A Portfolio of Study, Practice and Research

Submitted for the Doctorate of Psychology (PsychD) in Clinical Psychology

University of Surrey

An investigation of maintaining factors of insomnia in people with co-morbid anxiety

Rachel Blake

2002

Academic/Research Portfolio
Acknowledgements

I would like to express thanks to Dr Jonathan Foulds and Margaret Henning for their supervision of the service-related project. Thanks also to Dr Mick Finlay for his advice regarding the content analysis.

Many thanks to my supervisors of the major research project, Dr James Murray and Dr Metka Shawe-Taylor, for their advice and encouragement, support and insight, and for double-rating the thought content analysis.

Thanks also to Dr Brian Solts for his support when an alternative project for this dissertation did not work and for guiding me through the initial stages of this project.

Thanks to Dr Allison Harvey, early discussions with whom were helpful during the planning stage of the project.

For recruitment of participants, I would like to thank staff at Dorking Community Mental Health Team, who gave out information packs to their clients. I would also like to thank Stephen Emegbo, who gave out information packs to people attending the specialist sleep clinic. I am grateful to my fellow trainees, who responded to my request for good sleepers and passed on information to their friends and relatives. I am also grateful to Charlotte Freeman, Francine Elson and Caroline Rimmer for taking calls from potential participants.

Special thanks to all the people who took part in both the service-related and major research projects, without whom the studies would not have been possible.
Academic section: Essays
Adult mental health essay

January 2000

Year 1
Both behaviour therapists and cognitive therapists may use behavioural techniques in the treatment of anxiety disorder and depression. However, the underlying theoretical rationales for the use of these behavioural techniques differs. Critically evaluate these different theoretical rationales by drawing on the literature from anxiety and depression

Introduction

This essay will describe the theories underlying the practice of behaviour and cognitive therapy. Behavioural techniques common to both behaviour and cognitive therapy will be outlined. The rationale for the use of these behavioural techniques in both behaviour and cognitive therapy will be described. Finally literature from anxiety and depression will be used to evaluate the two different theoretical rationales. Due to the large body of literature on anxiety and depression the evaluation will concentrate on evidence which differentiates the two theoretical approaches.

Due to the large number of anxiety disorders (DSM-IV; APA, 1994) this essay will only focus on literature relevant to panic disorder, on which there is a relatively large body of research (Clark, 1997). To do justice to all behavioural and cognitive theories would be beyond the scope of this essay. Therefore principles underlying behaviour theory, classical and operant conditioning, will be briefly described and then disorder-specific models will be explained in more detail. For panic disorder the essay will concentrate on the recent classical conditioning model (Wolpe & Rowan, 1988) and the cognitive model proposed by Clark (1986). When evaluating the theories of depression the most influential behavioural theory of depression (Williams, 1997), the operant theory of lack of or reduced level of reinforcement hypothesis (Costello, 1972; Lewinsohn et al., 1970; cited in Williams, 1997) and Beck’s (Beck, Rush, Shaw and Emery, 1979) cognitive model of depression will be described.
Early behavioural theory: classical and operant conditioning

Behaviour therapy has its foundations in animal research performed earlier in this century. There are two main components of behaviour theory; classical and operant conditioning. Pavlov (cited in Hawton, Salkovskis, Kirk and Clark, 1989) showed that when an unconditioned stimulus (e.g. a bell ring) was paired with a conditioned stimulus (e.g. food) dogs produced an unconditioned response (e.g. salivating). Furthermore, Pavlov also showed that when the dogs were presented only with the bell ring, without the presence of food, they still salivated (conditioned response). Thus, the dogs learned the association between the bell (conditioned stimulus) and the arrival of food (conditioned response). This procedure, termed classical conditioning, has implications for human learning and has been applied to the understanding of human psychological disorders (Hawton et al., 1989). Anxiety according to the classical conditioning perspective occurs as a result of learned associations between otherwise neutral stimuli (conditioned stimulus) and psychological discomfort (anxiety as a conditioned response).

Behaviour theory draws on operant conditioning principles to explain why the psychological disorder is maintained. Operant conditioning, highlighted by Skinner (cited in Hawton et al., 1989), specifies that behaviour is maintained by reinforcement. That is, the individual learns that if in the context of a particular stimulus (antecedent), he/she performs a behaviour (behaviour), that behaviour is subsequently reinforced (consequence), the individual is likely to perform the behaviour again, having learnt the association between behaviour in the context and reinforcement. For example in the presence of anxiety-inducing stimuli (antecedent) an individual often displays avoidance (behaviour) of the stimuli to reduce fear (consequence), thus the avoidance is reinforced by the reduction of anxiety (Hawton et al., 1989). Behaviour theory states that this process maintains behaviour. Mowrer (1947, 1960; cited in Hawton et al., 1989) proposed a two-factor model of anxiety. According to this theory fear is developed through classical conditioning and maintained through operant conditioning.
**Behavioural and cognitive approaches to anxiety: panic disorder**

**Definition of panic disorder**

A panic attack is defined as a discrete period of intense fear or discomfort during which at least 4 of 13 somatic or cognitive symptoms are present. Panic disorder is characterised by recurrent panic attacks with the requirement following at least one panic attack there is a period of a month during which the individual worries about having another attack, worries about the implications of the attack (e.g. dying) and during which there is a significant change in behaviour (DSM-IV; APA, 1994).

**Classical conditioning model**

Wolpe & Rowan (1988) advanced a classical conditioning model of panic disorder. They suggest that the first panic attack is a response to the bodily symptoms or physiological sequelae to hyperventilation (e.g. feelings of depersonalisation, increased heart beat). Wolpe and Rowan state that following the experience of the first panic, the individual learns the association between surrounding stimuli at the time (e.g. the environment), accompanying physiological symptoms and panic. Resulting panic attacks are conditioned responses to the conditioned internal or external stimuli (physiological symptoms produced by hyperventilation or environmental contextual cues respectively). Thus, Wolpe & Rowan’s model proposes panic to be a conditioned response to stimuli associated with the first panic attack.

**Cognitive theory**

Clark (1986) applied the Beckian cognitive model (first developed to explain depression as described later) to the explanation of panic. Clark’s theory specifies that it is not the experience itself but the individual’s interpretations of physiological sensations that produce panic. This model, like Wolpe & Rowan’s,
proposes that the trigger for the panic can be internal or external. Attribution of threat to stimuli would then result in increased body sensations as an autonomic nervous system reaction. Clark describes how individuals with panic disorder then misinterpret bodily sensations in a catastrophic manner, for example believing that a rapid heart beat is a sign of impending heart attack and death. Clark’s model specifies how these misinterpretations can further increase focus on and exacerbate bodily symptoms (for example the belief that one is about to have a heart attack is likely to induce intense fear and thus the body’s autonomic nervous system will react to fear by further increasing heart rate!). A circular and causal relationship is formed between interpretation and aggravation of symptoms, such that sensations will increase to such an unbearable level that the individual is convinced of impending catastrophe. Thus, central to Clark’s theory is the notion that panic attacks are mediated by cognitive interpretations of bodily symptoms.

*Behavioural techniques: exposure and relaxation*

The behavioural technique of exposure to symptoms eliciting a panic attack is advocated in both theoretical frameworks. Exposure is either gradual, involving small increments in intensity of symptoms or fear, or is very intense, during which an individual might be exposed to a full panic attack. Exposure to symptoms of a panic attack may be to internal stimuli (induced through hyperventilation, either self-induced, or produced by inhalation of high oxygen to carbon dioxide ratio) or may be to external stimuli (involving an individual placing themselves in a situation known to bring on a panic attack). At time of exposure relaxation may also be used in which the individual is encouraged to learn the difference between tense and relaxed muscles. This behavioural technique is more controversial as will be discussed.

*Rationale for use of behavioural techniques in classical conditioning model*

The classical conditioning model of panic proposed by Wolpe & Rowan (1988) suggests that in order for the individual to break the conditioned response of panic to physiological symptoms induced by hyperventilation it is necessary for
the individual to gradually be exposed to increasing intensity of hyperventilation (systematic desensitization [Wolpe, 1958; cited in Hawton et al., 1989]), at which each increase is undertaken only after a reduction in fear response to the current level is achieved. During exposure a reciprocally inhibiting response to fear (Wolpe, 1958; cited in Hawton et al., 1989), relaxation, may be employed. A reciprocal inhibitor is a physiologically incompatible response; relaxation would be a reciprocal inhibitor of fear as the two physiological states cannot exist simultaneously; the introduction of one (relaxation) will inhibit the other (fear). Thus, the individual unlearns the association between physiological sequelae of hyperventilation and panic. This technique can also be applied to other conditioned stimuli which elicit panic.

Rationale for behavioural techniques in cognitive model

According to Clark's (1986) cognitive model, exposure would be viewed as a behavioural experiment, in which catastrophic beliefs regarding consequences of panic attacks can be tested by the individual. For example if a patient experiences the fear that he will faint in a panic attack he/she is encouraged to expose him/herself to internal and external stimuli that elicit panic attacks in order to test the validity of this belief. The use of relaxation in cognitive therapy is not considered to be of optimal benefit. Wells (1997) stresses the importance of the way in which behavioural techniques are used: "Teaching panic patients relaxation...techniques are unlikely to produce optimal changes in belief in misinterpretations since patients could attribute the non-occurrence of catastrophe to use of their relaxation strategy. Behavioural attempts to discover that misinterpretations are false is likely to be a better strategy." The individual will be encouraged to eliminate any behaviours (termed "safety behaviours"; Salkovskis, 1995; cited in Clark 1996) which he/she believes prevent the catastrophic consequence from occurring, and if allowed to remain will prevent disconfirmation of the belief. Thus a patient who believes they will faint unless they hold onto something during a panic attack is encouraged to experience the panic attack without holding onto anything, thereby fully disconfirming the belief in fainting.
Thus, behavioural and cognitive models are agreed that exposure is beneficial, but for different reasons. The behavioural perspective proposes that exposure modifies the learned associations and seeks to break the cycle between hyperventilation and panic. In aiding this process, relaxation is advocated to introduce a physiologically incompatible response to fear during exposure and thus the individual unlearns the conditioned associations between stimuli (conditioned stimuli) and fear (conditioned response). The cognitive model also agrees that exposure is beneficial, but for different reasons: exposure serves to disconfirm catastrophic beliefs which maintain panic attacks. In this approach relaxation may be viewed as a safety behaviour, which would prevent the belief from being challenged properly.

**Critical evaluation of evidence**

A crucial argument differentiating the behavioural and cognitive theories is the rate of occurrence and temporal order of the fearful cognitions in panic attacks. Firstly it has been suggested that negative cognitions are not even present in all panic attacks (Rachman, Levitt & Lopatka, 1987; cited in Rachman, 1993). However, Clark (1997) criticised the validity of these findings due to the fact that some catastrophic cognitions were not enquired after by the authors in the study. Thus the evidence that cognitions are not present in panic disorder is questionable. There is evidence however in support of catastrophic cognitions in panic; Hibbert (1984; cited in Clark, 1986) found that patients with panic disorder were significantly more likely to experience cognitions concerned with illness or death than individuals without panic disorder.

A critical difference between the theories and the rationale for the use of behavioural techniques is the role of cognitions in the cause of panic. Central to Wolpe and Rowan’s classical conditioning theory is the notion that panic is not invariably accompanied by fearful cognitions and, although they note that the first panic is a very unpleasant experience, such cognitions do not play a causal role. The evidence for this comes from Wolpe & Rowan (1988) who found that fearful cognitions were not present until after the panic attack had reached its height. At first glance this might seem to contradict the cognitive model of panic,
which proposes that cognitions are instrumental in producing panic. However, individuals were required to retrospectively recall their first panic attack, which in some cases occurred many years ago and to differentiate this from all subsequent panic attacks. Furthermore individuals were required to describe the exact sequence of events in a very fine time frame. The reliability of accounts under these conditions is likely to be questionable. Automatic thoughts are considered only just accessible to conscious awareness (Beck, 1988; cited in Clark & Fairburn, 1997) and given the detailed advice for clinicians on eliciting thoughts from individuals (e.g. in Wells, 1997) their accessibility after a long period of time has elapsed, and since which other episodes have occurred, is likely to be difficult. Even supposing evidence was reliable, Clark (1997) notes that the cognitive model does not specify cognitions to be the first indication of an impending panic attack. More convincing evidence to resolve the debate regarding the presence of negative cognitions in panic is provided by Khawaja & Oei (1999) who studied cognitions prospectively and in vivo (at the time of a panic attack). They found that catastrophic cognitions were the prominent feature during a panic attack, which is in support of Clark’s model.

Further evidence that differentiates the two theories comes from prevalence rates of panic. Critically, not all individuals who panic once go on to develop panic disorder (many studies cited in Clark & Fairburn, 1997). Thus the critical question to be addressed by theories of panic is why does panic attack not invariably lead to panic disorder? If panic is a classically conditioned response to hyperventilation one might expect every subsequent hyperventilation episode to lead to panic (Wolpe & Rowan, 1988). This is not the case: Gorman et al. (1988; cited in Sanderson & Beck, 1989) found that hyperventilation only leads to a panic attack in 23% of patients with panic disorder. Thus, there appears to be another factor in mediating individuals’ responses to hyperventilation and the bodily symptoms it produces; a factor which according to the cognitive model is the individual’s interpretations of the experience. There is evidence to support this suggestion: Sanderson, Rapee & Barlow (1989; cited in Sanderson & Beck, 1989) demonstrated that perceived (not actual) degree of control over hyperventilation was an important factor influencing resultant panic and anxiety in individuals with panic disorder. Studies have also shown that individuals with
panic disorder do misinterpret bodily sensations more than people without panic disorder (McNally & Foa, 1987; cited in Clark & Fairburn, 1997) and more than other patients with non-panic anxiety disorders such as social phobia and generalised anxiety disorder (Clarke et al., submitted; cited in Clark & Fairburn, 1997). Thus there does seem to be something specific about panic disordered patients in their interpretations of bodily symptoms.

There is also evidence supportive of the role of cognitions in mediating experience in individuals without panic disorder: Van den Hout & Griez (1982; cited in Clark, 1986) and Clark & Hemsley, (1982; cited in Clark, 1986) showed that normal individuals' response to hyperventilation is mediated by cognitions or interpretations of the experience. This observation is further support of the cognitive model of panic.

Wolpe & Rowan (1988) refute the role of cognition in panic by stating that cognitive correction by physician is not effective in reducing panic attacks, however Sanderson & Beck (1989) believe such correction is effective. Wells (1997) considers behavioural experiments to be the most powerful way of testing beliefs. Thus just because cognitive correction is ineffective this does not mean that cognitions are not the maintaining factor: this evidence might simply suggest that providing the patient with factual information may not be powerful enough to change beliefs: the individual may need to discover this for themselves through exposure.

Despite the different rationales, and the predominance of evidence for the cognitive model and against the classical conditioning model, therapy which uses behavioural techniques in a behavioural or cognitive theoretical framework can be equally as effective (Lloyd-Williams & Falbo, 1996; Burke et al., 1997; cited in Hughes, 1998). It may be unhelpful to compare the two techniques' effectiveness and more useful to elucidate the finer mechanisms of action. There is evidence to suggest both techniques can have an equal effect on cognitions regarding panic attacks (Lloyd-Williams & Falbo, 1996) despite this change being the aim of only one (cognitive) theoretical framework. The most convincing evidence for cognitions as having a strong mediating role is from
Adult Mental Health Essay

Clark, Salkovskis, Hackmann, Middleton, Anastasiades & Gelder (1994) and Clark, Salkovskis, Hackmann, Wells, Ludgate & Gelder (1999) who demonstrated that catastrophic cognitions reported by people with panic disorder at the end of treatment predicted outcome at follow-up.

The evidence suggests that panic disorder is mediated by the interpretation which an individual attaches to the experience. Furthermore, the research suggests that the therapeutic change of such cognitions is an effective treatment for panic disorder and moreover that status of cognitions at end of treatment is predictive of outcome at follow-up.

**Behavioural and cognitive approaches to depression**

*Definition of depression*

DSM-IV criteria for a major depressive episode are for the individual to experience any five of the following symptoms: negative affect, reduced pleasure from activities, weight change, sleep disturbance, psychomotor agitation or retardation, fatigue, feelings of worthlessness, concentrational difficulties or recurrent thoughts of death or suicidal ideation (DSM-IV; APA, 1994).

*Behaviour theory*

Williams (1997) stated that the most influential behavioural theories are those employing operant conditioning principles to explain depression. Reinforcement is the factor influencing behaviour in operant conditioning terms. Costello (1972; cited in Williams, 1997) suggested that depression is a result of a “loss of reinforcer effectiveness”. Lewinsohn et al. (1970; cited in Williams, 1997) proposed a similar hypothesis: depression is a “low rate of response-contingent positive reinforcement”. In initial stages of depression the individual may receive increased attention from the environment in response to their reduced behavioural output, termed “secondary gain phenomenon” (Williams, 1992), but central to both theories is the notion that ultimately the depressed person experiences a loss or reduced level of reinforcement for their behaviour as individuals stop paying
attention to the depressive behaviour. As a result the individual experiences negative affect and low motivation to perform usual behaviours (due to low or non-existent reinforcement).

**Cognitive theory**

Beck's cognitive model of depression (Beck et al., 1979; cited in Fennell, 1989) proposes that depression results when critical life events activate underlying assumptions a person may believe about themselves and how they should behave. The critical incident may be interpreted in the light of these underlying assumptions. For a person who has underlying beliefs “I must always be perfect” and “If I am not perfect I am a failure”, the failure of an important exam might activate these underlying negative assumptions about themselves. Beck et al. (1979; cited in Fennell, 1989) suggest the activation of negative assumptions then give rise to a number of cognitions, characterised by negative thinking about the self, the world and the future, termed the “cognitive triad”. These negative cognitions are said to mediate and maintain the depressive process and symptoms in a circular relationship in that the more negative the thoughts, the worse the depressive affect (Beck, 1991; cited in Clark & Steer, 1996). The theory states that cognitions in depressed people are subject to bias, both in recall of past events, and interpretation of new events and information, towards the negative. Beck (1991; cited in Clark & Steer, 1996) suggested that events are interpreted in the light of activated dysfunctional beliefs. In the example above any events in which the individual deems him/herself to be less than perfect will be interpreted as an example of “I am a failure”.

