BD-I diagnosis were compared with 14 participants with chronic diabetes as a control group to limit chronic illness as a confounding variable. Diabetes was chosen as a suitable control group as the authors cite similarities in the need to “maintain equilibrium between two undesirable states, via medication and lifestyle regulation” p558. Participants were well matched on gender, age and years since diagnosis. Self-concept was measured using a card sort task using 40 trait adjectives; 20 positive and 20 negative. Participants were asked to list as many self-characteristics as required to adequately describe themselves and were also asked to include 'someone with a chronic illness' as a characteristic. They then assigned as many of the adjectives as desired to each category. Compartmentalization is the degree to which a self-concept such as 'me at work' might be described with adjectives of the same valence. Participants with BD showed a significantly higher level of compartmentalization compared to participants with diabetes, however both groups used a similar proportion of negative adjectives. The perceived positivity vs perceived negativity of their own concepts was higher in the diabetes groups as opposed to the BD group. It appears that the BD group overall chose to describe more self-concepts in regard to work and the self, whereas the diabetes group describe more self-concepts for hobbies and relationships. The types of self-concepts an individual may choose to list may affect the types of adjectives required, which is not addressed or explored in this study. It appears that current mood information was only gathered for the BD group so mood effects were not controlled for.
Taylor, Morley and Barton (2007) expanded on the idea of compartmentalization to include self-complexity, where self-complexity was measured by the number and overlap between self-aspects generated by participants. Their study also incorporates Linville’s (1985) self-complexity affective extremity hypothesis; where similar characteristics are common to several self-aspects, activation of a negative trait can spread between aspects and may trigger a severe affective response. As people with Bipolar are theorised to spiral into affective episodes (Mansell et al., 2007), the authors state this may be in part due to ‘lower self-complexity’. Furthermore the authors theorise that high self-complexity may only be protective against sudden change in affect if it is predominantly made of positive traits. The groups consisted of healthy controls (n=18), individuals with either a DSM-IV diagnosis of Bipolar, BD (n=18) or depression, UD (n=16) and were not deemed currently in an affective state as measured by the BDI and BRMRS. In addition to the mood measures, current affect was measured using the Positive and Negative Affect Scale (PANAS; Watson, Clark & Tellegen, 1988, cited in Taylor et al., 2007) and did not differ between groups. The self-concept task was similar to Powers (2002) but in addition, BD and UD participants were asked to generate self-aspects describing themselves when in affective episode. Participants used a 7 point Likert scale to rate each self-aspect for positivity and importance to their self-view. Both the UD and BD groups used significantly more negative words than controls, although the effects remained only for BD when illness aspects were excluded. Both BD and UD were more compartmentalized in their self-aspects than the control group but did not differ from each other. This was true using two separate ways of measuring compartmentalization and the effect was seen even after illness-aspects were excluded. Differences of complexity were not seen between groups when illness aspects were excluded and the BD group appeared to show higher self-complexity in non-illness aspects than in illness aspects.

This seems reasonable as illness aspects related to periods when they are depressed or manic and therefore represent very different mood states to euthymia. The authors also state that these characterizations must be
developed after the disorder and hence may not fit with more stable self-aspects that have evolved throughout lifespan. There was no difference between groups for the number of self-aspects generated and so this study does not support the idea that Bipolar individuals have increased ideas about the self. The authors interpret that as only the Bipolar group showed increased proportion of negative words used in self-aspect with greater compartmentalization, this may represent a self-serving bias in that "compartmentalization in people with Bipolar disorder may be a very efficient way of maximizing a scarce resource — positive beliefs about the self." (p92.) As information about illness states was not gathered from controls, it may be that illness is generally conceptualized as negative and distinct from other self-aspects.

Both studies show that individuals with BD demonstrate higher compartmentalization with greater negative words. It is unclear whether compartmentalization represents an adaptive process or is risk for affective episodes. Again, this research is preliminary and relies on a small sample size so it can only allude to future areas of interest, however a replication by Alatiq, Crane, Williams, and Goodwin (2010b) has found similar results to Taylor et al. (2007). Compartmentalization may be reflective of selective attention in BD in that once one direction of valenced adjective is used, the participant is more likely to select further adjectives from this valence. Controlling for first chosen adjective may be useful in replications.

Conclusions

Whilst many studies have consisted of small sample sizes, limiting their power, the meta-analysis by Nilsson et al. (2010) has shown that a clear pattern has emerged. There is evidence for self-esteem being lower overall in individuals with BD but higher than UD populations with further differences being seen across varying mood states within this diagnostic group. Hypomania does not seem to reflect an opposite to BD depression as self-esteem was lower in the former group that those with remitted symptoms (Scott and Pope, 2003). Unfortunately because of varying
methodologies in terms of controlling for current symptoms, and diagnosis category, the nuances of self-esteem are not fully demarcated. Additionally as other factors involved in self-esteem are investigated concurrently e.g. social adjustment, it is unclear the effect of carrying out these measures on individuals. Further studies on the process of self-representation whilst preliminary in nature have shown that those with Bipolar show greater compartmentalization of self-aspects and show varying discrepancy between self-views and imagined states such as ‘ought-self’. As controlling for mood state appears to be important in delineating self-esteem, it can be argued that mood may mediate self-concepts which then increases the importance of participants completing mood measures. Most studies are cross sectional in nature and it may be important to test the stability of self-concepts longitudinally to see if past research regarding the stability of self-esteem is reflected in BD (Trzesniewski, Donnellan, and Robins, 2003).

Although definite conclusions about an integrative model of BD self-concept cannot be drawn from the current literature, they do seem to give evidence towards both Neale’s (1998) theory of the ‘manic defense’ in that individuals in mania states seem to possess negative appraisals and individuals with BD overall seem to represent the self in negative terms but demonstrate desires to become closer to ideal representations. Further to this self-esteem is also interesting in the emerging research regarding self-dispositional appraisals and hypomanic affective states. Jones, Mansell and Waller (2006) have shown evidence that individuals with BD are more likely to report positive self-dispositional appraisals for experiences representative of hypomania which is unrelated to dysfunctional attitudes. However Pyle and Mansell (2010) found that individuals scoring high for hypomanic personality were more likely to rate themselves more strongly linked to negatively or neutrally valenced trait words than an imagined person close to them, but overall attributed more trait words to themselves regardless of valence or levels of activation inferred by the word. It seems there is a pattern that those with a hypomania affective state seem to express more extreme and discrete self-conceptualizations. This may give evidence
for Mansell's et al. (2007) model as stated earlier as those with Bipolar are hyper vigilant to internal states which may lead to self-appraisals being abundant which are then easy to access during self-report measures. However this self-focussed style may also be a reflection of an attempt to regain control over mood states, the loss of control can be seen as a distressing experience. It is not clear whether those with BD have learnt over time to become more aware of internal states, as if this monitoring is successful in preventing relapse, it may be conceptualized positively.

Understanding ways in which people conceptualize themselves can be useful both for CBT as it provides an opportunity to test out these self-concepts, in particularly if self-concepts are discreetly positively or negatively valenced (Power et al. (2002). This may provide an opportunity for experimenting with assumptions and building evidence in order to place doubt in core beliefs. In terms of other interventions, there may be a role for positive psychology to explore self-esteem as well as the CBT models e.g. Fennell (1997).

This review has only concentrated on group differences but it must be acknowledged that negative or fluctuation self-conceptualizations can lead to distressing experiences for the individual. A qualitative study by Inder et al. (2008) used thematic analysis on participants with BD’s experiences of self-identity. They found subthemes of confusion, contradiction and self-doubt in the development of sense of self. These were manifest in attempts to differentiate between the "self" and the illness which were often unresolved. The impact on the individual must be central to therapeutic interventions.
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Professional Issues Essay

Discuss some of the tensions for staff and clients in services for people with learning disabilities where the prevailing philosophy of care and Department of Health Guidance (Valuing People Now) promotes autonomy and independence for people who, by definition have a need for support with daily life and to foster meaningful relationships.

Year 2
January 2012
Introduction

Valuing People Now (DoH, 2009) is a three-year strategy following the consultation on the government White Paper ‘Valuing People’ in 2001, the first white paper in 30 years on learning disabilities. In Valuing People; the story so far (DoH, 2005b), Rob Grieg, National Director, reported that some services saw the key principles; civil rights, independence, choice and inclusion, highlighted in Valuing People as “optional”. Valuing People Now was published as a means to evaluate how the delivery of this strategy was progressing and highlights ways forward and best practice in the areas where least change had occurred. It draws attention to personalisation of care, health care, housing, meaningful occupation, relationships and equal access to mainstream services. Overall the strategy is underlined by ambition and hopefulness that meaningful change towards independence can occur for all people with an intellectual disability. However, Valuing People Now has been criticised for this emphasis on independence and what this concept means at an individual level. As one responder to the Valuing People Consultation (DoH, 2009) highlights, there is difficulty in applying the concept of independence to all those with an intellectual disability: “Emphasis on independence doesn’t apply well to people with more complex needs e.g. independent living. ‘Interdependence’ should be what underpins the role of a valued member of society.” This term of interdependence, whilst positively framed in this quote, may have a different quality for people with an intellectual disability (ID\(^1\)) who often rely on support from others to achieve aspects of independence. It is the tensions that come about from this interdependence between staff and people with ID that I will explore below.

In this essay, I\(^2\) will explore the difficulty of balancing ‘autonomy’ and ‘support’ at different levels of interaction, widening from an individual level to a societal level. To do this I will highlight three main themes of potential

---

1 I will use both the terms ‘people with ID’ and ‘clients’ to refer to people who have been diagnosed with an intellectual disability

2 The introduction and reflection sections will be written in the first person to reflect my position within the topic, whilst the main body will be written in the 3rd person in order to present a balanced overview of the arguments raised.
causes of tensions between staff and clients; differing attitudes, competing needs of the organisation and the client and managing risk.

It is important to define what is meant by ‘staff’ and ‘clients’. In the category of ‘staff’ I include both direct care staff and staff working in social care and NHS services such as community learning disabilities teams (CLDTs). I will also include organisations and policy within the category of ‘staff’ as tensions can arise from staff trying to balance these organisational needs with person centred planning. In the category of ‘clients’ I include both people diagnosed with an intellectual disability (ID) and their families (both direct carers and other family members). I am including families as their day to day lives are affected by the services given to a people with ID and can receive a ‘service’ from organisations such as CLDTs. Finally, in order to embed this essay in lived experience, I will be illustrating my themes with brief anonymised examples from my clinical practice and concentrating on qualitative research highlighting the views of staff, service users and carers.

**Staff and client beliefs**

While person centred planning is central to an individual being able to sustain autonomy and independence (Valuing People Now, 2009) how this is done will vary, by its individualised nature, from person to person. The success of this therefore depends on the quality of the relationship between staff and clients. Tensions can arise when staff are supporting clients in areas of their lives when their respective beliefs are very different. Although tensions could arise between any differing beliefs, areas that historically have caused contention will be highlighted including sexuality, parenting and the nature of the relationship between staff and clients.

**Sexuality**

One of the greatest areas of change in attitude towards people with ID is as sexual beings. Historically they were seen as either asexual or eternal children (Murphy, 2003; Sinason, 2010) and support was not actively given
to help people with ID to form or maintain relationships. However, in contrast people with ID consistency report a desire to form romantic and sexual relationships (Murphy, 2003; Healy, McGuire, Evans, & Carley, 2009). At policy level this desire to form relationships is acknowledged and supported but no specific guidance is given to direct care staff in their role in supporting this, instead relying on commissioners and Learning Disability Partnership boards to develop “systems and process which will enable people with learning disabilities to build and sustain relationships.” p93 (Valuing People Now, 2009).

The literature suggests that direct care staff generally report a greater likelihood and willingness to discuss sexual behaviours openly than is demonstrated by family members. However differences in attitude vary considerably between subsets of staff. The attitudes of older care staff have been found to be consistently more conservative than younger staff (Cuskelley and Bryde, 2004). Other studies have found that type of role held influences how positive sexual relationships are viewed with community staff being more liberal in their views than nursing staff (Grieve, McLaren, Lindsay & Culling, 2009). In terms of job role, it may be that more conservative views depend on the proximity of the person to directly supporting the service user with their sexual needs, as across the literature indirect staff appear to be more liberal in their views than direct care staff (Aunos & Feldman, 2002).

Despite these more positive attitudes, it is important to differentiate between ‘willingness to accept’ and ‘preference’. Evans, McGuire, Healy & Carley (2009) found that despite more positive attitudes there was a preference for clients to maintain platonic friendships over sexual relationships. Staff members appear to be less comfortable with more intimate sexual expression, with less liberal attitudes towards sexual intercourse and homosexual relationships than masturbation (Yool, Langdon & Garner, 2003). Additionally acceptance is not necessarily followed by action and staff members were more uncertain of giving privacy to facilitate
relationships e.g. allowing people with ID to take a friend to their bedroom and shut the door (Evans, McGuire, Healy & Carley, 2009). In terms of the ‘normalization’ agenda, privacy as would be applied to someone without an ID is not given. Staff members are also often not aware of the policies of their service in regard to sexuality and people with ID (Murray, MacDonald & Levenson, 1999).

Given this, if staff in one support service have very differing attitudes and are unclear how or if to support sexuality in a real and practical way, it suggests that the message about sexuality may be delivered inconsistently to service users. This is borne out by the research with people with ID. People with ID tend to report beliefs that their sexual relationships are disapproved of by staff members and that certain acts of sexual expression are not allowed by the services that provide them (Murphy, 2003; Healy, McGuire, Evans, & Carley, 2009). People with ID also report more traditional beliefs than their actions suggest. For example, people with ID reported engaging in pre-marital sex but expressed beliefs that it was not an acceptable behaviour (Healy, McGuire, Evans, & Carley, 2009). This suggests their expressed beliefs are influenced by attitudes of carers and family members but to a lesser extent than their behaviour. This internal splitting may bring out feelings of shame in the person themselves, when it may be a product of confusion within the staff members. In terms of encouraging genuine autonomy, sexual education has been shown to increase people with ID’s understanding of sexual practices and they are therefore more likely to have capacity to consent to sexual expression (Murphy, 2003).

**Parenting**

Parenting is an area where client attitudes can contrast hugely with staff beliefs, in particular about capability to parent. Several studies have contrasted the view of capability from the individual’s view and their worker from social care services. Walton-Allen and Feldman (1991) found that care workers reported that parents needed more services than they were getting whereas parents felt they were getting too many services in some
areas and not enough of the things they wanted, such as assertiveness skills, access to community resources and vocational support. Parents with ID are often seen as requiring support from statutory services as a necessity (Walton-Allen and Feldman, 1991) whereas it appears to be more acceptable for other groups of clients with additional needs e.g. specific cultural needs to be supported by voluntary services or family. In terms of support, Booth (2000) highlights a service provider position as assuming incompetence and focusing on deficiencies rather than strengths. Additionally, parenting support programmes generally only include content designed by staff members (McGaw & Sturme, 1993). Booth (2000) reports that the support provided by services can actually inhibit competence and independence.

A parent with ID’s view of family services can be conflicting as firstly, they are engaged with many services and it can be confusing as to what role each plays. Secondly, they are expected to engage with a service they see as trying to take their children away. Parents with ID can then take up an adversial stance because of this fear of their children being taken away (Ward & Tarleton, 2007). Unsurprisingly then, that parents with ID often prefer to ask for support from other support networks rather than services (Willems, de Vries, Isarin & Reinders, 2007; Llewellyn & McConnell, 2002).

The literature suggests that these variations in view of competence can lead to unhelpful working relationships between parents with ID and service providers. This has very real consequences for families as people with ID can find it difficult to access appropriate support and consequently are more at risk of their children being taken into care (Valuing People Now, 2009). This example of differing attitudes interacting with the finding that parents with ID are often expected to achieve a higher standard than other parents rather than ‘good enough parenting’ this seems to place the power dynamic firmly in the hands of staff (Ward & Tarleton, 2007). With parenting, it seems that staff hold the power as to whether the family stays together. The
parents then have to adapt to a submissive stance, accepting unwanted and perhaps unneeded help or having their children taken into care.

Friendship

A service user lives in his own home with the assistance of 24 hour care staff and a support worker who visits twice weekly. He refers to both his care workers and community workers as friends and is very upset when staff move onto new roles.

The nature of the relationship between people with ID and their direct care staff is another area where power differentials and differing attitudes exist. Little qualitative data appears to exist on perceptions of conversational interactions between staff and people with ID and research has focused on quantitative data such as the size of social circle (see Kozma, Mansell & Beadle-Brown, 2009 for a review). However, Pockney (2006) conducted an ethnographic study into the social networks of people with ID and their paid carers. People with ID tended to have networks that included people from their current occupational circumstances and relationships with friends tended to be less ‘durable’ than those of the carers. All the people with ID who participated in the study chose the word friend to describe their paid care workers and included them in their networks where the staff did not. Pockney explains this in part by the limited social contacts of people with ID due to less opportunity for employment and by services being based on need rather than common interests. The case example above highlights the effect of the type of support services on a service user’s perception of friendship. This also represents a quandary for staff, as there is a tension between having meaningful interpersonal relationships with a client as well as providing a ‘task orientated service’ (Marquis & Jackson, 2000). The lack of staff uniforms and client’s lack of explicit knowledge of the paid nature of the relationship also serve to make this distinction unclear. In terms of staff views about clarifying their role to service users, Pockney (2006) reported a tension between being clear that ‘workers are not friends’ and ‘not being cruel’. Guidance for staff on managing this role was not
forthcoming from their employers so as Pockney states “In the absence of any normative consensus about their interactions, each service user and support staff member is left to negotiate the parameters of their relationship.” Despite these tensions, there appear to be some benefits to the ‘safety’ of these interactions. Staff members felt that the day centre offered an opportunity for their clients to initiate relationships in ways that were within their control and were likely to get a positive reaction.

Tensions that emerge from the difference between staff and client attitudes towards three contentious topics have been discussed. In particular they highlight the potential power differential by those who care and who they care for. Direct care staff have a privileged position; they often have knowledge about the service user not disclosed by the person themselves, through access to care notes. Delivering personal care and being inside someone’s home also involves a great deal of trust being bestowed upon them by the client. Privilege also comes with relationships with people with severe ID as staff often have to take the role of interpreting and meeting needs where they may be unspoken.

**Client and organisational needs**

*A service user’s home has recently moved from residential care to supported living and she now has access to a larger amount of her benefit money. She wants to spend the money buying expensive items such as a TV as she wants to prepare for a realistic move to independent living. The care workers in the group home worry she makes purchases impulsively and want to make sure she is not missing out on things she wants long term e.g. holidays. They are unsure how to support her to manage her money in order to meet her needs. They also have to account for every penny she takes out of her account at her annual review.*

As the case example above suggests, as well as on an individual level, tensions can arise in the relationship between people with ID and the
practices of the organisation by which their care staff are employed. As discussed, when not made clear, organisational policy can inhibit staff supporting clients consistently. However some policy and procedures of organisations can also hamper clients’ ability to gain autonomy. This section will highlight the tension when both control and choices are limited; both financially and procedurally.

**Autonomy over spending**

Many people with ID will have their own bank account and access to their benefits payments paid to them by the government. Since April 1997, Community Care (Direct Payments) Act 1996 has allowed councils to give people with disabilities cash payments for them to buy their own services rather than provide them with a central service. This has led to people with ID having the greatest control yet over their finances. In theory this should be the most cost effective option for councils and give more choice to people with ID. However Valuing People Now: from progress to transformation (2009) found that by 2006 direct payments only accounted for 1.1% of total learning disability expenditure. Where this is happening however, care staff are often expected to support clients with their finances. Often care staff have to keep receipts or support the client with keeping a record of their bank account transactions. In some cases, this is necessary to safeguard clients against financial abuse and money mismanagement. For those people with an intellectual disability who have greater skills in money management, this can become a process that feels disempowering. This may be because although the daily decision making over money lies with the service user, their individualised budget will at some point have been set by assessment by a social worker and agreed through the Resource Allocation Process. This is then discussed at annual reviews with the client, their direct care team and a social worker. This process means that although finances are safeguarded, the person with ID and their care staff team have to account for their finances to a greater rigorous standard than would a person without ID.
Autonomy over Housing

Similarly, accommodation represents another area where control is not easily achieved for people with ID. A priority of Valuing People Now (2009) is to ‘increase the range of housing options for people with learning disabilities and their families, including closure of NHS campuses’. Whilst a move away from institutional care is preferred by most service users (Gregory, Robertson, Kessissoglou, Emerson, & Hatton, 2001), moving home can be problematic.

Whilst choices of accommodation appear to be common practice, the choices given are generally limited to residential settings that can support the service user’s individual needs. Housing choices are sometimes limited by staff because of care needs, even when the people with IDs involved express a preference towards living with friends (Hoole and Morgan, 2010). Additionally, service users do not always get a choice of who moves into their home when a space becomes available, which would be common place for people without ID. Wiesel (2011) discusses the difficulty faced by social workers in balancing client needs, choice (and ability to choose) and the mix of residents. In relation to clients choosing their fellow residents, Wiesel highlights this as a complex dilemma as this may be viewed as a “form of exclusion practiced against those who are most vulnerable among people with intellectual disability” p288.

Changing accommodation purely based on care needs can also break supportive relationships between individual service users and also with their care staff. With particular illnesses such as dementia, moving to a service more appropriate to a person with ID’s care needs, can mean a loss of care staff who knew the individual before the onset of dementia. Therefore the opportunity of reminiscence is less likely and new care staff may not know the preferences that the service user was likely to have expressed before their capacity or communication skills decreased.
Whilst a full exploration of the many issues of autonomy within providing housing and finances is not within the scope of this essay, the tensions highlighted focus on the difference between choice and control. Sadly, people with ID in residential settings often get only tokenistic choice over their lives making decisions over small daily issues (Kozma, Mansell & Beadle-Brown, 2009). Jingree and Finlay (2008) found that staff members drew a comparison between control and choice, and that service users tended to have the latter. Choices suggests a limited amount of predetermined options (often predetermined by others) where control suggests a larger scope of actions, which is more flexible to change over time and appropriateness. As Jingree and Finlay acknowledge, for the staff interviewed, choice in itself is seen as optional and desirable rather than essential, where control is outside the scope of possibility.

Financial Context

More recently the changes in the finances of the UK government mean that support to achieve independence may be more difficult. The Learning Disability Coalition (2011) had 61 local authorities respond to their survey. They found that 20% of local councils were making cuts, compared to 10% in the previous year and 57% had increased charges or raised eligibility criteria for services or were consulting on this. From my clinical practice it seems that whilst choice between services or housing is still available, these are less aspirational and more focussed on basic needs. When different options go through the Resource Allocation Process, the cheapest option which meets the basic needs is likely to be a tempting choice for service providers.

Managing Risks

A service user with an intellectual disability from a Southern Asian background lives with his wife, children and elderly parents. It is important for the service user and his family that he lives at home as part of their cultural traditions. However, due to the service user’s challenging behaviour at home there has become an
increasing frequency of physical aggression between family members. His social worker feels the situation is unsafe and would like the service user to move into residential care. The family want to feel safe but the service user wants to continue living at home as 'man of the house'.

This example highlights the tension between a client's views, family views and the role of services in managing potential risk. Whilst this will not be discussed explicitly, it must be noted this is also an example of the difficulty of managing particular cultural needs by services when workers' ethnicity or cultural background may be different to their clients. Services have a duty of care to their clients to keep them and others safe. Keeping people safe tends to be prioritised over autonomy, independence and the preferences of the client and staff may find it challenging to take positive risks. For example, for a person diagnosed with Prader-Willi syndrome who cannot adequately control their diet through self-management and support, the wish to eat would be managed with environmental restrictions to food in order to safeguard the individual’s health. For the example above, the client's priority to be 'man of the house' is likely to be demoted below the service's and family's priority of safety. The concepts of best interests and capacity are crucial in making these decisions. People with ID have historically often been assumed to lack capacity as they were seen to have "impairments to qualities considered imperative for decision making, such as cognition, discretion, social competence and an understanding of one's own self-interest" p706 (Jingree & Finlay, 2008). The Mental Capacity Act (DoH, 2005a) framework suggests a person must have an ability to understand the relevant information, retain it, weigh up the information and communicate the decision in order to have capacity. In practice capacity must be assessed for each decision, but it seems that people with ID are less likely to be 'allowed' to make an unwise decision than someone with mental health difficulties. Waterson (1999) argues that community workers may have become more risk led than needs led due to negative public and media reactions to risk. This can in turn change the focus of planning person
centred care (Cambridge & Carnaby, 2005). Ensuring equal application of
capacity decision making therefore seems vital to ensure autonomy and
independence is not denied arbitrarily.

Critique and wider assumptions of autonomy and Independence

A service user who experiences social anxiety is being
evacuated to start attending a local service user led cafe. She
prefers to speak to staff rather than other service users. Her family
and key worker are helping her to regain her confidence in
approaching others and making friends. She discloses she has had
many experiences where people ignored her when she approached
them.

So far, this essay has discussed the areas and concepts that can represent
tensions between people with ID and the people who care for them.
However, a critical view of the concepts of autonomy and independence is
important in understanding the source of these tensions. Most of the studies
 cited have taken a normalization stance in which support is given for
people’s ‘deficits’ in order to make life for people with ID the same as for
people without ID. This stance does not take into account the wider attitudes
of society which can be in themselves a barrier to social inclusion. The
social model of disability (Oliver, 1996) focuses on the distinction between
“impairment (i.e. the loss or lack of some functioning part of the body) and
disability (i.e. the meaning society attaches to the presence of impairment)”
p45 (Chappell, Goodley, Lawthorn, 2001). The model puts the spotlight on
all societal members to create an inclusive culture. Interestingly, while
Valuing People Now (DoH, 2009) acknowledges the problem of bullying
and hate crime towards people with ID, it does not call for the public in
general to assist in delivering its strategy. Staff attitudes or organizational
practices can hinder independence, but a concept of a disabling society can
hinder a positive collaborative staff-client effort. For example, the National
Autistic Society emphasises barriers faced in accessing leisure facilities
when the environment is not autism friendly. Historically, access needs to
local facilities have been planned on physical needs alone. The lack of consideration of people with ID may be due to a lack of integration into the community which in turn is maintained by services that are not accessible. The concept of a disabling society therefore seems important in overcoming barriers to supporting people’s independence rather than focusing on internal ‘deficits’ of the person (Jingree & Finlay, 2008).

Valuing People Now (DoH, 2009) also adopts the position that in achieving autonomy and independence, clients are ‘consumers’. Organizations supporting those with severe and profound ID are critical of this stance. The focus on ‘normalization’ by promoting paid employment is unlikely to be achieved for people in this group and leaves them as vulnerable to exclusion. Inclusion Europe (2008) report that “people with severe disabilities often have higher needs for support services, but less possibility to pay for them. Thus they become “negative consumers” for whom new services, therapies or support methods are not available” p8. Critics of Valuing People Now (DoH, 2009) also oppose the closing of statutory services as for some people this may be preferable and therefore takes away the choice it supposedly champions.

**Discussion and reflections**

**Summary**

In thinking about the tensions between clients and staff in balancing support with independence, this essay has aimed to highlight service user and staff views. I do not want to suggest that these tensions reflect ‘problems’ or problematic behaviours as such, but rather that they are in part understandable given the differing positions and historical practices of social care. They are not, however, inevitable tensions and this is in part what Valuing People Now (2009) wants to change.