**Behavioural techniques: activity scheduling and graded task assignment**

In depression the techniques of graded task assignment and activity scheduling are employed. Both involve arranging to perform behaviours previously not exhibited or performed at a reduced rate during the depression. Activity scheduling would simply involve arranging to perform particular behaviours at particular times. Graded task assignment is used for more complex behaviours or tasks, which may need to be broken down into individual components; the
rationale for this being that the task itself is too large for the individual in their present depressed state to be able to manage.

**Rationale for use of behavioural techniques in operant conditioning model**

Operant behaviour theory states that increased reinforcement from the environment is instrumental in improving mood (Schwartz & Schwartz, 1993). Thus, behaviour therapy aims to increase reinforcement to break the cycle of reduced reinforcement leading to lower behavioural output, leading in turn to further reduced reinforcement. Activity logs are useful in determining contingencies for reinforcement and are subject to behavioural analysis (i.e. antecedent, behaviour, consequence, outlined above), which then enables the therapist to see where there are potentials for increasing reinforcement via activity scheduling or graded task assignment. In operant behaviour theory activity scheduling serves to increase potential for reinforcement from the environment (Schwartz & Schwartz, 1993). Graded task assignment would be used in behaviour therapy to gradually enable the individual to become more active, reinforcing behaviour at each stage, such that the individual is inclined to perform more of the same behaviour. Through activity scheduling and graded task assignment the cycle of low reinforcement resulting in reduced behavioural output is broken.

**Rationale for use of behavioural techniques in cognitive model**

Central to cognitive theory is the notion that it is the individual’s negative interpretation of events that maintains depressed mood. The rationale of therapy according to cognitive theory is to compensate for the bias in negative interpretation (Williams, 1997) to promote more rational or objective interpretations by examining the evidence for negative cognitions. As negative thinking is thought to maintain depression, targeting these cognitions is considered to be the optimal strategy in alleviating depression (Fennell, 1989). Thus, behavioural techniques employed in cognitive therapy aim to test out negative cognitions. Activity scheduling may be used to plan a test of a negative cognition. For example the cognition might be “no one will talk to me at the
Adult Mental Health Essay

party" and may discourage the individual from going. Activity scheduling, set up as a behavioural experiment to test out this hypothesis might involve arranging to go to a party to see if the negative cognition is true. Behavioural experiments such as this are employed in the likelihood that the individuals interpretations or predictions about events are likely to be subject to information processing bias or recall bias (Beck, 1967, 1976, 1987; cited in Clark and Steer, 1997). Such biases would tend to focus on the negative and the activity scheduling would serve to correct the biases. Graded task assignment would be used, as in activity scheduling, to test out negative cognitions regarding a particular activity (Williams, 1997). For example, a negative cognition “I won’t be able to do it”, would be subject to evaluation. Graded task assignment is likely to be used in preference to activity scheduling if the task is considered to involve separable stages, after which the individual can make a negative hypothesis regarding each stage, but then have this disconfirmed by the fact that he/she is able to perform the task. It should also be noted that in some cases individuals may be correct in their cognitions, in which case the activity scheduling as a behavioural experiment would provide valuable information to aid problem solving (i.e. what can the individual do to improve the situation?).

In summary, according to behaviour theory, behavioural techniques increase opportunity for reinforcement, the lack of which is proposed to maintain depression. However, in cognitive theory of depression, behavioural techniques such as scheduling activities and graded task assignment serve to evaluate validity of cognitions (Fennell, 1989).

Critical evaluation of evidence

There is some evidence that depression is associated with reduced reinforcement in that they showed a tendency to alienate people and thus reduce opportunity for reinforcement (Coyne, 1976). There is also some evidence that depressive behaviour is reinforced by surrounding individuals (Sheeber, Hops, Andrew, Alpert & Davis, 1998). Lewinsohn (1975; cited in Williams, 1992) showed an association between activities which are reinforced and mood, however Williams (1992) criticises the methodology used, which required individuals to only rate an
activity if they found it enjoyable and therefore individuals experiencing improved mood would be bound to rate more pleasurable activities for that day. Thus, the above is not evidence to suggest that altering reinforcement schedules will alter the depression. Williams (1992; cited in Williams, 1997) has argued that low reinforcement could be a consequence and not a cause of depression.

A problem for the behavioural model of depression is that clients may increase behavioural output and elicit more reinforcements, but still be depressed (Schwartz & Schwartz, 1993). This observation echoes my clinical experience that clients can receive reinforcement and have reasonable behavioural output, pursuing normal activities, yet still be depressed. Thus, reinforcement may not be sufficient to alleviate depression: the underlying cognitions that the individual has in relation to the experience may also need to be examined.

A fundamental prediction of the cognitive model of depression is that negative cognitions will be present in depression. Clark & Steer (1996) and Williams (1992) note that negative cognitions are consistently found in depression. There is also evidence for the existence of an information processing bias in depression. Haaga, Dyck & Ernst (1991) note that evidence consistently suggests that individuals with depression show biased negative interpretation of hypothetical scenarios. Such a bias also applies to the recall of past events. Clark & Teasdale (1982; cited in Haaga et al., 1991) showed that depression levels within individuals affected the number of negative autobiographical memories recalled.

Evidence converges to suggest a relationship between negative cognitions and other symptoms of depression (Haaga et al., 1991). In addition, Clark & Teasdale’s study (cited above) showed that the negative recall bias was related to severity of depression. Such evidence is obviously in support of the cognitive model, but not contrary to the behavioural model as it is the critical role of cognitions, and not their presence which differentiates the two theories.

As noted in the discussion of panic disorder, the presence of cognitions does not necessarily imply their role in maintenance of the depression, as proposed in the cognitive model (Beck et al., 1979; cited in Fennell, 1989). More convincing
evidence for the critical role of cognitions comes from mood induction procedures, in which negative depressive affect is demonstrated to follow induction of negative cognitions through the use of depressive stimuli, for example, asking for recall of negative autobiographical memories or reading aloud negative statements about the self (Williams, 1992). Williams (1992) notes that such evidence provides strong support for the maintenance role of cognitions in depression, and there is some evidence that a reduction in negative cognitions in depressed individuals accompanies alleviation of depressed mood (Williams et al., 1990; cited in Williams, 1992). However, there have not been prospective studies to investigate temporal order of cognitions and depressed affect specifically in depressed individuals (Clark & Steer, 1996). Thus, it could still be argued that cognitions do not play a maintaining role in depression.

As in panic disorder, the most convincing evidence for the role of cognitions in depression comes from studies which demonstrate the predictive value of cognitions for subsequent depression. Hollon et al. (1990; cited in Williams, 1997) showed that degree of dysfunctional attitudes was directly related to likelihood of relapse following treatment for depression.

The evidence is consistent with the presence of negative cognitions and interpretative biases in depression, which is consistent with the cognitive model, but not inconsistent with the behavioural models discussed. The relationship between cognitive status and depressive affect is stronger evidence for the cognitive model, but still does not imply causality. However the predictive value of cognitive status for outcome of depression adds further weight to the notion of a critical role for cognitions in depression. In the light of the accumulating evidence for the importance of cognitive change in depression, behavioural theories which specify lack of reinforcement to be the maintaining factor in depression are not likely to provide a complete account for depression.

**Conclusion**

Beck (1991; cited in Clark & Steer, 1996) stated,
"the distinctiveness of cognitive therapy as a system of psychotherapy does not depend on the particular therapeutic techniques employed by cognitive therapists (many of these are borrowed from other therapy schools), but upon the fundamental cognitive constructs and propositions that guide the implementation of therapy."

Thus, actual behavioural techniques can be indistinguishable in behaviour and cognitive therapy, however the rationale for using the techniques differs on critical points: their mechanism of action and the role of cognitions. Behaviour theorists would suggest behavioural techniques act to allow the individual to unlearn conditioned associations. Cognitive theorists would argue that behavioural experiments allow objective evaluation of evidence for the individual’s negative cognitions.

The majority of the evidence from panic and depressive disorder discussed in this essay is in support of the cognitive rationale: cognitions of the type specified by cognitive theory do appear to be present in panic disorder and depression. There is also evidence to suggest that misinterpretative and negative cognitions may play an important mediating role in other anxiety disorders, for example obsessive-compulsive disorder (Salkovskis, 1985) and social phobia (Clark & Stopa, in preparation; cited in Clark, 1997). However their presence in the conditions does not imply their causal role.

The difficulty researchers currently face is one of establishing unequivocal evidence for the maintenance role of cognitions in anxiety and depression, a crucial point on which behaviour and cognitive theorists differ. It is not helpful to examine the efficacy of different therapeutic approaches (Robinson, Berman & Neimeyer, 1990) as this essay has shown, for example in the case of panic disorder, that behaviour therapy and cognitive therapy can yield similar results. Wells (1997) notes that behavioural techniques applied in the rationale of behavioural theory can be useful in alteration of cognitions, although this is not specified in the underlying theoretical rationale regarding the mechanisms of action.
Evidence that change in cognitions accompanies therapeutic change is not decisive as change of cognitions may be an accompanying, rather than a causal factor (Marks, Basoglu & Noshirvani, 1995) in alleviation of anxiety or depression. Added to this is the inherent difficulty in measuring cognitions (Gelder, 1997). More convincing evidence for the critical role of cognitions in the maintenance of anxiety and depression is in their ability to predict outcome, as has been shown to be the case (Clark et al., 1994, 1999 and Hollon et al., 1990; cited in Williams, 1997) in anxiety and depression respectively.

References


Learning disabilities essay

June 2000

Year 1
What is the impact of others' expectations on the communicative abilities of people with learning disabilities and how might a clinical psychologist work with these issues?

Introduction

Communication can be defined as

"The exchange of messages between two or more individuals in direct relationship through the use of oral language, symbols, signs and behaviour, when the meaning of these symbols is understood by all participants in this exchange", Kenefick (1988)

or

"A communication partnership involves two or more people who exchange ideas and interpret meanings", (Bartlett & Bunning (1997).

Communication is essential to experience relationships, assert needs, make choices and establish an identity, both for the self, and in the eyes of others (Thurman, 1997). Therefore communication is a fundamental aspect of life. Understanding of others' communicative intentions is also crucial to make sense of the environment.

Difficulties in communication are common in people with learning disabilities. Estimates differ, probably due to methodological differences (Bartlett, 1997), but range from 62% (Blackwell et al., 1989; cited in Bartlett, 1997) to 81% (Law and Lester, 1991; cited in Bartlett, 1997). Keman & Sabsay (1997) note that people with learning disabilities' communicative style characterises them as different to people with whom they interact. For example Sabsay & Kernan (1983; cited in Leudar, 1997) found that people with learning disabilities did not conform to the quantity and relevance maxims of conversation outlined by Grice (1975; cited in Leudar, 1997). Leudar (1997) also found that people with learning disabilities were rated as less coherent and relevant. On the basis of research following the communicative interactions of people with learning disabilities in everyday
settings, Sabsay & Kernan (1997) divide communication problems into two categories: that of conveyance of meaning and that of appropriateness in interaction. Participants in their study could not always convey their meaning to others with whom they interacted and they cite examples of inappropriateness such as talking excessively about the same topic. Of course there are also specific syndromes that are associated with communication difficulties, for example autism, however, it is beyond the scope of this essay to consider the different communicative characteristics of people with these syndromes.

Historically, theories of language development have influenced ideas about communication intervention. The ‘nativist’ account (Chomsky, 1965, cited in Remington, 1997) states that our brains are innately pre-disposed to learn language, which implies that attempts to intervene in language development would be of minimal use. There is also a behaviourist account (Skinner, 1957; cited in Price, 1997) which states that language is learned through manipulation of traditionally defined antecedent stimuli and reinforcement contingencies. Attempts to enhance language development were applied within a behavioural framework to individuals with communication difficulties, thus, historically the focus has been on the individual (Leudar, 1981; cited in Leudar, 1997), but with only limited success (Price, 1997).

Kenefick’s (1988) and Bartlett & Bunning’s (1997) definitions of communication highlight its reciprocal nature. Therefore to say that people with learning disabilities have problems with communication is not to say that they are solely responsible for the difficulty. This has been recognised in an increasingly popular alternative to the above two accounts, the social-interactionist theory (e.g. Bates et al., 1987; cited in Remington, 1997). This approach states that language is learnt through the interaction between an individual and their social environment and cognitive-developmental status. It also emphasises the functional use of communication (a point neglected by early behaviourist interventions (Price, 1997), and the notion that children will not learn to communicate if they do not have a reason or a communicative partner (Price, 1997). Therefore, this approach advocates consideration of all partners in a communicative exchange if intervention is to be successful. Despite theoretical advances in knowledge, the
interative nature of communication (Yoder, Davies & Bishop, 1994; cited in Purcell, Morris & McConkey, 1999) is not always recognised by people working directly with people with learning disabilities. For example care staff have been shown to perceive that the focus of communication intervention should be on the client, rather than themselves or others (Purcell et al., 1999).

In research literature, the interactive nature is becoming recognised, as shown in a statement by Leudar (1997):
"Communicative problems are frequent in interactions where at least one participant is mentally handicapped", which locates the problem within the communicative exchange itself. Increasingly the emphasis is placed on intervening in the 'communication environment' (Van der Gaag, 1993). It is therefore important to consider factors extrinsic to people with learning disabilities, one of which is their communicative partner, and their expectations they bring to the interchange.

The role of others who interact with people with learning disabilities is one that attracts increasing attention in the literature. The expectations are likely to influence behaviour towards people (Jussim, 1986) therefore, one might predict that expectations could have an influence on the communicative exchange. This essay will discuss the expectations that others hold, and will consider their role in interaction with people with learning disabilities. ‘Others’ considered are families, care staff, clinical psychologists, psychiatrists, police and the general public. Current theory of language development and the psychological concept of ‘self-fulfilling prophecy’ (Jussim, 1986) predict that others expectations and their consequent behaviour is likely to influence the way a person with learning disabilities communicates. The psychological impacts of expectations as mediators of the impact of expectations on communicative ability will be discussed and the clinical psychologist’s role will be considered.

**Expectations**

Van der Gaag & Dormandy (1993; cited in McConkey, Purcell and Morris, 1999) have noted that judgement and adjustment by staff of their communication level
to that of the client results in more effective partnerships. Therefore one might expect difficulties where others under- or over-estimate the communicative ability of a person with a learning disability.

**Over-expectation**

In clinical experience others often overestimate comprehension abilities of clients. For example, the author has often heard staff say "He/she understands everything I say to them", of a client with a learning disability. In practice understanding is often based upon non-verbal and contextual communicative cues, which is illustrated in a case study cited by Thomas-Bawa & Henecker (Unpublished lecture, 2000). A request to a client with a learning disability to pick up leaves was communicated in two different situations; once through verbal instructions combined with demonstration of the activity, non-verbal and contextual cues, and the second time through demonstration, non-verbal and contextual cues alone while the demonstrator used non-sensical language. The effect was the same: the client picked up the leaves. Therefore, clients can give the impression of proficiency in comprehension of language when the reality is actually comprehension of a communication through non-verbal and/or contextual cues alone. This example can give some clues as to why individuals who interact with people with learning disabilities may overestimate their communicative abilities and may lead to client’s communication partner’s assuming a higher level of language comprehension in other situations when accompanying non-verbal or contextual communication cues are absent.

Evidence shows that employed carers of people with learning disabilities do not tailor their verbal communication skills to match those of the client, (Bartlett & Bunning, 1997) and use language that is beyond their comprehension abilities (McConkey, Morris & Purcell, 1999). While the mismatch may be due to staff difficulty in matching their language to that of the clients, the findings do suggest that clients may be subject to overestimation of their communicative abilities (Bartlett & Bunning, 1997). Purcell et al., (1999) also found that staff tended to overestimate clients’ verbal communication skills and that they also experienced difficulty in identification of non-verbal communication. McConkey et al., (1999)
suggested that staff’s perception of people’s communicative abilities may be an explanation for their findings. However, both studies focused only on verbal communication skills without consideration of other modes of communication, which may facilitate a client’s participation in the exchange.

The author was witness to a conversation between a client with Down’s Syndrome, his carer and a psychiatrist, which highlights another example of over-estimation of communicative abilities. The carer and psychiatrist asked the client numerous questions to which an appropriate answer would have been yes or no. The client replied in the appropriate way, thus giving the impression to others involved in the interaction that he had understood the questions. However, when the client was asked a question to which yes or no was not the appropriate answer, he answered “yes”, then in response to frowns from his carer, “no”, then in response to further frowns, he looked confused as the others looked on in expectation. There then followed an awkward silence. Therefore, the likely interpretation, and the impression of the author, was that the client had not understood any of the conversation, but somehow (perhaps through prosodic clues in the speakers’ voices) was able to produce the ‘right’ yes/no answer. Therefore, like the previous example, clients can often feign understanding when their communicative abilities are over-estimated, possibly to preserve self-esteem (Keman & Sabsay, 1997). However, the opportunity for people with learning disabilities to express themselves in such interactions is limited.

This phenomenon, acquiescence, was demonstrated by Siegelman et al. (1981; cited in Prosser & Bromley, 1998) in people with learning disabilities, particularly in response to questions requiring a yes/no response. This can occur when the person does not comprehend the question, likely in the above example. Therefore, over-estimation of communicative ability can actually impair people with learning disabilities’ communicative ability in the sense that when they do not understand questions they show a tendency to acquiesce. As a result their answers may not be consistent with their true needs. This could have drastic consequences, for example if being asked about major choices in their lives. One such example, is in the legal justice setting. It has been shown that people with learning disabilities demonstrated difficulty in understanding their legal rights.
Learning disabilities essay

(Gudjonsson, Clare & Cross, 1992; cited in Clare & Gudjonsson, 1995). This difficulty of understanding, coupled with the reduced tendency to seek clarification (Donahue, Pear & Bryan, 1980; cited in Donahue, 1997) may result at worst in people with learning difficulties making false confessions.

Even if communication is tailored to the individual, acquiescence can still occur. Historically people with learning disabilities have often been subject to general treatment which intellectually average individuals do not usually experience, for example ill-treatment by hospital staff (Caine, Hatton & Emerson, 1998). Because of their disability a power differential often exists between people with learning disabilities and their carers, other professionals, or even family and friends. For example, McConkey et al. (1999) found that clients were not given the opportunity to be equal communicative partners by staff. This may lead to the individual tending to be influenced by what their communicators say. Acquiescence can occur due to a desire to give the “correct” answer to the communication partner (Siegelman, 1981; cited in Prosser & Bromley, 1998), which fits in with a socially desired role (Shaw & Budd, cited in Prosser & Bromley, 1998). People with learning disabilities are also particularly vulnerable to leading questions (Clare & Gudjonsson, 1993; cited in Clare & Gudjonsson, 1995), which again suggests a desire to conform to the wishes of the interviewer (Perlman et al., 1984; cited in Bull & Carson, 1995). This is particularly the case if self-competence is perceived as low (Gudjonsson & Lister, 1984; cited in Bull & Carson, 1995). Indeed, people with learning disabilities may not even assert their needs in the face of a decision made for them: there is a tendency to comply (Flynn, 1989; cited in van der Gaag, 1993). Therefore it cannot always be assumed that people with learning disabilities will assert their choices.

There might also be expectations that communicative abilities in one situation will generalise to another, which is not necessarily the case. Bull & Carson (1995) noted that familiar contexts are often needed for people with learning disabilities to maximise their communicative abilities. This creates issues when people with learning disabilities have to give evidence in a court. Their ability to give evidence is likely to be compromised by style of questioning, which can be confusing and is likely to be unfamiliar to a person with a learning disability.
This also relates to an interview setting, for example with a clinical psychologist in which regular stimuli for communication are not present. Thus, an interview setting is likely to be unfamiliar and therefore an individual's communicative abilities may be under-estimated in this situation.

Under-expectations

The expectations of over-estimation of communicative ability and expectations regarding validity of communication regardless of the communication partner's style can both lead to people with learning disabilities' communicative abilities being compromised. However, there may also be under-expectation, or assumptions of invalidity.

Leudar (1997) found that communications made by people with learning disabilities were rated as significantly less valid than non-disabled controls by carers and instructors. This suggests that people with learning disabilities are not expected to be truthful as often as people without a disability. Evidence to support this assumption has been discussed in instances when certain questioning techniques are employed (e.g. Siegelman, 1981; cited in Prosser & Bromley, 1998). However such an expectation is likely to further compromise the person as the assumption may give rise to their partner seeking clarification of meaning, which is suggested to adversely affect self-esteem (Sabsay & Kernan, 1993; cited in Leudar, 1997). Furthermore, experience of expectations of invalidity may actually lead to a 'learned helplessness' (Abramson, Seligman & Teasdale, 1978; cited in Clare & Gudjonsson, 1995), which may lead to people with learning disabilities actually making factually inaccurate statements. It is this mechanism that Clare & Gudjonsson (1995) suggest may be behind false confessions, in that people with learning disabilities place more weight behind the actual truth than their statements, therefore, they might rely on non-disabled others to 'know' the truth.

Anecdotal evidence suggests that low expectations of communicative abilities is associated with staff use of directives in communication (Bradshaw, 1998). Certainly, proportion of directives used by staff in communication with people
with learning disabilities is high at 70% (Kenefick, 1986, cited in Kenefick, 1988). Kenefick also showed that a similar amount of communication between people with learning disabilities is directive. Research has shown that a decrease in the use of directive communication leads to increased client involvement in the communicative exchange (Money, 1997; cited in Purcell et al., 1999). Use of directive language by staff the majority of the time, coupled with evidence that staff only interact with people with learning disabilities in residential settings 10 to 15% of the time (Landesman, 1988), suggests that opportunities for involvement in communication are very low.

Use of directives by staff is also associated with the production of challenging behaviour (Hastings & Remington, 1994; cited in McConkey et al., 1999). This may arise out of being unable to communicate needs (Chamberlain, Chung & Jenner, 1993), which is in keeping with the suggestion that directives hamper clients' communicative opportunities, as challenging behaviour is a recognised form of communication (Thurman, 1997). Chamberlain et al. (1993) suggested that in the absence of appropriate forms of communication, individuals may resort to socially unacceptable modes. Research suggests that staff pay more attention to clients who exhibit seriously challenging behaviour (Emerson et al., 1992; cited in Chamberlain et al., 1993), therefore through reinforcement clients may learn the functional use of their behaviour and adopt it to communicate their intentions (Chamberlain et al., 1993). Unfortunately the more intense the challenging behaviour, the less likely an individual will desire to communicate with people.

There is evidence from a case study that through education of staff to heighten awareness about a client’s modes of communication, it is possible to reduce challenging behaviour and increase appropriate communication (Bradshaw, 1998). Bradshaw reported that anecdotal evidence suggested that this change was mediated through a alteration in staff perceptions and enhancement of expectations of the client’s communicative abilities. Therefore, correction of under-expectation can enhance communicative abilities.
As has been discussed, both under- and over-expectations can compromise people with learning disabilities’ communicative abilities. There is some suggestion that the communication problems such a mis-match can produce are contributed to by people’s reactions. Kernan & Sabsay (1997) noted that due to potential communication partners do not always invest the effort to overcome difficulties and others may, out of impatience, embarrassment or discomfort for the communicator, step in as advocate. The theory of learned helplessness (Abramson, Seligman & Teasdale, 1978; cited in Clare & Gudjonsson, 1995) is likely to be relevant in such situations and would predict that a person who is consistently spoken for in interactions may diminish his/her communicative output. Further consequences of social withdrawal would be reduced opportunities to enhance their communicative abilities.

Having discussed some of the consequences of a mismatch between others’ expectations of communicative ability, and the impact on communicative abilities and opportunities for people with learning disabilities, expectations in general of people with learning disabilities should also be considered, as these are likely to impact on their communicative opportunities.

General expectations of others

General attitudes towards people living in the community can vary and can be positive (Hudson-Allez & Barrett, 1996) or negative (e.g. Leighton, 1989; cited in Hudson-Allez & Barret, 1996), possibly depending on individual trust policy regarding the resettlement process (Hudson-Allez & Barrett, 1996). Szivos-Bach (1993) discovered a tendency for students with a learning disability to also hold negative views of their peer group. Thus, if people with a learning disability are perceived negatively by both other learning-disabled and intellectually-average peers, their opportunities for communication are likely to be minimal. In turn, lack of environmental opportunities for communication leads to less than optimal communicative abilities in people with learning disabilities (van der Gaag, 1989, cited in van der Gaag, 1998). Also of relevance is the suggestion that degree of success an individual experiences is likely to influence the likelihood of that behaviour occurring again (Butterfield & Arthur, 1995). People with learning
disabilities often experience rejection (van der Gaag, 1993), which will not only
decrease the likelihood of aiming to communicate again (Butterfield & Arthur,
1995), but the possible resultant social isolation means that the individual will not
have the opportunity to develop social skills (van der Gaag, 1993).

**Psychological impact and consequences for communicative behaviour**

The impact of the expectancies discussed on an individual’s self-esteem and
schema will now be considered. Unfortunately to the author’s knowledge, there is
only sparse research that links expectations of communication directly with
psychological impact and furthermore the psychological impact on
communicative abilities. The research that is available is to some extent anecdotal
and subject to interpretations of authors, and is often not the research question
originally addressed by the studies, so may be of limited validity. Therefore it is
also necessary to draw on broader psychological theory to hypothesise about
links, although this should also be subject to further validation.

In considering the impact of under-and over-expectations of the communication
abilities of people with learning disabilities the psychological concept of the
'self-fulfilling prophecy' (review by Jussim, 1986) is likely to be useful. As was
discussed, when others over-estimate communication ability, people with
learning disabilities are subject to failure. Should failure repeatedly occur, people
are likely to develop self-schemas of failure comparable to those observed in, for
example, depression (e.g. Beck, 1995), except that they may not be as easily
amenable to correction, because as has been shown, the reality is that other’s
sometimes communicate inappropriately with people with learning disabilities.
Cognitive theory states, information is interpreted through activated schemas or
assumptions, therefore, one might expect that any further experiences of failure
would be integrated into such schema, leading it to be even more resistant to
change. Furthermore, if an individual expects to fail, the probability of attempting
to communicate is likely to be reduced and if individuals do not adjust their
communication styles to enable success in a communicative interaction,
expectations of failure are likely to increase and attempts to communicate are
likely to reduce further.
Self-schema as being an influence on an individual's motivation for social interaction can be understood by also considering the discoveries regarding cognitions thought to mediate social phobia. As Wells (1997) notes, the common cognition in social phobia is that of negative evaluation. There is anecdotal suggestion by Kernan & Sabsay (1997) that this is a fear of many people with learning disabilities in their interactions, and indeed it does lead to social withdrawal by some individuals with a learning disability (Keman & Sabsay, 1997). However evidence also suggests that this fear might lead to compensatory strategies in at least some people, rather than social avoidance. Kernan & Sabsay (1997) describe a man who, when not able to convey his meaning to the shopkeeper, became frustrated and started to accuse the shopkeeper of cheating him. Another example is of a client who when anxious not to appear incompetent when trying to communicate, became aggressive, which had the opposite of the desired effect by alienating his communicator (Keman & Sabsay, 1997). This is captured by Goffman (1986; cited in Leudar, 1997):

"We may perceive his defensive response to his situation as a direct expression of his defect, and then see both defect and response as a just retribution...and hence a justification of the way we treat him".

Under-expectations are also likely to have psychological impact. As has been noted, under-expectations are likely to lead to 'learned helplessness' (Abramson, Seligman & Teasdale, 1978; cited in Clare & Gudjonsson, 1995), for example in the case of people whose statements are not believed, or whose communicative abilities are underestimated. Jussim (1986) notes the importance of "performance-contingent feedback" for people to develop a sense of control. If potential communication partners hold low expectations of a person with a learning disability, they may too have an information processing bias, through which only examples of poor communication pass, and which may lead to examples of success being ignored. If a person does not receive appropriate feedback, as found by Cullen et al. (1983) who showed that residents with a learning disability's interactions often received no response, or even receipt of a negative response (found by Kistner & Torgesen, 1987; cited in Poikkeus et al., 1999) it is possible that they might develop a low sense of self-efficacy (Bandura,
1977; cited in Jussim, 1986) in ability to communicate. O'Brien (1981; cited in Bartlett, 1997) described the 'vicious cycle' which can lead people with learning disabilities to react to low expectations and opportunities to interact by becoming more severely delayed in communication abilities.

Therefore, the psychological impact of a mis-match between others expectations and people with learning disabilities' communicative abilities is likely to have consequences for opportunities and development of communication. There are also likely to be wider impacts in terms of an individual's self-esteem, which in turn may influence the likelihood or nature of future attempts to communicate.

There is also the historical expectation that people with learning disabilities are the sole cause of communicative difficulty, in addition to a more general history of ill-treatment (Caine, Hatton & Emerson, 1998). This is likely to have fostered a culture in which people with learning disabilities have poor self-esteem, shoulder the blame, as might be predicted within a cognitive framework (e.g. Beck, 1995) when early experiences lead to development of negative self-schemas. The tendency to self-blame is evident in the work by Donahue that students attributed failure to understand internally in the context of ambiguous messages. Although unsubstantiated by evidence, it is possible that historical expectations still prevail to some extent today and have influence on people with learning disabilities' communication partners. There is some evidence that negative attitudes to people with learning disabilities still prevail (e.g. Leighton, 1989; cited in Hudson-Allez & Barrett, 1996) which are likely to lead to reduced opportunities for interaction. Therefore attempts at interaction may be rebuffed by a few individuals due to negative expectations. These are likely to have similar consequences for self-esteem as discussed above.

Finally the impact of expectations on service achievement will be considered. O'Brien (1987; cited in Emerson, Caine, Bromley & Hatton, 1998) defined five indicators by which a service should be judged: physical community presence, support for an individual to make life choices, development of competence, enhancement of respect and participation in the community and social networks. As Remington (1997) notes effective communication skills are crucial to their
achievement. For example if an individual is asked questions or has low levels of self-competence, the likelihood of acquiescence will be increased and the realistic opportunity for choice is likely to be reduced. Others’ expectations and perceptions of self-competence are also likely to influence opportunity to participate in the community and social networks. Thurman (1997) has suggested that self-esteem is partially constructed in communication. Therefore communicative ability and others’ perception of this are likely to influence whether the individual obtains respect, both for the self and from others.

How can clinical psychologists deal with these issues?

Communication issues

The evidence suggests that one of the most obvious responsibilities of the clinical psychologist is to aim to tailor their communicative style to that of the person with a learning disability. Where communicative difficulties are anticipated, involvement of a speech and language therapist for an assessment is likely to be useful.

The clinical psychologist must also be aware of the possibility of acquiescence and should aim to phrase questions in such a way to minimise this, for example by asking open questions (Prosser & Bromley, 1998) and choosing either/or questions in preference to yes/no questions (Siegelman, 1981; cited in Prosser & Bromley, 1998). Additionally, clinical psychologists should be cautious of information obtained by others who may not have used recommended interviewing techniques.

The clinical psychologist should also be aware of the potential for influencing people with learning disabilities (Clare & Gudjonsson, 1993; cited in Clare & Gudjonsson, 1995), particularly those with low perceived self-competence (Gudjonsson & Lister, 1984; cited in Bull & Carson, 1995). Therefore, leading questions may be particularly hazardous when used with people with learning disabilities. Such influence would have consequences, for assessment/therapy, in that conclusions might be invalid.
Remington (1997) notes that it is the responsibility of the clinical psychologist to maintain positive interactions with persons with learning disabilities to facilitate development of communication, as behavioural theory would predict that positive reinforcement of communication will influence likelihood of the communicative behaviour being repeated. As discussed above, positive experiences of communication are also likely to impact on self-esteem for people with learning disabilities, particularly those who have experience of difficulty in their communications. Functional analysis of stimuli and reinforcers in the communication environment that influence individuals’ communication can also be undertaken by clinical psychologists. They can educate staff in behavioural principles that govern the likelihood of challenging behaviour as a form of communication.

Remington (1998) notes that clinical psychologists are concerned with the pragmatics of language, i.e. the interactions of an individual within his/her environment. Clinical psychologists are often involved in writing individual program plans (IPPs) for clients. This is an opportunity to take into account the communication needs of an individual in terms of opportunities to interact.

*Psychological issues*

Clinical psychologists are an expert source of information regarding the psychological impact of other’s expectations. The psychological analysis above of possible impacts of others expectations also highlights a number of issues about which the clinical psychologist has specialist knowledge. Education of other professionals, care staff and families may heighten awareness of impacts and through this, facilitate change in the communication environment. Clinical psychologists, with their teaching and consultative skills, may be well placed to address these issues with others.

McConkey et al. (1999) note that often, communicative difficulties are localized within an individual, rather than within the system. Systemic formulations of problems are an area of expertise of the clinical psychologist. Therefore they may
be well placed to address the expectations of others in the system and the impacts on individual’s self-esteem in order to optimise communication, using both research evidence available as discussed above, and information particular to the individual.

Further research

In the course of researching for this essay it has become apparent to the author that causal research in this area is sparse. Jussim (1986) notes the difficulty in delineating causal factors, however, clinical psychologists with their expertise in research skills, might be in a position to address this gap in knowledge.

Conclusion

This essay has attempted to explore the impact of a variety of expectancy factors on people with learning disabilities’ ability to communicate. This essay firstly involved examining how others’ expectations might influence their communicative behaviour towards people with learning disabilities, and secondly how this behaviour will impact on psychological well-being and communicative abilities. Links between research are tenuous due to the lack of longitudinal research, which may imply causal links and at times it has been necessary either to rely on anecdotal evidence, or hypothesise about links from other psychological knowledge.

Expectations are likely to have been founded either historically, or through experience of the communicative behaviour of people with learning disabilities. The way in which expectations interact with individuals with learning disabilities’ communication abilities is complex and this essay has only been able to postulate at causal factors. Historically the concept of others as contributing expectations and holding influence over a communicative exchange with a person with a learning disability has been a neglected topic. As has been shown, through realisation of factors that are external to people with learning disabilities it may be possible to optimise individual’s communicative abilities.
Both philosophy and research would advocate a systemic approach to communicative difficulties. That is, it is important to recognise the role each communicator has to play in making a communicative exchange a success. This shift in focus in intervention away from 'pathologising' the individual with learning disabilities is likely to produce better outcomes. Through a move towards locating the problem within the communication environment, greater awareness of the role others have in enhancing and optimising the communicative abilities of people with learning disabilities can be realised. This shift may also have an effect on people with learning disabilities' self-esteem and lead them to challenge the power imbalance which sometimes exists, which may lead them to acquiesce or comply with choices.

**References**


Donahue, M.L. (1997) Beliefs about listening in students with learning disabilities: “Is the speaker always right?” *Topics in Language Disorders*, 17, 41-61.


Child essay

April 2001

Year 2
Psychiatric classification is irrelevant to the understanding and treatment of mental health problems in childhood and adolescence. Discuss.

Introduction

Psychiatric classification is widely used in psychiatry. Its relevance to clinical psychologists' work with children and adolescents will be considered. Firstly, the history and description of the use of psychiatric classification is outlined in order to provide background information regarding intentional rationale of its use. The relevance and usefulness of the present system to the understanding, on the part of both psychologists and clients, and treatment of mental health problems in children and adolescents is discussed. Aside from whether a system is scientifically relevant, there is also the consideration of whether it is philosophically acceptable (Howard, 1985; cited in Sonuga-Barke, 1998). Therefore, both scientific evidence and ethical/philosophical points of view are considered. The impact of psychiatric classification on research and its interpretation are also considered, as research is fundamental to the understanding and appropriate application of treatment within the scientist-practitioner model and according to the maxim of evidence-based practice.

A history and description of psychiatric classification

History

Frances, Hirst & Pincus (1995) noted that historically people have naturally categorised mental illness. The discipline of psychiatry developed informal psychiatric classification in order to distinguish between different types of mentally ill and the healthy (Mack, Forman, Brown & Frances, 1994; cited in Sonuga-Barke, 1998). However, there was a need for development of formal classification systems to make diagnoses uniform, improve reliability (Sonuga-
Barke, 1998) and improve communication between professionals (Clark, Watson & Reynolds, 1995).

Current systems in use

There are currently two main systems of psychiatric classification; The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) and the International Classification of Diseases (ICD-10: World Health Organisation, 1992). Categories in the two systems are similar (Cantwell & Rutter, 1994) and statements made about one often apply equally to the other (Sonuga-Barke, 1998), although their course of development differs (Shepherd, 1994; cited in Sonuga-Barke, 1998). The classification system of the American Psychiatric Association in its Diagnostic and Statistical Manual (DSM-IV, American Psychiatric Association, 1994) is chosen for primary consideration in this essay as it is the most commonly studied (Sonuga-Barke, 1998).