Although the themes were based on causes of these tensions; managing risk, attitudes and competing needs, some other concepts have emerged. The power differential between staff and clients is useful to pay attention to as it
appears that although choice is embedded in practice, this may not be done in any meaningful way. It does also not equate in practice with the control that people without ID enjoy. In terms of achieving better balance, clients have produced ideas to help support this, emphasizing the role of staff as support rather than ‘caring’. One idea of good practice for reducing tensions emerging from differing client and staff attitudes, was having structured time for service users’ views to be heard e.g. house meetings (Hoole & Morgan, 2010). The PMLD network call for “a more imaginative and creative approach to inclusion.... by building bases that can service a wide number of citizens” p13. Additionally, and most importantly it is vital that everyone challenges the disabling society in order to get proper community integration rather than just proximity.

Limitations of this essay

It must be noted that independence and involvement are quite ‘practitioner led terms’ (Hoole and Morgan, 2010) and moving towards these principles may not reflect the wishes of those individuals who prise support. It is important to acknowledge that people with ID are a heterogeneous group and therefore autonomy and independence may be more difficult to achieve in a meaningful way for certain groups. For the brevity of this essay, I have not given examples or cited research that covers all groups with ID, for example people with ID who have sexually offended. It must also be acknowledged that the tensions highlighted are those expressed by western populations and perceptions of people ID in other parts of world may be very different.

Reflections

Reflecting back to the quote in the introduction discussing independence and interdependence, I was struck by the difficulty in operationalising these concepts successfully in care work. Working within a Community Learning Disability Team at present I could claim some basic knowledge of the difficulties faced by those at all levels in promoting and achieving
autonomy. However, I am surprised at the difficulties in achieving successful interdependence. Greater clarity and training for staff on organizational policy, clarifying competence and supporting people to manage and challenge a disabling society seem to be helpful, although lofty, aspirations for reducing the tensions between staff and clients.
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Problem Based Learning Reflective Account I

Year 1
March 2011
The Problem

Our task was to prepare a group presentation on 'Relationship to Change'. We were given written material on the structure of Personal and Professional Learning Discussion Groups (PPD) and informed we were required to prepare a 20 minute presentation. The title of 'Relationship to Change' was left open for our interpretation.

Reflections on the Group Process

Task Orientation vs. Reflection

In our initial session we generated ideas on what the title meant to us as a group. The group became task orientated quickly and we even decided on a provisional title from these initial ideas. It seems our group struggled to balance our need to adhere to the task with our desire to share our own experiences of change regarding starting the course. This tension of balancing our desire to achieve the expected task quickly and have time to reflect is unresolved in our group and currently we still seem to favour the former. At first this seemed to reflect our anxieties about starting the course; however it may in part reflect the style of our facilitator. Throughout the sessions our facilitator reminded us of the technical details of the task and focussed our attention on elements we had overlooked such as setting group ground rules. I think this process was helpful in giving our group structure as at first we seemed to be very different in term of occupational background and personality. However, at times I felt like we were being 'caged in' to conduct our group similarly to previous year groups. It would have been interesting to see how the group dynamic had developed had we been encouraged to manage ourselves more independently. This has been something we have discussed during a PPD session subsequently and it seems that we generate more ideas and reflect independently when our facilitator is not present. For me, reflecting on this desire to stick to task has reminded me of a similar process in my supervision sessions. Both my supervisor and I seem to oscillate between focussing on the work I plan to
carry out in specific sessions and prioritising more in-depth reflection. On one occasion we spent almost a whole supervision session reflecting on the difficulty of formulating for a client with a complex diagnostic history and background. I found this interesting but frequently thought "but what am I going to do with the client!". This interrupted my involvement in a process I find valuable and interesting. My supervisor and I have discussed ways of incorporating both aspects and although a clear consensus has not been reached as yet we are mindful of balancing those needs in the future.

Group Development

In terms of our task behaviours our group did not seem to overtly follow the often quoted Tuckman and Jensen (1977) model of "Forming-Storming-Norming-Performing-Adjourning". We did not seem to have an obvious 'storming' phase and at the time it felt like our ideas came together relatively smoothly. I feel that Fisher's (1970) model of Decision Emergence better describes our group as this focuses on task statements. This comprises of four stages: Orientation, Conflict, Emergence and Reinforcement. The orientation stage is characterised by statements that both clarify the task and are ambiguous in nature so as to avoid group discord. Our initial session fits with the 'Orientation' phase where we had a desire to discuss our personal change and find commonalities in our experiences. We attempted to balance our anxieties about making decisions about the task with a need to keep our options open. Our second and third sessions fit within the 'Conflict' stage. However despite the label, here debating ideas and tension is seen as positive and is exemplified with stronger opinions rather than disagreement. I felt our approach of individually researching and then using the session to discuss ideas allowed us to bring our different interests to the group. However this was problematic in that our ideas were so varied that we had difficulty picking just one which led to feelings of confusion and being 'stuck'. This was most apparent during our third session where our home task was to draw our different ideas together with themes. This was difficult to do and so we reverted to a task orientation style to focus on one model: Ackerman's
Theory of Transformational Change (Anderson and Ackerman Anderson, 2001). This theory of organisational change resonated with several members of the group as a way of describing our projected journey onto training. This decision represents the ‘Emergence’ stage of Fisher’s model where a consensus is reached and opinions stated are either favourable or ambiguous. The latter is theorised to be “a way station on the dissenter’s journey to embracing the group decision” (Griffin, 1993) p259. I found myself agreeing with the model’s application to training but also having concerns about its lack of empirical evidence. However the relief of making a decision outweighed my desire to bring ‘problems’ to the group. Fisher’s final stage is ‘Reinforcement’ where nearly all statements are favourable and foster a sense of unity. Our group had a clearly positive narrative about our presentation and group dynamics which permeated our discussions with other groups. For me this did not always feel truthful as I felt we had not got to know each other well enough as a group, however I partook in this as much as other members. I believe now that this served an important purpose for us to allay our anxieties about our first assessment on the course.

**Idiosyncratic vs. Evidence based**

As discussed above, we had difficulty picking one model that seemed to encapsulate our experience of change. We chose the Ackerman model as it interested us and felt workable in the time restrictions of the presentation. I had mixed feelings about the model as although I felt it was useful to exemplifying the trainee’s journey, I had concerns about the lack of empirical evidence in comparisons to other models of change. In our attempt to incorporate other people’s ideas we also used defence mechanisms, from psychodynamic theory, to highlight the helpful and unhelpful ways of reacting to the stages of the model e.g. sublimation. I think that given our varying levels of familiarity with psychological models our priority was to present something entertaining that would resonate with our peer group rather than deliver an empirically sound presentation. Therefore my concerns about the models used were reassured by other members of the group rather than debated. Whilst this is not ideal, in my
therapeutic work I have had to balance the evidence base for intervention in a particular disorder with finding techniques that I think will resonate with the client. For example, for a client who was reluctant to confront their self-critical thinking, I negotiated working on behavioural activation and enhancing coping skills as a way in to therapy before moving on to the evidence-based CBT approaches to low self-esteem. Applying psychological theory in a way that is meaningful to the client is paramount to collaborative practice. The PBL exercise highlighted some of the potential difficulties in navigating this process.

Expressing difficult feelings

As discussed, our group had a strong positive group identity from the initial session. We discussed our individual reflections on the group at the end of each session and these were overwhelmingly positive. At every stage of the process the script that we were ahead of other groups and were working well together was articulated by most members. Stedmon and Dallos (2009) state that “reflection is not simply an internal process, but can be one of telling our story to others through conversations with colleagues” p9. I feel that our individual reflections contributed to and were influenced by this group narrative of competence which was difficult to challenge. However this was possible as one member stated that she felt nervous about practising her part of the presentation in front of the group. We responded with attempts to overtly display support and understanding. This willingness to show vulnerability was appreciated by the group and was highlighted in that week’s reflection. I experienced the difficulty and benefit of expressing different emotions on placement when one of my clients was feeling particularly ambivalent about therapy after the assessment process. She had voiced her concerns to her care coordinator but was worried about offending me if she expressed them directly. She did speak to me about her difficulty in understanding the direction therapy was taking and was then able to state how vulnerable she felt with me knowing so much about her traumatic history. Whilst I felt somewhat guilty about the likelihood that I had not articulated the process well enough, I admired her for being able to express
her needs given her beliefs about rejection and the potential power issues between us as client and therapist. Whilst I have always tried to gain a sense of trust and safety in my therapeutic alliances, this example highlighted its importance again for me.

Thinking critically

During the later stages of the task I felt I took the role of ‘critic’ within our group. I was acutely aware of the need to think critically about our work, both to address weaknesses in our presentation and as a core competency for the course. At times I was uncomfortable in this role as it seemed discordant with the positive statements made by other group members and I wondered if I was drawing myself apart from group membership. When our facilitator also highlighted possible weaknesses with our presentation it was met with resistance and defensiveness from the group as it did not fit with our discourse. This further exacerbated my own view on expressing unfavourable views. I would have welcomed others’ criticism or debate about the ideas we used; especially we had combined an organisational theory of change with psychodynamic defence mechanism theories without acknowledging the potential theoretical conflict. Whilst the need to think critically about one’s own work is essential, I wonder if the tension I felt represents my desire to find the ‘perfect’ theory or technique to use with a client. This is due to my anxiety about being at the beginning of training and knowing how much I still have to learn. I have discussed this in supervision as I am often extremely critical of my own work rather than reflecting on why a particular session has not gone well. My supervisor and I have discussed my learning point of ‘sitting with’ the difficult feelings of anxiety and reflecting on the unattainable ideal of a perfect therapeutic process.

The presentation

Managing Difference

It seemed that from our first session where we shared our experiences of change, we had had different journeys to clinical psychology
in terms of life experiences and previous occupations. It seemed that we managed these differences well and utilised our individual strengths. For example, those with an interest in performing took part in the role-play element, those interested in theory or reflections took those parts. We had all contributed ideas to each other’s sections and had an awareness of making the presentation flowing rather than disjointed. It reflected our group values in terms of effort and respect however I wonder if this represented how we managed potential conflict. We were all able to bring our own strengths and feel competent in those roles without having to compromise or feel out of our depth. Fortunately for this task it worked well but I wonder if our group will need to learn to manage our different interests in future tasks. This may present a challenge to our ‘unified and unproblematic’ group identity.

Before we presented, I felt we had an entertaining and interesting presentation that fulfilled the task brief. However whilst watching other groups present I felt a little embarrassed that other people had placed service users at the centre of their considerations whereas we had chosen to document our own experience. In our first session we had discussed models of change in relation to service users as well as clinical psychologist’s role in facilitating change. However most of our ideas were anchored in our own experiences and we chose a model which we felt could elucidate our predicted journey into training. On reflection I wish we could have found a way to greater incorporate a service user perspective especially the teaching sessions I have enjoyed most during the following few months have been when service users views have been central. Although our presentation now feels self-indulgent, our viewpoint of looking ahead to potential problems in our journey of training served an incredibly helpful process personally. I felt that we identified effective ‘ways of being’ during future anxiety provoking experiences. I feel it parallels the ‘prediction’ part of setting behavioural experiments with clients. In this, problem solving the consequences of a change in behaviour can assist clients to feel invested in putting this change into practice.
Applications to the future

The PPD group was our first opportunity to get to know each other in a smaller setting that was not socially orientated. For me it played an important part in becoming less anxious about meeting new people and feeling comfortable on the course. I feel we worked effectively, were respectful of each other’s views and supported each other through the first few weeks of training. However at the start of writing this account I wondered how much my continued group membership would lead me to still see our group process in a positive and unproblematic light. I feel writing this account has allowed me to unpick my personal narrative from the group narrative. I feel our group had overwhelming strengths in shared values and ways of working which I feel confident will help us to navigate difficulties in the future. However we have learning points in regard to acknowledging difference without trying to ‘solve’ it and also thinking critically. I hope these will come as our confidence and competency increases and as we develop our individual styles of working.

The process of reflecting in the context of clinical practice has been useful in linking common interpersonal processes that have occurred in both group settings and with clients. I hope to take what I have learnt from writing this account to improve my skills in reflecting ‘in-action’ during my clinical work and during further PPD tasks.
References


Problem Based Learning Reflective Account II

Year 2
February 2012
The task

Within our Personal and Professional Learning Discussion Group (PPLDG), we were given a description of a fictional complex case. The aim of the case was to consider risk and assessment for three year old twins and their parents' ability to care for them. The twins had been placed on the Child Protection Register, due to concerns regarding abuse and neglect from their parents. We were given background information, a genogram, a professional network diagram and ideas on factors we might want to consider. The task took into account many factors such as: generational issues of children,

parents and grandparents, supporting parents with learning disabilities, domestic violence, child protection procedures, poverty and engagement with services. Our group had to decide on a way to interact with the case and construct a 20 minute presentation for our peers and service users.

Our process

Pragmatism

Our group approached the task very pragmatically in comparison to our first Problem Based Learning (PBL) task. We immediately discussed ideas for the presentation itself and decided on role-playing a representation of courtroom proceedings. It was acknowledged by certain members of the group that half the group enjoyed doing role plays and half did not and so the courtroom scene might be anxiety provoking for the latter group. Discussing this seemed to reflect a growing knowledge of each other's preferences and a desire to accommodate them. Everybody agreed they were comfortable with performing a role play and we immediately agreed on dates to meet and discuss our actions. Our key phrase throughout the task was to 'keep things simple'. I think this is because we have become more confident both in our ability to know the course criteria for assignments and our ability to produce something 'good enough'. We also learnt to focus from our previous task where we took longer to find direction which led to a lot of unused research. This reflects my position towards training as I also take a far more pragmatic approach towards planning placement tasks. In
my adult placement I committed myself to more clients than was
manageable in the time available. In my current placement I focus on taking
on enough cases that are within my capabilities and that are good quality
learning experiences. An important part of professional development is to
understand and acknowledge your competencies and limitations; otherwise
this can negatively impact on your clients and your colleagues.

Dealing with complexity

Another example of our aforementioned pragmatism was to pick two
areas of interest to focus on in our presentation. We decided to argue points
for and against the family keeping the children based on research about the
effect of domestic violence on children and on parental engagement with
services. We chose these from a list of over 30 issues that we had identified
in our second group meeting. I wondered if our desire to focus on small
areas was because we felt overwhelmed by the complexity of the case. This
may be because the case had no ‘easy’ outcome and we acknowledged that
it felt like a ‘risky’ case. I wonder if we were also thinking to the future and
our responsibilities when working with similar cases when qualified.

The task also highlighted the power that professionals have in making
decision in people with disabilities’ lives once they are part of services. This
felt particularly relevant for me on my current placement working with
people with learning disabilities. As part of my role I assess peoples’
cognitive abilities to see whether they are eligible to receive services from
the learning disability team. I assessed a client whose scores were on the
borderline of the team’s entry criteria. I felt a great responsibility with my
supervisor to make the right decision balancing his need for support with the
prospective difficulties he might face if labelled with a learning disability. I
found it helpful that my supervisor and I could bring this back to the wider
psychology team for discussion and support for our decision. Within our
group I did not feel we had enough of a collaborative or supportive
approach to allay our anxieties. I believe this contributed to our ‘avoidance’
as we decided to present the arguments for and against as part of our
presentation instead of showing the court making firm recommendations. It may also be that my dissatisfaction with the group’s reluctance to present ‘answers’ of any sort represents my own discomfort with uncertainty. Mason (1993) discusses the idea of ‘safe uncertainty’ where one can be comfortable with not knowing all the answers and still be able to operate effectively. Whilst I felt comfortable with this concept in adult mental health, especially when working in a systemic model, I was surprised to find that this has been more challenging when working in a LD service where problems can be presented as concrete and so family or staff teams want concrete ‘solutions’. This is something I have tried to manage with the help of my supportive supervisors, however I will need to continue to be mindful of this throughout my career.

Negativity and impact upon collaboration

There seemed to be a general sense of malaise and disengagement within the group and this showed in our behaviour which appeared quite apathetic. Participants undertaking PBL exercises often rate this as a deeper type of learning which invites collaboration (Fenwick, 2002). In contrast, our group felt divided. Once the topic areas were agreed we quickly decided upon roles and areas of investigation for each member in order to split the workload. Whilst this seemed practical, it meant that we worked on our individual sections with seemingly little collaboration. Even agreed group tasks such as sharing research sources were only adhered to by one or two members. This fits with Bushe’s (2001) idea of the pre-identity group where group members do not identify with the group and therefore their individual aims are more salient. This was in contrast to our PBL task in the first year where we identified strongly with the group, possibly as a way to ally our anxieties in our position as new trainees.

Our approach in the second PBL may reflect our position within the training course. Anecdotally, the idea of the ‘second year dip’ seems to be passed down from the more experienced to new trainees. Within our PPLD group, several members acknowledged they were strongly feeling ‘in the
dip’ in which they felt more tired and less positive about the experience of being on the course. I had experienced this feeling several months earlier on in the course and was starting to feel more enthusiastic about training, especially when moving on to my Learning Disabilities placement which I was enjoying. Many of us were also in the early stages of tackling our Major Research Projects (MRPs). This may also account for our attention being firmly on our individual needs as this is the most individualised assignment we complete during the course. This experience of trying to balance individual vs. group needs is something I have seen in my clinical work on placement. A client was referred by the staff in her supported living home because she would want things that other service users in the home possessed and would go to great lengths to obtain them. When I assessed the ‘problem’ from both the client and staff’s perspective, whilst the staff saw her as ‘deliberately difficult’, it came to light that from the client’s perspective she did not like the other service users or many of the staff in the home and could give reasons for this. She was therefore planning to move into her own flat which was a realistic goal for her. I wondered whether the staff had unrealistic expectations of her desire to prioritise the needs of the group (which made the staff’s work easier) over her own needs. From the beginning of our PPD groups’ inception I have thought of us as diverse individuals. Few of us seem to be close friends outside the group and this may influence our wish to prioritise group needs. Upon reflection, I wonder if my own expectations of our PPD group’s enthusiasm and engagement were reasonable given the demands on us and circumstances at the time.

Positions in the group

I have discussed how our group approach was different to our previous PBL task, however our individual positions in the group also appeared to shift. We had given feedback to each other in our last PPLD group and my lack of enthusiasm for the group had been noticed. I had reflected upon the impact that I had had on the group last year and was keen to learn from this and be a more positive influence. Having this aim was helpful and also
limiting as I felt reluctant to say anything that could be perceived as negative. For example, I felt it was important to highlight this case as challenging and resist the urge to present the case as 'easy to solve', however when I expressed this in our initial meeting I was worried about being perceived as falling back into my previous role. I also noticed a shift in my own professional persona as I also felt able to operate in the group without having to 'play the fool'. One of my learning needs from placement is to be less self-deprecating in supervision which I often use as a source of humour. It felt freeing to be able to be a serious member of the group.

Another major shift in the group was with one particular group member. My view of this person was of someone who had developed significant skills in noticing and naming emotions in others and who helped the group gel. In this task, this member had more of a negative influence on the group expressing that they wanted to keep meetings as short as possible. This behaviour was problematic in one meeting as they were uncomfortably prescriptive with another member and was directing the group’s work in a non-collaborative way. This was noticed by myself and others in the group as unusual behaviour for this person and we were curious of the circumstances behind it. In a later PPLD session another member gave some feedback on how they found the sessions ‘stressy’, however the person concerned did not pick up on this. This made me reflect on how we are aware of our impact on others. Within the NHS Leadership Framework developing self-awareness is one of the required personal competencies. This is vital in our clinical practice and something of which I am mindful in client sessions, however I can acknowledge that I struggled with this in the first year of the PPLD group. Although it seems there is often discrepancy between people’s self-evaluation and their performance as judged by others (Dunning, Heath and Suls, 2004) I was curious about the reasons why we lack self-awareness at times but also why we struggle to give others direct feedback on their behaviour. I wonder whether we did not feel it within our ‘role’ to address difficult behaviours in other trainees and instead (perhaps unreasonably?) expect the course team to give difficult feedback. This may
also be because our group feels too 'risky' to contain the painful emotions that may arise from giving feedback. This is an important skill I hope to be able to develop as this is essential as a qualified Psychologist and supervising others.

Learning Experience

During the presentations, I noticed that other groups had used some interesting techniques such as sculpting to present ways of thinking about the family. This made me think about the style of our presentation and what I had personally gained from participating in the PBL task. Our task was research based and we presented many references as part of the court case format. Although we were given positive feedback that our presentation was 'scholarly', I personally felt disappointed by the lack of impact of the PBL process in increasing my skills. Problem Based Learning tasks appear to have a greater effect on students' skills than their knowledge (Dochy, Segers, Van den Bossche, and Gijbels, 2003), however I felt I had gained an overview of the topic area but not gained any further skills. The experiences I feel I have learnt the most from, both at university and on placement, are those which I have been involved in rather than those I have purely been told about. This fits with Kolb's Experiential Learning Circle (1984). In future group projects I hope to keep this in mind and encourage the group to experiment with new skills as a focus, rather than supplement to our knowledge.

Summary

Looking back on this account, I notice that I view the PBL as quite a negative experience. However I also realise that despite my concerns about the 'quality' of the experience I may not have acknowledged the strength of the group in being able to deliver a 'good enough' presentation despite the difficulties in the group process. Given this, I am still somewhat optimistic about our PPD group and hopeful that the group will become a safer space over time. I am also realistic that group theories, such as Tuckman's (1965), describe a mature and optimum group and that as some groups do not ever
gel naturally together (Bushe & Coetzee, 2007) our group may never realise this optimum. Support during clinical training can come from many areas of which PPLD groups are just one.
References


Fenwick T. J. (2002). (Problem-Based Learning, Group Process and the mid-career Professional: Implications for Graduate Education.) *Higher Education Research & Development (21)*, 1. pp 5-21


Summary of Personal and Professional Learning Discussion Group I

Year 1
September 2011
Personal and Professional Learning Discussion Group Process Account

Year 1

Our Personal and Professional Learning Discussion Group (PPLDG) has met regularly throughout the first year of training. This account looks at the tasks undertaken by the group which included our first problem based learning task, genograms and case presentation. Although the group is still relatively new and posited as not reaching its optimal stage of development, processes within the group are discussed using stages from Srivastva, Obert & Neilsen's (1977) cyclical model.

Group relationships are highlighted as the most vital learning experience looking at engagement, safety in expressing and responding to emotions as well as the role of the facilitator in our learning. The self-identity of group members and how this differed from others’ perceptions of us is discussed. I felt our group has great strengths in bringing together diverse experiences and viewpoints and works well when given a structured and time limited task. Our weakness has been our difficulty in developing a strong group identity outside of specific tasks.

Finally, as I have not gained as much from the PPD experience as expected, an account of my work to remedy this is discussed and hopes for the future as we prepare to undertake our second problem based learning task.
Summary of Personal and Professional Learning Discussion Group II

Year 2
July 2012
Personal and Professional Learning Discussion Group Process Account

Year 2

Our Personal and Professional Learning Discussion Group (PPLDG) has met regularly throughout the second year of training. The group work and dynamics have felt very different to the previous year. This account looks at the work undertaken by the group including our second problem based learning task. It also explores the identities within the group, group processes and the strengths and weaknesses in light of that. The role and impact of the facilitator is also discussed. The group has felt somewhat disjointed and separate this year and this is discussed using Bushe and Coetzee’s (2007) explanatory model. It may be that our group’s lack of engagement is due to the discrepancy between our ideas of what the group is and how we would like it to be. This was explicitly discussed by the group in our final session and we were able to use our skills in sharing views and negotiation to plan for next year’s group.

Although I have not gained explicit knowledge through my group membership, this year has allowed me to think about my own ways of being with others. It has helped me to develop my ‘reflecting in action’ (Schon, 1987) skills which have been useful in my clinical work with clients.
2. Clinical Dossier
Overview of Clinical Experience Gained During Training
Adult Mental Health Core Placement

October 2010 – September 2011
Community Mental Health Team (CMHT) & Early Intervention in Psychosis Service (EIP)

This placement was based in a CMHT that served a working age adult population and an EIP service working with young people aged 14-35 who were within three years of their first episode of psychosis. My supervisor worked across both services. I also had the opportunity to work with the Systemic Family Therapy for the second half of my placement. This was working with people who had experienced psychosis and their families and used a post-Milan approach.

Within this placement I was able to gain a wide range of experience working with clients with a range of difficulties. I mainly used Cognitive Behavioural Therapy (CBT) approaches although I was also able to draw on third wave approaches such as Dialectical Behavioural Therapy & Acceptance and Commitment Therapy. I carried out a number of neuropsychological assessments both as outpatients and with clients from an inpatient ward. These included queries regarding brain injury, dementia and cognitive strengths and weaknesses. I was also given the opportunity to give a presentation on Cognitive Behavioural theories of anxiety to a local Access team.

During the placement I conducted a Service-Related Research Project (SRRP) looking at people with prodromal symptoms of psychosis referred into the four local CMHTs to establish how many had been correctly referred and seen by the EIP. The findings were fed back to both my CMHT and the EIP.
Learning Disabilities Core Placement
October 2011 – March 2012
Community Learning Disability Team (CLDT)

During this placement, I worked with people diagnosed with a learning disability, ranging from mild to severe. Cases were varied and included distress, behaviour that carers found challenging and adjustment. This placement gave me many opportunities to work with families, local service providers and care home staff. I worked with a holistic model which included Functional Analysis, Behaviour Therapy, Cognitive Behaviour Therapy and Systemic therapy to inform my work. I also used consultation models when working with other services. I worked with clients as outpatients, both in the centre and at their homes. This was helpful in highlighting the potential difficulties around choice, privacy and working with staff. This brought me into contact with safeguarding practices and I was able to benefit from working with the safeguarding team. I gave a presentation to the CLDT on the LD Improving Access to Psychological Therapies service.

I also gained experience in using a range of psychometric tools including cognitive assessments, carer rated dementia assessments and adaptive functioning assessments. I assessed two people for eligibility for the service. I conducted one assessment using a non-verbal test and worked with an interpreter.
In this service I gained skills in working with older adults therapeutically. Working in this service highlighted the interaction between physical health, cognitive impairment and mental wellbeing. As well as working within Cognitive Behavioural and Systemic models, it was important to consider the role of early life history and attachment style. Themes of loss were pertinent; in terms of bereavement, health changes and family relationships.

I was also able to co-facilitate a group for low mood based on Cognitive Behavioural principles. This allowed me to work with other services and helped to highlight group dynamics. I carried out Challenging Behaviour assessment work on this placement and worked with care home staff using a consultation model. This made a number of factors salient for me; including Capacity, Best Interests, and the relationship between the systems around an older person with a diagnosis of dementia. I was able to conduct a number of differential diagnosis assessments for dementia including pre-diagnostic counselling and feeding back assessment results.