American Psychiatric Association’s system (DSM)

The DSM-IV system of psychiatric classification (American Psychiatric Association, 1994) largely adopts a categorical approach to classification in that disorders are considered to be discrete entities, although it also includes a dimensional axis to code global assessment of functioning (Frances et al., 1995). A disorder is assumed to be characterised by clusters of symptoms. An individual must display some or all of the symptoms in order to meet the criteria for that disorder. As often individuals are not required to experience all symptoms to reach the threshold for categorisation within the disorder, there is variation in presentation of symptomatology within a category of disorder (American Psychiatric Association, 1994). Although the DSM-IV contains a separate section for disorders usually first diagnosed in infancy, childhood or adolescence, it notes that clinicians should also consider classifying individuals according to the categories in the adult sections.
Due to disagreement regarding aetiology, psychiatric classification is intended to be atheoretical (Rutter et al., 1969; cited in Cantwell & Rutter, 1994) and disorders are not classified according to cause (Clark, Watson & Reynolds, 1995), but instead are based on observable symptoms. However, Sonuga-Barke (1998) argues that the meta-theory of mental health problems implied by current psychiatric classification systems (DSM and ICD) is of a “traditional medical approach” (p. 120). Sonuga-Barke (1998) suggests that this “medical” model of mental illness carries assumptions; that mental illnesses are separate entities, that disorder is equivalent to dysfunction and that disorders apply to individuals rather than systems. Therefore, the pathology is thought to be located in an individual rather than his or her environment. The assumption of mental illness as a discrete entity that is dysfunctional will be examined in more detail in sections on validity and alternative approaches to classification. The impact of the assumption of a pathological individual is also considered later.

Relevance of psychiatric classification for understanding and treatment of mental health problems in childhood and adolescence

For psychiatric classification to be relevant for understanding it first needs to be reliable and valid. Reliability and validity will be considered before addressing the advantages and disadvantages of psychiatric classification for clients, clinical psychologists and research.

Reliability

The reliability of psychiatric classification systems refers to the extent to which two professionals agree in assigning an individual to a category, or test-retest reliability over time. Reliability is necessary if a classification system is to be a language between professionals: they must know that they are talking about the same thing.
Inter-professional reliability or test-retest reliability

There is some suggestion that inter-professional reliability in relation to childhood mental health disorders is problematic (Canter & Rutter, 1994). A reason for this might be that although there has been considerable effort to reduce inter-professional differences by specification of diagnostic criteria, which were not present in DSM until the third edition (Reid & Wise, 1995), the criteria specified in DSM-IV are not necessarily objective. For example, Frances et al., (1995) acknowledge that the concept of "clinically significant impairment or distress", used to allow division from the normal and pathological (American Psychiatric Association, 1991) will be interpreted subjectively. Diagnostic reliability can be improved by standardised interview procedures; superior reliability was obtained from lay interviewers using the Diagnostic Interview Schedule for Children (DISC) than clinician's diagnosis (Piacentini et al., 1993; cited in Jensen, Roper, Fisher, Piacentini, Canino, Richters et al., 1995). This suggests that formal assessment methods should be used to improve reliability. Reliability may also vary with disorder category. Jensen et al. (1995) found relatively higher reliability for depression (0.7), conduct disorder (0.71) and attention-deficit hyperactivity disorder (0.68) than oppositional defiant disorder (0.61) or anxiety disorder (0.50) when combined parent and child reports were used. It should be noted that Jensen et al.'s (1995) studies relate to DSM-III-R diagnostic categories, and may not be generalisable to DSM-IV, the version currently in use, as diagnostic criteria have altered (Reid & Wise, 1995).

Inter-rater reliability of the "behavioural and emotional disorders with onset usually in childhood and adolescence" category in the research version of ICD-10 was 0.94 (Sartorius, Ustun, Korten, Cooper & van Drimmelen, 1995), substantially higher than reliabilities reported by Jensen et al. (1995) on the DSM-III-R. This suggests that psychiatric classification systems can be reliable. The findings may reflect either an actual difference in reliability between the two classification systems, or methodological factors. For example, in making a diagnosis, Sartorius et al.'s (1995) clinicians used information obtained from a variety of sources, whereas Jensen et al. (1995) used only the DISC. Also, in Sartorius et al.'s (1995) study, assessments were either conducted jointly, or
presented as a case conference, whereas in Jensen et al.'s (1995) study, assessments were conducted independently and over two to three week test-retest intervals. Therefore, reliability of a diagnostic category is inextricably linked to methods used in assessment.

Reliability of informants

Even assuming that good inter-professional reliability exists, there are differences in the process of obtaining information used to classify an individual (Cantwell, 1996). In work with children and adolescents, it may be necessary to obtain assessment information from a number of individuals, including members of the family, teachers and the child him/herself. This leads to differences in perspectives. Reliability between different informants is often low, for example, Kolk & Kazdin (1993; cited in Target & Fonagy, 1996) found correlations of only between 0.27 between parent and child report and only 0.41 between parent and teacher. Cultural norms may also affect inter-rater reliability where raters are from different cultures (Sonuga-Barke, Minchoa, Taylor & Sandberg, 1993); however this research did not examine reliability of psychiatric classification criteria.

Reliability for time of symptom onset may be particularly problematic. For example, Angold, Erkanli, Costello & Rutter (1996) found that both children and parents reliability in dating onsets of symptoms were poor over periods of more than a few months, which will affect reliability of psychiatric classification when criteria specify a duration of symptoms.

Validity

In order for psychologists to use an instrument in clinical practice, the validity of that instrument should have been demonstrated. A classification that is not valid may lead to misunderstanding of mental health problems in childhood and adolescence.
Carr (1999) notes that validity of categories depends on the degree to which they share common risk, precipitating, maintaining and ameliorating factors and the stability of the disorder over time.

There is very little evidence that mental health disorder categories in children and adolescents share common aetiology (Carr, 1999). Symptoms shown by a child that meet the criteria for a single psychiatric category may have differing precipitating factors. For example, enuresis or encopresis may be due to a range of factors that might include infection, which requires medication, or child sexual abuse, which would require initiation of child protection procedures. Research has also revealed that similar causal factors can manifest itself in different psychiatric categories. For example, children with depressed parents are at risk for differing psychiatric problems (Rutter, 1989, 1990; cited in Cantwell & Rutter, 1994), although it could be argued that depression in parents may manifest differently in parenting styles and may have different impacts on a child’s environment, thus representing different precipitating factors. Child sexual abuse can also lead to a variety of, or no negative psychological reactions (Rind, Tromovitch & Bauserman, 1998), although this study did not examine psychiatric disorder classifications.

It has been suggested that symptomatology can also change with the age of a child, in that as he or she grows older, they may meet different diagnostic criteria. For example, Cantwell & Baker (1989; cited in Target & Roth, 1996) found that out of nine children with separation anxiety disorder, four years later only one still met criteria for diagnosis, but four children met criteria for other diagnoses. However, Canter & Rutter (1994) stated that several disorders are consistent over time; they cited Harrington et al.’s (1990) research that found depressive disorders in childhood predicted risk of depressive disorder in adulthood. Stability over time appears to vary between disorders (Target & Fonagy, 1996), but also may be affected by methodology used. Therefore, some disorder categories may demonstrate validity in the sense that they show relative stability over time, while others may be relatively unstable.
Validation of diagnostic criteria for DSM-IV (a field trial) categories of oppositional defiant disorder and conduct disorder in children and adolescents was performed by administering measures of impairment to children and ascertaining the optimal diagnostic threshold that identified impaired children (Lahey, Applegate, Barkley, Garfinkel, McBurnett, Kerdyk et al., 1994). This approach is useful for demonstrating that categories relate to real-life impairment. Unfortunately, this research does not test the validity of the categories of disorder themselves.

Co-morbidity: a threat to evidence for discrete entities

A further threat to the categorical construct is high rates of co-morbidity in mental health problems of childhood and adolescence, which are far above chance levels that might be statistically expected (e.g. Caron & Rutter, 1991). DSM-IV includes exclusionary rules in some diagnostic categories that other diagnoses take precedence (for example, oppositional defiant disorder would not be diagnosed if a child also met criteria for conduct disorder; Reid & Wise, 1995), but recognises that it is sometimes necessary to diagnose under more than one category. Co-morbidity questions the validity of categories of mental health problems as the overlap observed between the disorders renders the discreteness of them questionable.

Cole, Truglio & Peeke (1997) found that factor analyses of anxious and depressive symptoms in children yielded only a unitary anxiety-depressive factor for younger children (third grade), that suggests that separate categories for anxiety and depression in younger children may be of questionable validity.

Validity of a categorical approach

The validity of a categorical construct will be addressed in this section, although points made here are also relevant to a later section on the alternative dimensional approach to psychiatric classification.
The convergence of symptoms in different disorders has led some researchers to argue for continuums. Autism and Asperger's syndrome are considered by some to represent two distinct syndromes on the basis that language delay is not present in Asperger's syndrome, but is present in autism (they exist as two separate categories in DSM-IV). However, it has been argued that the two syndromes are in fact represent different points on the same spectrum as they differ in severity rather than conceptually (e.g. Wing, 1991).

The validity of a categorical approach to childhood and adolescent mental health problems also rests on its ability to differentiate the normal from the abnormal (Widiger & Clark, 2000), as is implied in the "theory" behind psychiatric classification (Sonuga-Barke, 1998). This begs the question, "What is normal?" In diagnoses of mental retardation, the cut-off point for mental retardation is derived from statistical properties of intelligence for the normal population. However, other category criteria are more arbitrary (Widiger & Clark, 2000).

Although the American Psychiatric Association periodically revise their system of psychiatric classification according to research, a categorical approach is retained. Caron & Rutter (1991) argued that research is methodologically biased to find in favour of categories, rather than continuums. Findings of difference between groups of individuals are taken to provide evidence for the categorical approach; however, such a result could reflect different ends of a continuum (Caron & Rutter, 1991).

In summary, research suggests that psychiatric classification can achieve acceptable levels of reliability, which makes the system a useful tool; however validity of categories is more questionable and may render the current system in need of further research to address the validity of disorder constructs.

**Advantages and disadvantages of diagnosis for clients**

Given concerns about reliability and validity, clinical psychologists may be reluctant to present psychiatric diagnoses to clients as "reality". This issue aside,
the effect of a diagnostic classification or label on a person is a topical debate. There may be potential benefits and costs in receiving a diagnosis.

Access to resources

Services are often described in terms of the population that they serve and the individuals who qualify for access. Psychiatric classification can provide a route to accessing services and receiving extra support (Cantwell & Rutter, 1994). For example, an individual diagnosed with "mental retardation" in DSM-IV will have access to special education. In clinical experience, the prospect of obtaining extra help is a factor that motivates parents to obtain a diagnosis for their child. Diagnosis may also allow access to voluntary services and support groups (Searight & McLaren, 1998) which may play an additional role in treatment.

The problem with using psychiatric classification to guide resource allocation is that this would entail making decisions mostly upon symptomatology, with only minor consideration of impact of the problem on a child’s development. Recently the Department of Health (1999; cited in Pilgrim, 2000, p.305) recommended, “decision making based on estimates of need, risk and vulnerability, not diagnosis or legal status”, so it is likely that psychiatric classification may not be the only factor determining access to resources. For example, psychiatric classification is not relevant to preventative work with children and their families who do not yet meet, but who are at risk in the future, for meeting diagnostic criteria. Resource allocation for these families may need to be decided on a different basis.

The effect of a diagnostic label

A qualitative study that examined parents reactions to a diagnosis of autism found that diagnoses helped understanding and also helped relieve guilt that their child’s behaviour was their fault (Midence & O’Neill, 1999). Therefore, psychiatric classification may be important for parents’ and families’ understanding. However, as the study sample had received a diagnosis, it is possible that the people in the study had actually wanted a diagnosis. This is not
always the case and parents who do not want diagnoses may have different views, a question that Midence & O’Neill did not address.

Psychiatric classification may also be unhelpful for clients and their families. Although the DSM system allows categorisation of systemic contributions on axis IV (psychosocial and environmental problems), the psychiatric classification is still applied to the individual, and not the system within which the problem may have been created. Rather than being located in an individual, it has been suggested that mental health problems in children and adolescents arise out of a complex interaction between characteristics of the child, the parents, and the relationships between them, contextual and situational factors, including those at the level of the community (Carr, 1999). In this respect, it could be argued that psychiatric classification placed upon a child may shift responsibility wholly onto the child and may affect the way parents and others in the system understand the problem. In cases where a child has suffered abuse from a parent, it may also be considered unethical to attach a label of disorder to them. This could be construed as further mechanism to make the child feel isolated and different. Therefore, psychiatric diagnosis may falsely allow understanding that the problem is in one individual and not the system.

Cantwell & Rutter (1994; p.17) stated that “diagnoses apply to disorders and not to people”; however, in the respect that psychiatric classification is applied to a child rather than a system, its appropriateness in terms of a global understanding of mental health has been questioned (Sonuga-Barke, 1998). There may be wider consequences of pathologising and locating a problem within an individual. Mental health diagnoses can be stigmatising (Pilgrim, 2000; Carr, 1999). From studies in cognitive psychology it is known that experience is interpreted in the light of how people already view the world. Therefore, once given a diagnosis, an individual may be perceived by others in accordance with the label.

Psychiatric classification has also been accused of biasing understanding in that it “medicalises” the normal, for example in the case of attention deficit disorder (ADHD) (Searight & McLaren, 1998).
There may be pressure on clinical psychologists to provide a psychiatric diagnosis from teachers and parents (Searight & McLaren, 1998). Consideration of the view of clients is difficult when working with children, as there may be differing views within a family. There may be questions about a child’s ability to consent to a diagnosis. A solution might be to allow the decision to request or decline a psychiatric diagnosis to rest with parents; however the disadvantage of this is that views of children and adolescents, particularly of children are difficult to consider, as they may not be aware of implications. It may also allow for the child to be labelled with the problem, which may not be an appropriate view to promote.

**Usefulness of psychiatric classification for clinical psychologists**

The reliability and validity of psychiatric classification is somewhat separate from its usefulness to clinical psychologists. That is, a system might be “correct” in the sense that it represented a true reality, it would still not necessarily be relevant in the sense that it may not provide the clinical psychologist with useful data.

**Understanding and assessment**

Psychiatric classification may be useful for communication between clinical psychologists (Carr, 1999) in the sense that it represents a uniform language. In this respect it can also be useful in legal work when communicating about the nature of a client’s difficulties (Professional Affairs Board, 1999). Psychiatric classification may guide the focus of an assessment and provide a starting point for intervention; however, it may also shift a clinician’s focus away from other avenues of inquiry by pre-assigning the area of interest.

Sonuga-Barke (1998; p, 121) said of the medical model’s assumption of dysfunction (inherent in psychiatric classification), “Social impairment is automatically assumed to result from an inability to respond to a particular environment adaptively, rather than a lack of motivation to do so”. Thereby, the individual may be viewed as not being able to do anything about his or her
disorder. This does not promote understanding of individuals' strengths and coping strategies (Sonuga-Barke, 1998). Thus, by accepting psychiatric classification we may blind ourselves as clinicians to the individual's strengths. In this respect psychiatric classification does not guide assessment of strengths, only areas of deficiency.

Psychiatric classification groups people on the basis of symptoms, but depending on the individual, there may be more important factors than symptomatology in understanding of the problem (Target & Fonagy, 1996). Target & Fonagy (1996) advocate that clinical psychologists should take a global view of the impact of problems on social, psychological and educational areas of development. For example, in clinical work with children and adolescents the quality of their relationships with family and friends, and whether or not they are truant from school, or at risk of harm to self or others may be more relevant factors than diagnosis.

Treatment

Psychiatric classification may not promote an appropriate model of treatment. According to social constructionist theory, one foundation of modern systemic approaches, problems are constructed in society by the way language is used (Simblett, 1996). From this theoretical stance, it may be considered anti-therapeutic to provide a diagnosis in a language of deficit rather than strength. A language of deficit might inhibit clients' abilities to see exceptions to their problems, which can be an important part of therapy.

Strengths and protective factors form an important part of a clinical psychologist's formulation and often will form a basis for psychological intervention. Other than coding circumstances on axis IV (psychosocial and environmental problems), psychiatric classification does not provide information regarding complex system interactions, which would guide treatment with families. Psychiatric classification also does not describe risk and maintaining factors for the problem, which also guide treatment approaches. Consequently,
the clinical psychologist is likely to need to use psychological theories in order to
guide their work with relationships between individuals.

A further factor that renders psychiatric classification irrelevant for treatment is
high levels of co-morbidity (Caron & Rutter, 1991). When an individual meets
the criteria for two or more categories of disorder, psychiatric classification does
not guide the clinician in selection of which treatment to use, or which disorder to
treat first.

Due to its categorical approach, psychiatric classification only allows
consideration of levels of a disorder above a certain threshold. As discussed, there
is evidence that mental health problems in childhood and adolescence exist on a
continuum. Indeed, clinical psychologists work is sometimes with families of
children do not meet criteria for disorder and whose problems are manifest at a
sub-psychiatric category level. Consequently, psychiatric classification is
irrelevant for this aspect of a clinical psychologist’s work.

Relevance to research

As well as influencing clinical psychologists’ and clients’ understanding of
mental health problems, psychiatric classification may impact upon research
seeking to acquire understanding of mental health problems of children and
adolescents.

Understanding

Psychiatric classification is useful in that it has allowed progress in
epidemiological research (Regier, Kaelber, Rae, Farmer, Knauper, Kessler &
Norquist, 1998). It also provides a basis for research into a particular disorder in
that it enables grouping of individuals for research into risk and precipitating
factors for the disorder (Carr, 1999). It also allows research into the course of the
disorder over time (Carr, 1999). However, psychiatric classification may also
mislead research endeavours. If a psychiatric classification system has poor
reliability and validity, research on its basis will be flawed (Cantwell, 1996).
Research may be affected by the nature of the categorical system. For example, if a classification system separates two disorders that may be in fact one on a continuum, for example, as is suggested in the case of autism and Asperger's syndrome, research into the separate disorders might not be representative of the population as a whole. As well as similarities in individuals between categories that might be better researched together, there are differences between individuals within a category (Clark et al., 1995). When heterogeneous individuals are grouped as one, this may lead to loss of information about individual differences and may bias understanding (Mirowsky & Ross, 1989; cited in Sonuga-Barke, 1998).