I was also able to lead two service delivery projects; one starting a Service User and Carer Involvement group and another introducing Dolls Therapy on an inpatient ward. I was able to present information to nursing staff about Dolls Therapy as well as research best practice and efficacy. I also sourced, designed and constructed the resources for families and staff.
Advanced Competencies Placement
October 2012 - March 2013
Inpatient Neurorehabilitation Ward

On this placement I worked as part of a multidisciplinary team within an inpatient setting for ‘fast-stream’ rehabilitation following acquired brain injury. My main roles were to conduct cognitive screening and in-depth neuropsychological assessments, provide cognitive rehabilitation and therapeutic interventions for a wide range of difficulties including anxiety, psychosis and adjustment. Behavioural assessment was also important in this role given that some inpatients had executive functioning difficulties and displayed disinhibited behaviour. I found team working to be the most important part of this role and took part in many joint sessions with other staff including Physiotherapy, Occupational Therapy and Speech and Language Therapy. Dynamics within the staff team were important to notice as well as dynamics between staff and families. I had the opportunity to introduce a systemic framework for staff case discussions which staff reported valuing.

This placement also allowed me to take on more leadership roles and I acted as a key worker for two people attending an outpatient clinic. I also liaised directly with families to feed back formulations where there was discrepancy between family expectations and the individual’s performance. I presented information about the service to medical students.

This placement allowed me to extend my neuropsychological assessment, formulation and interpretation skills and I also learnt about personality testing and test selection.
Child and Young People Core Placement
April 2013 - September 2013

Child Adolescent Mental Health Team Tier 2 - CAMHS

This placement was in a council provided Tier 2 CAMHS service which offered short term interventions to families and young people. The service used a consultation model rather than referral model. This was a useful learning experience for me as it allowed me to see the benefits of developing other professionals’ skills but also the tensions inherent in using a different entry system to other local agencies.

My work was varied, working with a range of children. Work included behaviour difficulties and mental health such as anxiety and low mood. Some of this work was directly with the children and I conducted a number of therapeutic interventions. It was important to tailor assessments for the child and to think creatively about possible interventions. Children and parents often had different ideas about what the goal for the work should be. Much of the initial work was relationship building and establishing goals. I also worked through parents to deliver interventions and also liaised with schools. Some of the work involved observations in schools and gathering information from other professionals. The role of safeguarding was important and I was able to attend a Child in Need meeting and liaise with social service staff.

I took the lead on service evaluation during my placement and completed a qualitative analysis of consultation feedback questionnaires. I presented to the CAMHS team on this feedback and opened up a discussion about consultation and the method of collecting feedback. I also presented to a pupil referral unit on parental mental health and the impact on children.
3. Research Dossier
Service Related Research Project

Are Service Users with Early Signs of Psychosis being referred to an Early Intervention Service? A Case Note Audit

Year 1
July 2011
Acknowledgements

Thank you to the Early Intervention Service and Community Mental Health Team managers and locality manager for allowing access to case notes and to the Information Governance lead for guidance on audit process. I would also like to thank my supervisor for her input in developing the idea.
Abstract

Objective

To audit how many service users with 'Early Signs' of psychosis are being identified and referred to an Early Intervention Psychosis Service (EIPS)

Design

A multi-site retrospective case note review was undertaken for referrals made from 1st January to 31st March 2010. Criteria for Early Signs of psychosis was designed from the PACE 'Ultra High Risk' criteria (Phillips et al., 2002).

Participants

168 Service users aged 17-35 at point of referral who were referred to one of the four CMHTs within a London borough.

Results

22 people were identified as meeting criteria for either 'Prodromal Psychosis' or '1st Episode of Psychosis'. Prodromal signs of Psychosis were identified in both GP referral and CMHT assessment notes. Of the service users who remained using trust services, 50% were referred to EIPS.

Conclusions

Service users who chose to disclose symptoms of 'Early Signs' of psychosis were identified at referral and assessment. All those wanting a service were given one, however only half of those who were eligible were referred to EIPS. Primary diagnosis may have been a contributory factor. Disengagement with services was common suggesting a role for earlier EIPS involvement.

Implications

A clear checklist of criteria for Early Signs and dissemination of the EIPS policy may help CMHTs refer on suspicion rather than confirmation of psychosis.
Contents

Introduction 85
Early Intervention Services 85
Service Users at Risk of Psychosis 85
Early Signs of Psychosis 85
Service Background 86
Aims 87
Objectives 87
Method 87
Design 87
Participants 88
Criteria procedure 88
Process 88
Ethics and Confidentiality 90
Results 90
Analysis 90
Results 90
Early signs criteria 90
Referral Data 91
Referral Outcomes 92
Diagnosis 92
Discussion 93
Overall Findings 93
Reflections on the process 94
Limitations 94
Criteria 94
Data 95
Implications 95
Recommendations 96
References 97
Appendices 99
Appendix 1: Process chart 100
Appendix 2: Full PACE criteria 102
Introduction

Early Intervention Services

Early Intervention in Psychosis services (EIPS) represents part of the national strategy to treat schizophrenia and psychotic illness (NICE, 2009). They respond to the approximately 6000 young people aged between 16 and 30 who experience a first episode of psychosis per year (CSIPS, 2007). The aim of these services is to limit the duration of untreated psychosis (DUP) which Power et al. (2007) conceptualize as the period from brief limited intermittent psychotic symptoms to treatment. DUP has been associated with poorer prognosis at 12 months for symptomology and social functioning. (Marshall et al., 2005). EIPS offers specialist care for up to three years which is more intensive than that of a Community Mental Health Team (CMHT). The ethos is that of prevention and young people are supported to maintain relationships, housing and employment, as well as being offered antipsychotic medication and psychological therapy. Early Intervention aims to deliver care earlier to limit the social cost of a decline in functioning (NICE, 2009).

Service users ‘At Risk’ of psychosis.

An extension of this prevention strategy is the more recent emphasis towards ‘At Risk of Psychosis’ services. Retrospective accounts of psychotic illness suggest that service users experience changes in functioning and subclinical symptoms prior to developing a first psychotic episode (Yung & McGorry, 1996). These include a decrease in functioning, depression, reduced attention and subthreshold psychotic symptoms (Yung et al., 2003). Power et al. (2007) suggest this prodromal stage of psychosis usually begins approximately a year before a full psychotic episode occurs.

Identifying Early Signs of Psychosis

Services such as the Personal Assessment and Crisis Evaluation (PACE) in Australia have used retrospective accounts to develop criteria to identify those with possible prodromal signs of psychosis (Phillips et al., 2002). They distinguish symptoms and their severity into three groups:
Vulnerability, Attenuated Psychosis and Brief Limited Intermittent Psychotic Symptoms (BLIPS). These criteria are used by At Risk services in the UK including the Outreach and Support in South London (OASIS). They have also been used to produce assessment measures; the Comprehensive Assessment of At Risk Mental State (CAARMS; Yung et al., 2002) and the Structured Interview of Prodromal Symptoms (SIPS; Miller et al. 2003). These measures are not unproblematic, as rates of prediction of psychosis using the criteria are variable; Phillips et al. (2002) found that 41% of clients developed acute psychosis within 12 months. Other studies have found rates range from 9 – 76% over different time points (see Cannon et al, 2008 for a review) suggesting a potentially high false positive identification rate. Work is ongoing to refine these criteria to increase sensitivity and specificity, although many service users who do not develop psychosis are subsequently diagnosed with other types of mental distress and experience poorer social functioning (Addington et al., 2011). Therefore it is important to identify service users at an early stage of mental ill health.

Service background

The EIPS being audited is commissioned to offer Mental Health assessment, pharmacological and psychological treatment to service users between the ages of 17 and 35, following a first episode of psychosis or an episode within the last 3 years. The Operational Policy (April 2009) states that:

"Professionals will be encouraged to refer young people for an expert assessment based on a suspicion rather than certainty of psychosis. Where there is uncertainty of diagnosis an extended period of assessment would be appropriate with the [EIPS] team." p5-6.
During discussion with the team questions were raised as to whether all service users with Early Signs of Psychosis\(^3\) were being referred to EIPS. EIPS receives referrals from CAMHS and other specialist services but mainly from Community Mental Health Teams (CMHTs). The team suggested that service users are referred to EIPS only at the first episode of psychosis rather than on suspicion of psychosis. It was felt of importance to the service to identify whether service users with 'Early Signs' of psychosis are being identified by CMHTs both at the initial referral (usually by the GP) and at their first assessment. If identified these service users should be referred to the EIPS for assessment.

**Aims and Objectives**

**Aims**

To assess whether service users suspected to have 'Early Signs' of psychosis are being referred to EIPS for assessment according to the guidelines of the EIPS operational policy.

**Objective**

To identify the extent to which service users with prodromal symptoms or a suspected first episode of psychosis are being appropriately referred to the Early Intervention Service within 12 months

**Method**

**Design**

The study is a multi-site retrospective electronic case note review which examined notes for service users referred to any of the four Community Mental Health Teams in the borough, who can refer into the EIPS.

\(^3\) In this project 'Early Signs' of Psychosis refers to both Prodromal signs of psychosis and 1\(^{st}\) Episode of psychosis
Participants

An electronic report was requested from the Information Management Team looking for service users aged 17 - 35 who had been referred to one of the four CMHTs between 1st January 2010 to 31st March 2010 (as marked on the electronic notes system). This identified a total of 168 referrals.

Procedure

Criteria

Firstly criteria were established to identify service users with Prodromal signs of psychosis or a 1st episode of psychosis, based on the PACE criteria (Phillips et al., 2002). The PACE criteria was chosen due to its prevalent clinical use (as above). It also clearly describes Prodromal signs of psychosis according to severity and duration. Vignette examples were drawn from the assessment measures used to operationalise the criteria: Comprehensive Assessment of At Risk Mental States (CAARMS; Yung et al., 2002) and the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) see Appendix 2. For reasons of practicality in comparing criteria against the limited information within the electronic notes, these examples were then consolidated to make a simplified reference criteria (Table 1). Additionally the two groups of Attributed Psychosis and BLIPS within the PACE criteria were combined to produce unified criteria for ‘Prodromal Signs’ of Psychosis. Although the PACE criteria also includes a group named ‘At Risk’, this was excluded during a pilot study. Whilst the criteria family history of a psychotic illness was possible to find within referral information, it was difficult to differentiate reduced functioning as negative symptoms of psychosis from a diagnosis of depression.
Table 1. Signs of Psychosis: Prodromal and First Episode

<table>
<thead>
<tr>
<th>Overview</th>
<th>Symptoms</th>
<th>Impact on functioning</th>
<th>Conviction</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prodromal psychosis</td>
<td>Either intense but very brief OR Frequent and less severe symptoms</td>
<td>One or more of: * Unusual thought content up to delusions * Some sensory level hallucinations * Paranoia * Disorganisation of speech</td>
<td>Some distress but may not be preoccupying</td>
<td>Varies; Questions self and can be questioned Conviction changeable</td>
<td>For intense symptoms: Up to several times per week for a short duration. For mild symptoms: Up to daily for less than an hour</td>
</tr>
</tbody>
</table>

1st episode of Psychosis | Intense and lasting symptoms | One or more of following: * Unusual and highly improbable, thoughts held with extreme conviction and impact on behaviour * True hallucinations which may feel are real and/or are distressing * Lack of coherent speech | Symptoms impact greatly on functioning, preoccupying and distressing | Strong | From several times per week to continuou s | Symptom s last greater than one week |

Initially each service user’s referral information was checked to identify those service users referred to services for the first time. This was checked against the referral letter as the system does not differentiate those with no previous contact with services from those who have had treatment in other trusts or abroad. The electronic notes were then reviewed against the ‘Prodromal’ and ‘1st Episode’ criteria in their referral information and subsequent initial assessment by the CMHT. Service users were then placed into one of four categories: ‘Prodromal’, ‘1st Episode’, ‘Previous Episodes’

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4 Service users who, prior to 2010 referral, have experienced a previous episode of psychosis or bipolar mania and/or those previously diagnosed with schizophrenia, schizoaffective disorder or bipolar.
and 'Non-Psychosis related' referrals. Their progression within services during the 12 months following referral was then ascertained by examining further clinic letters, notes and further referrals. Finally their diagnosis and date given were noted. See Appendix 1 for a process chart.

Ethics and Confidentiality
Following advice from the supervisor, permission was sought to read client notes from the following individuals: CMHT and EIS Locality Managers, Area General Managers and the Information Governance Lead in SWLSTG. A process was agreed as to how to create an audit trail for the trust around accessing the notes. Following initial identification of participants the data was anonymised within the data capture spreadsheet and kept by the researcher on a Trust secure laptop. Following the end of the study this data was destroyed.

Results
Analysis
Descriptive statistics were used to examine the data including percentages and nominal data.

Results
Early Signs Criteria
Out of the 168 service users 13 (7.74%) met criteria for Prodromal psychosis and 9 (5.36%) met criteria for 1st episode. As the numbers were small, no meaningful differences between teams could be elicited, therefore the four CMHTs’ data is combined. Table 2 shows the percentages in each group:

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5 Service users who did not meet psychosis criteria at the time of the referral, typically those with mood disorders or personality disorders.
Table 2: Categorised groups using ‘Early signs’ Criteria

<table>
<thead>
<tr>
<th></th>
<th>Prodromal</th>
<th>1st Episode</th>
<th>Previous Episodes</th>
<th>Non-psychotic related</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number (total = 168)</td>
<td>13</td>
<td>9</td>
<td>17</td>
<td>115</td>
<td>14</td>
</tr>
<tr>
<td>Percentage</td>
<td>7.74%</td>
<td>5.36%</td>
<td>10.12%</td>
<td>68.45%</td>
<td>8.33%</td>
</tr>
</tbody>
</table>

Referral data

‘Prodromal’ Group

11 out of 13 of those in the ‘Prodromal’ group had a referral letter within their case notes. Of these, eight (72.7%) had prodromal symptoms noted in the referral letter. All were accepted for assessment by the CMHT and two of these declined contact or disengaged. Of the 11 who were assessed, prodromal symptoms were noted in ten assessments. Therefore it appears that service users with prodromal signs could be identified at both points of assessment.

Chart 1: Prodromal signs in Referral Letter

Chart 2: Prodromal signs in CMHT Assessment

Of the seven service users in the ‘1st Episode’ group, three people were referred to the CMHT following admission, two had no referral letter and the remaining two had signs of psychosis in their referral information. All were assessed and all seven met criteria for acute psychosis in their assessment.

In both groups, all referred to EIPS were accepted into the service.
Referral Outcomes

Of the 11 meeting criteria for 'Prodromal' signs who remained engaged following referral, a further three disengaged within the following 6 months and two people moved out of area so were discharged from the CMHT. Of the remaining six that used services, one was referred to primary care psychology; three were referred to EIPS and two remained with the CMHT. Following this, two engaged and one declined contact.

Chart 3: Outcome for Service Users with prodromal signs discharged from services

Chart 4: Outcome for Service Users with prodromal signs remaining with services.

Of those meeting '1st episode' criteria, one person moved out of area. Of the remaining six, three were referred to EIPS within 7 days and went on to receive a diagnosis of psychotic illness. Of the remaining three who remained with the CMHT, two were thought to have primarily substance use and one was thought to have a mood disorder with psychotic features.

Overall, 50% of those in each group were referred to EIPS for assessment.

Diagnosis

Of the "Prodromal" Group two people could not be followed up as they moved out of area. At 12 months, 11 could be followed up either by staying with services or re-referred. Table 3 shows the diagnostic categories:
Table 3: Diagnosis after 12 months of those with Prodromal signs of Psychosis:

<table>
<thead>
<tr>
<th></th>
<th>Psychotic illness</th>
<th>No diagnosis recorded</th>
<th>Affective disorder</th>
<th>Personality Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prodromal Group</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Discussion

Overall findings

Within the three month time period, it appears that service users with ‘Early Signs’ of psychosis recorded in the notes, either prodromal or 1st acute episode, constitute a small number of referrals into the CMHTs. Consequently any interpretation of the data must be tentative.

Of the service users who had signs of early psychosis recorded in the notes, a high number were identified at the initial referral and a higher number identified when more information was sought at CMHT assessment. This suggests that Early Signs are amenable to identification at both points in the pathway, particularly by CMHT clinicians when assessment is more detailed.

In terms of referral pathways, it appears that for both service users with signs of Prodromal and 1st episode, those that chose to engage with local services were provided with a service. However there was variance in where this service was given; primary, secondary services or EIPS. Only 50% of both those with Prodromal signs and 1st Episode psychosis were referred to EIPS demonstrating that some with ‘Early signs’ were not referred on.

Although it is unknown why some people were referred to EIPS and others remained with the CMHT, the diagnosis given suggests that not all those meeting the ‘Early Signs’ criteria received a primary diagnosis of a
psychotic illness. It may be that the symptoms meeting the criteria e.g. hallucinations, are secondary to another more prominent diagnostic cluster of symptoms e.g. Borderline personality disorder. Therefore, clinicians may be referring to EIPS only if they believe psychosis is the primary cause of distress.

Overall psychosis is being recognised where evidence is disclosed by the service user and all that seek a service receive one. However half of those who could have been referred to EIPS for assessment were not.

Reflections on the process

During the audit, it was striking how difficult it was to identify the criteria as detailed information was not included within the notes and different teams recorded this in different ways. Specifically information regarding duration and severity of symptoms was sparse. Instead information tended to take a ‘present’ or ‘absent’ approach to symptoms. Consequently it may be that others experiencing ‘Early Signs’ were not identified in this study.

A high rate of service users declined or disengaged with services at several stages of their pathway. Exploring this specific group’s reasons for declining would be helpful in adapting care to decrease disengagement. It may be the nature of psychotic symptoms i.e. decline in social functioning, unusual beliefs and paranoia prevents service users from wanting to engage. Additionally stigma may be a factor.

Limitations

Criteria

Both the groups of Attenuated Psychosis and BLIPS used to design the ‘Early signs’ criteria for this study focus on positive symptoms such as hallucinations and delusional beliefs. However, as the PACE criteria acknowledges with its ‘At Risk’ group, experiencing negative symptoms e.g. withdrawal may be a first indicator of psychosis. This study did not
look for decline in functioning as it would have been difficult to
differentiate from symptoms of depression. However it may be useful to
include negative symptoms independently of family history of psychosis as
part of criteria for identifying those at risk of psychosis.

Data credibility

As with any retrospective case note review, the quality of the results is
relies on the quality and quantity of the data inputted to the database.
Several areas of the notes were checked extensively to limit the impact of
missing data however the variance in data quality affected the results.
Firmer interpretation could be made about where early signs are identified
(referral or CMHT assessment) if there was no missing assessment data or
referral letters.

Implications

Although the data within this audit was limited, service users with early
signs of psychosis are not being consistently referred. It may be that
CMHTs would be more confident to refer to EIPS on suspicion of psychosis
(rather than confirmation) if they have specific criteria that they can adhere
to during assessment. A checklist may also be useful for GPs, however
changing practice within interlinked trust teams may be more
straightforward than influencing GP practice as the latter have a more varied
set of priorities and interests.

As clients tended to disengage from the CMHT, there may be scope for
CMHTS to involve EIPS earlier in assessment. The focus on prevention
and intensive input may be more palatable for service users who may be
experiencing a confusing and distressing set of symptoms. If services users
chose to use a CMHT service, those with prodromal signs could be kept
within the CMHT but highlighted as ‘At Risk’ so that their psychotic
symptoms could be specifically monitored.
As with much of the At Risk research, this audit suggested that many people meeting the criteria do not go onto develop psychosis. This suggests that a watchful waiting or psychological approach is more appropriate as well as more palatable to service users (McGlashan et al, 2007).

**Recommendations**

- The PACE criteria could be used to build a reference sheet for CMHT referrers and for GPs, in order to facilitate identification of those with Early Signs of psychosis.
- The results of this audit will be fed back to the CMHTS and EIPS involved in July and August 2011. Clinicians will be reminded of the criteria for ‘Early Signs’, the rationale for identification and encouraged to refer to EIPS on suspicion of psychosis.
- Qualitative research could be carried out investigating when clinicians are likely to refer to EIPS. Research could also explore why those identified with Early Signs disengaged with services.
References


*Psychological Reports*, 10: 799-812.


Appendices
Appendix 1: Process for studying case notes
Section of Electronic Notes system

Look at Entry/Exit section

<table>
<thead>
<tr>
<th>Information searched for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check if there is a referral prior to 2010 referral</td>
</tr>
<tr>
<td>Check if referral to EIS in 2010 + date</td>
</tr>
</tbody>
</table>

Look at Clinical Documentation section

<table>
<thead>
<tr>
<th>Information searched for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check for referral letter</td>
</tr>
<tr>
<td>Check for Prodromal criteria</td>
</tr>
<tr>
<td>Check for clinic letter (referral date +6 months) and look for Episode of 1st psychosis</td>
</tr>
</tbody>
</table>

Look at Progress Notes section

<table>
<thead>
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<th>Information searched for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check for 1st assessment</td>
</tr>
<tr>
<td>Check for Prodromal criteria</td>
</tr>
<tr>
<td>Check for progress notes (referral date +6 months) and look for episode of 1st psychosis</td>
</tr>
</tbody>
</table>

Look at Diagnosis section

<table>
<thead>
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<th>Information searched for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look for diagnosis and date</td>
</tr>
</tbody>
</table>

100
Appendix 2: PACE clinic criteria (adapted from Phillips et al, 2002)
With examples from the Comprehensive Assessment of at risk mental states (CAARMS; Yung et al, 2002) and the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962)

<table>
<thead>
<tr>
<th>Prodromal Criteria</th>
<th>Examples on Brief Psychiatric Rating Scale Score on scale in brackets</th>
<th>Examples on CAARMS measure Score on scale in brackets</th>
<th>Subsection of PACE criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>First degree relative with a psychotic or schizotypal diagnosis</td>
<td></td>
<td></td>
<td>Vulnerability</td>
</tr>
<tr>
<td>Significant decrease in mental state or functioning in the past year Duration: &gt;6 months</td>
<td></td>
<td></td>
<td>Vulnerability</td>
</tr>
<tr>
<td>&lt;6 years Measured using GAF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of one of the following symptoms:</td>
<td>Very Mild – Mild (2-3) on Unusual content Scale: Some ideas of reference e.g. unrealistic powers or persecution. May not be fully formed idea and held with doubt.</td>
<td>Either: Subthreshold intensity + Frequency: Moderate to Severe (3-5) Thought content: Perplexity than something isn’t right with the world, objects, people or events have significant, level of conviction varies and some change in behaviour. AND/OR Moderate to Moderately severe Perceptual Abnormalities (3-4): Intense distortions to true</td>
<td></td>
</tr>
<tr>
<td>• Ideas of reference</td>
<td></td>
<td></td>
<td>Attenuated psychosis</td>
</tr>
<tr>
<td>• Odd beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Magical thinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Perceptual disturbance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Paranoid ideation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Odd thinking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Odd speech</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Odd behaviour</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• Appearance</td>
<td></td>
<td></td>
<td></td>
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</table>

102
<table>
<thead>
<tr>
<th>Subthreshold</th>
<th>Severe</th>
</tr>
</thead>
</table>
| Psychotic and| frequen | t 
| Thought content (9) | Score of 3-6 | t 
| Unusual and distinctly bizarre | twice a week to twice a week | t 
| OR | than one hour | t 
| or less than one hour for less than | OR | t 
| than one hour for less than an | than one hour for less than | t 
| hour on 2 or more occasions | hour on | t 
| in responding | occasions | t 
|
| Conceptual disorganization, incoherent speech, rambling, tangential thinking, perseverative ideas | Severe to extremely severe | mild to moderate |
| Delusions, hallucinations, unusual and bizarre thought content | Severe to extremely severe | mild to moderate |
| Suicidal or parasuicidal gestures or plans | Severe to extremely severe | mild to moderate |
| Severe anxiety, panic attacks, self-harm, or severe depression | Severe to extremely severe | mild to moderate |
| Agitation, impulsivity, or disinhibition | Severe to extremely severe | mild to moderate |

**Note:** Scale: On guard, and can report on self-conscious distress, may have some self-reports of symptoms, can have some visible distress, and may have some worrisome symptoms in public. Plausible incidents.
improbably material held with extreme conviction and impacts on behaviour AND/OR
**Psychotic (5-6)** on Perceptual Abnormalities
: True hallucinations which may feel are real or may question, distressing AND/OR
**Psychotic disorganised speech (6)**
Lack of coherent speech ad difficult with line of thought, loss of association AND
**Frequency of (1-3)**
Less than once per month to twice a week for more than an hour or almost daily for less than an hour.

<table>
<thead>
<tr>
<th>Strength of conviction:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Reasonable</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Frequency:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>At least several times per week</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Duration:</th>
<th></th>
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<tbody>
<tr>
<td>&gt;1 week &lt;5 years</td>
<td></td>
</tr>
</tbody>
</table>

<p>| Transient Psychotic | Moderate to | Severity score: Brief |</p>
<table>
<thead>
<tr>
<th>Symptoms:</th>
<th>Extremely Severe (4+) on Unusual content Scale: Fully formed delusion, either some preoccupation or functional impairment. Held with some conviction.</th>
<th>Psychotic and Severe unusual thought content (6): Unusual and highly improbably material held with extreme conviction and impacts on behaviour AND/OR Psychotic (5-6) on Perceptual Abnormalities: True hallucinations which may feel are real or may question, distressing AND/OR Psychotic disorganised speech (6) Lack of coherent speech ad difficult with line of thought, loss of association PLUS Frequency (4-6) of three to six times per week more than an hour or daily less than one hour to continuous</th>
<th>Limited Intermittent Psychotic Symptoms (BLIPS) Contd</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ideas of reference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Magical thinking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Perceptual disturbance</td>
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<tr>
<td>• Paranoid ideation</td>
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<tr>
<td>• Odd thinking</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>• Odd speech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strength of conviction:</td>
<td>Moderate – Extremely Severe (4+) Conceptual Disturbance Scale: Speech difficult to understand due to tangential or incoherence up to severe impairment.</td>
<td></td>
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<td>Strong</td>
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<tr>
<td>Symptoms resolve</td>
<td>Symptoms remit on each occasion</td>
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<td>spontaneously without</td>
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<tr>
<td>medication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration:</td>
<td>Each episode present for less than 1 week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of episode of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 week</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Episode within the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>past year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Psychotic Symptoms:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ideas of reference</td>
<td><strong>Psychotic and Severe on Unusual thought content scale (6):</strong> Unusual and highly improbably material held with extreme conviction and impacts on behaviour AND/OR Psychotic (5-6) on Perceptual Abnormalities scale: True hallucinations which may feel are real or may question, distressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Magical thinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Perceptual disturbance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Paranoid ideation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Delusional thinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Disordered speech</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acute Psychosis contd**
<table>
<thead>
<tr>
<th>AND/OR</th>
<th>Psychotic disorganised speech (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lack of coherent speech ad</td>
</tr>
<tr>
<td></td>
<td>difficult with line of thought,</td>
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<tr>
<td></td>
<td>loss of association</td>
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<td></td>
<td>PLUS freq (4-6) three to six</td>
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<td></td>
<td>times per week more than an</td>
</tr>
<tr>
<td></td>
<td>hour or daily less than one</td>
</tr>
<tr>
<td></td>
<td>hour to continuous</td>
</tr>
</tbody>
</table>

| Present for longer than a week | 107 |
Major Research Project

The effects of vacation on work-related rumination and sleep in school teachers

Year 3
July 2013
Acknowledgments

I would like to thank all the teachers who took part in this study. I would also like to thank my supervisor Dr Mark Cropley for his support, patience and encouragement. I would also like to thank Dr Rob Meadows for the journey into Actigraphy and his constructive comments.
Abstract

Introduction
Working life can bring exposure to stresses which in turn can impact on health. Recovery from work stressors is thought to be essential in preventing fatigue and eventually burnout. Sleep and Vacation are important types of recovery. One mechanism thought to interfere with recovery is Work-Related Rumination, in particular its subtype: Affective Rumination. This concept appears to be conceptually similar to the Depressive Rumination concept of Brooding, which is thought to be predictive of depression. The study aims to look at the effect of affective rumination over a naturally occurring vacation period.