Treatment

Psychiatric classification provides a basis for research into potential treatments for mental health problems in childhood and adolescence. As Target & Fonagy (1996) note, co-morbidity complicates this research. If pure disorders are researched, the research literature may be of limited use in selecting appropriate treatments for clients with co-morbidity. If co-morbidity is high, as is particularly the case in children and adolescents (Caron & Rutter, 1991) clinical psychologists will have a frequent problem of a lack of evidence-based treatment for co-morbid problems.

Although psychiatric classification allows grouping of individuals for the purposes of research, it may also hinder research, as it groups individuals on the basis of symptoms and not aetiology. This is a particular problem in children and adolescents as symptoms do not necessarily correspond to a single cause. Therefore, individuals who have taken part in a controlled trial to establish, or compare the efficaciousness of particular treatments may have differing causes of their problem. Consequently, a reasonably standardised treatment may either benefit or not benefit individuals, possibly depending on the specific risk or precipitating factors for the problem. In trials individuals' differences may be masked by the group result, on which the efficaciousness is established (Mirowsky & Ross, 1989; cited in Sonuga-Barke, 1998). Despite this problem,
there may not be a better way of conducting comparisons of treatment effectiveness.

This has highlighted a circular problem. Without a classification system that represents "reality" in the status of mental health problems in childhood and adolescence, there will be inherent problems in researching efficacy of treatment for particular disorders. However, without a way of classifying problems, research regarding potential treatments for groups of individuals that may be generalisable to other groups of individuals is problematic.

_Psychiatric classification as a measure of outcome_

Should research outcome be based on whether individuals continue, or discontinue to meet criteria for a particular category, outcome data would mostly involve symptom improvement. Although symptom improvement is relevant, other outcome data may also be important, for example measures of family interaction (Target & Fonagy, 1996) and may need to be included in evaluation studies. If categories are unreliable, this might affect outcome research if measures are taken by different professionals. That is, if an individual no longer met diagnostic criteria after a treatment trial, if reliability is low, it would be difficult to ascertain whether this was due to treatment effectiveness, or to inter-rater variability. Extra training and use of standardised assessment instruments may help.

_Alt ernatives to current system of psychiatric classification_

_Dimensional system_

A lack of absolute symptom specificity in categories of psychiatric classification has lead some authors to argue for a dimensional system (e.g. Widiger & Clark, 2000). Widiger & Clark (2000) advocate a dimensional model of classification that represents mental health problems on dimensions of symptoms that cluster together. However, Widiger & Clark's proposed model is not entirely
dimensional in that they suggest that clusters that co-occur frequently, and for which a cause is found, would form the basis for a category.

Widiger & Clark's (2000) proposal considers the broader issue of psychiatric diagnosis and not specifically as it relates to children. Achenbach (1991; cited by Carr, 1999), provided evidence for a dimensional model of children's mental health problems in that analysis of behavioural reasons for referral existed as extremes on two dimensions – internalising or externalising behaviour problems. There is evidence that some disorders exist on continuums, for example, attention deficit hyperactivity disorder, which has lead to arguments in favour of a dimensional approach. A dimensional system would help reduce the large number of categories currently present (Clark et al., 1995), depending on the number of dimensions used, and may better represent the data. However, other disorders, for example, dyslexia, might be more suited to a categorical approach (Carr, 1999). Therefore, research might need to continue to differentiate whether disorders are qualitatively or quantitatively different from normality.

An advantage to a dimensional system of classification for clients would be that such a model would assume quantitative and not qualitative differences from normality (Sonuga-Barke, 1998), which might promote a less stigmatising model of mental health problems. However, even with a dimensional approach, stigma may become attached to individuals any imposed cut-off point.

A disadvantage to dimensional systems is that they do not easily conceptualise rarer problems or those with only one symptom (Carr, 1999). Epidemiological research would be problematic as the categorical model lends itself well to group comparisons. Also it would be difficult to group potential research participants for the purposes of treatment efficacy trials if individuals were described on different dimensions. Sonuga-Barke (1998) stated that although the dimensional approach to psychiatric classification may be better grounded in the scientific data, it may inhibit links between research and practice.
Psychological formulation

Psychological formulation is grounded in theories based on psychological research. Consequently, it allows understanding of risk and precipitating factors, as well as current factors that maintain the problem (Carr, 1999). It does illustrate potential avenues for treatment in consideration of strengths and protective factors. Furthermore, psychological formulation allows understanding of the system’s (e.g. parents’, teachers’ and friends’) role, which is particularly important, given that mental health problems of children often reflect problems in a system (Carr, 1999). Even those involved in the development of the DSM-IV classification system advocate that clinicians might consider exceptions to a diagnosis (Cantwell & Rutter, 1994). This is analogous to the therapeutic stance taken by narrative therapists, who focus on exceptions to the “problem story” (e.g. Monk, 1997), and of systemic therapists, who attend to strengths (Carr, 1999), as a therapeutic way forward. As psychological formulation considers many aspects of a child and their family, it is likely to be less stigmatising. Psychological formulation also allows continuity (Pilgrim, 2000) from the normal to the clinically significant degree of a problem, which is important where preventative work, or work at sub-threshold levels of a problem is to be conducted.

Unfortunately, psychological formulation is problematic in that each formulation is individualised and may vary between professionals for the same individual, not only with respect to detail, but also to theoretical orientation. Consequently, inter-rater reliability is likely to be low. Also, without a consensus in theory and individual formulation, validity would be constantly questioned by clinicians of other theoretical orientations. The current method of psychiatric classification is likely to show better reliability and validity. It would also be difficult to group children on the basis of individual psychological formulations. Therefore, research may be confined to single case studies. Consequently, although there are inherent problems, psychiatric classification may continue to be relevant for research due to the need for some way of grouping individuals and due to its better reliability and validity than psychological formulation. This need might be served by a dimensional system instead.


Conclusion

The reliability and validity of psychiatric classification are likely to be affected by methodological factors employed in the research. Studies that address questions of reliability and validity will need to be carefully examined for methods used.

There may be benefits in psychiatric classification for clients, such as access to resources and understanding.

Psychiatric classification allows a clinical psychologist to understand the group of symptoms presented; however diagnosis does not describe risk, precipitating, maintaining or ameliorating factors and therefore will not guide psychological understanding. The clinical psychologist needs to supplement diagnosis with individual formulation. Clinical psychologists should select treatment on the basis of evidence that demonstrates its efficaciousness; however, high levels of co-morbidity complicates this process in children and adolescents. Where research is conducted on “pure” disorders, the literature will not guide treatment with the significant number of children who display co-morbidity.

Psychiatric classification has provided a basis for epidemiological research; however there are serious concerns as to whether the present categorical system best represents mental health problems in children and adolescents; it may be that some disorders would be better classified within a dimensional system. In future it will be necessary to balance the need for a system on which to base research with the need to revise classification systems in order that they best represent research data.

References


Specialist essay

June 2001

Year 2
What are the implications of the Self-Regulatory Executive Function (S-REF) model for the practice of cognitive therapy?

Introduction

Cognitive therapy as proposed by Beck, Rush, Shaw & Emery (1979) and Beck, Emery & Greenberg (1985) has been established as an effective treatment for many mental health problems, and is often the treatment of choice (Roth & Fonagy, 1996). The basis for cognitive therapy, the cognitive model, has largely remained unchanged since Beck wrote about it in the 1970s, although it has been adapted and elaborated upon for a variety of mental health problems, for example, Clark’s, (1986) model of panic disorder. Alongside this development in cognitive therapy, cognitive psychology has developed further understanding of links between cognitions and emotions, largely using experimental paradigms. A criticism of cognitive therapy is its failure to accommodate and adapt to findings from experimental cognitive psychology. Recently, new theories have been developed arising out of the cognitive science literature, one of which is Wells & Matthews’ (1994) self-regulatory executive function model (S-REF).

This essay will describe and outline limitations of the Beckian cognitive model and implications for therapy. Wells & Matthews’ (1994) S-REF model will be described and its contribution to understanding of mental health problems will be critically evaluated in the light of recent literature. Specific focus will be given to research that addresses aspects of the model that have important implications for clinical practice, as evaluating all of the evidence on which the model is based would be beyond the scope of this essay. Also, as a wide body of evidence is supportive of Beck’s cognitive model, this essay will not attempt to critically evaluate Beck’s model in detail; rather, the S-REF model will be considered in terms of its contributions to the practice of cognitive therapy over and above those of the Beckian model. Particular reference will be made to differing theoretical stances between the two models. Implications for therapeutic intervention will be considered not only in terms of theoretical coherence, and differences from traditional cognitive therapy, but also pragmatics, an important
factor in the practice of clinical psychology. Examination of the S-REF model in terms of its contribution to understanding and therapeutic practice will be conducted separately.

**Traditional cognitive model**

*Beck et al. (1979) cognitive model*

Beck et al.’s (1979) cognitive model proposed that through early experience, schemas are formed about the self, others and the world. Schemas are thought to be represented as declarative statements, such as “I am unlovable”, “Others are untrustworthy” or “The world is a bad place”. People who are vulnerable to emotional problems are likely to have negative schemas. These schemas are thought to be dormant until a negative life event occurs that activates underlying schemas. Once schemas are activated, events are interpreted in the light of the schema. Consequently, information processing is biased through process of selective attention to schema-congruent information. During this negatively biased processing of events, the individual experiences negative automatic thoughts about him/herself, events and the future that then lead to negative emotion and influence how an individual behaves. Thoughts in emotional disorder are thought to be absolute and fixed. The negative automatic thoughts are suggested to maintain the emotional disorder.

Practice of cognitive therapy according to the cognitive model would involve modification of thought content at the level of negative automatic thoughts. In therapy the negative bias in information processing and the tendency to think in terms of absolutes and not degrees is corrected through the use of cognitive techniques and behavioural experiments. Treatment would initially target the negative automatic thoughts, but would also address schemas in order to prevent relapse.

Beck et al.’s (1979) theory is thought to be limited by its lack of description of the process underlying the affect of core and intermediate beliefs on processing of
current events and is not thought to detail sufficiently the mechanism for change in cognitive therapy (Wells, 2000).

**Self-regulatory executive function model**

*Description of S-REF model*

Wells & Matthews (1994) suggest that events are processed by three interacting cognitive levels: self-beliefs, a conscious on-line level and an automatic level. The self-belief level could be likened to schemas in traditional cognitive therapy and stores knowledge about the self and prior experience. Self-knowledge comprises both declarative beliefs and procedural knowledge (plans for processing). The automatic level conducts unconscious processing of external, and internal - cognitive (e.g. cognitions) or physiological state information (for example, heartbeat or tension in muscles). The on-line level is responsible for conscious processing of information received from the two other levels. It interprets information from the automatic level and controls action based on information from the self-belief level.

Wells (2000) suggests that there are different processing configurations of these three levels, but describes and implicates only one in emotional disorders, the S-REF configuration. The S-REF is thought to serve a self-regulatory function. In this sense, it is said to provide a homeostatic function, activated under conditions of adversity to return the self to a desired state. The S-REF is suggested to initiate when threat is detected, internally or externally at the automatic level, in order to reduce the discrepancy between desired and current experienced states of self. Consequently, in S-REF configuration, external and internal events are appraised and activity aimed at achieving the desired goal is executed by the on-line, controlled processing level, guided by information from the self-belief level to guide coping with the threat stimuli. On-line monitoring continues until the goal is reached through re-appraisal of the threat, or through use of effective coping strategies, when S-REF activity terminates. Other demands on attention will temporarily divert processing out of S-REF mode (distraction); however, S-REF mode will initiate again with any perceived threat.
S-REF activity occurs in two modes (perspectives individuals take), object (where appraisals are taken as fact), which is the usual mode of operation, or meta-cognitive, in which individuals are capable of evaluating their thoughts and experiences (i.e. they are events and are not necessarily taken as fact). In meta-cognitive mode, processing capacity is directed towards detached evaluation of cognitive and internal events. Wells (2000) suggests that individuals normally fluctuate between the two modes of processing, as both can be adaptive in certain situations (for example, the object mode is useful to escape real threat). Mode of processing can influence emotion. For example, in object mode, feelings of anxiety are taken as representative of reality, whereas in meta-cognitive mode, evaluation of the reality of the threat can occur and lead to re-appraisal.

Meta-cognitive knowledge in the form of declarative beliefs and procedural knowledge guide processing and coping strategies. These may predispose an individual to use a certain coping strategy or may alert an individual to particular internal or external stimuli (Wells, 2000). For example, an individual may believe that worry is effective way of dealing with anxiety, or that they must be hyper-vigilant to bodily sensations or something bad will happen, plans which would be stored at the procedural and declarative self-belief level and would be executed by on-line processing.

Depending on the outcome (affected by meta-cognitive plan for processing and coping strategies), self-beliefs may either be maintained, or modified. For example, the meta-cognitive plan “I should avoid everything that makes me feel anxiety” would lead to the use of an avoidance coping strategy. Consequently, the interpretation of the anxiety-provoking stimuli as threatening is likely to be strengthened rather than modified, and a threat appraisal of the stimuli is likely to occur again in the future. Other meta-cognitions and coping strategies would be more likely to lead to re-appraisal of the threat value of the stimuli. The mode of processing of the S-REF will affect whether the threat appraisal is modified: object mode will lead to threat appraisal being taken as fact, which will not be questioned; meta-cognitive mode will lead to questioning of the threat appraisal.
and possible modification. S-REF will be re-activated in response to stimuli if modification at the self-belief level does not occur.

Emotional disorder is thought to occur in response to anticipated or perceived actual failure to meet the self-regulatory goal (Wells, 2000). This may be due to the fact that the goal was unrealistic (as can be the case when people use emotional states as a regulator of whether a goal has been met, which can cause problems when desired feeling states are unobtainable, or if a person has a very low tolerance of negative emotional states). Alternatively action taken as a coping mechanism to reach the desired self-state goal was ineffective (this would be due to the nature of self-beliefs), or negative appraisal of self-state, such that the discrepancy between desired and current self-state is not perceived to have reduced, or due to external constraints.

Emotional disorder is maintained by the fact that S-REF processing is perseverative as the individual will continue to monitor for personally relevant threat stimuli (Wells, 2000), such that the individual continues to attempt to reach the goal using the same processing configuration, but is not effective. Emotion then affects processing in S-REF by biasing the information retrieved from the self-belief level. S-REF affects automatic processing too – heightens attention for threat-relevant stimuli. As on-line processing is limited, if maladaptive plans for coping are executed and perseverated, attentional capacity for modifying self-beliefs or instigating the attentionally demanding strategy of problem-focused coping will be limited.

S-REF model compared with traditional cognitive model and new developments of the cognitive model in terms of their contribution to understanding emotional disorder

The S-REF model specifies process, and sees cognition as dynamic process with parts of the system having reciprocal affects on the others. This is different from the Beckian model, which makes cause-effect predictions about the role of cognitions in emotional disorder. Another main difference between the traditional cognitive model and S-REF model is in the role of procedural self-knowledge and
resultant processing styles implicated in contributing to maintenance of disorder. The advantage over the cognitive model is that S-REF states how self-knowledge might influence processing routines, a link that was not made by Beck in discussion of how schemas or self-beliefs affect processing.

The S-REF and specific models of disorders developed on the basis of the Beckian model are also similar in some ways. Recent attempts to theorise specific models for specific disorders are based on the S-REF model, for example, in the recognition of the role of meta-cognitions (in GAD) (Wells, 1997) and the role of self-focussed processing (in social phobia) (Clark and Wells, 1995; cited in Wells, 1997). Recent developments in cognitive therapy also acknowledge the role of behavioural coping strategies in the maintenance of beliefs, which is like Salkovskis’s (1996) description of safety-behaviours, which are said to be coping strategies employed in a situation that an individual believes prevents the catastrophic danger appraisal in the situation from occurring, but that actually maintain the problem by preventing disconfirmation of the appraisal. In the S-REF model these are specified as part of the self-regulatory plan, one strategy to achieve the desired self-state would be to avoid the anxiety provoking stimulus, thereby preventing re-appraisal of it and change at the self-belief level.

A problem with the traditional cognitive model is that it does not explain the observed incongruence between clients knowing something rationally and knowing it emotionally. S-REF model recognises the impact of emotions on processing, highlighted in experimental cognitive work (reviewed by Wells & Matthews, 1994), which is not specified by Beck’s model. S-REF addresses this issue with its explanation of the role of feelings and internal events in guiding information processing and cognitions. For example, clients with OCD may check until it “feels right”.

**Evaluation of evidence for S-REF model**

Evidence supportive of the S-REF model that is also supportive of the cognitive model will not be reviewed here. Instead, evidence that is of further relevance to the validity of the S-REF model, or evidence that distinguishes between the
cognitive and S-REF model will be discussed. The similarities between self-beliefs and schemas have already been discussed; however the difference between the models is that S-REF specifies that self-beliefs contain procedural knowledge (processing plans) in addition to the declarative knowledge specified by the traditional cognitive model (Beck et al., 1979). Most clinically relevant is the proposed role of meta-cognitions and their link to processing strategies used, and degree of self-focus in processing in maintenance of emotional disorder.

A key distinguishing feature between the traditional cognitive model and S-REF is the nature of cognitions. The traditional model states that it is the thought content which is the causal factor in emotional disorders and predicts content specificity in disorders (Beck et al., 1987; cited in Wells & Butler, 1997). Advances of the cognitive model have recognised the role of meta-cognitions, but S-REF model extends this to state that meta-cognitions and resultant processing strategies determine emotion. This has implications for practice in whether cognitions or meta-cognitions should be targeted.