Participants
Teachers were recruited for the study as teaching is a high stress profession and it also has a naturally occurring break from work in the form of half term. A total of 1344 teachers participated in phase 1 and a total of 57 in phase 2. In the latter phase participants were recruited on the basis of their Work-Related Rumination Scores to create two groups.

Method
In Phase 1 teachers were invited to complete a number of online self-report measures looking at Teacher Stress, Work-related rumination and Sleep Quality. In Phase 2 Teachers were asked to wear an Actiwatch and complete a sleep diary over 18 nights; including 2 work weeks with a vacation in the middle. They were asked to complete a measure of Work-related rumination at four different time points.

Results
Whilst objective sleep measures did show a change over the vacation period, there were no differences between Low and High Affective Ruminators. On subjective measures, vacation was associated with an increase in sleep quality for the High Affective Ruminator and for both groups for Feelings of Refreshment. Evidence for a mediating role of rumination was found.
Conclusion

Work-related rumination affects perception of sleep quality but not objective measures. Possible reasons for this are discussed.
Contents

Chapter 1: Introduction ..................................................................................... 115
1.1 Overview ................................................................................................. 115
1.2 Work, stress and health .......................................................................... 115
1.4 Work Demands and Recovery ................................................................. 116
  1.41 Theoretical conceptualizations of recovery ......................................... 117
  1.42 Recovery Experiences ...................................................................... 119
  1.43 Sleep and recovery .......................................................................... 120
  1.44 Vacation and recovery ...................................................................... 121
1.5 Impairments to Recovery: Psychological Detachment and Rumination ................................................................. 122
  1.51 Mechanisms of Rumination: Perseverative cognition ...................... 123
1.6 Work-Related Rumination ..................................................................... 124
  1.61 Subtypes of rumination .................................................................. 125
1.7 Rumination and sleep .......................................................................... 127
1.8 Areas for future research ...................................................................... 128
  1.81 Measurement of Sleep .................................................................... 129
1.9 Aim of the Current Study ...................................................................... 130
  1.91 Relevance to Clinical Psychology .................................................. 131
  1.92 Hypotheses ....................................................................................... 132
Chapter 2: Method ....................................................................................... 133
2.1 Phase 1 .................................................................................................. 133
  2.11 Design ............................................................................................... 133
  2.12 Participants ....................................................................................... 133
  2.13 Materials ............................................................................................ 134
  2.14 Confidentiality and data storage ....................................................... 136
  2.15 Ethical Considerations ...................................................................... 136
  2.16 Pilot study .......................................................................................... 137
  2.17 Permission for measure use ............................................................... 137
  2.18 Power calculation .............................................................................. 137
  2.19 Procedure ........................................................................................... 138
  2.20 Analysis .............................................................................................. 139

112
Chapter 1: Introduction

1.1 Overview

Work can be an important part of life and for many constitutes a large proportion of our waking day. As well as financial gain, work gives opportunity for both positive effects such as personal satisfaction and achievement as well as negative aspects such as stress. In order to continue to perform at an adequate level, people need to 'recover' from the effort expended during the working day. This chapter will examine the models of recovery and the main source of recovery; sleep and the effects of vacation. This study will focus on the psychological processes thought to interfere with recovery: rumination and in particular, specific work-related rumination. An overview of the current evidence will be presented with the aim of identifying areas for future research.

1.2 Work, stress and health

For most people, the experience of 'working life' includes a range of pressures including psychosocial, emotional and cognitive demands. Whilst most people are generally satisfied in their job role, across Europe 23% of workers report low levels of well-being (Eurofound, 2012). Equally, whilst most workers will have experienced varying pressures during their working life, at times these pressures can result in 'Work-Stress'. Definition and measurement of work related stress can be problematic due to reliance on self-report measures and the popularity of a cultural discourse on stress (Blaug, Kenyon & Lekhi, 2007). However, the UK's Health and Safety Executive (HSE) define work-related stress as:

"The adverse reaction people have to excessive pressures or other types of demands placed on them at work." (HSE, 2013 Definition of stress, section, para. 1).

Work related stress (WRS) can lead to illness and absence from work. Within the UK, work-related stress accounted for 40% of all work related illness in 2011-12 (HSE, 2013). Absence due to work-related stress meant 10.4 million working days were lost in 2011/12. In terms of mental health, stressors arising from work are predictive of depression (Tennant, 2001),
anxiety (Melchior et al, 2007) and mental exhaustion, although this may be
cyclical for the latter (Demerouti, Bakker & Bulters, 2004). Possible
negative physical effects include hypertension (Rosenthal & Alter, 2012),
increased risk of coronary heart disease (Kivimäki et al, 2006) and disturbed
sleep (Akerstedt et al, 2004; Cropley, Dijk & Stanley, 2006). It must be
noted that variation in definitions of ‘work-stress’ and reliance on cross-
sectional and self-report measures mean that inferring causal relationships
should still be tentative (Rosenthal & Alter, 2012).

1.4 Work Demands and Recovery

As demonstrated above, work stress can impact on an individual’s
physical and mental health as well as leading to wider scale economic
impacts. This has given rise to increasing research on the mechanisms of
how work stress impacts on health. One area of research aiming to elucidate
this relationship focuses on how individuals recover from the working day.
As noted earlier, working life involves both physical and mental effort and
so engaging in tasks during a working day can consume an individual’s
physical and cognitive resources (Cropley & Zijlstra, 2011). This depletion
of resources requires the individual to ‘restock’ these resources in ‘non-
work’ time. Recovery is therefore conceptualized as a psycho-physiological
process of ‘unwinding’ from working stressors. Whilst breaks in the
working day can provide some brief recovery time, the majority of this
occurs outside of the working day and is termed ‘external recovery’
(Demerouti, Bakker, Geurts & Taris, 2009). An individual’s time outside of
their formal working hours is usually taken up with non-work activities
(household tasks, personal errands, care tasks), leisure activities and sleep.
All of these activities can be seen as integral to the individual’s recovery
from the working day (Sonnentag, 2003) although sleep occurs for the
largest period of non-work time.

Recovery from work can be conceptualised as either a conscious process
or unconscious by-product of other activities we choose (or are required) to
participate in outside of work. In terms of conscious processes we may
choose to deliberately participate in activities that ‘lift’ our mood after a
stressful day. This process has been termed 'upward regulation' (Parkinson & Totterdell, 1999). The process of recovering or re-energising from the working day is thought to require either a change or decrease in the cognitive or physical demands made on the individual. The process of recovery can be delayed if exposure to stressors continues into non-work time. This may be by active exposure to new stressors such as prolonged working hours or engaging with working activities in non-work time for example by checking work emails on Smartphones (see Cropley & Millward, 2009). Without adequate recovery, fatigue may accumulate and affect the individual's future performance.

1.41 Theoretical conceptualizations of recovery

A number of models have been posited to explain the mechanism of recovery from work: Conservation of Resources Theory, Effort-Recovery Theory and the Job Demand-Resources-Recovery model.

1.411 Conservation of Resources

Conservation of Resources theory (COR; Hobfoll, 1998, 2001) posits that stress can arise from an individual's perception of their resources. Hobfoll defines resources as 'valued entities' which are valued at a cultural rather than at an individual level (Hobfoll, 2001). These 'entities' can be characteristics, social circumstances, material objects or levels of energy (see Hobfoll, 2001 for a comprehensive list). These may be valued in their own right or because possessing them allows other resources to be obtained. Stress comes about when these resources are actually or expected to be lost. Non-work activities are a valuable source of these resources which may compensate for resources lost during the working day. COR theory also highlights the importance of appraisals in one's evaluation of one's own resources. Two individuals may perceive similar resources differently to one another, and a lower evaluation of one's resources may make an individual susceptible to stress.
1.412 Effort Recovery Theory

Effort-Recovery Theory (Meijman & Mulder, 1998). This theory posits that, inherently, the undertaking of work tasks must involve effort being expended. Effort involves activation of the sympathetic nervous system and, in very demanding situations, release of cortisol from the Hypothalamic-Pituitary-Adrenal (HPA) system. Whilst in work these systems are activated, however in order for the individuals to feel ‘recovered’ these systems should return to baseline during non-work time. Activities outside of the working day that also activate these systems mean that activation levels remain higher than baseline and sufficient recovery is not reached. Over time this can lead to the individual feeling fatigued and not able to operate at their optimum during work time.

It appears that Effort-Recovery Theory and Conservation of Resources theory are complimentary and may represent two sides of the same recovery process.

1.413 Job-Demand-Resources recovery

The Job Demand-Resources-Recovery model (JD-R-R; Kinnunen, Feldt, Siltaloppi & Sonnentag, 2011) builds on the Job Demands-Resources model (JD-R; Bakker & Demerouti, 2007; Demerouti et al., 2001) and positions it in the context of recovery. The JD-R model states that the factors that affect employee wellbeing fit into one of two general categories: Job Demands and Job Resources. Job Demands are the psychological and physical efforts of a job task. Job Resources are factors which support the achievement of work goals, reduce the psychological and physical costs of job demands and/or support individual growth and development (Bakker & Demerouti, 2007). The JD-R model conceptualises the interaction between work demands and resources in both positive and negative terms as the interaction can lead to two processes: Health Impairment process and the Motivational process. In the Health Impairment process, high and sustained job demands can outstrip the employee’s resources leading to strain and job exhaustion outcomes. Conversely, high job resources can serve a motivational purpose, in particular when job demands are high.
In the JD-R-R model, it is posited that job demands can inhibit recovery, whereas job resources facilitate recovery. Kinnunen et al (2011) found support for a pathway of high demands at work which led to difficulty detaching psychologically from work which in turn led to higher fatigue. Within their study, recovery processes were also mediators in both the Health Impairment and Motivational processes. Psychological detachment (the ability to switch off from work) fully mediated the relationship between job demands and work fatigue.

There is further evidence supporting the role of recovery in the context of job demands. High levels of work demands during the day decreases the likelihood of psychological detachment from work in the evening (Sonnentag and Bayer, 2005). Conversely, job resources such as learning opportunities during the day increased health cardiovascular outcomes (allostasis) during the night (Rau, 2006). The relationship between recovery and job demands may also be cyclical over time with recovery experiences being positively related to job resources and negatively related to job demands, which in turn predict recovery experiences (Rodriguez-Munoz, Sanz-Vergel, Demerouti & Bakker, 2012).

1.42 Recovery Experiences

As noted above, recovery is thought to occur in the absence of the exposure to stressors and/or when perceived resources are gained. Although the need for recovery is acknowledged, the factors influencing the likelihood of recovery are less well understood (Siltaloppi, Kinnunen & Feldt, 2009). Sonnentag and Fritz (2007) suggest that although people’s methods of recovering from work may vary e.g. reading, learning new hobbies, socialising, exercising or watching television, they have similar underlying mechanisms. They suggest the underlying processes are psychological detachment from work, relaxation, mastery, and control. Psychological detachment is defined as the ability to ‘switch off’ from the previous stressor or activity. Relaxation is defined as activities that are calming or involve little exposure to stressors. Mastery experiences involve
activities that allow opportunity for development and learning. Control is defined as activities that are self-chosen and fit with personal preferences.

In this model, mastery and control appear to fit within Hobfoll’s Conservation of Resources theoretical framework as building competence and a sense of control can be perceived as additional resources for the individual. Similarly, activities that are underpinned by the concepts of relaxation or psychological detachment appear to fit within Meijman & Mulder’s Effort-Recovery framework, as they decrease the demands placed on the individual or at least divert attention elsewhere.

1.43 Sleep and recovery

Whilst recovery experiences can occur in the evening post work, one of the most significant opportunities for recovery is sleep. In order for sleep to be restorative it must be continuous (Walsh & Lindblom, 1997). However, sleep disturbance is a common problem, A representative survey of British people found that 57% had at least one difficulty with sleep (remaining asleep, getting to sleep, sufficient sleep duration) over the past week with 27% experiencing this on a majority of nights (Groeger, Zijlstra & Dijk, 2006). Disturbed sleep has also been linked to cardiovascular disease and type two diabetes (Åkerstedt and Nilsson, 2003). Lack of sleep can increase risk of mood problems (Breslau, Rosenthal & Andreski, 2006), immune function problems and susceptibility to infection (Bryant, Trinder & Curtis, 2004), difficulties maintaining alertness and vigilance within tasks (Dinges et al, 1997).

It is common knowledge that stress can interfere with sleep. However the relationship between work stress and sleep has only been explored recently. Psychological work demands are a significant predictor of sleep quality whereas physical demands are not (Winwood & Lushington, 2006). This study also found that higher psychological demands were a significant predictor of poorer recovery between working shifts. Conversely, in periods of low stress, sleep quality seems to improve (Dahlgren, Kecklund & Akerstedt, 2005). The relationship between daytime demands and sleep
appears to be due to cognitive arousal before bed (as measured by the Pre-Sleep Arousal Scale, PSAS; Nicassio, Mendelowitz, Fussell & Petras, 1985), which has been found to be a full mediator (Morin, Rodrigue & Ivers, 2003). Sleep problems have a clear impact on health and work demands can indeed interfere with sleep. However, it is less clear whether arousal is physiological or psychological. Hall et al (2007) found that psychological stress was associated with higher physiological movement during sleep, however this was in people with insomnia rather than healthy adults. In healthy sleepers, Tang & Harvey (2004) found that both cognitive and physiological pre sleep arousal affected perception of sleep when compared to Actigraphy defined sleep. However, it must be noted that many studies utilise an artificial sleep design which may mean the results are not generalisable to normal daily sleep.

1.44 Vacation and recovery

Leave from work represents another important part of the recovery process. Whilst evenings allow opportunities for recovery, they may not be able to provide sufficient recovery time. This is also the case for weekends if non-work demands are high (Fritz & Sonnentag, 2005). Vacations\(^6\) give opportunity for a longer period of respite from work and are viewed as time for recuperation. This process fits with the Effort-Recovery Framework as fewer work stressors should be present. Being away from work also gives individuals opportunity to participate in activities they may not otherwise have time for such as trips away. This can be seen in the context of the COR theory as resources are being gained during participation in pleasant activities under one’s control (de Bloom, Geurts & Kompier, 2010).

Additionally, with no work to attend, a greater proportion of the day is available for leisure time in relation to non-work activities such as chores. Studies of vacation are a recent phenomenon and historical studies had few control elements. For example, few studies utilise sufficient measurements

\(^6\) Although ‘Vacation’ is an American term, it is used here as a less ambiguous term instead of ‘holiday’ or ‘leave’. The latter terms can refer to other concepts e.g. ‘holiday’ can refer to bank holidays, or a holiday away from home and ‘leave’ can refer to different types of absence from work rather than annual leave.
to adequately assess the effect of vacation on recovery (de Bloom et al, 2010).

Vacation studies have found that self-reported wellbeing and health improves during a vacation (de Bloom et al, 2010). Psychological detachment from work is high during vacations, which is associated with increased wellbeing benefits (de Bloom, Geurts & Kompier, 2012). However, the improvements seen in the vacation period returned to baseline in the first week following vacation, with the exception of fatigue. This has been found consistently despite the length of vacation (de Bloom et al, 2012). This process has been termed ‘fade out’ (Etizon et al, 1998). Greater job demands on returning to work speed up the effect of burn out, whereas greater relaxation experiences during the vacation have a protective effect, although this only lasts for two weeks post vacation (Kuhnel and Sonnetag, 2011).

Sleep also seems to be important in vacations. Better sleep quality and longer sleep were associated with more health benefits, although the direction of this relationship is unclear (de Bloom et al, 2012).

1.5 Impairments to Recovery: Psychological Detachment and Rumination

As noted in vacation studies, psychological detachment from work appears to be important in facilitating recovery. Psychological detachment refers to “the individual’s sense of being away from the work situation” (p579, Etizon et al, 1998). It requires the individual not to think about work or job-related issues as well as being physically away from the work place (Sonnentag & Kruel, 2006). Psychological detachment is poorer in those with a high workload and those who do not believe they will gain from recovery (Sonnentag & Kruel, 2006).

The present study will look at one of the cognitive processes that may interfere with gaining psychological distance and therefore recovery: Rumination.
1.51 Mechanisms of Rumination: Perseverative cognition

The process of thinking about work after work has been termed 'work-related rumination' (Cropley, Dijk & Stanley, 2006) and is posited as being important in how workers mentally 'switch-off' from work. Before examining work-related rumination and the current literature, it is helpful to put work-related rumination in the context of stress and recovery. Therefore, this section will consider the role and mechanism of perseverative cognition.

The stress and health literature suggest that it is prolonged psychological stress that leads to negative health outcomes. However, an individual’s physiological response to a novel perceived stressor is generally short-lived as physiological markers return to normal quickly (Brosschot et al, 2010). In the context of work, fuller recovery seems to involve ‘distance’ from the experiences of the work day. If the experiences of the working day represents stressors that impacts on health, this may be due to the stressor being re-activated by a lack of psychological distance. Brosschot (2005, 2006) proposes that ‘perseverative cognition’ (PC) may present one cognitive mechanism as to how our physiological response to stress is maintained and in turn, the pathway to negative health outcomes. Brosschot builds on ‘sustained activation’ theory (Ursin & Murison, 1983 cited in Brosschot, Pieper & Thayer, 2005). Sustained stress physiological response is thought to come about when there are either anticipatory responses to future perceived stressors, a delay in recovery from stressors or recurrent physiological response to past stressors. Brosschot argues that stress theories have largely ignored prolonged physiological responses (Brosschot et al, 2005) and that stress reactions are often both past and future focussed. Perseverative Cognition is defined as “The repeated or chronic activation of the cognitive representation of stress-related content” p1045. They posit that PC is the pathway between the initial stress reaction and harm to the body, by means of prolonged activation of the body’s stress reactions.

The model of Perseverative Cognition is an example of the move towards a broader understanding of repetitive thought. Researchers have historically separated concepts of thoughts that are repetitive in nature and are associated with negative affect (Nolen-Hoeksema, 1991) into concepts
such as rumination, worry, dwelling and others. However the similarities and underlying properties between these concepts is now being examined. Similar to the Brosschot model is the Repetitive Thought model (Segerstrom et al, 2010). This categorises repetitive thoughts against three continuaums: valence, purpose (searching vs. solving) and total repetitive thought (tendency to ruminate). Results on repetitive thought measures show high test-retest correlations and also correlate consistently across measures despite whether they are positive or negative (Segerstrom et al, 2003). This suggests a possible disposition to repetitive thought (Roach et al, 2010). Although evidence is only newly emerging for this hypothesis, it has face validity. For a fuller review of repetitive thought see Watkins (2008).

1.6 Work-Related Rumination

Work-related rumination (WRR) is defined as “a thought or thoughts directed to issues relating to work, that is/are repetitive in nature” p493 (Cropley & Zijlstra, 2011). Work related rumination was first posited by Cropley and Millward Purvis (2003) as they found that teachers with high job strain took longer to unwind over the course of an evening than teachers reporting low job strain, independent of the type of evening activities carried out. Work-related thoughts and rumination have also been linked to fatigue (Akerstedt, 2004).

However, Cropley and Zijlstra (2011) propose that work-related rumination is not solely a negative state. They separate the concepts of ‘affective rumination’ and ‘problem-solving pondering’ as styles of thinking about work, as well as ‘detachment’, which describes a complete disengagement from work in non-work time. Affective rumination is described as a negatively valenced state experienced as increased psychophysiological arousal characterised with intrusive thoughts about work. In contrast, problem-solving pondering is a positive valenced state without arousal which involves prolonged thinking over the tasks of the day in order to reach a conclusion.
They also highlight a third factor: detachment. Having much in common with the definition above, detachment is the ability of the individual to 'switch-off' from work and to gain psychological 'space' from the workplace. Their conceptualisation seems to encompass the three main responses to work related thoughts. A measure: the Work Related Rumination Questionnaire (Cropley, Michanlianou, Pravettoni & Millward, 2012) was designed to capture self-reported repetitive thoughts about work.

1.61 Subtypes of rumination

As noted in section 1.6, Cropley and Ziljstra (2011) argue that there are different types of work-related rumination with differing characteristics. Affective Rumination appears to be mostly closely related to a physiological stress response as it involves an emotional response. For example, increased rumination is related to physiological stress markers e.g. salivary cortisol (Rydstedt, Cropley, Devereux, & Michalianou, 2009). Querstret and Cropley (2012) suggest that affective rumination and problem solving pondering operate through different pathways of the brain. They posit that problem solving pondering may operate via the prefrontal cortex which dampens the psycho-physiological response found in affective rumination. Rumination is “unintentional perseverative thoughts in the absence of obvious external cues” p197 (Cropley & Millward Purvis, 1999). Martin and Tesser (1989) conceptualise it as being related to a single topic (Ciarocco, Vohs & Baumeister, 2010). Evidence for subtypes of rumination which have differing outcomes can be found in the depressive rumination literature. Nolen-Hoeksema (2000) defines a ruminative response style as thinking “repetitively and passively about negative emotions, focusing on symptoms of distress” p504. Ruminative response style theory states rumination occurs in response to low mood (Nolen-Hoeksema, 1991). Rumination has been linked to psychological disorders such as depression (Mor and Winquist, 2002) and anxiety (Fresco, Frankel, Mennin, Turk, & Heimberg, 2002). Clinically, rumination consistently predicts the onset of depression but when observed with certain negative
thinking styles it also predicts the duration of symptoms (Nolen-Hoeksema, Wisco & Lyubomirsky; 2008).

One of the most widely used measures of rumination is the Ruminative Responses Scale (RRS) of the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991). Treynor, Gonzalez and Nolen-Hoeksema (2003) found a two factor model within the RRS; Brooding and Reflection. Brooding has been described as maladaptive as it predicts both short term and long term lowered mood. In contrast, reflection is concurrent with depression in the short term but may be adaptive long term. Confirmatory support for these two factors has been found in non-clinical samples (Schoofs, Hermans & Raes, 2010). This distinction has also been found in never depressed and formally depressed individuals in a community sample (Whitmer & Gotlib, 2011). The two measures appear to interact with other factors differently. For example Brooding has been found to associate with perfectionism where Reflection did not (Olson & Kwon, 2008). Brooding is also thought to be a mediator along the pathway to depression for childhood emotional abuse, whereas reflection is not (Raes & Hermans, 2008). Some similarities do exist as both brooding and reflection predict suicidal ideation at 1 year (Miranda & Nolen-Hoeksema, 2007).

Although the WRRQ and RRS were developed separately, their definitions of subtypes of rumination appear similar. It seems likely that the concepts of brooding and reflection map onto the concepts of affective rumination and problem-solving pondering concepts in the WRRQ respectively, however to date this hypothesis has not been tested. The description of both affective work-related rumination and brooding has a ‘self-focus’ quality whereas problem-solving rumination and reflection involve a turning outwards of focus. Self-focus - as opposed to an external focus - is implicated as being maladaptive across clinical presentations (Mansell et al, 2009). Similarly, Mor & Winquist (2002) found that in a meta-analysis of studies, perseverating on negative self-focussed thoughts was maladaptive.

The present study will aim to compare these concepts in relation to sleep and stress.
1.7 Rumination and sleep

Rumination is also related to sleep difficulties. Students who experienced a high-stress period, also experienced reduced sleep if they scored highly for emotion-focused coping (Sadah, Keinan & Daon, 2012). Inducing rumination can also affect sleep, in particular for high trait ruminators (Guastella & Moulds, 2007) and can delay the onset of sleep (Tang & Harvey, 2004). Research into pre-sleep rumination and insomnia suggest that rumination and sleep quality are associated after controlling for depression (Thomsen et al, 2003). Other types of rumination have also been found to affect sleep quality. For example, rumination about an anger experience mediates the relationship between forgiveness and sleep quality (Stoia-Caraballo et al, 2008). It seems that rumination as a perseverative cognition is related to both stress and sleep difficulties.

Similarly a small number of studies have started investigating the relationship between sleep and work-related rumination in the context of recovery. There is a negative association between sleep quality and work-related rumination (Thomsen, Mehlisen, Christensen & Zachariae, 2003; Thomsen et al. 2004). Cropley et al (2006) conducted a diary study with teachers looking at overall work rumination. They found that work rumination was higher earlier in the evening and decreased as the time from work increased. Teachers with high job strain showed higher levels of overall rumination than teachers with low job strain. Both higher job strain and work rumination were also associated with poorer sleep quality. This study did not find sufficient support for work rumination being a mediator or moderator between job strain and sleep quality. However this may be attributable to the low direct effect of job strain on sleep quality within their mediation model.

Subsequently, Berset, Elfering, Lüthy, Lüthi & Semmer (2011) found that work rumination was a full mediator of the relationship between two different types of stress; effort reward imbalance and time pressure, and sleep quality.
More recently, Querstret & Cropley, (2012) found the relationship between affective rumination and fatigue was partially mediated by sleep quality. Additionally, poor sleep quality and affective rumination scores predicted higher levels of both chronic and acute fatigue. Conversely, higher levels of problem solving rumination were associated with reduced fatigue. This suggests problem-solving rumination serves a different pathway to affective rumination.

These models show emerging evidence for a pathway between work stresses, rumination and sleep quality which may then result in fatigue. There is emerging evidence for affective rumination being the ‘active ingredient’ in this pathway, as this should be associated with a greater physiological stress response.

1.8 Areas for future research

As this chapter has demonstrated, working life can expose the individual to significant stressors. Recovery is thought to be important in how individuals keep themselves well in the face of these stressors. There is clear evidence for the role of cognitions; in particular work-related rumination mediating the effect of stressors onto recovery experiences including sleep. However, the methodology employed in previous studies has been somewhat limited.

Whilst the current research provides evidence for a relationship between wellbeing and work-rumination, causal relationships are not currently established. Much of the methodology has concentrated on cross-sectional studies (Querstret & Cropley, 2012) and even longitudinal diary studies have only explored a small number of days. This is especially problematic given that the relationships between work-related wellbeing and sleep quality can be argued to be cyclical. Sleep quality is both a strong predictor of work-wellbeing and work pleasure during work hours, whilst work-related rumination is in turn a predictor of sleep difficulties (Kompier, Taris & van Veldhove, 2012). As stress may accumulate over time it seems that a longitudinal study would be of value (Kinnunen & Feldt, 2013). Additionally, the evidence for work-related rumination impacting on sleep
is emerging however the role of rumination as a mediator is still unclear as results have been mixed (Berset et al, 2011; Cropley et al, 2006).

Studies of rumination and sleep have also been limited to self-reported measures of sleep. Sleep studies are also often cross-sectional or focus on global trends (van Hooff, Geurts, Kompier & Taris, 2007). Workers perception of their sleep may be affected by their mood which may be affected by their perception about work. Using objective measures of sleep quality would give more evidence for the mechanism of work-related rumination in affecting sleep. The suitability of the available objective sleep measures is important and so this will be explored further before describing the current study.

1.81 Measurement of Sleep

Polysomnography (PSG) is seen as the ‘gold standard’ of assessing sleep characteristics and as a diagnostic tool. This multi-parametric method usually involves the participant sleeping in a laboratory whilst physiological variables are measured including heart rhythm, muscle activity, brain function and eye movements. Whilst this provides rich data, it is only practical if assessing a small number of nights. Some research has taken place evaluating home based PSG (hPbSG) rather than lab based PSG (lbPbSG). Although hPbSG is not currently recommended as a replacement (Bruyneel et al, 2011), its use is helpful in directly comparing the effects on sleep of being in a laboratory or home based environment. Sleep efficiency, sleep duration and sleep latency were all improved when assessed at home (Iber et al, 2004; Bruyneel et al, 2011) suggesting that assessment of sleep at home may be more representative of natural sleep.

Actigraphy has been claimed as an alternative to PSG when assessing multiple sleep cycles or whole day activity. Actigraphy is a measure of movement rather than sleep. It requires an individual to wear a device, usually on the non-dominant wrist, which measures movement through acceleration. In establishing actigraphy as a valid measurement tool, many papers have used it in comparison to another standard such as PSG

129
(Morgenthaler et al, 2007). Evidence for Actigraphy as a suitable alternative for PSG has been mixed and has been subject to several reviews (Pollak, Tryon, Nagaraj & Dzwonczyk, 2001; Sadeh et al, 2011) and in-depth analysis of the validity of the scoring procedures (Meadows et al, 2005). However reviews of Actigraphy have consistently found it to be an adequately accurate way of measuring sleep in healthy adults (Morgenthaler et al, 2007; Sadeh et al, 2011). Given that sleep appears to be more naturalistic in home settings and a large number of nights are needed to assess the difference between vacation and working time, actigraphy is a reasonable way of assessing sleep in healthy adults.

1.9 Aim of the Current Study

The current study aims to explore the relationship between stress, work-related rumination and sleep over a vacation period. Teachers were chosen as a suitable population as teaching is a high stress profession (Borg & Riding, 1991) and they have been shown to demonstrate work-related rumination in previous studies (Cropley & Millward Purvis, 2003; Cropley et al, 2006). Teachers are also suitable as they experience an enforced period of respite from work at a standardised time, in the form of half term.

This study will add to our understanding of work-related rumination, as previous studies have been mostly cross-sectional. Therefore, this study will be longitudinal. Secondly, the study will use both subjective (self-report) and objective measures (actigraphy) of sleep quality to compare whether sleep quality is affected by work-related rumination and vacation. A third aim is to compare the subtypes of work-related rumination to the depressive rumination concepts of Brooding and Reflection, as these seem conceptually similar. A final aim is to investigate whether affective rumination mediates between stress and sleep.

In order to do this a two phase study was designed. The first phase was designed to recruit participants for phase two based on their work related affective rumination score. This phase was also designed so that correlations between the subtypes of rumination across the WRRQ and RRS could be tested as well as the mediation analysis noted above. The second phase was
the longitudinal study investigating the relationship between work-related rumination and objective and subjective sleep quality over a vacation period.

1.91 Relevance to Clinical Psychology

This study aims to extend the current rumination literature in particular in investigating two types of rumination in a non-clinical sample. Given that teachers are more likely to take time off work due to stress (HSE, 2013) and that teaching is viewed as a high stress job role (Cropley & Millward Purvis, 2003), the current study posits that this population represent a ‘grey’ area between healthy and clinical. Rumination literature is dominated by testing theoretical models either in disorder specific clinical samples (Gruber, Eidelman, Johnson, Smith & Harvey, 2011; Papageorgiou & Wells, 2003) or undergraduate student samples (Morrison & O’Connor, 2005; Lyubomirsky, Caldwell & Nolen-Hoeksema, 1998). This study aims to widen the application of rumination theories to a non-clinical group who may be at risk of developing clinical symptoms due to high exposure to stressors. This group would likely initially fall under a primary care service if they developed initial symptoms e.g. IAPT services.

As the study is primarily concerned with work-related rumination and recovery, participants need to be currently employed in order for work-related rumination to be relevant. The current study also aims to test the effect of work-related rumination on sleep in a naturalistic setting; hence teachers with an enforced holiday period are a relevant population. Identifying the role of rumination in impairing recovery is useful, as this may help with identifying early clinical signs of stress and difficulties with mental health at work. This would therefore give opportunity for early targeting with intervention.
1.92 Hypotheses

Primary Hypotheses

H1: High Affective Ruminators will have more disturbed sleep as measured by sleep efficiency and sleep fragmentation than Low Affective Ruminators.

H2: High Affective Ruminators will have poorer self-rated sleep as measured by the sleep diary than Low Affective Ruminators.

H3: Sleep quality as measured by the objective sleep measures will be higher during vacation compared to both working weeks. This effect will be smaller for High Affective Ruminators than Low Affective Ruminators.

H4: Perceptions of sleep quality as measured by the sleep diary will be higher during vacation compared to both working weeks. This effect will be smaller for High Affective Ruminators than Low Affective Ruminators.

Secondary Hypotheses

H5. The Affective Rumination subscale of the WRRQ will be positively correlated with the Brooding subscale of the Rumination Response Scale.

H6. The Problem Solving Pondering subscale of the WRRQ will be positively correlated with the Reflective Subscale of the RRS.

H7. Affective work-related rumination will mediate the relationship between work stress and sleep quality.
Chapter 2: Method

2.1 Phase 1

2.1.1 Design

The phase 1 data collection utilised a cross-sectional design in the form of an online survey using standardised questionnaires.

2.1.2 Participants

Full-time primary and secondary school teachers were invited to take part from schools within the UK. A total of 2306 participants accessed the online study. Of these 193 indicated they did not meet the inclusion criteria and were disqualified from the study. The inclusion criteria for participants were: that they be employed in the United Kingdom, teaching primary or secondary age students; and working full time (defined as working 30 or more hours per week over five days). A total of 765 people consented to take part in the study but either withdrew or did not complete the survey and so data from any completed questions was removed. A total of 1348 participants fully completed the online survey. Four participants were removed following data screening (see Section 2.20) leaving 1344 participants included in the data analysis. In terms of gender, 1075 participants were female (80%) and 269 were male (20%). Participants had a mean age of 39.79 years (SD = 11.01). In terms of marital status; 693 (51.6%) were Married, 283 (21.1%) were single, 107 (7.9%) were divorced or separated, 4 (0.29%) were widowed and 257 (19.1%) were cohabiting. 627 (46.7%) worked in Primary school education, 660 (49.1%) in Secondary school education, 22 (1.6%) in Middle school and 35 (2.6%) in Special Educational Needs Schools. See Table 1 for location of participants.

Table 1: Location of participants

133
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2.13 Materials

The online survey was hosted by the University of Surrey Psychology department. It comprised the following measures. See Appendix 4 for copies of the measures and Appendix 5 for a copy of the online survey.

a) Work-Related Rumination Questionnaire (WRRQ)

The Work-Related Rumination Questionnaire was developed by Cropley, Michanlianou, Pravettoni & Millward (2012) as a self-report measure of repetitive thought about work. It has three subscales; Affective Rumination, Problem-solving Pondering and Detachment. Each scale has 5 items scored along a 5 point Likert subscale ranging from 1- very seldom/never to 5- very often/always. Each subscale totals to a maximum score of 25. Item examples include: “Are you irritated by work related issues when not at work?” (Affective rumination), “In my free time I find myself re-evaluating something I have done at work” (Problem-solving pondering) and “I make myself switch off from work as soon as I leave” (Detachment). Factor analysis has confirmed the three subscales (Querstret & Cropley, 2012) and they have reliability of 0.81-90 (Cronbach’s alpha). It has been

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7 Two other measures were collected as part of the online study however these were not used in the final analysis due to limitations of the scope of the research. These may be used for future publications.
used with a population of adults with varied job roles including education, health care and management (Querstret & Cropley, 2012). Cronbach’s alpha for the current study was 0.89 for the Affective Rumination Subscale, 0.74 for the Problem Solving Scale and 0.83 for the Detachment Scale.

b) Ruminative Responses Scale (RRS) and subscales ‘Reflection’ and ‘Brooding’.

The Ruminative Response Scale (RRS; Nolen-Hoeksema & Morrow, 1991) is 22 item self-report measure that was originally a sub component of the Response Styles Questionnaire. Correlation between self-report administration and interview administration is good at 0.90 (Nolen-Hoeksema & Jackson, 2001). Later factor analysis by Treynor, Gonzalez & Nolen-Hoeksema (2003) theorised the RRS to consist of two 5-item subscales; Reflection and Brooding which has been confirmed by other authors (Schoofs, Hermans & Raes, 2010). Example ‘Reflection’ subscale items include “go away by yourself and think about why you feel this way”. This subscale reflects an analytical thought process about the individual’s current emotional state. Example ‘Brooding’ subscale items include “think 'Why do I always react this way?'". This subscale reflects a passive self-focus on the person’s problems. Troynor et al (2003) found these factors were differentially related to symptoms of depression which the other 12 items of the RRS reflect. Respondents answer each question on a scale from 1 (almost never) to 4 (almost always). The Cronbach’s alpha for the Reflection scale was 0.72 and 0.77 for the Brooding scale and the test-retest correlation was .67 (Troynor, Gonzalez & Nolen-Hoeksema, 2003). Cronbach’s alpha for the current study was 0.788 for the Reflection scale and 0.817 for the Brooding scale.

c) Pittsburgh Sleep Quality Index (PSQI)

The PSQI (Buysse et al, 1989) is a self-rating subjective measure of the quality of sleep of adults. Responses are given on a 0 to 3 Likert Scale. The measure is transformed into seven components which are summed to gain a global score ranging from 0 - 21. The seven components are: subjective sleep quality, sleep duration, sleep latency, habitual sleep efficiency, sleep
disturbances, use of sleeping medication and daytime dysfunction over the last month. The cut off for being a 'poor sleeper' is a score of 5 or more. The Cronbach's Alpha internal consistency of the scale is 0.83 for the seven subscores and reliability is good. It has been used with a variety of populations (Carpenter & Andrykowski, 1998; Backhaus, Junghanns & Broocks, 2002) including clinical populations (e.g. Agargün, Kara & Solmaz, 1997).

d) Teacher Stress Inventory (TSI)
The Teacher Stress Inventory (TSI; Boyle, Borg, Falzon & Baglioni, 1995) is a 20 item self-report measure looking at stressors within a teacher's working environment. Respondent rate each stressor on a five point Likert ordinal scale ranging from no stress to extreme stress. It has high face validity and the Cronbach alpha internal consistency of the scale is $r = .85$ (Boyle et al, 1995). This has been widely used and validated and also has been used with teachers (Griffiths et al., 1999). In the current study the Cronbach's alpha was 0.896

2.14 Confidentiality and data storage
All data downloaded from the online survey was kept in an electronic file which was both encrypted and password protected. All data was anonymised at source as participants were not asked for their personal details. Only the researcher and academic advisor had access to the data.

2.15 Ethical Considerations
The Phase 1 procedure was reviewed by and received a favourable opinion from the University of Surrey Faculty of Arts & Human Sciences Ethics Committee (see Appendix 1). Areas of importance highlighted to the Ethics Committee included consent, risk of distress to participants and data protection.

The measures used were unlikely to cause distress to participants as they focussed on work related thoughts and sleep rather than symptoms of distress. Participants were informed that if they did find the questionnaires upsetting they could contact the chief investigator via email for a list of
helpful organisations. If they had immediate concerns they were asked to contact their GP or out of hours primary care service. Throughout the data collection period, no one contacted the researcher stating they felt distressed. When contact was made with the researcher, this was to give feedback on the survey (e.g. suggestions for changes) or to state they found the study interesting.

Participants were given information about data protection and anonymisation of responses within the information form. The survey did not ask for names or personally identifying details. Only email addresses were asked for from those interested in participating in phase 2. Email addresses were removed for data analysis. Participants were also informed about secure storage of the data both during the study and following the end of the study, in line with the Data Protection Act.

Participants were directed on how to withdraw consent during completion of the online survey in the information sheet. They were also asked to actively consent to participate before the survey began.

2.16 Pilot study

A pilot study was run with 10 participants before the study began to ensure the website operated correctly and the questionnaires did not take more than 20 minutes to complete.

2.17 Permission for measure use

The WRRQ was obtainable from the author at the University of Surrey. The author of the Ruminative Responses Scale (Nolen-Hokesema, S) was contacted and permission to use was granted. The TSI and PSQI are freely available for use in non-profit education research.

2.18 Power calculation

Previous studies testing the relationship between rumination and sleep quality suggest a small to medium effect size of 0.24 (Cropley et al, 2006). Calculations using G*Power (v3.1.3; Faul et al., 2007) result in a sample size of 133 to obtain a power of 80% to detect whether the correlations coefficient is different from zero at the 5% level using a 2-sided test.
However, as part of the role of this phase was to recruit sufficient participants for the phase 2 study, participants were recruited until the minimum number required for the phase 2 study was met.

2.19 Procedure

A total of 25,724 schools in the UK (Scotland, Wales, Northern Ireland and England) were approached by email between January and May 2013 during term time. The email contained introductory information to the head teacher about the study and they were asked to consider passing this information to their full time teaching staff. The email also contained the link to the online survey.

For participants that accessed the survey they were first asked whether they met the criteria of being a full time teacher in the UK (defined as 30+ hours over 5 working days per week). Participants were then shown an information sheet about the study (Appendix 2). This included information about research contact details, confidentiality, how to withdraw, consent and data storage and protection. Participants were then asked to indicate their consent to take part (Appendix 2). Participants who did not consent were directed to a page which thanked them for their time and asked them to close the survey window. See Appendix 3 for the online survey layout.

Participants who consented to take part were then asked a series of demographic questions. The questionnaires were completed in the following order: Pittsburgh Sleep Quality Index, Teacher Stress Inventory, Work Related Rumination Questionnaire and Ruminative Responses Scale. If participants did not complete an item on a page, they were prompted to do so before moving on hence all data sets were complete. Following completion of the questionnaires participants were shown some brief information about the follow up study (Phase 2) and asked if they were willing to be contacted and, if so, leave a contact email address. Participants’ right to choose or decline was highlighted. Participants were then thanked for their participation and reminded of the researcher and supervisor’s contact details in case of any queries or comments. The measures were trialled (as above) and were found to take an average of 15-
20 minutes to complete.

2.20 Analysis

Completed data sets were downloaded from the online website into an Excel spreadsheet. Responses where the numbering system had had to be changed because of the website requirements were transformed to reflect their correct scoring. For the PQSI, the seven composite variables were computed, where possible, by formula or by hand within Excel. Data was entered into a statistical programme; the Statistical Package for the Social Sciences (SPSS) (v20, Windows OS).

a) The raw data was screened for outliers or errors (within free text fields) and four participants were found to have given nonsensical answers or be far outside working age. These four records were excluded. Missing entries were also checked. On two items on the PSQI, a free text field was used for participants to record bed times. 97 participants had recorded a time period rather than a discrete time and therefore it was not possible to compute the final PSQI Total score. Where the PSQI total score was used in analysis, the data was from the remaining 1247 participants. No other missing data was found, due to the controls on the online survey.

b) Each subscale was assessed for normality and skewness. Histograms and frequencies were used to assess normality. Statistical parameters (e.g. skewness and kurtosis) and tests of normality (e.g. Shapiro-Wilk) were not appropriate because of the large sample size, as this can give a statistically significant result even if deviation from normality is small (Field, 2013).

c) The relationships between the subscales of the WRRQ and the RSS were tested using a bivariate correlation analysis. Descriptive statistics were also produced.

d) Mediation analysis was conducted using the PROCESS macro from Hayes (2013). Bootstrapping using 5000 samples was conducted. Bias corrected and accelerated 95% Confidence Intervals were reported. A value of zero not being included in the 95% confidence intervals for the indirect effect was taken as indicating significance. Effect size was estimated using the Kappa Squared value as this is a standardised value, independent of
sample size (Preacher and Hayes, 2011).

2.2 Phase 2

2.21 Design

The phase 2 study utilised a quasi-experimental between and within group design.

2.22 Participants

Participant identification

Participants were identified from the phase 1 data set. For inclusion for consideration participants must have completed the entire questionnaire set and indicated they were willing to be contacted about the follow-up study. The scores on the ‘Affective Rumination’ subscale of the Work-Related Rumination Questionnaire (WRRQ) were summed. Participants with a score of 12 or below were included in a group termed ‘Low Affective Rumination’. This score was chosen as it represents average responding of ‘2’ or ‘seldom’ on the WRRQ. This group consisted of 196 people (lowest 14.5% of the data set), of which 70 (35.7% of group) had given consent to be contacted. Participants with a score of 22 or above were included in a group termed ‘High Affective Rumination’. This score was chosen as it represents average responding of at least ‘4’ or ‘often’ on the WRRQ. This group consisted of 239 people (highest 17.8% of the data set), of which 107 (44.8%) had given consent to be contacted. A total of 177 people were contacted via email to invite them to participate in the study and sent an information sheet about the study (Appendix 7). Eighty one (45%) responded to enquire about the study. Questions were asked via email to establish whether they met the inclusion criteria:

- Remaining in the UK for the duration of the study
- No external factors interrupting sleep more than once per night e.g. children aged 18 months or younger.
- No diagnosis of a sleep disorder e.g. sleep apnea, narcolepsy
- Not taking medications for sleep difficulties.
- Were not going into the work place during half term.

21 respondents either declined or indicated they did not meet the inclusion criteria and were disqualified from the study.

Study packs were sent out to 60 participants, 30 Low Affective Ruminators and 30 High Affective Ruminators. All packs were returned, however one pack was not returned in time for analysis. In two cases, the Actiwatch data was incomplete due to malfunction of the Actiwatch and these participants were excluded from the analysis. The final participant groups included 28 Low Affective Rumination Group and 29 in the High Affective Rumination Group. See Figure 1 for diagram of participant identification.

A chi-squared analysis showed the groups do not differ in terms of gender, age, educational type or marital status at the 0.05 level.

*Low Affective Rumination (LAR) Group*

Participants' mean total score for Affective Rumination was 9.96 (SD = 1.62). 22 participants were female (78.6%) and 6 were male (21.4%). Participants had a mean age of 38.14 (SD = 12.41). 13 (46.4%) were Married, 11 (39.3%) were single, 1 (3.6%) was divorced and 3 (10.7%) were cohabiting. 8 (28.6%) worked in primary school education, 1 (3.6%) in Middle school, 18 (64.3%) in Secondary school and 1 (3.6%) in Special Educational Needs Schools.
Figure 1: Diagram showing participant identification

Total participants completed
Phase 1 Study
= 1344

Participants identified according to the WRRQ Affective Rumination Score

Low Affective Rumination group

Average score of 2 or less = 196 (14.5%)

Participants who had consented included = 70 (35.7%)

Potential participants emailed = 177

Participants responded = 35
Participants excluded following discussion of inclusion criteria = 5

Participants invited to take part in study = 30

Final Participant Group = 28 LAR

Data excluded: Data not returned in time = 1
Actiwatch malfunction = 1

High Affective Rumination Group

Average score of 4 or more = 239 (17.8%)

Participants who had consented included = 107 (44.8%)

Potential participants emailed = 177

Participants responded = 46
Participants invited to take part in study = 30
Participants excluded following discussion of inclusion criteria = 16

Final Participant Group = 29 HAR

Data excluded: Actiwatch malfunction = 1

Study Completed
**High Affective Rumination (HAR) Group**

Participants’ mean total score for Affective Rumination was 23.48 (SD = 1.33). 25 participants were female (86.2%) and 4 were male (13.8%). Participants had a mean age of 41.34 (SD = 10.09). 11 (37.9%) were Married, 7 (24.1%) were single, 3 (10.3%) were divorced, separated or widowed and 8 (27.6%) were cohabiting. 16 (55.2%) worked in primary school education, 1(3.4%) in Middle school and 12 (41.4%) in Secondary school.

**2.23 Measures**

**2.231 Objective Measures of Sleep**

a) Actiwatch

The Actiwatch 4 is an accelerometer measuring movement that looks similar to a wrist watch. As stated above, whilst polysomnography (PSG) is accepted as the ‘gold standard’ for measuring sleep objectively, actigraphy is seen is an acceptable alternative where PSG is impractical, in particular when multiple nights of data is needed.

Sixty Cambridge Neurotechnology (CNT) model AW4 Actiwatches were borrowed from the University of Surrey. Prior to use, new batteries were fitted and the watches were checked to be measuring consistently using calibration equipment from CNT. All watches were found to be within normal limits and said to have ‘passed’. Before use the watches were tested by the researcher by wearing for two hours to ensure they were collecting data. Each watch was assigned a unique identifier. The unique identifiers were assigned to participants and the watch assigned to them. A 1 minute epoch length was used as this is the commonly used length and was the minimum length of recording possible to allow for the Actiwatch to record for the study period. This also gave the possibility for the data to be analysed using alternative algorithms (see Meadows et al, 2005 for a review) however the standardised algorithms provided by the manufacturer were deemed adequate to determine whether the participant was awake or asleep for each epoch. CNT actiwatches react to accelerations >0.05 g.
Sleep Analysis software provided by the manufacturer was used to analyse the raw data. The Time to Sleep and Time to Wake values from the sleep diary were entered for each night’s sleep to establish the sleep time period.

Four variables were taken from the Actigraphy output data for each night: Sleep Efficiency, Assumed Sleep Time, Actual Sleep Time and Fragmentation Index. Sleep Efficiency is defined as the ratio of time asleep vs. time spent trying to sleep. A score of 85% or more is considered to signify a ‘normal’ night’s sleep. Sleep Fragmentation is the ratio of wake bouts to total sleep time (Morell et al, 2000). Assumed Sleep Time is the number of minutes spent in bed trying to sleep. Actual Sleep Time is the number of minutes spent asleep as defined by the Actiwatch algorithm. Fragmentation Index is the number of minutes slept divided by the awakenings in the night. A score of 50 or more is thought to represent fragmented sleep (Morell et al, 2000; Meadows et al, 2005).

2.232 Subjective Measures of Sleep

Sleep Diary

A sleep diary was given to all participants for completion each day (Appendix 8). Participants were asked to record four elements of their sleeping time: Time they got into bed, Time attempted to go to sleep, Time they woke up and Time they got out of bed. Participants were given nine questions and asked to rate their perception of their night’s sleep on a Likert Scale of 1-7. These questions were based on questions from Akerstedt, Hume, Minors & Waterhouse (1994). These have been used in subsequent studies (Cropley, Dijk & Stanley, 2006) where they generated two factors: ‘Sleep Quality’ and ‘Feelings after Waking’. Questions within the Sleep Quality factor include: “Did you sleep throughout the night?”, “Did you wake up early?”, “Was it difficult or easy to fall asleep?”, “How did you sleep?” and “Was your sleep restless or calm?”. Cronbach’s Alpha for the ‘Sleep Quality’ scale on each day was acceptable, ranging from 0.73 to 0.87. Questions within the ‘Feelings after Waking’ factor include: “Did you wake up easily?” and “Did you feel refreshed after awakening?”. Cronbach’s Alpha for the ‘Feelings after waking’ scale on each day was
good, ranging from 0.84 to 0.86.

2.24 Rumination Measure

Work-Related Rumination Questionnaire
The WRRQ was completed on four days at approximately 6pm:
- Baseline - On Sunday night before the first working week (Night 1)
- Time 1 - The Wednesday night of the working week (Night 4)
- Time 2 - The Wednesday night of the vacation week (Night 11)
- Time 3 - The Wednesday night of the following week. (Night 18)
On each occasion participants were asked to answer the questions on how they felt that day rather than generally. See Phase 1 method for full details of the WRRQ’s psychometric properties.

2.25 Procedure

Following participant identification, eligible participants were sent an information sheet and consent form via email and given the opportunity to ask any questions about the study. As well as the material listed above, the study pack included a paper copy of the information sheet, consent form and information sheet about the study (Appendix 7). The study pack was sent to the participant’s home or school address via special delivery recorded post. For participants local to the researcher’s university the study packs were given to and collected from the individuals directly via school reception staff. Participants were also asked whether they preferred to be reminded about completing the measures via phone, email or text message. Participants were asked to start wearing their Actiwatch on the Sunday of the first week and then keep this on until the Thursday morning following half term and complete the sleep diary each evening and morning. They were also prompted to complete the WRRQ four times during the study:
- On the Sunday night before the first working week (Night 1)
- The Wednesday night of the working week (Night 4)
- The Wednesday night of the vacation week (Night 11)
- The Wednesday night of the following week. (Night 18)
Participants then posted the completed WRRQs, Sleep Diary, Consent form and Actiwatch back to the Researcher via the return special delivery recorded envelope provided.

2.26 Follow up

Those participants who agreed to receive a sleep report were sent this via post within two months of completing the study.

2.27 Analysis

Data composition

Data from the Actiwatches was downloaded using an Actiwatch reader into Sleep Analysis 7 software. The sleep diary times ("Time tried to go to sleep" and "Time woken up") were entered into the Sleep Diary for the corresponding Actigram. The Analysis 7 software produced a set of variables for each day. Of these the following were of interest: Sleep Efficiency, Sleep Fragmentation Index, Assumed Sleep and Actual Sleep.

To compare Work and Vacation weeks, composite measures were constructed. Sadeh & Acebo (2002) suggest that five to seven nights are ideal for composite measures although they acknowledge that there has been limited research on actigraphy reliability over time. However, in order to assess whether work related rumination was affecting sleep participants would need to have experienced a working day either side of the night (in order to possibly ruminate about the day's work and anticipate the next day) limiting the possible nights available to four (Monday – Thursday). Including weekend nights may have affected the results as these days are non-work days and should result in less exposure to stressors. Additionally, due to limitations with the number of nights the Actiwatch could record (given delivery time and sufficient sensitivity of the epoch recording length) only 18 nights of data were available. Therefore only Monday to Wednesday of the final working week was recorded. For comparison, it was decided that each week should have the same number of nights and so data from nights Monday to Wednesday for each week were included in the composite measure. To establish whether including four nights (Monday – Thursday) in Weeks 1 and 2 would affect the outcome of the results,
analyses were run using these variables. No difference to the current results was observed and so the original three nights in each week were included in the final composite measures.

Mean values across the three nights were calculated for each week: Working Week 1, Vacation Week and Working Week 2.

**Data standardisation**

a) Actigram Data

Actigrams were visually examined for any missing data. If a portion of the night’s data (as identified by the sleep diary) was missing, that night was excluded from the analysis. In total, 17 nights of whole night data was missing (1.66% of all nights) due to participants forgetting to wear the watch. Meadows et al (2010) recommend that any data blocks missing for >six hours are excluded in 24 blocks and so these days were left blank. No more than two participants’ data per day in any group were missing.