_Cognitions versus meta-cognitions_

Firstly, evidence suggests that content of cognitions distinguish between some different disorders. For example, in panic disorder individuals are more likely to misinterpret bodily sensations than clients with social phobia or controls (McNally & Foa, 1987; cited in Clark, 1997). Also, in health anxiety individuals tend to misinterpret physiological experiences as signs of illness more than clients with other anxiety disorders (Salkovskis, 1990; cited in Salkovskis & Bass, 1997). These cognitions are hypothesised to cause and maintain these disorders. In contrast, in OCD there is evidence that thought content does not differ from those without OCD (Salkovskis & Harrison, 1984; cited in Amir et al., 1997); however, the meta-cognition that if we think a thought, it may come true as an event is associated with emotional distress (Rachman, Thordarson, Shafran & Woody, 1995). There is also evidence that meta-cognitive appraisal of obsessional thoughts predicts emotion (Purdon, 2001).
Wells suggests that meta-cognitions and meta-cognitive plans are responsible for maintenance of emotional problems. Therefore, it follows that meta-cognitions should relate to processing style (meta-cognitive plan) and to negative emotion.

**Meta-cognitions in disorders and link to emotions**

S-REF model predicts that individuals will hold meta-cognitions about the usefulness or harm of coping strategies. Therefore, research has attempted to address whether individuals hold negative or positive beliefs about strategies for coping with thoughts.

Papagorgiou & Wells (in press; cited in Papageorgiou & Wells, 2001) found that people with depression held positive beliefs about rumination, although the citing authors do not state whether this was in comparison to controls, or another psychiatric sample. Also, in GAD, negative meta-cognitions about worry were shown to predict GAD (Nassif, 1999; cited in Wells & Carter, 2001). Wells & Carter (submitted; cited in Wells, 1997) found that even controlling for cognitive content and frequency of worries, the meta-cognitions about worry predicted the degree of emotional problem.

**Link between thought control strategies and emotions**

The S-REF model also predicts that the meta-cognitive plan will lead to emotional problems. Evidence from a non-clinical sample suggests that thought control strategies of worry and punishing oneself for thoughts is associated with emotional problems and that social control (asking others if they experience thoughts also), distraction and re-appraisal of thoughts were not associated with negative emotion experienced (Wells & Davies, 1994). Papageorgiou & Wells (2001) found that rumination was associated with depressive thinking in students and that this was stable over a 6-week period. Studies have also shown that clinical populations use more of certain thought control strategies and that a link exists between some thought control strategies and emotions in clinical populations. For example, Warda & Bryant (1998; cited in Wells, 2000) found that people with acute stress disorder (ASD) following RTAs used more punishment and worry than victims without ASD and that use of these strategies
were associated with emotional distress. Amir, Cashman & Foa (1997) found that people with OCD used more of the thought control strategies of worry, re-appraisal, social control and particularly punishment than controls. The only thought control strategy on which the groups did not differ was distraction. Morrison & Wells's (2000) showed that people with schizophrenia used more worry and punishment and less distraction than a control group (comprised of health service staff and students). All of these findings should be interpreted with caution, as controls were a non-clinical sample. It is possible that if individuals have more distressing thoughts, they will use strategies more often to deal with them. Just because a style of coping is prevalent in emotional disorders, for example, rumination in depression, it does not mean that it is necessarily implicated in causing or maintaining the emotional disorder. Findings could easily reflect a by-product of the nature of the disorder rather than a causal or maintaining factor. If an individual experiences more symptoms, it is likely that they will use more thought control strategies. Although, Wells & Carter (in press; cited in Wells 1997) did find that meta-cognitive beliefs predicted distress in clients with GAD, even when worry content and frequency was controlled for, suggesting that meta-cognitions do have a causal role.

Other evidence supportive of the proposed maintaining role of thought control strategies in emotional disorder comes from longitudinal studies showing the predictive value of coping strategies in terms of recovery. Reynolds & Wells (1999) who showed that compared to a non-recovered sample of people with PTSD or depression, at time of recovery the recovered sample used distraction more and worry less. Use of re-appraisal was associated with recovery. When use of other thought control techniques was controlled for, the use of distraction negatively predicted depression (i.e. indicating that distraction is a useful strategy). Also, punishment was positively associated, and reappraisal was negatively associated with degree of depression; however these findings still may not implicate a causal role of thought control strategy, but instead just suggest that a symptom of depression – tendency to punish oneself – is decreasing with the other symptoms.
The effects of experimentally induced rumination were shown by Lyubomirsky & Nolen-Hoeksema's (1993) who found dysphoric students who had been instructed to ruminate were less willing to engage in activities than dysphoric students who had not been ruminating, even though the groups did not differ in terms of their perceived enjoyment of the activity. Although this did not explicitly test the hypotheses of the connection between thought control and mood, it does demonstrate the behavioural impact of ruminating and one could imagine that this may be mediated by its effect on mood. Deleterious effects have also been demonstrated following induction of worry in a non-clinical sample: worry increased negative thoughts (Butler, Wells & Dewick, 1995; cited in Wells, 2000).

Self-focus

The S-REF model also predicts that heightened self-focus of attention can be a causal factor in the maintenance of disorder. There is evidence that this is the case in social phobia (Clark, 1997). As individuals with emotional disorders are more attuned to various bodily symptoms and anxiety responses, this suggests a heightened self-focus is present in other disorders also.

Ability to think meta-cognitively

Another prediction the model makes is that individuals who are more flexible in their style of processing and can switch into meta-cognitive mode would be more likely to question their appraisals than individuals whose processing mode was mainly in object mode, and therefore would be less vulnerable to developing emotional disorder. This prediction could be tested out by examining individuals' tendency to re-evaluate their thoughts. Re-appraisal thought control strategies seem to be negatively associated with emotional distress, evidence that may provide some support for this prediction.

In summary, although specific predictions can be tested out, the nature of the model as a dynamic interaction between three sub-systems does not allow it to be
tested in its entirety. It would therefore be difficult to control for the effects of one, while assessing the causal role of another.

**Implications for practice**

Although the S-REF model has many implications for practice, particular focus will be given to main implications and those over and above the implications for practice of traditional cognitive therapy, and those that are in conflict with the traditional approach. Available evidence that supports or challenges implications for practice will be considered.

Wells (2000) states that therapy should modify not only declarative, but also procedural self-beliefs, which includes self-regulatory plans for processing. There are many components to this aim. It may involve modification of unrealistic meta-cognitive goals for desired internal states, such as ‘I must stop having intrusive thoughts’, which may require examination of intolerance of emotions, cognitions or aversive states. Procedural modifications to unhelpful attempts to cope, for example, worry or rumination, would also be necessary as the model assumes conscious control over these thoughts. Also the individuals’ processing style of focusing on the self needs to be changed, with the aim of reducing threat-monitoring, to internal and external stimuli. The procedural aspect of self-knowledge may be modified with the use of attentional training, which will be discussed below.

*Declarative meta-cognitive modification*

Wells (2000) states that therapeutic change occurs only when S-REF processing mode is activated, as this is the style of processing responsible for maintenance of the disorder. Therapy would aim to target the way of processing cognitions and experience. Firstly, individuals need to be encouraged to shift to meta-cognitive mode, rather than object mode, where negative appraisals regarding cognitions and internal experiences such as feelings can be questioned, rather than taken as fact. This Wells suggests should be achieved through therapist prompting individuals to constantly evaluate and take an outsider perspective on cognitive
events and by individuals practising these skills in thought monitoring. Individuals can also be encouraged to take a detached perspective with respect to their thoughts and internal experiences (called “detached mindfulness”, Wells & Matthews, 1994), which may encourage the meta-cognitive mode of thinking.

This approach may be in contrast to more traditional cognitive therapy, which would principally aim to evaluate the content of thoughts, rather than meta-cognitions or thoughts about thoughts. The idea of working therapeutically only when an individual is in S-REF processing configuration could be likened to the idea of working with ‘hot’ cognitions (cognitions that elicit emotional affect in session); however, in contrast to traditional cognitive therapy, work is not advocated when processing is out of S-REF configuration, or with ‘cold’ cognitions, as the model suggests challenging thoughts at this time would not lead to belief change. As the S-REF model does not specify other processing configurations, it is difficult to know why this is.

Wells (2000) predicts that changing purely verbal cognitions will have a ‘limited effect’ if processing styles and behaviour are not altered. However, the numerous outcome studies testament to the effectiveness of traditional cognitive therapy that does just that cannot be ignored (Roth & Fonagy, 1996). Some disorders, such as OCD and GAD are known to be difficult to treat and the advancement of knowledge about the role of meta-cognitions in maintenance of these disorders has enhanced the practice of therapy. However, in outcomes studies, processing configurations have not been explicitly addressed, as suggested in the S-REF model, yet therapeutic change has still occurred. There are also other disorders, for which the focus of therapy is likely to be exclusively on cognitions and not meta-cognitions or processing styles, and for which the effectiveness of traditional cognitive therapy has been demonstrated. It may be that processing routines are modified indirectly (but not an explicit target) in traditional cognitive therapy.
Procedural meta-cognitive modification

The S-REF model predicts that processing plans need to be modified in order to move focus of processing away from the self and to optimise the processing of disconfirmatory evidence to aid changes in declarative self-beliefs. In order to do this, Wells (2000) suggests that individuals need to learn new procedural plans in order to move focus of processing away from the self and to increase attentional control. The experience of training in new procedural plans not only allow exposure to experience without dysfunctional coping strategies, but also free up processing resources for on-line processing of the disconfirmatory experience (as on-line capacity is limited) both of which are necessary for modification of declarative and procedural self-knowledge. However, any choice of techniques used to achieve this aim must also consider the specific processing that might be modified with the technique (Wells, 2000). Decrease in self-focus could be detrimental where an individual is avoiding the internal threat stimuli, but still appraises the stimuli as threatening. In this case, the strategy could serve to strengthen threat appraisal, as the individual is not being exposed to information that can modify these beliefs. Similarly relaxation has benefits of reduced arousal, halting of worry or rumination, and may make available more attentional resources for other processing (Wells, 2000), although it could also prevent exposure to disconfirmatory evidence and stop modification of threat appraisal (particularly if the meta-cognitive threat appraisal is regarding internal events such as physiological symptoms of anxiety). Wells also notes that relaxation can increase self-focus, which is thought to be unhelpful in S-REF mode.

Nevertheless, if the use of therapeutic strategies were carefully considered, a client would experience a new processing style at the same time as discovering new knowledge that disconfirms their meta-cognitions. The advantage of this approach is that it not only modifies declarative or ‘intellectual’ knowing, but also changes a clients’ ‘feeling’ that the new declarative belief is right (Wells, 2000). Therefore, through experiencing a new processing style, the emotional belief in the new declarative knowledge is enhanced as emotion is a product of the S-REF processing configuration. Such an approach is in contrast to the traditional cognitive therapy approach of simply targeting declarative cognitions.
and not focusing on procedural operations (style of processing). These new processing routines may take practice and time, just like learning of other procedural knowledge (Wells, 2000).

Attentional training is aimed to give clients skills to learn new processing styles and teaches clients to selectively attend to and divide and switch attention between stimuli (Wells, 2000). It is intended to be practised when the client is not experiencing negative emotion, thereby insuring that re-diversion of attention does not place the client in a position when they are avoiding exposure to information that would disconfirm negative appraisals. Consequently, in contrast to other anxiety management strategies, the intention is not to avoid distress, but to teach more adaptive and flexible processes of attention (Wells, 2000).

A further extension of attentional training is situational attentional re-focusing (Wells, 2000), which applies the principles of switching and selective attention training to specific situations. For example, in the case of social phobia, clients might practise diverting their attention externally, which would not only enhance flexible control of attention, but it would also allow for attention towards specific disconfirmatory evidence to be processed, with the aim of modifying self beliefs (Wells, 2000).

The benefits of therapy according to the S-REF model are documented in work with clients with social phobia (Wells & Papageorgiou, 2001), involving instructing clients to divert their attention towards an external focus, rather than internally focusing on the self (a process which is said to maintain the disorder). However, although the focus was primarily on modifying focus from self to external stimuli, the treatment also incorporated to a lesser degree elements of traditional cognitive therapy such as verbal re-attrition and therefore, the therapeutic outcome could have been due to these elements. Further research needs to involve random controlled trials of the relative benefits of therapy according to the traditional cognitive model versus the S-REF model, which would guide the clinician in selection of appropriate treatment.
In order for therapy to target meta-cognitions and processing styles as suggested by the S-REF model, first the therapist must conceptualise the clients’ difficulties within the S-REF model, as they would do within a cognitive model in traditional cognitive therapy. Wells (2000) calls this process meta-cognitive profiling. This is an area in which complexity may be a potential limitation as well as an advantage of the S-REF model. Unlike Beck’s model, the S-REF model is not linear, but is dynamic and each part of the system has effects on the other. An early component of cognitive therapy is socialising the client into the model, providing them with a clear rationale for the focus of therapy. Detailed understanding may be useful for clinicians and researchers; however clients may find the depth of information about cognition and emotion difficult to understand and overwhelming. Clark (2001) makes the point that people may find it difficult to distinguish between concepts if the terminology is too complex. If clients do not have a clear rationale for therapy, engagement levels are likely to be lower, and effectiveness may be reduced. Therefore, the therapist may find it harder to educate clients about the model, and the process outlined by S-REF may need to be simplified and tailored to the clients’ needs.

Conclusion

The S-REF model builds on advances in Beck’s cognitive model that have recognised the importance of meta-cognitions in the maintenance of psychological disorders. However, Wells & Matthews (1994) advance this further by stating that disorder is not only maintained by declarative meta-cognitive plans, but also procedural plans for focus of attention and processing style. Modification of procedural plans is necessary in addition to declarative belief change to produce recovery (Wells, 2000).

Research literature is largely supportive of the S-REF model as the future direction for cognitive therapy. Evidence suggests that meta-cognitions regarding their thoughts do differ in clinical emotional disorders, and that also clients hold meta-cognitive processing plans that are maladaptive, such as rumination, worry
and punishment. Experimental manipulations have shown the deleterious effects of these processing styles in terms of emotional disorder, and their predictive value in terms of recovery. However, the S-REF model is complex, and due to the dynamic nature of predictions between different cognitive levels, causal predictions are difficult to test. Critical appraisal of the research evidence allows recognition that much of it is in keeping with the predictions, but does not provide infallible evidence of the validity of the S-REF model. Future research that tests the effects of induction of rumination or worry in clinical samples would provide firmer support for the S-REF model; however, this may be unethical. Instead, the research relies on such procedures in non-clinical student samples.

The S-REF model has been used to inform current treatments for GAD, OCD and social phobia; however, in future its relevance for other disorders may be investigated in more detail.

Future research could examine the efficacy of cognitive therapy practised according to the S-REF model relative to the traditional cognitive model in randomly controlled trials; however in the meantime, clinicians may need to balance the need to practice according to an evidence base with the need to practice according to new theoretical developments.

References


Older adults essay

March 2002

Year 3


The ageing process gives rise to many inevitable psychological and physical changes. Discuss.

Introduction

There has been a trend to view the ageing process as a process of inevitable decline. For example, the textbook *Clinical Psychology with the Elderly* defines ageing as,

"a progressive loss of adaptive ability" (Woods & Britton, 1985; p.10).

However, the National Service Framework for Older Adults (Department of Health, 2001; p.19) notes that,

"chronic degenerative disease, disability and ill health are not an inevitable consequence of ageing".

The nature of physical and psychological change in the ageing process is a very large topic of research and thus this essay will only focus on those aspects that are likely to be most relevant to clinical psychologists' work. Two large domains of clinical psychologists' work with the elderly are in the areas of mental health, and the area of cognitive abilities, in particular to aid differential diagnosis of pathological cognitive impairment (i.e. degenerative brain disease due to dementia) (Woods, 1994). The ageing process has been differentiated into primary (normal) and secondary (pathological) ageing (Busse, 1969; cited in Birren & Schroots, 1996). In working with the elderly, it is important to know what, if any changes are inevitable, i.e. are related to primary ageing, and what, if any changes are secondary or pathological and might be appropriate as a target for intervention.

First physical changes that occur in the ageing process will be described and the extent to which they are observed to occur will be discussed. Sensory systems and the brain will be described in more detail as these changes are likely to be
relevant to the discussion of cognitive psychological changes. The evidence regarding whether change in the areas of mental health and cognition is inevitable in the ageing process will be discussed. In the examination of whether changes in these areas are inevitable, factors that influence mental health and cognitive status in the elderly will be considered. Identification of these factors is important for treatment and prevention (Geerlings, Beekman, Deeg & van Tilburg, 2000). Ageing is a dynamic process and consequently research methodology is an important consideration. The limitations of different types of studies will be discussed.

**Physical ageing**

Twenty four theories of biological ageing have been documented (Morse & Rabinowitz, 1990). They tend to suggest that biological ageing occurs either through internal factors, like a biological clock, or external factors, such as exposure to toxins (Morse & Rabinowitz, 1990; Stuart-Hamilton, 2000). Biological changes in ageing include cell loss and reduced cell efficiency, and reduced efficiency of bodily organs, such as the heart and lungs (Stuart-Hamilton, 2000). Changes also affect the sensory systems, for example, visual acuity declines (Corso, 1981; cited in Stuart-Hamilton, 2000), as do other functions of the visual system (Hagegerstrom-Portnoy, Schneck & Brabyn, 1999; cited in Stuart-Hamilton, 2000). Hearing also declines with ageing (Bromley, 1988; cited in Stuart-Hamilton, 2000). Such declines to not appear to be inevitable, in that there is individual variability and some do not experience a decline. For example, although 75% of the elderly require spectacles, (Bromley, 1988; cited in Stuart-Hamilton, 2000), 25% do not. Nevertheless, such changes become more likely as people age.

Some physical illnesses are more common in later life (Stuart-Hamilton, 2000), for example, stroke is seen as an age-related disease (Briggs, 1993) in that although it is not inevitable, the incidence becomes much more prevalent in the elderly compared with younger adults. Age-associated biological changes can make elderly people more vulnerable to environmental stressors (Briggs, 1993).
It is important to distinguish between primary, or normal ageing, and secondary, or pathological ageing. That is, although certain physical illnesses become more likely with ageing, such illnesses are not considered part of the ageing process. Instead, they are considered to be pathological. As the prevalence of certain conditions increases, to the extent that significant proportions of the population are affected, for example in the case of dementia, which is uncommon in people under 60, but is estimated to affect 20% of people over 80 (Jorm, 1990; Kay, 1991; cited in Briggs, 1993), the distinction between normal and pathological ageing may be less clear (Cullum, Huppert, McGee, Dening, Ahmed, Paykel & Brayne, 2000). In this respect, there is sometimes blurring as to what constitutes normal and pathological ageing. For example, the senile plaques and neurofibrillary tangles found in the brain and associated with Alzheimer's disease, a chronic neurodegenerative disease, are also found to a lesser extent in the brains of healthy elderly people (Schiebel, 1996). Consequently, the number of the changes when compared between healthy elderly and people with dementia differs along a continuum, making the distinction between normal and pathological ageing more complex. This issue affects ageing studies, as researchers are faced with the question of whether to include people with physical health problems or dementia, or whether to exclude them from studies.