Sleep diary times were compared to the Actigram data. If there was discrepancy the data was analysed further, i.e. there was a period of significant stillness before the time indicated as Time to Sleep, or significant activity following Time to Sleep. Where there was discrepancy, the first 10 minutes where no activity was recorded (Signified as 0s) following the participant-indicated Time to Sleep was identified. The midpoint of this inactivity was taken as the Time to Sleep period as per procedure from Van Der Berg et al (2008). This was the case for 3 nights (0.3% of all nights), occurring in two participant’s data.

b) Sleep Diary

Across the seven Sleep Diary questions 12 (1.17%) full day’s data were missing. In addition, 14 individual values were missing (0.12%) where participants had not completed one question out of the day’s diary. In total 1.29% of Sleep Diary data was missing. Where individual data was missing, a median value based on that days data was added. The data was run both with and without this median data. No differences were seen in average
mean or significance, so the median values were omitted. Where a whole
day of sleep diary data was missing, this was left blank. No more than two
participants’ whole day data were missing for any individual day.

**Outliers and normality**

a) Outliers

On two nights (0.19%) Time Asleep as measured by the Actiwatch was
less than 1 hour and was identified as an outlier. On further examination the
Actigraph data did not fit with the participant’s sleep diary or sleep quality
measure. This was thought to be due to error within the Actiwatch and
therefore not representative of the participant’s sleep. These nights were
excluded.

b) Normality

Each dependent variable was checked for normality. This was done by
visually checking histograms calculating the skewness and kurtosis for each
variable and running the Shapiro-Wilk test (Appendix 10). These tests
indicated 17 out of the 60 data sets violated at least one criterion for
assumption of normality. In order to ascertain whether transformation of the
data sets would give a normal distribution, log transformations were run on
each data set. However, transforming the data increased the number of sets
not meeting normality criteria to 21 out of 60. Therefore, the data was not
transformed in the final data set. ANOVA is a robust measure that can
manage minor changes in normality (Keppel & Wickens, 2004) so it was
considered robust enough to run parametric statistics on the data sets.

**2.28 Analysis for Phase 2 data**

a) The phase 1 data was examined for the two groups. Group means on
the demographic variables (age, gender, marital status) and composite phase
1 measures (Three subscales for the WRRQ, Two subscales and total for the
RRS, total scores for the TSI and PSQI) were calculated. Independent
sample t-tests were carried out on these values.
b) Results were examined for Levene’s test of variance. Where assumptions were not met, the adjusted figure was used.

c) Mauchley’s test of sphericity was used to test whether the variances of the differences between conditions were equal. Violation of sphericity may mean the variances of the group are distorted and can lead to inflation of the F-ratio and type I errors. Where this was violated, the Greenhouse-Geisser correction was used as this is a conservative estimate (Field, 2013).

d) A 3 (Time: Work Week 1, Vacation Week 2 and Work Week 3) x 2 (Low Affective Rumination group, High Affective Rumination Group) mixed design ANOVA was carried out on each of the objective and subjective measures. Where a significant main effect between groups was found, the data was analysed using an independent samples t-test. Where a significant main effect between times was found, a paired samples t-test was used. Where a significant main effect of the interaction between group and time was found, a repeated measures ANOVA was run on each group separately. Post-hoc pairwise comparisons were used to detect difference between the time points and Bonferroni corrections used to reduce the likelihood of a Type I error. Bonferroni corrections are a conservative estimate but help to reduce lack of power when the groups being compared are small (Field, 2013). Effect sizes were calculated using eta squared and Cohen’s $d$. 

149
Chapter 3: Results

3.1 Overview
In order to provide clarity, this chapter will present the results in sections centred on the hypotheses.

Sections 1-4 are concerned with the Phase 2 study. Section 1 is concerned with the descriptive data of the two groups. Section 2 presents the data on Work Related Affective Rumination over time. Section 3 details the results of the Objective measures of Sleep (Hypotheses 1 & 3). Section 4 details the results of the Subjective measures of Sleep (Hypotheses 2 & 4).

Sections 5-6 are concerned with the data collected from the Phase 1 study. Section 5 details the correlations between the scales and subscales of the measured variables (Hypotheses 5 and 6). Section 6 then goes on to examine the mediation model between Affective Rumination, Stress and Sleep Quality (Hypothesis 7).

3.2 Section 1: Demographics and Baseline Data
Table 2 shows the group differences between the measures in phase 1. Although the groups were not matched for gender, the difference was non-significant. The difference between the groups for age and number of years teaching was also non-significant. The HAR group worked more hours per week than the LAR Group.

By design the High Affective Rumination (HAR) Group were more likely to ruminate affectively than the Low Affective Rumination (LAR) Group. The LAR group were less likely to use problem solving pondering as a strategy and more likely to be detached from work than the HAR group. In terms of Depressive Rumination, the HAR scored higher than the LAR group for the total RRS score as well as both subscales, Brooding and Reflecting.

The HAR group scored higher on the Teacher Stress Inventory than the LAR Group. The HAR group also scored higher than the LAR group for the PSQI, although both groups fell into the clinical range.
<table>
<thead>
<tr>
<th></th>
<th>Low Affective Rumination Mean (SD)</th>
<th>High Affective Rumination Mean (SD)</th>
<th>Test (T-test unless otherwise specified) t = (df)</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRRQ – Affective Rumination</td>
<td>9.96 (1.62)</td>
<td>23.48 (1.33)</td>
<td>34.513 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>22 Female (78.6%)</td>
<td>25 Female (86.2%)</td>
<td>X2</td>
<td>p = 0.284</td>
</tr>
<tr>
<td>Age</td>
<td>38.14 (12.41)</td>
<td>41.34 (10.09)</td>
<td>1.071 (55)</td>
<td>p = 0.29</td>
</tr>
<tr>
<td>No. of Years Teaching</td>
<td>11.04 (10.00)</td>
<td>13.72 (9.23)</td>
<td>1.06 (55)</td>
<td>p = 0.30</td>
</tr>
<tr>
<td>Number of Hours Worked</td>
<td>47.46 (6.74)</td>
<td>55.45 (6.12)</td>
<td>4.69 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>PSQI Total</td>
<td>5.46 (2.67)</td>
<td>9.07 (3.52)</td>
<td>4.347 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>TSI Total</td>
<td>13.75 (9.65)</td>
<td>40.31 (13.88)</td>
<td>8.414 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>WRRQ – Problem Solving</td>
<td>16.36 (3.13)</td>
<td>20.07 (2.72)</td>
<td>4.781 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Pondering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRQ – Detachment</td>
<td>15.86 (3.99)</td>
<td>8.14 (3.69)</td>
<td>7.588 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>RRS – Brooding</td>
<td>6.75 (1.35)</td>
<td>12.66 (4.05)</td>
<td>7.441 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>RRS – Reflection</td>
<td>7.32 (2.14)</td>
<td>10.76 (3.40)</td>
<td>4.584 (55)</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>RSS – Total</td>
<td>29.68 (5.54)</td>
<td>53.48 (12.86)</td>
<td>9.133 (55)</td>
<td>p &lt; 0.001</td>
</tr>
</tbody>
</table>

3.3 Section 2: Work-Related Rumination

The means of the WRAR scale Week 1, Week 2 and Week 3 were plotted for both the High and Low Affective Rumination Groups in Figure 2 below. This was in order to establish whether the work related affective
ruminations scores changed over time during the study and to establish whether group membership was stable over time.

Figure 2: Work-Related Affective Rumination over time

The results of the two by four mixed design ANOVA show no significant interaction of time x group F(3,165)=2.37, p=0.73. However, there was a significant effect of group F(1,55)=177.67, p<0.001 with a large effect size (eta squared=.76). This was as expected as the groups were chosen by differences on the Affective Rumination Measure (HAR M = 19.94, SE = .46 vs. LAR M =11.13, SE=.47).

There was also a significant effect of time F(3,65)=8.67, p<0.001 with a small effect size (eta squared=0.13). This was due to significant differences between all Working time points and the Vacation Week. Participants reported higher work-related affective rumination (WRAR) at Baseline (M = 15.63, SE=.632) which was significantly lower t=2.54(56) p=0.01 at the Vacation Week (M=14.60, SE=.71) and represents a medium effect size d=0.34. Similarly participants reported higher WRAR at Work Week 1 (M=16.05, SE=.70) and Work Week 3 (M=16.16, SE=.78) compared to the Vacation Week (M=14.60, SE=.71), t=4.41(56) p<0.001 and t=4.56(56)
p<0.001, respectively. Both these differences represent a medium effect size, d=0.58 and d=0.60 respectively.

The HAR group scored consistently higher than the LAR for work related affective rumination over time suggesting that their group membership was consistent. Therefore they appear more likely to ruminate emotionally regardless of being at work or on vacation. However, both groups appeared to ruminate emotionally about work less in vacation time compared to working times.

3.4 Section 3: Objective Sleep Measures

3.41 Sleep Efficiency

The means of the sleep efficiency ratio as measured by the Actiwatch for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 3 below.

Figure 3: Sleep Efficiency over 3 weeks

![Graph showing sleep efficiency over 3 weeks for High and Low Affective Rumination Groups]

The results of the two by three mixed design ANOVA show no significant group x time interaction F(1,55)=.335, p=.57. There was also no significant main effect of group, F(1,55)=.110, p=.74. There was however, a significant main effect of time F(1,110) = 9.45, p<0.01 with a medium effect size (eta squared = .15). Participants had greater sleep efficiency
during Work Week 1 (M=87.05, SE=0.61) compared to the Vacation Week (M=83.70, SE=.74), \( t=46.14(56), p<0.001 \), which represented a medium effect size \( d=0.61 \). Similarly, participants had higher sleep efficiency during Work Week 3 (M=85.88, SE=.71) compared to the Vacation Week (M=83.70, SE=.74), \( t=-2712(56), p=0.01 \), representing a small effect size, \( d=0.35 \).

These results suggest that there is no significant difference between the LAR and HAR groups in terms of their Sleep Efficiency Scores. Sleep Efficiency scores did change over time, and lowered in the vacation week, suggesting a poorer night’s sleep in holiday time.

3.42 Sleep Fragmentation

The means of the Sleep Fragmentation Index Score as measured by the Actiwatch for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 4 below.

Figure 4: Fragmentation Index Scores over Time

![Sleep Fragmentation Graph]

The results of the two by three mixed design ANOVA show no significant group x time interaction \( F(1,55)=.67, p=.51 \) and no significant main effect of group, \( F(1,55)=.20, p=.65 \). There was however a significant
main effect of time $F(1,110) = 7.15$, $p=0.01$ with a small-medium effect size (eta squared $= .11$).

This was due to a significantly less fragmented sleep between Work Week 1 ($M=24.20$ SE=1.11) and Vacation Week ($M=29.92$, SE=1.56), $t=-3.60(56)$, $p=0.001$, with a medium effect size $d=0.48$. There was also significantly less fragmentation of sleep in Work Week 1 ($M=24.20$ SE=1.11) compared to Work Week 3 ($M=27.35$, SE=1.24), $t=-2.25(56)$, $p=0.3$ with a small effect size $d=0.22$.

These results suggest that there is no significant difference between the LAR and HAR groups in terms of their Sleep Fragmentation Index Scores. Sleep Fragmentation scores did change over time suggesting sleep was less fragmented (and therefore better quality) in the week before half term compared to either the vacation week or the week following half term.

This was an unexpected finding, which will be discussed further in the discussion section.

### 3.4.3 Assumed Sleep Time

The means of the time attempting to sleep (Assumed Sleep) as measured by the Actiwatch for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 5 below.

**Figure 5: Assumed Sleep over Time**

![Assumed Sleep Diagram](image)
The results of the two by three mixed design ANOVA show no significant group x time interaction $F(2,110) = .937, p = .38$. There was also no significant main effect of group, $F(1,55) = 1.32, p = .256$. There was a significant main effect of time $F(2,110) = 39.90, p < .01$ with a large effect size ($eta$ squared = .42).

This effect was due to participant's spending less time trying to sleep in Working Weeks compared to the Vacation Week. Participants attempted to sleep for less time in Work Week 1 ($M = 6\text{hrs}50\text{mins}, SE = 6\text{mins}$) compared to the Vacation Week ($M = 7\text{hrs}49\text{mins}, SE = 7\text{mins}$), $t(56) = -8.47, p < .001$, with a large effect size $d = 1.13$. They also attempted to sleep for less time during Work Week 3 ($M = 6\text{hrs}49\text{mins}, SE = 7\text{mins}$) compared to the Vacation Week ($M = 7\text{hrs}49\text{mins}, SE = 7\text{mins}$) and $t(56) = 8.33, p < .001$, representing a large effect size $d = 1.85$.

These results suggest that there is no significant difference between the LAR and HAR groups in terms of their Assumed Sleep Hours. The hours participants' spent in bed did change over time, with people spending more time in bed (attempting to sleep) in the vacation week.

3.44 Actual Sleep Time

The means of the time asleep (Actual Sleep) as measured by the Actiwatch for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 6 below.
The results of the two by three mixed design ANOVA show no significant group x time interaction $F(2,110)=1.02$, $p=.35$ and no significant main effect of group, $F(1,55)=1.10$, $p=.30$. Again, there was a significant main effect of time $F(2,110)=28.56$, $p<0.01$ with a large effect size (eta squared = .33).

This was due to a participant's being asleep for less time in Working Weeks compared to the Vacation Week. As with the assumed sleep results, participants slept for less time during Work Week 1 ($M=6hrs06mins$, $SE=6mins$) compared to the Vacation Week ($M=6hrs43mins$, $SE=7mins$), $t(56)=-5.98$, $p<0.001$, with a large effect size ($d=0.80$). Participants also slept for less time during Work Week 3 ($M=5hrs59mins$, $SE=6mins$) compared to the Vacation Week ($M=6hr43mins$, $SE=7mins$), $t(56)=5.96$, $p<0.001$, representing a large effect size ($d=.78$).

These results suggest that there is no significant difference between the LAR and HAR groups in terms of their Assumed Sleep hours. The hours participants spent asleep did change over time, with people spending more time asleep in the vacation week as compared to working weeks. This change is likely to be due to the fact that more time was spent in bed.
Thus for all the actigraphy measures, there was no main effect of group or an interaction effect however, the measures did differ over time.

3.5 Section 4: Subjective Measures

3.51 Sleep Quality

The means of the Sleep Quality Measure as measured by the sleep diary entries for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 7 below.

Figure 7: Sleep Quality over Time

The results of the two by three mixed design ANOVA showed there was a significant group x time interaction $F(2,110)=3.783$, $p=.03$. The main effect of group was not significant $F(1,55)=2.83$ $p=.10$. There was a no significant main effect of time $F(2,110) = 2.08$, $p=.13$.

High Affective Ruminators reported poorer sleep quality at Week 1 ($M=22.32$, $SE=.104$) compared to Low Affective Ruminators ($M=25.18$, $SE=.89$), $t(55)=2.08$, $p = 0.04$ which represented a large effect size $d=2.08$.

High Affective Ruminators similarly reported poorer sleep quality at Week 3 ($M=23.09$, $SE=1.08$) than Low Affective Ruminators ($M=26.01$, $SE=.87$), $t(55)=2.09$, $p= 0.04$, also presenting a large effect size $d=2.10$. The difference between the groups for Week 2 was non-significant.

158
In terms of the individual groups, there was no significant difference between sleep quality scores over time for the LAR group $F(2,54)=8.31$, $p=.44$. However, for the HAR group there was a significant effect of time $F(2,56)=4.47, p=0.02$. This was due to sleep quality being lower in Work Week 1 ($M=22.32$, SE=1.04) compared to the Vacation week (25.26, SE=.96) $p=0.046$.

These results suggest that during working weeks the HAR group rated their sleep quality significantly lower than the LAR group. The HAR group also perceived their sleep quality to be significantly higher in the vacation week to the week before half term. In comparison, the LAR group’s perception of their sleep quality did not change significantly despite whether they were at work or on vacation.

3.52 Feelings after Waking
The means of the Feelings after Waking Measure as measured by the sleep diary entries for Week 1, Week 2 and Week 3, for both the High and Low Affective Rumination Groups are shown in Figure 8 below.

**Figure 8: Feelings after Waking over Time**
The results of the two by three mixed design ANOVA showed there was a significant group x time interaction $F(2,110) = 4.66, p=.01$ with a small effect size (eta squared = .05). The main effect of group was also significant, $F(1,55)=11.56 p=.001$ which had a medium-large effect size (eta squared = .17). Finally, the main effect of time was significant $F(2,110)=31.48$, $p<0.001$, representing a large effect size (eta squared = .34).

In the first working week, High Affective Ruminators ($M=6.38, SE=.48$) reported feeling worse after waking than Low Affective Ruminators ($M=8.75, SE=.40$), $t(55)=3.79, p<.001$ which represented a large effect size $d=3.79$. High Affective Ruminators ($M=7.14, SE=.42$) also reported feeling less refreshed after waking than Low Affective Ruminators ($M=8.98, SE=.39$) in Work Week 3, $t(55)=3.21, p<.001$, again representing a large effect size $d=3.21$. The difference for the Vacation Week was non-significant.

Participants reported feeling less refreshed after waking in Work Week 1 ($M=7.54, SE=2.63$) compared to the Vacation Week ($M=9.80, SE=2.07$), $t(56)=6.31, p<0.001$, representing a large effect size $d=0.83$. Similarly, participants reported feeling more refreshed in the Vacation Week ($M=9.80, SE=2.07$) than the Work Week 3 ($M=8.04, SE=.31$), $t(56)=6.30, p<0.001$, representing a large effect size $d=.83$. When looking at the LAR and HAR groups individually, the same pattern emerged. For the LAR group, participants felt more refreshed after waking in the Vacation week ($M=10.11, SE=.35$) than during either Work Week 1 ($M=8.75, SE=.40$) or Work Week 3 ($M=8.98, SE=.39$), $p=.02$ and $p=.03$ respectively. For the HAR group, participants also felt more refreshed after Vacation week ($M=9.51, SE=.42$) than during either Work Week 1 ($M=6.38, SE=.48$) or Work Week 3 ($M=7.14, SE=.42$), both $p<.001$. These results suggest that participants rated their feelings after waking highest in the vacation week. High Affective Ruminators appear to report lower feelings of refreshment after waking than their Low Affective Rumination counterparts in working weeks although both groups rate at similar levels in the vacation week.
3.6 Section 5: Correlations between Factors

Table 4 shows the correlations between the Ruminative Response Scale subscales and the Work-Related Rumination Questionnaire subscales. The phase 1 data set was used to test this hypothesis as it was a larger sample. See Table 3 for descriptive of sample.

### 3.6.1 Demographic characteristics

**Table 3: Means and Standard Deviation of Phase 1 Measures**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQI Total</td>
<td>7.71</td>
<td>3.36</td>
<td>1247.00</td>
</tr>
<tr>
<td>TSI Total</td>
<td>29.64</td>
<td>13.43</td>
<td>1344.00</td>
</tr>
<tr>
<td>RRS Brooding Subscale</td>
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<td>RRS Reflection Subscale</td>
<td>8.45</td>
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<td>1344.00</td>
</tr>
<tr>
<td>RRS Depression Subscale</td>
<td>22.48</td>
<td>7.03</td>
<td>1344.00</td>
</tr>
<tr>
<td>WRRQ Affective Rumination Subscale</td>
<td>17.25</td>
<td>4.46</td>
<td>1344.00</td>
</tr>
<tr>
<td>WRRQ Problem Solving Subscale</td>
<td>18.25</td>
<td>3.21</td>
<td>1344.00</td>
</tr>
<tr>
<td>WRRQ Detachment Subscale</td>
<td>11.25</td>
<td>4.13</td>
<td>1344.00</td>
</tr>
</tbody>
</table>

All correlations between the measures were significantly correlated p<.001. The WRRQ Detachment scale was negatively correlated with all other subscales p<.001, all other relationships were in the positive direction. See Table 4 for correlation values.

3.6.2 Rumination Measure Comparisons: WRRQ and the RRS

The WRRQ Affective Rumination Scale was positively correlated to the RRS Brooding Scale, sharing 28.09% of the variance and representing a large correlation. The WRRQ Affective Rumination Scale also correlated positively with the RRS Reflection Scale sharing 12.53% of the variance and representing a moderate correlation.
The WRRQ Problem Solving Pondering scale correlated with the RRS Reflection Scale, sharing 5.57% of the variance and representing a small-moderate correlation. The WRRQ Problem Solving Scale correlated similarly to the RRS Brooding Scale, sharing 4.84% of the variance and also represents a small-medium effect.

- The correlations suggest that whilst the RRS and WRRQ concepts of emotional vs. problem solving rumination have strongly overlapping elements, they are not identical concepts. In particular the concept of Problem Solving Pondering correlates similarly to both of Brooding and Reflection.

3.63 Within Scale Correlations

**WRRQ**

The WRRQ Affective Rumination scale correlated positively with the WRRQ Problem Solving Pondering scale, sharing 20.07% variance and representing a large effect size. The WRRQ Affective Rumination scale negatively correlated with the WRRQ Detachment scale, sharing 44.22% variance and representing a large effect size. Similarly, the WRRQ Problem Solving Scale showed a strong negative correlation with the WRRQ Detachment Scale, sharing 25.1% variance and representing a large effect size.

**RRS**

The RRS Brooding Scale correlates strongly with the RRS Reflection scale, sharing 36.73% of the variance and representing a large effect size.

3.64 Summary

All RRS and WRRQ subscales negatively correlate to the WRRQ Detachment subscale, suggesting rumination, regardless of emotional valence, is different to 'switching off'. Although the conceptually similar RRS and WRRQ subscales were significantly related, the variance shown was higher within, rather than between measures.
Table 4: Correlations between all measure subscales

<table>
<thead>
<tr>
<th></th>
<th>PSQI Total</th>
<th>TSI Total</th>
<th>RRS Brooding</th>
<th>RRS Reflection</th>
<th>RRS Depression</th>
<th>WRRQ Affective Rumin</th>
<th>WRRQ Problem Solving</th>
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<tr>
<td>PSQI Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSI Total</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>RRS Brooding</td>
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<td>.481**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>RRS Reflection</td>
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<td>.332**</td>
<td>.606**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRS Depression</td>
<td>.454**</td>
<td>.504**</td>
<td>.787**</td>
<td>.665**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRQ Affective Rumin</td>
<td>.454**</td>
<td>.611**</td>
<td>.530**</td>
<td>.354**</td>
<td>.561**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRQ Problem Solving</td>
<td>.207**</td>
<td>.251**</td>
<td>.220**</td>
<td>.236**</td>
<td>.197**</td>
<td>.448**</td>
<td></td>
</tr>
<tr>
<td>WRRQ Detachment</td>
<td>-.38**</td>
<td>-.359**</td>
<td>-.356**</td>
<td>-.212**</td>
<td>-.366**</td>
<td>-.665**</td>
<td>-.501**</td>
</tr>
</tbody>
</table>

3.7 Section 6: Mediation

The mediation model for the relationship between Teacher Stress, Affective Ruminuation and Sleep was investigated as shown in Figure 9.

Teacher Stress score was a significant predictor of Affective Rumination, b = 0.4, t = 27.63, p<0.001. This accounts for 38% of the variance and suggests that as Teacher Stress increases, Affective Rumination also increases. Affective rumination also significantly predicts Sleep Quality, b = 1.39 t = 11.64, p<.001 accounting for 21.8% of the variance. Teacher Stress predicts Sleep Quality directly b = .09, t = 13.79, p<.001 explaining, 13.3% of the variance. Teacher Stress also predicts Sleep Quality accounting for Affective Rumination b = .03, t = 4.25 p<.001.

There was a significant indirect effect of Teacher Stress on Sleep Quality through Affective Rumination, b = .06. Bias Corrected CI [0.05,0.07]. This represents a large effect, K² = .19, 95% Bias Corrected CI [0.161, 0.226]. Further support for the model of Affective Rumination mediating the relationship between Teacher Stress and Sleep Quality was found using the Sobel test as this was also significant, b = .06, z = 10.73, p<.001.
Figure 9: Simple mediation model for the role of affective rumination as a mediator between teacher stress and Sleep quality.

- Affective Rumination
  - $a$ = 0.04
  - $b$ = 1.39
  - $p < 0.001$

- Teacher Stress (TSI)
  - $b = 0.01$ $p < 0.001$
  - Indirect Effect
    - $b' = 0.06$, 95%
    - BCa CI (.05, .07)

- Sleep Score (PSQI)
Chapter 4: Discussion

4.1 Overview

The discussion explores the main findings of the study, firstly by main hypotheses and then by secondary hypotheses. These are discussed within the context of previous findings in relation to sleep and rumination. The findings are then considered in relation to recovery theory. The strengths and weaknesses are discussed, making particular reference to methodological issues. Links to clinical practice and implications for clinical applications are then considered. Finally, potential areas for future research are identified.

4.2 Main Findings

4.21 Objective Sleep Measures

H1: High Affective Ruminators will have more disturbed sleep as measured by sleep efficiency and sleep fragmentation than Low Affective Ruminators

This hypothesis was not supported by the results. Across all the objective sleep measurements, there was no significant difference between the groups. Participants appear not to differ in terms of their sleep efficiency and sleep fragmentation, taken as measurements of objective sleep quality.

H3: Sleep quality as measured by the objective sleep measures will be higher during vacation compared to both working weeks. This effect will be smaller for High Affective Ruminators than Low Affective Ruminators.

This hypothesis was also not supported by the results. Both the Low and High Rumination groups differed across the objective measures when comparing work weeks to vacation weeks. However, against expectations, participants had poorer sleep efficiency and more fragmented sleep in vacation time. This may be because the vacation week represented both a change in routine and fewer routine sleep patterns generally. This change in routine could have increased waking times because of sleep patterns shifting to later bedtimes and wake times e.g. being woken by the sunlight in
bedrooms. Although the finding was surprising, similar results were found in a recent Actiwatch study by Bei et al (2013). They found that adolescents had slightly lower sleep efficiency during a two week vacation compared to school weeks and this appeared to be predicted by delay in normal bedtimes.

Participants may have been more variable with their sleep diary because of not having a set sleep and wake time, although no differences in reliability between the sleep diary and actigram were noted.

It must be noted that for all three weekly time points as measured by the three day aggregated measure, both sleep efficiency and sleep fragmentation fell approximately within the ‘normal’ range. Problematic fragmented sleep is thought to be signified by a Sleep Fragmentation Index score of 50 or more. However, participants mean scores were consistently under 35 across the study period. Similarly, a figure of 85% is considered a ‘normal’ night’s sleep for sleep efficiency. Participants’ scores only dropped slightly below this figure during the vacation week suggesting both groups were having a ‘good enough’ night’s sleep.

The HAR and LAR groups also did not differ in terms of their number of hours asleep, both actual and assumed. This replicates Cropley et al (2006) where teachers with differing levels of job strain did not differ in terms of sleep time. Teachers appeared to have more sleep in holiday time, but this was still only in line with average sleep hours (Williams, Zimmerman & Bell, 2013). Teachers averaged only 6 hours and 50 minutes attempting to sleep in working weeks, suggesting restricted sleep and possibly chronic non-optimal sleep time.

4.22 Subjective Measures

H2: High Affective Ruminators will have poorer self-rated sleep as measured by the sleep diary than Low Affective Ruminators
H4: Perceptions of sleep quality as measured by the sleep diary will be higher during vacation compared to both working weeks. This effect will be smaller for High Affective Ruminators than Low Affective Ruminators.

The results showed partial support for this hypothesis. The HAR group had poorer self-rated sleep quality and lower rated feelings after waking than the LAR group, however this was only during working weeks. The groups did not differ during the vacation week. The HAR group appeared to perceive their sleep as poorer when working. Previous studies have shown varied results, Van Hoof et al (2007) found high effort individuals rated their sleep quality higher on non-work days, whereas de Bloom et al (2010) found no difference in perceived sleep quality during vacation weeks.

Overall, it appears that the HAR group perceive their sleep to be poorer compared to the LAR group. However Low and High Affective Ruminators appear to be similar when measuring sleep quality using objective measures. There are a number of possible explanations for this. Firstly, this may be because the high affective ruminators perceived their sleep to be worse because of their rumination. Secondly, and related to the previous point this may be because sleep perception may be affected by mood. For example, the PSQI also has been shown to also represent dissatisfaction. We did not measure daily mood so it is unclear whether this was an influence.

A third explanation is that rumination is purely cognitive i.e. participants woke up in the night but continue to lie still. It could be argued that rumination is experienced physiologically (heart racing, alertness) but does not have a physiological impact, in that waking does not lead to movement. A final possible explanation is that the Actiwatch was not sufficiently sensitive to detect waking periods. Actigraphy has better sensitivity and specificity for sleep periods rather than waking periods (Sadeh et al, 2011). Combined with the third explanation, people may have woken and moved but not enough for the Actiwatch to classify it as a wake epoch.

These results also open up debate about what constitutes a ‘good night’s sleep’. Whilst both groups of participants were getting a ‘good enough’ night’s sleep in terms of the efficiency and fragmentation of their sleep, the
HAR group did not feel as refreshed as the LAR group. As this difference was only evident in working weeks this suggests that style of rumination does affect perception of sleep when stressors (i.e. work) are salient. Subjective sleep quality seems to be related to the continuity of sleep and ease of sleep onset (Akerstedt, Hume, Minors & Waterhouse, 1997). However, Akerstedt, Hume, Minors & Waterhouse (1994) found that sleep efficiency needed to reach 87% for people to rate their sleep as ‘rather good’. Within the current study, efficiency only reached this cut-off in week 1. Additionally, the values reported for sleep quality and feelings of refreshment after sleeping fell above the midrange value. Whilst it seems likely that this is below what participants would have hoped for, the ratings may mean ‘good enough’ in this domain as well.

4.3 Secondary Hypotheses

H5. The Affective Rumination subscale of the WRRQ will be positively correlated with the Brooding subscale of the Rumination Response Scale.

This hypothesis was upheld. Brooding shared the largest amount of variance with the Affective Rumination subscale, over the other WRRQ subscales. However, Brooding had a stronger correlation with the other scales of the RRS (Reflection and the Depression items). Whilst the size of the overlap supports Brosschot’s (2006) hypothesis that there is an underlying mechanism to rumination, these concepts do appear to have a unique character and be measuring slightly different concepts. A correlation value approaching 1 would have brought into question whether the scales were interchangeable and whether both measures were needed. As this was not found, the results add support to rumination primarily being domain specific (Rector, Antony, Laposa, Kocovski, & Swinson, 2008).

H6.

The Problem Solving Pondering subscale of the WRRQ will be positively correlated with the Reflective Subscale of the RRS.

This hypothesis was partially upheld. Whilst there was a positive correlation between the Problem Solving Pondering (PSP) scale and
Reflection, a similar amount of variance was also found between the PSP and Brooding scale. Additionally, Reflection had a stronger correlation with Affective Rumination than with PSP. It appears whilst there may be some overlap between PSP and Reflection and theoretically they are similar concepts, these may not represent a distinct phenomenon. Whilst the similarities between the RRS and WRRQ have been compared theoretically (Cropley & Ziljstra, 2011), the current study is the first known to compare these measures directly. There appears to be more support for similarities between the emotional component of rumination, but the similarities between the problem solving element are less clear.

H7. Affective work-related rumination will mediate the relationship between work stress and sleep quality.

This hypothesis was supported and the mediation effect of Affective Rumination was large, although it did not account for the full variance in the relationship between Teacher Stress and Sleep Quality. This hypothesis could only be tested on the large sample, and therefore on self-reported sleep quality, as Teacher Stress was not measured in the Phase 2 study. These results are in line with previous studies. Cropley et al (2006) found that although the reduction in the relationship between job strain and sleep quality when adding work rumination was small, meaning a mediation hypothesis could not be supported, the results still fit with the proposed mediation model. Berset et al (2011) did find support for a full mediation model where work rumination mediated between two measures of job stress and sleep quality. Finally, Querstret & Cropley (2012) found that sleep quality was a partial mediator between affective rumination and fatigue. Whilst these studies differ in terms of the conceptualisation of work stressors, measures used and whether rumination was subdivided, together with the current study they do suggest emerging support for work rumination impacting on sleep quality.
4.4 Theoretical explanation

4.41 Sleep and Recovery

This study aimed to explore whether work-related affective rumination impacted on sleep as a means of recovery. On objective measures affective rumination did not appear to impact sleep. However, during working weeks (when stressors were present), the HAR group did perceive their sleep quality as poorer compared to the LAR group. Against expectations two of the objective measures: sleep efficiency and fragmentation actually worsened in the vacation week, but perception of sleep quality increased for the HAR group and feelings after waking increased for both groups. This may have been due to increased sleep duration during the vacation week. Kawada (2012) posit that sleep duration alone is not an indicator of feeling rested and that perception of sleep may account for increased feelings of wellbeing. In the current study, participants were not directly asked about their perception of the duration of sleep, so this relationship cannot be examined further. However, perception of sleep and its relationship to wellbeing appears to fit with Hobfoll’s Conservation of Resources theory (2001) as it is the individuals’ perception of the resource and its cultural value that is important rather than the resource itself. Vacation itself and greater freedom to spend time in bed is likely to have been viewed as a resource and therefore feeling of wellbeing following sleep were greater, despite sleep not being continuous. Whilst feelings of recovery and psychological wellbeing were not directly measured, this explanation appears to have good face validity.

The findings are more mixed for Meijman & Mulder’s Effort Recovery framework. For both groups, half term should represent a removal (or lessening) of the daily work stressor. However work-related affective rumination levels remained at a similar value. As well as indicating that rumination style may be a trait response, this also suggests stressors are not removed as such but that vacation may represent a recovery resource to compensate for the stressors associated with thinking about work.
4.42 Rumination

One aim of this study was to explore whether comparing rumination subtypes suggested an underlying emotional vs. problem-solving component. This also leads to a larger question about the roles of these two types of rumination. Treynor et al. (2003) posit that reflection is neutrally valenced, while Cropley and Zijlstra (2011) suggest that people who partake in problem-solving pondering may do so because they find thinking about work interesting and beneficial if it leads to a solution. This suggests that this problem-solving rumination has an adaptive quality; indeed several authors have argued for this with particular reference to increased creativity (Verhaegen, Joormann & Khan, 2005; Cohen & Ferrari, 2010).

However, it seems there is greater evidence for problem-solving rumination being associated with poorer outcomes, but to a lesser degree than emotional rumination. Querstret and Cropley (2012) similarly found that Affective Rumination and Problem-solving Pondering were strongly positively correlated and that both were negatively correlated to Detachment. Similar results have been found in the depressive rumination literature (Teasdale & Green, 2004). Brooding seems to be predictive of depression over time, whereas both brooding and reflection are associated with current low mood (Treynor et al., 2003; Joormann, Dkane & Gotlib, 2006). The current study was in line with these results, as higher Teacher Stress and poorer Sleep Quality were associated with both higher Affective Rumination and Problem-Solving Pondering; the latter to a smaller extent (See Table 4). Only Detachment had a negative association with these poorer wellbeing outcomes. Similarly across the Affective Rumination groups, High Affective Ruminators also scored significantly higher for Problem-Solving Pondering and lower for Detachment than Low Affective Ruminators (Table 4).

People who report frequently ruminating, state that the function is to try to understand their problems and find effective solutions (Papageorgiou & Wells, 2003). Thus it is possible that given the overlap between the subtypes of rumination, both types are an attempt to ‘solve a problem’ but differ in their focus (searching vs. solution). This data also fits with Brosschot’s
(2006) model of perseverative cognition as both types can be classed as repetitive thought. Only detachment represents a different response to stressors.

An alternative theory is that problem-solving rumination is only problematic under conditions of high stress (Nolen-Hoeksema & Lyubomirsky, 1995). For example, in people who are already depressed it can exacerbate symptoms (see Nolen-Hoeksema, Wisco & Lyubomirsky, 2008; Treynor et al, 2003). Within this study High Affective Ruminators also reported higher levels of stress. Therefore problem solving rumination may have also been employed as a strategy which in the short term is problematic. Further evidence for this would be in studies looking specifically at psychological detachment, which this study has argued represents a theoretically opposite concept to rumination. Psychological detachment moderates the relationship between job strain and psychological wellbeing and a lack of detachment is only problematic when work demands are high (Sonnentag, Binnewies & Mojza, 2010).

However, it must be noted that within this study, whilst there was some evidence for this in terms of the emotional component, the evidence for a distinct problem-solving component was less clear.

4.5 Limitations

4.5.1 Actigraphy and variables
As discussed above, Actigraphy is a measure of movement rather than of sleep itself and therefore it can only infer sleep states from movement. Given the results, it could be argued that rumination is purely cognitive or does not invoke as much movement as required for the sensitivity of the watch. Within the literature, it is still unclear whether cognitive arousal or physiological arousal interferes with sleep (King et al, 2001). However, given the previous support for Actigraphy as a valid measure (Sadeh et al, 2011) and that the Actiwatch variables did demonstrate change over time, Actigraphy is the most appropriate measure for this multi-day naturalistic design.
Variables from this method were chosen on the basis of their validity and representativeness of sleep quality; however the study did not include sleep latency. Previous studies have found that rumination and pre sleep arousal can delay the onset of sleep (Zoccola et al, 2009) and difficulty getting to sleep is a commonly reported indicator of poor sleep (Porkka-Heiskanen, Zitting & Wigren, 2013). Although sleep latency has previously been used within Actigraphy studies, the measure of sleep latency was considered too unreliable to include in this study. This is because even slight deviations from the true sleep onset time can affect the sleep latency figure greatly. If participants had fallen asleep accidently without recording the time, this data would have been unreliable. During a short study participants could have been asked to ensure this did not happen. However the purpose of this study was to interfere as little as possible with normal sleep routines in order to reflect a real-life phenomenon. This could also occur when sleep diaries are used to measure sleep latency. Therefore only PSG can give a reliable estimation of sleep latency.

4.52 Self report measures

This study chose to focus on sleep measures as outcome measures, which meant the hypotheses could be tested sufficiently. However, it might have been of interest to measure other variables highlighted in previous research, such as fatigue, recovery, or psychological wellbeing, in order to extend the evidence generated by the current study. For example, Stoia-Caraballo et al (2008) found that negative affect could affect sleep quality by increasing physiological arousal.

Additionally, this study asked participants about how they managed thoughts about work, following work. However sleep outcomes may have been influenced by worries about the next day’s work. Whilst this study is set in the context of perseverative cognition theory, which highlights the commonalities between worry and rumination, an additional questionnaire directly looking at worry may have been helpful to support this hypothesis. Previous studies did differentiate between worry and rumination (e.g.
Cropley & Millward Purvis, 1999) however this was analysed as a composite measure.

4.53 Other possible variables
As well as internal factors such as mood and rumination, the quality of one’s sleep can be affected by external factors. One possible influence on the night’s sleep is a bed partner’s own movement during the night. In an actigraphy study, Meadows et al (2005) found that 30-36% of an individual’s movements followed a movement by their partner. Daytime relationship interactions can also have an effect on sleep. Hasler and Troxel (2010) suggest there is a bidirectional influence between sleep efficiency and daytime relationship functioning in cohabiting couples. Many participants within the study were in cohabiting relationships, and although bed sharing was not directly assessed, these participants are likely to be sleeping with a partner. Whilst this was not controlled for within the study, participants were asked on recruitment whether there were significant factors which interrupted their sleep and if so were not asked to participate. Similarly, other stressors could have been controlled for such as caffeine intake, noise and light.

4.54 Self Report
Finally the Phase 1 study used only self-report measures which may have increased common method bias.

4.6 Strengths

4.61 Sample Size and Characteristics
Firstly, the sample size for the Phase 1 data was large and had sufficient power to run both correlations and mediation analysis. The data also represented a range of ages, participant locations and gender. Gender and age were also similar to other studies (e.g. Cropley & Millward Purvis, 1999).

Given the sampling method, people who had an interest in either sleep or wellbeing were likely to access the study which may limit the
generalisability of the study. However, the data did show a normally distributed range of work-related rumination scores across the three subscales suggesting a range of people did participate. This allowed distinct and separate HAR and LAR groups to be drawn from the initial sample. Some studies decide group membership based on a median split of the data, however this can mean an arbitrary cut-offs and participants scoring around the median value having little difference despite being placed in different groups. Group assignment was based on scores on the scale and also remained stable over time so can be viewed as valid group membership.

4.62 Study design

Given that previous studies have looked at work-related rumination and sleep either using a cross-sectional design or over a small number of days, this study adds a unique contribution to the literature. Specifically, the study being longitudinal, using both objective and subjective measures and also utilising a vacation period. The study design also meets three out of the five requirements (simple comparison of variables, specifying exact times for measure completion and measurements taken during vacation) for best practice when conducting a vacation study as suggested by de Bloom et al (2010). The remaining two (multiple post-vacation measurements and baseline measurement two weeks before the vacation) were not possible to meet due to limitations on the number of days the Actiwatch could record.

4.7 Clinical Implications

Whilst participants were drawn from a ‘healthy population’, the results do have some implications that are relevant to a clinical population.

As noted in section 1.9, participants were drawn from a high stress profession. In particular the HAR group reported experiencing high work-related stress. Additionally, Brooding and Work-Related Affective Rumination showed a strong correlation. Work-related Affective Rumination may therefore be a precursor or risk factor for Brooding which has been implicated in poorer outcomes in depression (Nolen-Hoeksema, 2000) and could be tested in future research. Whilst none of the participants
could be described as experiencing insomnia, this condition can have far reaching effects. For example, sleep problems raise the risk for depression, even many years after the symptoms have gone (Reimann & Voderholzer, 2003; Johnson, Roth & Breslau, 2006). Insomnia also raises the risk of future psychological disorders (Taylor, Lichstein, & Durrence, 2003).

In the present study, participants demonstrated a difference between objective and subjective measures of sleep quality. If problematic sleep is actually at the subjective level and high levels of stress/ rumination lead to poorer perceived sleep, this suggests a role for intervention, in particular Cognitive Behaviour Therapy (CBT). CBT would be particularly relevant as this targets unhelpful thinking styles that do not take into account all the evidence in a situation. If people prone to rumination believe their sleep is worse than it is then CBT could help to target that belief e.g. by looking objectively at sleep duration. Of relevance to this study, trials for CBT-I for work related stress in teachers are beginning and highlight the importance of stress related difficulties (Thiart, Lehr, Ebert, Sieland, Berking, & Riper, 2013). In clinical populations, CBT is effective for insomnia as a primary problem but also has a positive impact on comorbid symptoms (see Sánchez-Ortuño, & Edinger, 2012 for a review). Hence treating sleep problems may also alleviate other psychological difficulties.

Finally, by highlighting the role of affective rumination as a mediator between stress and sleep, this hypothesis could be tested in clinical populations. By learning more about the role of affective rumination, it opens up possibilities for interventions to be designed.

4.8 Suggestions for future research

4.81 Developments to the current study

As noted in section 4.53, several variables were not measured in this study due to not wanting to over burden participants. Given the evidence for the mediating role of affective rumination between stress and sleep (the current study; Berset et al, 2011) and for the mediating role of sleep between affective rumination and fatigue, it would be useful to extend this
model out further to include all of these factors. Additionally, only 19% of the variance was accounted for by affective rumination, suggesting there are other variables that may have a mediating role. Stressors outside of the home and activities undertaken during non-work time (see section 1.42) may be helpful to investigate further to show the role on affective rumination.

This study did not measure how many times people ruminated, only their ruminative style. It may be useful to know the impact of frequency of rumination on stress and sleep. Given the tendency to ruminate in both a problem solving and affective manner, it may also be useful to look at metacognitive beliefs around rumination and worry as they might mediate the relationship between stress and rumination. For example, if you believe that thinking over the day’s events is helpful in preparing you for the following work day you are more likely to continue to ruminate.

4.82 Intervention for Rumination

Although this study utilised a natural recovery period, it did not look at an intervention as such. As discussed in section 4.7, there is good evidence for CBT for sleep problems and new trials of CBT for work-related stress which may prove a useful intervention. Direct intervention studies for rumination are lacking in both depressive rumination and work-related rumination research. Given the theoretical models of recovery and evidence for the helpful process of detachment, there are current approaches which may be useful in reducing rumination, e.g. Mindfulness (Kabat-Zinn, 2003). Mindfulness, whilst not reflecting complete detachment, is a detachment from ‘doing’, i.e. problem solving and reduces emotional arousal (e.g. Speca, Carlson & Goodey, 2000). Evidence also suggests that recovery and positive affective states can be increased by absorption in other activities during leisure time. For example, Hahn, Binnewies & Haun (2012) found that absorption in activities with partners predicted positive affective states. Whilst the latter is not a therapist led intervention, people experiencing rumination may benefit from finding activities they can be mentally
absorbed by, similar to Csikszentmihalyi's concept of flow (Nakamura & Csikszentmihalyi, 2002).

4.9 Conclusion

This quasi-experimental study was successful in demonstrating the relationship between affective rumination, stress and sleep in a sample of British school teachers. The study is the first in a number of areas: examining work-related rumination as related to sleep over time; exploring the impact of vacation on sleep and affective rumination; examining the relationship between similar concepts between domain specific rumination measures and using objective measures of sleep as well as self-report. It also added support to the role of work-rumination mediating the relationship between stress and sleep.

It was found that whilst participants representing High Affective Rumination and Low Affective Rumination differed on perceived sleep quality (during working weeks), they did not differ on objective measures of sleep. The results fit with both the Effort-Recovery model and Conservation of Resources Theory, suggesting that perception of sleep improves when daily work stressors are not present and that sleep is perceived as a resource. Some surprising results were found, such as the decrease of sleep quality using objective measures during the vacation weeks.

Whilst the study has strengths in terms of sample size and design, it also has limitations in terms of ability to generalise to non-teaching populations. It also did not take into account other possible confounding variables such as the effect of partner sleep. Future studies could bring together the current known relationships and also extend to interventions for both depressive and affective rumination.
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Appendices
Appendix 1: Letter of ethical approval
Professor Bertram Opitz  
Chair: Faculty of Arts and Human Sciences Ethics Committee  
University of Surrey  

Hannah Drewett  
Trainee Clinical Psychologist  
School of Psychology  
University of Surrey

3rd January 2013

Dear Hannah

Reference: 835-PSY-12
Title of Project: Work-Related Rumination style and its relationship to Sleep Quality, Perfectionism and Role-Salience Identity

Thank you for your submission of the above proposal.

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

If there are any significant changes to your proposal which require further scrutiny, please contact the Faculty Ethics Committee before proceeding with your Project.

Yours sincerely

Professor Bertram Opitz  
Chair
Appendix 2: Phase 1 email
Dear Headteacher,

Work, Thinking Style and Wellbeing in School Teachers

We are researchers based at the School of Psychology at the University of Surrey. We are investigating how work and thinking styles affects sleep quality and wellbeing in school teachers. This study is being carried out with volunteer full time primary and secondary school teachers working in the UK.

We would like to ask you whether you would consider helping us with our research by passing on the information about this study to the teachers from your school. The study involves taking part in an online survey. The survey will ask questions about thinking styles about work, sleep and wellbeing. The survey will take approximately 15 minutes to complete and all results will be anonymised. The study can be accessed at either of the following links:
http://surveys.fahs.surrey.ac.uk/individual_wellbeing

or alternatively at http://surveys.fahs.surrey.ac.uk/individual_wellbeing/cgi-bin/ciwwweb.pl?hid_studyname=HannahDrewett01&hid_pagenum=0

The links should work on both school and home computers although they only work on some mobile phone browsers.

We would be grateful if you would email this link to all the full time teaching staff in your school in order for them to choose whether they would like to participate. Your cooperation will be greatly appreciated, as we need a large number of teachers to participate in this study.

This study has a favourable ethical opinion from the Faculty of Arts and Human Sciences at the University of Surrey. If you have any questions concerning the project please contact me on h.drewett@surrey.ac.uk or Professor Cropley on 01483 686928

Many Thanks
Hannah Drewett
Trainee Clinical Psychologist
Psychology
Department of Psychology
University of Surrey
Guildford
Surrey
GU2 7XH

Many Thanks
Professor Mark Cropley
Professor in Health
Appendix 3: Phase 1: Information Sheet and Consent form
Dear participant,
Thank you for considering taking part in this study. Please read the information sheet to see if you would like to take part in this study.

Introduction
My name is Hannah Drewett and I am a Trainee Clinical Psychologist based in the Psychology Department at the University of Surrey, Guildford. As part of my training to become a clinical psychologist, I conduct research with members of the public

What is the study about?
I am interested in how work affects an individual’s wellbeing. In particular I am looking at how people think about their work day after work and how this affects their sleep quality.

Do I have to take part?
No, taking part in this study is entirely up to you. If you want to take part, please read through the rest of this information sheet and then click to give your consent on the following page. To help you decide whether or not to take part, you can talk it over with friends, family or health professionals etc. You can also contact me for further information and I will be happy to answer any queries. My contact details are at the bottom of this sheet.

You can also withdraw from the research at any time without giving a reason. If you want to withdraw your consent before you have finished the questionnaires, just exit the screen. Your answers will not be included in the study and will be deleted. If you want to withdraw your consent following submitting your answers, please contact me on h.drewett@surrey.ac.uk with details of the email address you used to log-on to the study. You answers will then be deleted and discarded from the study.

What will I have to do?
In this part of the study, you will be asked to complete a series of questionnaires. You’ll be asked to answer questions on the way you think about your work, sleep and personality characteristics. Each question is answered along a scale. Don’t think too much about each answer; try to give your immediate response. The questions should take around 15-20 minutes to complete.

We will be inviting some of the people who complete this study to take part in the second part of the study. This study will involve using an Actiwatch to measure your sleep patterns as well as repeat some of the questionnaires used within this study. You will receive a report on your sleep patterns as a reward for taking part. You will be asked at the end of the questions whether you are willing to be considered for the second part. Only some people will be asked to participate and if you are approached you are not obliged to participate. Details of the follow up study will be shown at the end of the questions.
**Does what I say get shared with anyone else?**
What you say will remain confidential and will only be seen by myself and my supervisor. You will not be identifiable as your name and all details about you will be kept anonymous in the study. This includes any information about where you live, your real name, your age, gender, ethnicity or your school etc – or any other information that would identify you personally.

Research is always supervised by someone senior to me, so my research supervisor may have access to the questionnaire data during the research study. My supervisor’s name and contact details are also at the bottom of this sheet.

All information gathered during this research study will be stored securely in a locked filing cabinet at the University of Surrey, in accordance with the Data Protection Act 1998 and will be destroyed after 10 years.

**What happens when the research study is completed?**
The data collected in this study will form the basis for my thesis which is an important part of my doctorate. This piece of research will be completed in summer 2013.

Again, all personal details about you will be kept confidential (your real name, your age, gender, where you live, etc), and no-one will be able to identify who you are.

Researchers usually like to have their research findings published in relevant scientific journals so that others working in the same field can learn more. I hope to publish the results of this study in a relevant journal; however the details of this will be decided following completion of the study.

**What are the benefits of taking part in this research?**
You might find the questionnaires interesting to complete. While you may not see any immediate change or benefit to yourself, you will be contributing to an important piece of research that will advance our understanding of how work and wellbeing are related.

**Are there any downsides of taking part?**
The questionnaires used in the study are not designed to be upsetting and have been completed by lots of different types of people all over the world. If you do become upset by any of the questions you can contact me via email below for a list of helpful organisations. If you have immediate concerns then please contact your GP or out of our health service for advice.

**What if there is a problem?**
If you have any concerns about any aspect of the way you have been treated during the course of the research study, then you can contact my supervisor. His name is Professor Mark Copley and details are at the end.
Has the research been approved by any committee?
The study has been given a favourable ethical opinion by the Faculty of Arts & Human Sciences at the University of Surrey Ethics Committee.

I hope I have answered all of your questions about the research study, but please feel to ask me anything else that I have not covered. My contact details and those of my supervisors are below.

Research being conducted by:
Hannah Drewett
Trainee Clinical Psychologist
C/o Department of Psychology, University of Surrey
h.drewett@surrey.ac.uk – I will always try to respond to you within 48 hours

Supervised by:
Professor Mark Cropley
Professor in Health Psychology
mark.cropley@surrey.ac.uk
01483 686928
Pg3: Consent Form

I agree to complete the questionnaires for the research project to explore the effect of work on wellbeing
Yes No

I have read and understood the Information Sheet.
Yes No

I understand that my decision to take part in this project is entirely voluntary.
Yes No

I have been given information by the researcher about what the project is about, why it is being done, and how long it is likely to take.
Yes No

I understand that all personal data is held and processed in the strictest confidence, and in accordance with the Data Protection Act (1998). No personally identifiable information will be used.
Yes No

I understand that I can change my mind about participating in the study at any time (up to the point that the research is submitted to the University for assessment) and I don’t have to give a reason for wanting to do this.
Yes No

I have read and understood everything written above and I have been given enough time to think about this and have chosen to consent to participate in this task.
Yes No

Proceed to study
Appendix 4: Measures
Teacher Stress Inventory

This part of the questionnaire tells us about the daily stressors you may encounter as a teacher; how great a source of stress are these factors to you? Please answer each question truthfully, but don't spend too much time thinking about your response, as your first answer is usually more accurate.

1. Poor career structure: (promotion prospects)
2. Difficult class
3. Lack of recognition for good teaching
4. Responsibility for pupils
5. Not enough pupils
6. Too short rest periods (mid-morning break, mid-day break)
7. Fruiting: poor attendance to work
8. Inadequate salary
9. Too much work to do (e.g., lesson preparations and marking)
10. Having a large class size
11. Maintaining class discipline
12. Administrative work (e.g., filling in forms)
13. Pressure from parents
14. Ill-defined syllabus (e.g., not detailed enough)
15. Lack of time to spend with individual pupils
16. Shortage of equipment and poor facilities
17. Unhelpful and stubborn behaviour of other teachers
18. Pupils' inappropriate behaviour or cheek
19. Pressure from head teacher and education officer
20. Having extra duties because of absent teachers
### Pittsburgh Sleep Quality Index (PSQI)

**Instructions:** The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions.

**During the past month,**

1. When have you usually gone to bed? __________
2. How long (in minutes) has it taken you to fall asleep each night? __________
3. When have you usually gotten up in the morning? __________
4. How many hours of actual sleep did you get that night? (This may be different than the number of hours you spend in bed)

5. During the past month, how often have you had trouble sleeping because you...

<table>
<thead>
<tr>
<th>Reason</th>
<th>Not during past month (0)</th>
<th>Less than once a week (1)</th>
<th>Once or twice a week (2)</th>
<th>Three or more times a week (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cannot get to sleep within 30 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Wake up in the middle of the night or early morning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Have to get up to use the bathroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Cannot breathe comfortably</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Cough or snore loudly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Feel too hot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Feel too hot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Have bad dreams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Have pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. During the past month, how often have you taken medicine (prescribed or "over the counter") to help you sleep?