Biological changes in the brain are likely to be of particular relevance to psychological changes, and thus will be described. It has been estimated that between five and ten percent of neuronal connections in the brain are lost in the ageing process (Schaie & Willis, 1991; cited in Stuart-Hamilton, 2000). This loss is predominantly in cortical areas, concerned with intellectual function (Stuart-Hamilton, 2000), and particularly the temporal lobes (Woodruff-Pak, 1997; cited in Stuart-Hamilton, 2000), which have long been linked with memory function (Scoville & Milner, 1957). Average yearly decreases in volume, measured by magnetic resonance imaging (MRI), of the cerebral hemispheres was found to be 0.23%, whereas the temporal lobes and the amygdaloid-hippocampal complex (closely linked to the retention of memories) reduced in volume at higher yearly rates of 0.28 and 0.30% (Coffey et al., 1992; cited in Scheibel, 1996). Examination of mean changes might lead to the conclusion that some brain changes are inevitable in ageing; however, there was large inter-individual
variation in degree of volumetric change and individual differences regarding when the change occurs (Scheibel, 1996). For example, changes were only observed in 50% of people at the age of 68.

Therefore, for a given individual, it is unclear whether certain changes will be inevitable by a given age; however, some physical changes occur universally (Morse & Rabinowitz, 1990), albeit at different rates. Further research is needed to examine specific factors, which may be genetic or environmental, that are involved in timing of changes in order to answer the question of inevitability. Whether physical changes translate to observable cognitive psychological changes in the ageing process will be considered below. Neuronal loss does not necessarily equate with decline in cognitive functioning (Scheibel, 1996).

Whether change during the ageing process occurs in two areas of psychological functioning, mental health and cognition, will now be discussed.

Psychological change: mental health

It is important to consider psychological changes and in particular change in mental health status in the ageing process, and how these relate to physical aspects of the ageing process. The National Service Framework for Older Adults (Department of Health, 2001; p.19) challenges the notion that change in mental health status is inevitable with ageing:

“mental health problems may be perceived by older people and families, as well as by professionals, as an inevitable consequence of ageing, and not as health problems which will respond to treatment”.

The evidence for this statement will be considered, in particular in relation to depression, as this is one of the most prevalent mental health problems suffered by older adults (Blazer, 1994; cited in Geerlings et al., 2000).

Epidemiological studies that have attempted to ascertain prevalence rates of mental health problems in the elderly relative to younger adults can give some
clue as to the inevitability of mental health decline in the ageing process. Initial inspection of the research studies would reveal a lower incidence of depression in the elderly relative to younger adults (Myers et al., 1984; cited in Blazer, Hughes & George, 1987); however this would be misleading, as the proportion of elderly people who report sub-clinical symptoms is much higher (15% reported significant dysphoria compared with 3.7% prevalence of depressive disorder) (Blazer & Williams, 1980; cited in Blazer et al., 1987). This could lead to the conclusion that a significant number of elderly develop dysphoria during the ageing process.

Blazer et al. (1987) reported that the 20% of their epidemiological sample of elderly people with dysphoria were more likely to be uneducated, unmarried and have a lower socio-economic status than the rest of the elderly population. This might suggest that dysphoria is more likely to be inevitable in the people demonstrating those characteristics during the ageing process. Intervention may aim to make such elderly peoples’ demographic characteristics more closely match those without dysphoria. On the other hand, the relationship may not be as clear; there may be another variable that makes the dysphoric elderly more likely to show such demographic characteristics. Such a variable may mediate both the dysphoria and the demographic characteristics, for example an enduring personality characteristic. Research to answer this question would be important if intervention were to be useful.

An inherent problem in attribution mental health problems to the ageing process from results of epidemiological surveys that compare people of different ages is that such studies do not highlight the change in mental health status due to the ageing process. Different age cohorts would have lived through different life experiences and thus may differ in their relative predisposition to develop mental health difficulties. For example, say relative incidences of post-traumatic stress disorder (PTSD) between young adults and the elderly were compared. If a higher incidence of PTSD were to be found in the elderly, this could be attributable to many other factors other than age, a clear example of which would be wartime experience. This problem can be ameliorated through the use of longitudinal studies, which assess prevalence of the variable to be studied at
different time points; however, such studies have high attrition rates, due, for example, to death or health reasons, which inevitably biases results (Hertzog, 1996).

A longitudinal study demonstrated that higher prevalence rates of depression are found if frequent repeated measurements are taken and shorter episodes, that might be missed by studies with longer intervals between measurements, are included (Geerlings, Beekman, Deeg & van Tilburg, 2000). Furthermore, Geerlings et al. (2000) investigated the link between decline in physical health status (Aldwin, Spiro, Levenson & Cupertino, 2001) and depression in the ageing process. Geerlings et al. (2000) replicated previous findings (Geerlings et al., 2000) and found an association between depression scores on the Centre for Epidemiological Studies Depression Scale (CES-D) and physical health status, but only for a group with chronic depression, and not short episodes (defined as remitting within five months). This suggests that as people age, a decline in physical health status may predispose them to experience chronic depression; however, there are likely to be other factors influencing the degree of inevitability of short episodes of depression. The findings suggest that relevant interventions might target depression, physical health and a combination of the two (Gurland & Wilder, 1988; cited in Geerlings et al., 2000). However, Geerlings et al. (2000) note that due to the association between depression and physical health problems, concurrent diagnosis may not always be made, meaning that the individual may not receive the appropriate treatment.

Heidrich (1998) followed 106 women across a six-year time interval and found significant decline on both measures of physical health (number of health problems, symptom bother, difficulty with activities of daily living and subjective ratings of physical health). Additionally, a statistically significant increase in mean depression scores (measured by the CES-D), was observed. Furthermore, links were found between these two variables. The longitudinal design of the study enabled elucidation of the association between depression and physical health, a limitation of cross-sectional studies. Heidrich (1998) showed that physical health status at the beginning of the study predicted depression six years later; however depression at the start did not predict later physical health status. 

Older adults essay
This indicates that adverse physical health status is a mediator of future psychological health measured by depression ratings. A limitation of the study was that participants were women only and therefore replication is needed with male participants. Furthermore, statistically significant results are not necessarily indicative of clinically significant findings. Decline in physical health status were noted to be small (Heidrich, 1998), as were the mean increase in depression scores (from 9.54 to 11.97 out of a possible total of 60). Therefore, the clinical significance of this increase in depression scores is questionable.

There was also an association between positive relations with others and physical health (Heidrich, 1998), which suggests that the decline in ability to keep up social relationships that may accompany mental health may be a mediator of the relationship between physical health and depression. This would indicate that intervention could not only target physical health problems, but should also aim to maintain peoples' social relationships, despite any health handicaps. Further research would be needed to guide appropriate intervention as it is unclear whether this relationship is due to physical limitations, or psychological impacts of having health difficulties. The work of Bisconti & Bergeman (1999) helped to clarify this issue. They showed that perceived social control mediated the association between social interaction and depression in people over the age of 65, suggesting that work may be more appropriately directed at older adults' internal representations of their relationships, rather than just providing more opportunity for social interaction (Bisconti & Bergeman, 1999).

Therefore, research suggests that depression is not inevitable, but its development may be mediated by physical health problems, social relationships and perceived social control. This would suggest remediation, or prevention, of depression or dysphoria might be achieved by advances in physical health care and strategies designed to enhance social relationships, including psychological approaches to look at internal representations of relationships (Bisconti & Bergeman, 1999). Alternatively, it may be that peoples' self-report of physical health (Geerlings et al., 2000) and internal representations of their relationships may be affected by depression or dysphoria, which would result in a statistical association, but not a causal relationship.
**Psychological change: cognition**

It has been noted that neuronal connections are lost in the ageing process, particularly in cortical areas, which are linked with intellectual function, and particularly in the temporal lobes, linked with memory functions (Stuart-Hamilton, 2000). From this, it might be assumed that decline would be observed; however, this may not necessarily be the case. The evidence that addresses this question will be examined.

**Intellectual function**

Inspection of normative data for standardised tests shows that the mean test scores decrease with increasing age group. For example, on the Weschler Adult Intelligence Scale – third edition (WAIS-III) (Weschler, 1997), reduction in mean score over age groups is different depending on the ability being measured. When intelligence is separated into fluid and crystallised intelligence (Cattell, 1971; cited in Briggs, 1993) fluid ability is thought to decline with age, whereas crystallised intelligence is thought to remain stable, and may improve with age (Coleman, 1996).

As part of the Berlin study on ageing, Lindenberger & Reischies (1999), people aged 70 to 100, grouped into age ranges of five years, were given tests of intellectual functioning. Correlational data showed associations between age and the poorer performance on five tests of reasoning, knowledge, perceptual speed, memory and fluency. Despite the general trend, the scatterplots of individual performance show large inter-individual variation in performance that was not related to age (Lindenberger & Reischies, 1999). Rather, the factor that accounted for most of the variance in intellectual performance on the tests was perceptual speed. This suggests that perceptual speed may be more important than age per se. Unfortunately, the authors do not compare mean intellectual performance across the age groups, so actual difference in scores is not known. It could be that although there was an association with age, group means did not differ.
Given that, as discussed, sensory decline is prevalent, although not inevitable, in the ageing process, it is important to consider the impact of this on measurement of intellectual function. Inevitably, sensory difficulties will impact on ability to perform tests to optimum levels and it is possible that sensory variables may be a mediating factor in the relationship between age and intellectual functioning. Lindenberger & Reischies’s (1999) finding that perceptual speed explained most of the variance in intellectual functioning suggests that this may be the case. Anstey, Luszcz & Sanchez (2001) note the widely reported association between sensory and intellectual functioning in the elderly. They investigated this relationship further and found that although there was an association between performance on cognitive tests and factors of speed, vision and hearing acuity, age alone continued to predict cognitive performance when the other factors were controlled for. Therefore, sensory acuity may mediate some of the relationship between age and cognitive/intellectual performance, but does not account for all of the variance.

The evidence suggests that on average, older people are likely to perform worse than younger people on measures of intellectual function. However, there are large variations in individual performance at a given age. Research suggests this may be partly due to variation in perceptual speed and sensory function, and therefore may not represent actual intellectual differences between ages. Furthermore, although cross-sectional studies, where people of different ages are compared, highlight age differences, they do not enlighten the process of ageing as findings could reflect characteristics of the different age cohorts other than their chronological age. For example, differences in sociological variables, such as length of education, are likely to exist between the groups, could be alternative explanations for group differences (Woods, 1994). Consequently, although standardisation data (such as for the WAIS-III) are useful to compare an individual’s performance with age-related peers on assessment, they cannot be used to support the argument that age-related decline in intellectual function is inevitable.

As they involve investigation of a given cognitive function in the same person over time, longitudinal studies of cognitive function can resolve some of the
methodological problems inherent in cross-sectional studies and therefore can be useful in enlightening the ageing process.

Cullum et al. (2000) reported the results of a longitudinal study investigating cognitive decline in elderly people over 75 using the CAMCOG. The CAMDEX, from which the CAMCOG is a part, is reliable and valid for use with the elderly (O'Connor et al., 1991; cited in Cullum et al., 2000). They also note the advantage of the CAMCOG over the Mini-Mental State Examination (MMSE) (Folstein et al., 1975; cited in Cullum et al., 2000), in that it has less of a ceiling effect (Huppert et al., 1995; cited in Cullum et al., 2000). Significant global decline, and significant decline in the seven sub-scales was found over a mean re-test interval of 3.9 years (range 3.4 to 5.0), from which the authors conclude that cognitive decline is inevitable in the ageing process. However, it should be noted that although decline was statistically significant, examination of the standard deviations of the global CAMCOG scores suggests large variation in individual performance at both time points, and particularly at follow-up. Furthermore, like other studies of ageing, a large number of people were lost to follow-up due to death, illness, refusal or simply not being contactable. This may bias the longitudinal study to find less cognitive decline than might have been found had for example, ill people been included in the study. A longitudinal study is time-consuming and may still not provide the answer to the question as to whether age-related decline in test performance is inevitable. A decline in test performance over time might reflect the fact that the material has lost its relevance for the individuals (Woods & Britton, 1985).

A further factor to be considered is ecological validity of measurement techniques. As with all psychological tests, the extent to which findings apply in the "real world" and clinical relevance, the extent to which findings are clinically, as well as statistically, important, should be considered. Woods & Britton (1985) also raise the point that tests are not always ecologically valid, for example the Block Design test of the WAIS-III. This may mean that tests are not measuring real-life intellectual function. Also, the testing environment is likely to be increasingly less familiar to increasingly older adults as time since they left
school passes. This may lead younger adults, who are more familiar with taking tests, to have an advantage in an assessment (Woods & Britton, 1985).

As tests are often used to aid diagnosis of cognitive impairment, this use may bias the kinds of research that are conducted into the ageing process. With increasing attention being given into establishing tests sensitive to cognitive impairment in degenerative disorders for example in dementia (e.g. Fox, Warrington, Seiffer, Agnew & Rossor, 1998) there may be a bias towards investigation and publication of data that show decline in the ageing process. This may in turn result in less research being conducted into abilities that improve with age and thus might bias society’s perception of change in abilities with age towards the negative. Constraints that exist on measurement techniques may also bias research publications. It has been suggested that wisdom increases with age (Clayton & Birren, 1980; cited in Coleman, 1996); however, this is a harder concept to define (Coleman, 1996) and consequently to measure.

**Memory function**

As discussed with the WAIS-III, inspection of normative data for various memory tests including the Weschler Memory Scale – third edition (WMS-III) (Weschler, 1997) and the Adult Memory and Information Processing Battery (AMIPB) (Coughlan & Hollows, 1985), would document lower mean performance on the test with increase in age. This would suggest an inevitable decline in memory performance, at least on the particular test and testing conditions. However, as discussed, such normative data are based on cross-sectional studies, which, as they compare people within different age groups and not the ageing process per se over time, do not answer the question of inevitability.

Nevertheless, decline in memory function is a commonly reported phenomenon as people age (Ryan, 1992; cited in Smith, 1996). “Age-related” differences in memory were found on the CANTAB (Cambridge Neuropsychological Test Battery) through using age as the predictor variable for variance in performance on memory test in the CANTAB (Rabbitt & Lowe, 2000). From this the authors
label their findings "age-related declines"; however, this conclusion was based on cross-sectional findings and thus the same methodological limitations discussed, in terms of the applicability of findings to the ageing process, apply. Longitudinal research has also found statistically significant decline in memory function over time (Cullum et al., 2000). Furthermore, there is evidence to suggest that education may be a protective factor in memory function as a negative association between education and memory decline (over a mean period of 3.9 years) was found (Cullum et al., 2000).

As with intellectual function, the findings of studies are related to choice of measurement technique. This is particularly the case with memory, as there are many different facets (Baddeley, 1997). Additionally, test performance inevitably relies on other cognitive functions, and thus when change is observed, it is important to know whether results are attributable to change in the function that was supposed to be measured, or whether results are due to some other cognitive function that is a pre-conditional requirement for effective performance on the test. An extreme example of this would be if a blind person was deemed to have failed on a visual memory test. Consequently theories of how memory tests are performed will be important to consider when attempting to explain factors involved in decline in memory test performance. For example, Craik (1992; cited in Smith, 1996) suggested that older adults are penalized more by recall tests of memory, as opposed to recognition tests, as the former require more processing resources. Therefore, memory differences observed in older people were due to changes in executive function, rather than memory function. Other theories that are based on other processing resources have also been proposed to account for differences in memory test performance between older and younger adults (Smith, 1996). For example, perceptual speed was found to account for 80% of the age-related variance in recall memory test performance (Salthouse, 1993; cited in Smith, 1996). Unlike tests of executive function, age differences in memory function could not be explained by fluid IQ scores, which suggests that fluid IQ scores do not mediate variance in memory performance (Rabbitt & Lowe, 2000).
The particular selection of memory tests may be biased against elderly people. For example, because of the methodological problems inherent in measuring very remote memory (i.e. from childhood) in that every person's experience is different and such tests are difficult to standardise for this reason. Furthermore, any measure of childhood recall would likely be biased in favour of younger adults, compared with older adults, as memories would be more recent.

In summary, the evidence seems stronger for memory decline in the ageing process compared with the evidence for intellectual decline. Like intellectual function, memory function may be mediated by other cognitive abilities, which will be highlighted by further research. However, it is important to consider methodology of assessment of memory, as testing constraints dictate memory tests to usually be over intervals of around 30 minutes (e.g. Weschler, 1997). These constraints mean that less is known about change in memory performance on memory for personal events over longer time periods.

**Methodology: normal versus pathological ageing**

A final consideration in ageing cognition research is what constitutes normal ageing. For example, the risk of developing a progressive dementing illness is increased with increasing age and 20% of adults over 80 are thought to suffer from dementia. Whether to include this group of people in studies of normal ageing is an issue to be considered. Furthermore, Fox, Warrington, Seiffer, Agnew & Rossor (1998) showed that significant sub-clinical cognitive deficits could be detected on a verbal memory task in people who had not yet developed dementia, but who went on subsequently to develop dementia. This was a selected sample in that the participants were genetically vulnerable to dementia, and therefore results may not be generalisable to those not genetically vulnerable; however, it does suggest that studies of normal ageing may include those who are developing dementia not yet detected. This would bias results to find more cognitive impairment than would be expected otherwise. Indeed, research has suggested that increased susceptibility to dementia with age may be a confounding variable in the association of age with cognitive impairment. Lindenberger & Reischies (1999) found that associations were weaker when
people with dementia were excluded from the analysis. Associations may further be weakened if those who go on to develop dementia are retrospectively excluded.

Given that older people are more vulnerable to physical problems, there is also the consideration of how physical problems might bias cognition research as it is also a factor in decline in cognitive function (Holland & Rabbitt, 1991; cited in Woods, 1994). For example, a longitudinal study showed that people with raised blood pressure declined more on the WAIS than those without (Wilkie & Eisdorfer, 1971; cited in Woods, 1994). Studies that have investigated cognitive function in the ageing process do not necessarily include the physical health status of participants. Therefore, the inclusion of those with raised blood pressure may bias results to find more cognitive decline than might otherwise be found with a healthy sample. These two examples serve to illustrate the numerous methodological considerations inherent in selecting a sample of people with whom to conduct research into the ageing process: who should be included in a study of normal ageing?