7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

8. During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?

<table>
<thead>
<tr>
<th></th>
<th>Very good (0)</th>
<th>Fairly good (1)</th>
<th>Fairly bad (2)</th>
<th>Very bad (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. During the past month, how would you rate your sleep quality overall?

Component 1

- Score

Component 2

- # Score: (4, 15 min (0); 16-30 min (1); 31-60 min (2); >60 min (3)) + #5: Score (if sum is equal 0-4; 5-14; 15-24; 25-35).

Component 3

- # Score: (>7/10, 6-7/10, 5-6/10, <5)  

Component 4

- Total # of hours asleep/Total # of hours in bed x 100  

- >83%-85% = 4; 75%-84% = 1; 65%-74% = 2; <65% = 3

Component 5

- # sum of scores 5b to 5j (0-0; 1-3; 4-6; 7-9)  

Component 6

- #6 Score

Component 7

- #7 score + #8 score (0-0; 1-2; 3-4; 5-6; 7-8)

- Add the seven component scores together: Global PSQI Score


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211
## Work-related Rumination Questionnaire

The following questions relate to your time after work. Please circle the number that applies to you:

<table>
<thead>
<tr>
<th>Question</th>
<th>Very seldom/ Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often/ Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you become tense when you think about work related issues in your free time?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>After work I tend to think of how I can improve my work-related performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you feel unable to switch off from work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Are you troubled by work-related issues when not at work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you become fatigued by thinking about work-related issues during your free time?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you leave work issues behind when you leave work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I make myself switch off from work as soon as I leave</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find solutions to work-related problems in my free time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Are you irritated by work issues when not at work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In my free time I find myself re-evaluating something I have done at work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find thinking about work during my free time helps me to be creative,</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Are you annoyed by thinking about work-related issues when not at work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you think about tasks that need to be done at work the next day?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am able to stop thinking about work-related issues in my free time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you find it easy to unwind after work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Rumination Responses Scale

Rumination Scale:

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you generally do, not what you think you should do.

1. I almost never. 2. Sometimes. 3. Often. 4. Almost always.

1. think about how alone you feel
2. think "I won't be able to do my job if I don't snap out of this"
3. think about your feelings of fatigue and achiness
4. think about how hard it is to concentrate
5. think "What am I doing to deserve this?"
6. think about how passive and unmotivated you feel
7. analyze recent events to try to understand why you are depressed
8. think about how you don't seem to feel anything anymore
9. think "Why can't I get going?"
10. think "Why do I always react this way?"
11. go away by yourself and think about why you feel this way
12. write down what you are thinking about and analyze it
13. think about a recent situation, wishing it had gone better
14. think "I won't be able to concentrate if I keep feeling this way"
15. think "Why do I have problems other people don't have?"
16. think "Why can't I handle things better?"
17. think about how sad you feel
18. think about all your shortcomings, failings, faults, mistakes
19. think about how you don't feel up to doing anything
20. analyze your personality to try to understand why you are depressed
21. go someplace alone to think about your feelings
22. think about how angry you are with yourself

213
Appendix 5: Online survey
Introduction

Thank you for considering participating in this study.

Before you begin, you will first be asked if you meet the criteria for the study. If you do, you will then be asked to read an information sheet which will tell you about the study. We will ask for your consent to participate in the study before the survey begins.

Thank you again for your time.
Dear participant,

Thank you for considering taking part in this study. Please read the information about to see if you would like to take part in the study.

Introduction

My name is Hannah Bozlet and I am a Trainee Clinical Psychologist based in the Psychology Department at the University of Surrey, Guildford. As part of my training to become a clinical psychologist, I conduct research with members of the public.

What is the study about?

I am interested in how work affects the wellbeing of teachers. In particular, I am looking at how teachers think about their work day after day and how this affects their sleep quality.

Do I have to take part?

No, taking part in this study is entirely up to you. If you do not want to take part, please read through the rest of this information sheet and then click to give your consent on the following page. You can contact me for further information and I will be happy to answer any queries. Your contact details are at the bottom of this page.

You can also withdraw from the research without giving a reason (up until submitting your answers on the final page). If you want to withdraw your consent before you have finished the questionnaires, just exit the screen. Your answers will not be included in the study and will be deleted. As the data is anonymised, unfortunately we cannot identify your responses after you have completed the questionnaire to withdraw them.

What will I have to do?

In this part of the study, you will be asked to complete a series of questionnaires. You will be asked to answer questions on the way you think about your work, sleep and personality characteristics.

Each question is answered using a scale. Don’t think too much about each answer, try to give your immediate response. The questionnaires should take around 15 minutes to complete.

We will be inviting some of the people who complete this study to take part in the second part of the study. This study will involve using an Actimetric to measure your sleep patterns as well as completing a set of questionnaires used within this study. An Actimetric is a piece of normal watch which is worn on the non-dominant wrist and does not interfere with daily activities. You will receive a report on your sleep patterns as a reward for taking part. You will be asked at the end of the course whether you would like to be considered for the second part. Only some people will be asked to participate and if you are approached you are not obliged to participate. Details of the follow up study will be shared at the end of this survey.

Does what I say get shared with anyone else?

What you say will remain confidential and will only be seen by myself and my supervisor. You will not be identifiable as your name and all details about you will be kept anonymous in the study.

This includes any information about where you live, your real name, your age, gender, ethnicity or your school etc. or any other information that would identify you personally.

Research is always supervised by someone senior to me, so my research supervisor may have access to some of the data. The data will be processed by my supervisor and his name and contact details are also at the bottom of this sheet.

All information gathered during this research study will be stored securely in a locked filing cabinet at the University of Surrey, in accordance with the Data Protection Act 1998 and will be destroyed after 10 years.

What happens when the research study is completed?

The data collected in this study will form the basis for my thesis which is an important part of my doctorate. This piece of research will be completed in summer 2013.

Again, as personal details about you will be kept confidential (your real name, your age, gender, where you live, etc), and no-one will be able to identify who you are.

Researchers usually like to have their research findings published in relevant scientific journals so that others can learn from the work I have done. I hope to publish the results of this study in a relevant journal; however the details of this will be decided following completion of the study.

What are the benefits of taking part in this research?

You might find the questionnaires interesting to complete. While you may not see any immediate benefit to yourself, you will be contributing to an important piece of research that will advance our understanding of how work and wellbeing are related.

Are there any drawbacks to taking part?

The questionnaires used in the study are not designed to be upsetting and have been completed by lots of different types of people all over the world. If you do become upset by any of the questions, you can withdraw. If you have immediate concerns then please contact your GP or out of hours health service for advice.

217
What if there is a problem?

If you have any concerns about any aspects of the study you have been involved during the course of the research study, then you can contact my supervisor. His name is Professor Mark Critchley and his details can be found below.

Has the protocol been approved by any committees?

The study has been given a favourable ethical opinion by the Faculty of Arts & Human Sciences of the University of Surrey, Ethics Committee.

I hope I have answered all your questions. If you have any queries, please feel free to ask me anything else that I have not covered. My contact details and those of my supervisors are below.

Research assistant, conducted by:

Marina Chiricozi

Superintendent Psychologist

Co-Department of Psychology, University of Surrey

marina@ludlow.net - I will always try to respond to you within 24 hours

Supervised by:

Professor Mark Critchley

Professor in Health Psychology

mark.critchley@uksone.net

07091899509

218
1 Consent Form.

I agree to complete the questionnaires for the research project to monitor the effect of psych on wellbeing.

I have read and understood the information sheet.

I understand that my decision to take part in this project is entirely voluntary.

I have been given information by the researcher about what the project is about, why it is being done, and how long it is likely to last.

I understand that all personal data will be held and processed in the strictest confidence, and in accordance with the Data Protection Act (1998). No personally identifiable information will be used.

I understand that I can change my mind about participating in the study at any time (i.e., up to the point that I submit the online questionnaire) and I don't have to give a reason for waiting to do this.

I have read and understood everything written above and I have been given enough time to think about this and have chosen to consent to participate in this task.

Do you give your consent, and therefore wish to continue?

[ ] Yes

[ ] No
Demographic Information

Are you?
- Female
- Male

Age?

Where do you live?
- Scotland
- W. Ireland
- Wales
- North West
- North East
- Midlands
- East Angle
- South West
- South East
- Greater London

Marital Status:
- Married
- Single
- Divorced
- Separated
- Widowed
- Cohabiting

Please note how many children (in your immediate family) do you have

Number: _ _ _
Please note which type of education you work in:

- Primary School
- Middle School
- Secondary School
- Special Education Needs School

How many pupils are in your class?

If, in your school, classes are not being taught at the end of the day, please click box 1 or 2. If you teach 1 class with 20 pupils and 2 classes with 30 pupils, please enter 80 as your answer. For heads of year or heads of teachers who do not teach classes please enter the size of your department.

Are you responsible for any other unit?

- Yes
- No
The next set of questions are concerned with your sleep during the past month.

1. What time do you usually go to bed?
2. How long (minutes) has it taken you to fall asleep each night?
3. When have you usually woken up in the morning?
4. How many hours of actual sleep did you get that night?
   (This may be different than the number of hours you spent in bed?)
5. (During the past month) how often have you had trouble falling asleep?

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
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<tr>
<td>Time</td>
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</tbody>
</table>

During the last month, how often have you taken medication (prescribed or not prescribed) to help you sleep?

<table>
<thead>
<tr>
<th>Number of Times</th>
<th>None</th>
<th>Once or Twice a Week</th>
<th>Three or More Times a Week</th>
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</thead>
<tbody>
<tr>
<td>This Month</td>
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<tr>
<td>Total</td>
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<tr>
<td>Question</td>
<td>Options</td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?</td>
<td>Not during the past month, Less than once a week, Once or twice a week, Three or more times a week</td>
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<tr>
<td>During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?</td>
<td>Not during the past month, Less than once a week, Once or twice a week, Three or more times a week</td>
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<tr>
<td>During the past month, how would you rate your sleep quality overall?</td>
<td>Very good, Fairly good, Fairly bad, Very bad</td>
<td></td>
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</tbody>
</table>
This part of the questionnaire tells us about the daily stresses you may encounter.

Please answer each question truthfully, but don't spend too much time thinking about your responses, as your first answer is usually more accurate.

<table>
<thead>
<tr>
<th>Stressor</th>
<th>No stress</th>
<th>Mild stress</th>
<th>Moderate stress</th>
<th>Much stress</th>
<th>Extreme stress</th>
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<tbody>
<tr>
<td>Poor career structure (promotion prospects)</td>
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<td>Difficulty clear</td>
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<td>Lack of recognition for good teaching</td>
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<td>Responsibility for pupils</td>
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<tr>
<td>Noisy pupils</td>
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<td>The short rest periods (mid-morning break, mid-day break)</td>
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<tr>
<td>Pupils' poor attitudes to work</td>
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<td>Inadequate salary</td>
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<td>Too much work, funds (e.g., lesson preparation and marking)</td>
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<tr>
<td>Having a large class size</td>
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<tr>
<td>Maintaining class discipline</td>
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<td>Administrative work (e.g., filing in forms)</td>
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<tr>
<td>Pressure from parents</td>
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<td>Ill-defined syllabuses (e.g., not detailed enough)</td>
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<tr>
<td>Lack of time to spend with individual pupils</td>
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<td>Shortage of equipment and poor materials</td>
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<td>Attitude and behavior of other teachers</td>
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<tr>
<td>Pupils' impolite behavior or cheek</td>
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<tr>
<td>Pressure from head teacher and education officers</td>
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<td>Having extra students because of absent teachers</td>
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</tbody>
</table>

224
The following questions relate to your kind work. Please select the number that best applies to you:

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>If</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you feel satisfied with your work?</td>
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<tr>
<td>Do you feel that your work is well done?</td>
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<td>Do you feel that your work is well organized?</td>
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<td>Do you feel that your work is well presented?</td>
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<td>Do you feel that your work is well received?</td>
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<td>Do you feel that your work is well understood?</td>
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<td>Do you feel that your work is well appreciated?</td>
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<td>Do you feel that your work is well appreciated by others?</td>
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<td>Do you feel that your work is well appreciated by superiors?</td>
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<td>Do you feel that your work is well appreciated by colleagues?</td>
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<td>Do you feel that your work is well appreciated by subordinates?</td>
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<td>Do you feel that your work is well appreciated by clients?</td>
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<td>Do you feel that your work is well appreciated by the public?</td>
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<td>Do you feel that your work is well appreciated by the organization?</td>
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<td>Do you feel that your work is well appreciated by the community?</td>
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<td>Do you feel that your work is well appreciated by the nation?</td>
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<td>Do you feel that your work is well appreciated by the world?</td>
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<td>Do you feel that your work is well appreciated by the universe?</td>
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<td>Do you feel that your work is well appreciated by the cosmos?</td>
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<td>Do you feel that your work is well appreciated by the infinity?</td>
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<td>Do you feel that your work is well appreciated by the eternity?</td>
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<tr>
<td>Do you feel that your work is well appreciated by the omnipotence?</td>
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<td>Do you feel that your work is well appreciated by the omniscience?</td>
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<td>Do you feel that your work is well appreciated by the omnipresence?</td>
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<td>Do you feel that your work is well appreciated by the omnibenevolence?</td>
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<td>Do you feel that your work is well appreciated by the omnipotence?</td>
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<td>Do you feel that your work is well appreciated by the omnipresence?</td>
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<td>Do you feel that your work is well appreciated by the omnibenevolence?</td>
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</table>

225
Follow-up Study

We plan to run a second part to this study where we will be looking at thoughts about work and how this affects sleeping patterns. This will involve wearing an actigraph (looks and feels like a wrist watch) for 2.5 weeks to measure sleep patterns as well as completing some questionnaires similar to the ones you have just completed. This will happen in May 2013 over the half term period. A detailed sleep report will be produced for all participants.

If you are interested in participating, we kindly ask you to leave your email address which will enable us to contact you again. If you would like to help us again please give us your email address below, but if you wish not to, just leave the space blank.

Email Address: ___________________________
Thank you for completing the questionnaire.

Thank you for your interest and participation in the study. Your answers will help us very much. In case of any questions concerning the survey, please send an email to [email] or Dr. Mark [Name].
You can now close this survey.
Appendix 6: Phase 2 Recruitment Emails
Hello,

You recently took part in a study looking at wellbeing, thinking style and sleep in teachers. At the end of the study you indicated you were willing to consider participating in the second phase of this study.

We are now preparing the second part of the study and would like to invite you to take part. The choice to participate is entirely up to you and I have attached some information on the study for you in order to help you make a decision.

The purpose of the study is to look at sleeping patterns over a 2.5 week period. This would involve wearing a device called an Actiwatch for the study period. The Actiwatch looks and feels like a wristwatch and is worn on the non-dominant wrist. We are asking participants to wear this from the Sunday of the week before half term (19th May), through half term week, until the Wednesday after half-term. We would also be asking you to complete a sleep diary and complete some questionnaires at 4 time points during the study. These are similar to the questionnaires you have done in the first part of the study. As a thank you for taking part we are offering a sleep report on your individual sleep data.

Please have a look through the information sheet and let me know if you would be willing to take part. If you have any further questions then please contact me.

Thank you again for taking part in the first part of the study.
Appendix 7: Phase 2 Information and Consent Form
Sleep and Wellbeing Study – Information form and Consent form

Dear participant,

Thank you for considering taking part in this study. Please read the information sheet to see if you would like to take part in this study.

Introduction
My name is Hannah Drewett and I am a Trainee Clinical Psychologist based in the School of Psychology at the University of Surrey, Guildford. As part of my training to become a Clinical Psychologist, I am conducting research with teachers.

What is the study about?
I am interested in how work affects an individual’s wellbeing. In particular I am looking at how people think about their work day after work and how this affects their sleep quality.

What will I have to do?
In this part of the study, you will be sent a pack which includes:

- Actiwatch
- 4 packs of measures
- Return stamped envelope.

To participate in the study will be asked to wear an Actiwatch which measures movement and activity. The actiwatch looks and feels similar to a wrist watch. You will be asked to wear this at all times aside from when you are near water e.g. in the shower. You would be asked to start wearing the Actiwatch on the Sunday of week 1 (19th May) and then keep this on until the Thursday following half term (6th June). We will also ask you to keep a diary of your sleep times and be asked to complete a set of questionnaires four times during the study:

- On the Sunday night before the first working week,
- The Wednesday night of the working week
- The Wednesday night of the half-term week
- and the Wednesday night of the following week.

To take part you must be staying in the UK for half-term (i.e. cannot be holidaying abroad). Following this we will ask you to return the actiwatch in the stamped addressed envelope.

You will receive a report on your sleep patterns as a reward for taking part.

Does what I say get shared with anyone else?
What you say will remain confidential and will only be seen by myself and my supervisor. You will not be identifiable as your name and all details about you will be kept anonymous in the study. This includes any
information about where you live, your real name, your age, gender, or your school etc – or any other information that would identify you personally.

Research is always supervised by someone senior to me, so my research supervisor may have access to the questionnaire data during the research study. My supervisor’s name and contact details are also at the bottom of this sheet.

All information gathered during this research study will be stored securely either electronically (encrypted and password protected) or in a locked filing cabinet at the University of Surrey, in accordance with the Data Protection Act 1998 and will be destroyed after 10 years.

What happens when the research study is completed?
The data collected in this study will form the basis for my thesis which is an important part of my doctorate. This piece of research will be completed in summer 2013.

Again, all personal details about you will be kept confidential (your real name, your age, gender, where you live, etc), and no-one will be able to identify who you are.

Researchers usually like to have their research findings published in relevant scientific journals so that others working in the same field can learn more. I hope to publish the results of this study in a relevant journal; however the details of this will be decided following completion of the study.

What are the benefits of taking part in this research?
You will receive a report on your sleep patterns as a reward for taking part.

Are there any downsides of taking part?
No. You will need to wear the Actiwatch at all times (except in the shower or when near water).

Do I have to take part?
No, taking part in this study is entirely up to you. If you want to take part, please read through the rest of this information sheet and then sign to give your consent on the following page. You can contact me for further information and I will be happy to answer any queries. My contact details are at the bottom of this sheet.

You can also withdraw from the research at any time without giving a reason. If you want to withdraw your consent before you have finished the study, please contact me on h.drewett@surrey.ac.uk and I will contact you to arrange the return of the Actiwatch. Your answers will not be included in the study and will be deleted. If you want to withdraw your consent following submitting your actiwatch data, please contact me on
h.drewett@surrey.ac.uk and your answers will then be deleted and discarded from the study.

**What if there is a problem?**
If you have any concerns about any aspect of the way you have been treated during the course of the research study, then you can contact my supervisor. His name is Professor Mark Cropley and details are at the bottom of the sheet.

**Has the research been approved by any committee?**
The study has been given a favourable ethical opinion by the Faculty of Arts & Human Sciences at the University of Surrey Ethics Committee.

I hope I have answered all of your questions about the research study, but please feel to ask me anything else that I have not covered. My contact details and those of my supervisors are below.

**Research being conducted by:**
Hannah Drewett
Trainee Clinical Psychologist
C/o School of Psychology, University of Surrey
h.drewett@surrey.ac.uk – I will always try to respond to you within 24 hours

**Supervised by:**
Professor Mark Cropley
Professor in Health Psychology
mark.cropley@surrey.ac.uk
01483 686928
Consent Form – Sleep and Wellbeing Study

I have read and understood the Information Sheet.
I understand that my decision to take part in this project is entirely voluntary.
I have been given information by the researcher about what the project is about, why it is being done, and how long it is likely to take.
I understand that all personal data is held and processed in the strictest confidence, and in accordance with the Data Protection Act (1998). No personally identifiable information will be used.
I understand that I can change my mind about participating in the study at any time (up to the point that the research is submitted to the University for assessment) and I don’t have to give a reason for wanting to do this.
I have read and understood everything written above and I have been given enough time to think about this and have chosen to consent to participate in this task.

Please circle
Yes
No

Participant Name

Participant Signature
<table>
<thead>
<tr>
<th>Night</th>
<th>What time did you go to bed?</th>
<th>What time did you try to go to sleep?</th>
<th>What time did you wake up?</th>
<th>What time did you get out of bed?</th>
<th>Please answer the following questions by circling the number that best describes how you slept:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sunday 19th May</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>q. Did you sleep throughout the night not at all</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>g. Did you wake up early? Wake up early</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>b. Did you wake up easily? very difficult</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>f. Was it difficult or easy to fall asleep? very difficult</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>m. Did you have dreams? many</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>a. If you awoke during the night, how easy or difficult was it to get back to sleep? very difficult</td>
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<td>q. How did you sleep? very poorly</td>
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<td></td>
<td></td>
<td></td>
<td>p. Did you feel refreshed after awakening not at all completely</td>
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<td>q. Was your sleep restless or calm? very restless</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Did you think about work (or related issues) whilst you were...</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>q. Trying to fall asleep? not at all all the time</td>
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<tr>
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<td>q. During the night? not at all all the time</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>q. In the morning before you got out of bed? not at all all the time</td>
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Appendix 9: Instructions
Actiwatch information for participants

Thank you for participating in the study. Below is some information on using the actiwatch and instructions for what you need to do during the study period.

What is an actiwatch?
An actiwatch is a device which measures movement and the light at any given point. It has an accelerometer within the casing of the watch. The actiwatch will come on a wristwatch strap which you then attach to your non-dominant wrist.

What do I need to do?
When you receive the actiwatch it will be set up ready to record from 6pm on Sunday evening 19th May – you don’t have to switch it on, it will run by itself. You can leave it in a safe place before the study start time of 6pm on Sunday; just remember to put it on your non-dominant wrist before that time on the 19th May. If you would like a reminder, you can choose to receive email reminders or text message reminders.

At the start of the study, please complete the 1st set of questionnaires marked ‘19th May’ and store in the stamped addressed envelope provided.

Please make sure you wear your actiwatch at all times (night and day) and don’t take it off. The exceptions to this are:

- Having a shower or bath
- Anything where your actiwatch would get immersed in water e.g. swimming, washing up, bathing children etc.

Every evening, on the sleep diary provided, please note down the time you get into bed as well as the time you attempt to go to sleep. For example if you get into bed at 10:30pm, read for 15 minutes and then switch the lights off at 10:45pm, you would note down 10:30 as the ‘time to bed’ and 10:45pm as the ‘time you try to go to sleep’.
When you wake up please again note down the time you woke up. **Your sleep diary is crucial to the accuracy of the study and to your sleep report.** We advise having the diary and pen on your bedside table or by the bed.

Continue wearing the watch as above until the morning of Thursday 6th June.

Please also complete the set of questionnaires again on the following days/times:

- Wednesday 22nd May at approx 6-7pm
- Wednesday 29th May at approx 6-7pm
- Wednesday 5th June at approx 6-7pm

We can send you an email or text message reminder if you choose.

On Thursday 6th June please put the set of 4 questionnaires in the SAE return envelope provided as well as the actiwatch and sleep diary. Please post back to the University of Surrey ASAP after this date or make arrangements with the researcher for it to be collected.

Your sleep report will be sent to you via post within two months of the end of the study.

If you have any questions about the study you can contact me on h.drewett@surrey.ac.uk – I will always reply to you as quickly as possible.

Please keep the actiwatch safe at all times, it is an important piece of research equipment and very costly to replace.

Thank you again for your help with this study – we are very grateful for your participation.
Appendix 10: Data Screening

Skewness, Kurtosis and z-scores for each of the variables for both the Low and High Affective Rumination Groups
Skewness, Kurtosis and Z-Scores for Phase 2 Dependent Variables – High

Affective Group

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<th>Z-score</th>
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* = Significant violation of assumption of normality. A z-score of >1.96 is considered to mean normality is violated at the 0.05 level (Field, 2009).
Skewness, Kurtosis and Z-Scores for Phase 2 Dependent Variables

- Low Affective Rumination Group

<table>
<thead>
<tr>
<th>LAR Group</th>
<th>Skewness</th>
<th></th>
<th>Kurtosis</th>
<th></th>
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* = Significant violation of assumption of normality. A z-score of >1.96 is considered to mean normality is violated at the 0.05 level (Field, 2009).
Abstract of Qualitative Group Research Project

Exploring the impact of internet dating on men and their self-views:

'Shopping for love online: 'dodgy chicken', 'naive scientist', 'expert' or

'au natural'

Year 1
May 2011
A great deal of research has been conducted into the scientific complexities of selecting a partner and falling in love, focusing on areas such as genetic and biochemical factors. It has also widely been found that there are frequent discrepancies between self-presentation online and 'real'. Whilst research has focused on dater's self-presentation, the effect of internet dating on people's sense of identity has not been extensively researched.

The aim of this study is to explore representations of the self in relation to internet dating through lived experience. The research question is: How do experiences of internet dating impact on views of self in adult heterosexual men?

Four heterosexual men aged between 30 and 40 were interviewed. The questions were developed through discussion and consensus between the researchers and were analysed following the Braun & Clarke (2006) six-stage thematic analysis. Four overarching but interrelated themes were identified: People as commodities; the scientific vs. the natural; becoming an expert and shifting self-perceptions.

Internet dating was sometimes described as 'shopping' for partners, whilst the internet dating process itself was a product where your experience depends on your expectations. Participants also felt like commodities in the process. All four participants perceived internet dating as a more scientific way to meet potential partners. They also appeared to perceive romantic connections as random and difficult to predict. Regardless of their overall cynicism regarding the science of selecting a suitable mate, all the participants did appear to employ some quasi-scientific methods to filter potential partners. Participants also viewed their experiences as changing the way they saw themselves. This research could facilitate a greater dialogue around online dating's strengths and limitations and examine how subjective realities are related to overarching discourses around internet dating operating within wider society.
Research Log
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<table>
<thead>
<tr>
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<tbody>
<tr>
<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>
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<tr>
<td>3</td>
<td>Critically reviewing relevant literature and evaluating research methods</td>
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<tr>
<td>4</td>
<td>Formulating specific research questions</td>
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<tr>
<td>5</td>
<td>Writing brief research proposals</td>
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<tr>
<td>6</td>
<td>Writing detailed research proposals/protocols</td>
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<tr>
<td>7</td>
<td>Considering issues related to ethical practice in research, including issues of diversity, and structuring plans accordingly</td>
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<tr>
<td>8</td>
<td>Obtaining approval from a research ethics committee</td>
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<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>
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<tr>
<td>11</td>
<td>Collecting data from research participants</td>
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<td>12</td>
<td>Choosing appropriate design for research questions</td>
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<tr>
<td>13</td>
<td>Writing patient information and consent forms</td>
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<td>14</td>
<td>Devising and administering questionnaires</td>
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<tr>
<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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<td>18</td>
<td>Choosing appropriate statistical analyses</td>
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<td>19</td>
<td>Preparing quantitative data for analysis</td>
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<td>Choosing appropriate quantitative data 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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<tr>
<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>
<td>26</td>
<td>Presenting research findings in a variety of contexts</td>
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<tr>
<td>27</td>
<td>Producing a written report on a research project</td>
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<tr>
<td>28</td>
<td>Defending own research decisions and analyses</td>
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<tr>
<td>29</td>
<td>Submitting research reports for publication in peer-reviewed journals or edited book</td>
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<tr>
<td>30</td>
<td>Applying research findings to clinical practice</td>
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250