**Conclusion**

In the ageing process, physical health becomes more likely to decline; however, there are not inevitable changes and individuals differ. Psychological change in terms of mental health, specifically depression, does not appear to be inevitable, but rather mediated by factors of physical health, social relationships and how people perceive their relationships. This suggests that attention to these factors might increase the likelihood of elderly people developing depression or dysphoria in the ageing process. Studies that have investigated change in cognition, particularly intellectual function and memory are fraught with methodological problems. Cross-sectional studies are unable to answer the question of inevitability of change, as ageing is a dynamic process and must be studied as such. Large variability in performance between individuals renders the approach of examining group means unhelpful when answering the question of inevitability. Future research will highlight factors that enable the question of inevitability to be answered on an individual basis. The question of which
participants to include in studies of “normal ageing” is also important to consider as different practices are likely to yield different results.

Vaillant & Mukamal (2001; P. 839) note that geriatric psychiatry, “must pay as much attention to health as to disease”. This comment is particularly relevant, since the way we conceptualise ageing is likely to influence the kind of research conducted and whether it is deficit-, change-, or development-orientated (terms used in Vaillant & Mukamal, 2001; p. 839). Furthermore, the kind of research that is conducted, and the conclusions that are drawn are likely to contribute to societal views about the ageing process. For example, Hendricks (1995) noted that ageism can be socially constructed in the language used to describe the elderly and the ageing process. Therefore, it is particularly important to consider methodology in research conducted in the ageing process in order to ensure relevant research questions are answered about the ageing process, rather than making comparisons between the young and the old.

References


Clinical section
Summary of Clinical Experience
Summary of clinical experience

**Adult Mental Health Placement**

**Setting**
The adult mental health placement was set within a psychology department. The caseload was both primary care and Community Mental Health Team. There was also the opportunity to undertake some work in a government setting.

**Models**
The models for the placement were systemic-narrative and cognitive-behavioural. There was also some indirect experience of psychodynamic models of working.

**Range of experience**
Clients' presenting issues included anxiety and depression, post-traumatic stress disorder, relationship difficulties, hallucinations, suicidal ideation, aggression, personality disorder, cognitive difficulties.

There was experience of group work with traumatised refugees.

Conducted research project that examined client satisfaction and presented results to service.

Attended training on trauma debriefing and the Mental Health Act.

Regular presentation of clinical case work in group supervision setting.
People with Learning Disabilities placement

Setting
This placement was in a community team for people with learning disability. It served mental health needs and provided a challenging behaviour service. There were opportunities to work with clients in out-patient, residential and day care settings.

Models
Behavioural, attachment and cognitive-behavioural models were used on this placement.

Range of experience
Clients' presenting issues included challenging behaviour, autism, bereavement, eating disorder, self-harm, depression, personality disorder. Assessments of capacity and cognitive abilities were also conducted.

I co-ran a social skills group for people with a moderate learning disability.

Experience of presenting conference up-date to team members.

Visited a range of services provided for people with learning disabilities, including social service residential homes, NHS residential homes, day centres, and in-patient settings.
Summary of clinical experience

Child Placement

Setting
This placement was in a variety of settings; a health centre, a GP surgery, social services nurseries for under fives and a Child and Family Consultation Centre (Child and Adolescent Mental Health Service).

Models
The models used in this placement were behavioural, narrative, and cognitive-behavioural. Parenting approaches were also used.

Range of experience
Presenting issues included social communication difficulties, behavioural and emotional difficulties, educational difficulties (learning and reading difficulties), post-traumatic stress disorder, sleeping, toileting and feeding difficulties, anxiety, depression and low self-esteem. Cognitive assessments of developmental delay were conducted.

Teaching experience with nursery staff (attention deficit hyperactivity disorder).

Consultation experience with nursery and staff and school teachers.

Involvement in CAMHS meetings, specialist autism diagnostic service, and CAMHS training (attachment; autism; Human Rights Act; racism and culture workshop; “Working Together” inter-agency working seminar).
Specialist CBT Placement

Setting
This placement was mainly based in a Community Mental Health Team, but included some work at the Mentally Disordered Offenders service and a psychotherapy service.

Models
The cognitive-behavioural model was the main approach used on this placement (including schema-focused), but psychodynamic approaches were also used.

Range of experience
This placement involved working with clients with complex and long-term mental health needs. Presenting issues included self-harm, schizophrenia, alcohol, adjustment to illness, childhood abuse, personality disorder, anxiety, depression, physical health problems, manic-depression and offending behaviour (shoplifting). An assessment of risk for sexual offending was also conducted.

Planned, initiated a referral system for, and conducted assessments for a group for people with insomnia.

Attended weekly psychotherapy group supervision with psychotherapist. Attended personality disorder conference.

Initiated research project into insomnia in people with mental health difficulties.
Older Adult Placement

Setting
This placement was based in a Community Mental Health Team for the Elderly. Work was also conducted in in-patient, day hospital, and residential settings.

Models
Cognitive-behavioural, behavioural and neuropsychological models were used in this placement.

Range of experience
Clients’ presenting issues included cognitive difficulties, physical health difficulties, bereavement, anxiety, depression, stroke, sensory impairments, trauma following childhood abuse, resettlement difficulties and personality disorder.

Designed, initiated referral system, assessed potential participants, and ran a group for people with memory difficulties.

Teaching experience of CBT (basic concepts and models of anxiety and depression) to team members. Presentation of clinical case work.

Attended training day on prevention of abuse of vulnerable adults.

Involved in organisational approaches to implement National Service Framework recommendations for younger adults with dementia within the service.
Summary of clinical experience

**Specialist Neuropsychology Placement**

**Setting**
This placement was split between in-patient work in a private rehabilitation hospital and out-patient work in a NHS community hospital.

**Models**
The neuropsychological model was the main model used in this placement. Behavioural and cognitive-behavioural approaches were also used.

**Range of experience**
Direct experience of assessment of clients with neuropsychological difficulties following traumatic brain injury, stroke, or other neurological syndromes. Involved using a variety of neuropsychological assessment techniques. Direct experience of rehabilitation of neuropsychological difficulties. Direct experience of emotional sequelae of neuropsychological and neurological problems. Observational experience of assessments for suitability for the in-patient program.

Experience of supervising assistants.

Participated in, and provided a psychological perspective to case conferences, goal planning and clinical review of in-patients.

Visited range of residential places for people who have had a brain injury.
Summaries of Case Reports
Summary of Adult Mental Health Case Report: Cognitive Therapy of Depression with a 30 year old woman

Presenting problem
Yvonne presented with depression that had been present over the last four years. She had experienced financial difficulties in her marriage, and then had a miscarriage. After the miscarriage, Yvonne’s relationship with her husband deteriorated and ended in divorce. She held a number of extremely negative thoughts about herself.

Formulation
Yvonne experienced little affection in her childhood, from which she was likely to have developed beliefs about low-self worth. She compensated for this by attempting to achieve perfection. Following her miscarriage and subsequent breakdown of her marriage, Yvonne felt a failure. This activated latent assumptions that she must achieve perfection and never fail if she was to be worthy. Consequently, symptoms of depression developed.

Intervention
Yvonne was seen for 14 weeks for cognitive therapy. Work initially focused on developing techniques to evaluate depressive thoughts. Therapy then focused on underlying rules Yvonne had developed concerning perfectionism and self-blame, and allowed her to develop new life rules for herself. Core beliefs about her low self-worth were also re-evaluated. The therapy also focused on allowing Yvonne to grieve for her lost child.

Outcome
Yvonne engaged well in therapy and worked hard to compile a book of self-therapy techniques. She reported increased confidence and self-worth, and decreased feelings of failure and guilt. Her depression improved from the "severe" range of the BDI to the "mild-moderate" range.
Summary of People with Learning Disabilities Case Report: Assessment of Emotional and Behavioral Difficulties of a 20 Year Old Woman with a Moderate Learning Disability: a Behavioural and Attachment Perspective

Presenting problem
Leena, who has a moderate learning disability, was referred for verbal and physical aggression and absconding from her residential home. Her placement at the residential home was under threat because of this behaviour, which was thought to be related to disagreements with her mother.

Assessment
An applied behavioural analysis framework, which views behaviour as a functional adaptation to, and as maintained by, the environment, was used to conduct a detailed assessment of the presenting problem. An attachment framework was incorporated into the assessment as Leena’s difficulties centered around her relationship (attachment) with her mother.

Formulation
Leena’s experience of rejection from her mother throughout her life had made her vulnerable to future experiences of rejection, both from her mother, and from staff and other residents at the residential home. Leena was likely to have internalised early rejection from her mother to result in low and unstable self-esteem. Consequently, whenever Leena perceived she was being rejected, she would behave aggressively towards staff and other residents in order to release the aversive physiological state brought about through rejection. Leena would also abscond to seek out her mother when she perceived she was being rejected by others. Her mother positively welcomed Leena, which maintained the absconding.

Outcome
During the course of the assessment, Leena moved out of the service catchment area. She requested a referral for therapy, which was made to the psychologist in the area.
Child Case Report: Assessment and Treatment of an Eight Year Old Girl with Post-Traumatic Stress Disorder Following a Car Accident: A Story of Bravery

Presenting problem
Rachel was referred by a Child Psychiatrist for assessment and treatment of symptoms of post-traumatic stress disorder following a road accident in which she had been knocked down by a car. She experienced nightmares and avoided talking about the accident. She also tried to avoid the scene of the accident, and crossing roads, which were both problematic for Rachel’s mother, as both were encountered on Rachel’s daily walk to school.

Formulation
Rachel was from a refugee family and had witnessed her mother being racially abused, both verbally and physically by her neighbours. Therefore, Rachel was vulnerable to any further trauma. During her stay in hospital after the accident, Rachel believed she was going to die. Rachel avoided the trauma and therefore did not integrate it fully into her memory. Consequently, she experienced nightmares and intrusive memories of the accident, which were triggered particularly by crossing roads or visiting the place where the trauma occurred. The accident also affected Rachel’s preferred view of herself, in that she no longer saw herself as “brave”.

Intervention
Therapy involved playing out the trauma, to enable Rachel to integrate it into her memory. In-vivo exposure to crossing roads was done until Rachel’s anxiety ratings reduced considerably. Witnesses of God and her imaginary friend, Magic Mouse were called upon to witness the new brave Rachel, and a celebratory party of her bravery was held with Rachel and her friends.

Outcome
The frequency of Rachel’s nightmares reduced from every night to three nights a week. She was able to cross roads with her eyes open (thus demonstrating reduced avoidance) and was even able to face the accident scene by bravely pulling a face at it!
Specialist CBT Case Report: Cognitive-Behaviour Therapy of Social Anxiety with a 28 Year Old Woman with Borderline Personality Disorder

Presenting problem
Lindsay was referred for negative thinking patterns about herself. She was very self-critical and worried that others would criticise her in social situations. Consequently, she found it difficult to socialise, to do her job, and to do everyday tasks such as shopping. When she became very distressed over other’s perceived comments about her, she would cut herself.

Formulation
Lindsay’s mother had been very critical and humiliated her, and thus in social situations she expected others to be critical, or to view her negatively. Consequently, she viewed herself as disgusting and perceived others as critical. She compensated for these beliefs by attempting to be like a “chameleon”, blending in to avoid criticism, and avoiding intimacy because then others could not hurt her. Therefore, in social situations, these beliefs became activated, and she experienced many negative thoughts about herself. She tended to monitor herself excessively in social situations and consequently could not fully devote her attention to conversations, thus exacerbating the problem.

Intervention
Although Lindsay did not self-harm during the therapy, she expressed a desire to, and therefore prevention of this was addressed in therapy. Therapy aimed to deal with strategies to deal with Lindsay’s self-critical thoughts and predictions about other’s reactions to her in social situations. It also examined the utility of self-monitoring behaviours.

Outcome
Lindsay achieved her therapy goal of going around to a friend’s house for the evening. She reduced self-monitoring in social situations and learnt to use cognitive techniques to consider all possibilities, and not to jump to negative conclusions regarding others’ perceptions of her in social situations.
Older Adult Case Report: Neuropsychological Assessment of a 57 Year Old Man Referred for Memory Complaints

Presenting problem
Jeremiah was referred for assessment of memory and word finding difficulties. Jeremiah’s working conditions involved exposure to carbon monoxide; however, he also experienced stress at work and, previously, in his family life, and the referrer questioned the extent of the contribution of these factors to his memory complaints. His MRI scan showed damage consistent with carbon monoxide poisoning.

Assessment
Jeremiah was assessed on tests of general intellectual functioning, memory, attention and concentration, speed of processing, and naming ability. He was also assessed on tests of executive function, sensitive to damage in the area affected by carbon monoxide shown on MRI.

Formulation
Jeremiah’s test performance revealed difficulty with executive function, which was consistent with organic damage from carbon monoxide poisoning. His memory test performance was below the expected level for emotional material, but at the expected level for abstract material. This suggested that there was an emotional component to his memory difficulties. His naming ability was at the expected level.

Outcome
The results of the assessment were fed back to Jeremiah. In particular, the importance of ensuring he was no longer exposed to carbon monoxide was emphasised to him.
Research section
Service related research project

October 2000

Year 1
24 October 2000

Dear

Many thanks for your most interesting presentation of your research results to our Department.

I'd like to say again how very important this piece of research into users' views is to our Clinical Governance loop and service developments. We are really grateful for your work!

Yours sincerely

Consultant Clinical Psychologist
**Clients' perceptions of a psychology service**

**Abstract**

*Title:* Clients' perceptions of a psychology service

*Objective:* To examine client satisfaction of psychology service users. To compare satisfaction between clients who complete and do not complete therapy. To compare satisfaction between primary care and CMHT users. To assess generalisability of results to population of the psychology service users.

*Design:* Survey method, incorporating quantitative rating scales to assess satisfaction with various aspects of the service, and qualitative (open-ended) questions to enable exploration of experience of clients attending the psychology service.

*Setting:* An out-patient psychology service

*Participants:* 105 clients who were discharged consecutively over a three-month period were contacted. Response rate of 46.7% was achieved.

*Main outcome measures:* Satisfaction questionnaire developed by the service.

*Results:* A response rate of 46.7% was achieved. 80.9% of clients reported being satisfied overall with the service. As predicted clients who did not complete therapy reported significantly lower satisfaction levels on all but one of the ratings scales than clients who completed therapy. Contrary to predictions there were no significant differences in satisfaction ratings between primary care and CMHT clients. Client reports of their experiences of therapy were grouped into four categories: practicalities, therapeutic relationship, therapist action and outcomes. Comments were mostly positive. Clients valued the therapeutic relationship and outcomes of change in perspective of the problem, self-understanding and off-loading of the problem. Suggestions for change were
Service related research project

mainly in the practicalities category and included lower waiting lists, more flexible session times, and additional resources.

Conclusions: High levels of satisfaction were reported. Suggestions for improvement of the service may guide its future development.

Introduction

There is an increasing focus on gaining users' perspectives of services within the National Health Service (Department of Health, 1991; cited in Stallard, Department of Health, 1997, 1989 and 1999) and service users' views of mental health services are considered to be increasingly important for future development of the NHS. Gaining psychology service users' views is likely to be particularly important as clients' views about therapy often differs from that of the therapist (Elliott & James, 1989).

Users' views are commonly obtained through satisfaction surveys. Client satisfaction is unrelated to symptom improvement (Pekarik, 1992) and therefore may be useful as an additional outcome measure (Stallard, 1996), especially as it is thought to be related to utilisation of the service (Lebow, 1982; cited in Stallard, 1996).

Previous research has reported consistently high satisfaction rates (e.g. Goodwin, Holmes, Newnes & Waltho, 1999; Hutchings & Pope, 1998), however, satisfaction ratings can be subject to bias: clients who do not respond tend to be less satisfied (Stallard 1995; cited in Stallard, 1996) and response rates are low from clients who do not complete therapy (e.g. Jefferis & Porter, 1996; Hughes, 1997). There is also a trend for clients with less severe difficulties to report higher levels of satisfaction (Perreault, Rogers, Leichner & Sabourin, 1996) Therefore, it is likely to be important to ensure that a survey sample obtain a sample of clients distributed across different levels of severity. This illustrates the importance of obtaining a representative sample of clients.
Another problem is that satisfaction research often employs data from quantitative rating scales, which do not necessarily inform future service development as they do not elicit client’s views for improvement. Therefore open-ended questions should be incorporated into surveys asking users for their views, (Stallard, 1996).

The psychology service was interested to know clients’ satisfaction, experience and views and had already developed a questionnaire, which included both rating scales and open-ended questions, and piloted it with thirty clients. Analysis of the pilot results indicated ceiling levels of satisfaction with the service; however, the questionnaire was only administered to clients who had completed therapy and by only a minority of therapists in the department. Thus, the study sample was not representative.

The psychology service commissioned a research project to extend the use of the questionnaire to examine a more representative sample of clients’ views. The service wished to examine satisfaction between clients from the primary care and CMHT service to ascertain whether the previous research finding, that clients with more complex difficulties tended to be less satisfied, was also true for their service. As the pilot had only involved completers of therapy, the service also wished to discover whether these clients differed from non-completers of therapy in satisfaction. In addition, the service wished to use open-ended questionnaire data from a representative sample of clients to inform clinical practice and future service development.

The aims of the present study were:
1. To document satisfaction levels with specific aspects of the service with a wider and more representative sample of clients.
2. To compare satisfaction levels between clients who completed and those who did not complete therapy, with a prediction that non-completers would be less satisfied.
3. To compare satisfaction levels between primary care and CMHT clients, with a prediction that CMHT clients would be less satisfied.
4. To assess generalisability of results to all clients who have used the psychology service.

5. To examine qualitative data provided by clients for their experiences in therapy and suggestions for improvement.

**Method**

**Design**

A questionnaire, cross-sectional survey design was used.

**Participants**

All clients who were discharged from psychology services during a three-month period between 17\textsuperscript{th} January and 18\textsuperscript{th} April, 2000, and had used either primary care and CMHT services at least once, were contacted, with the exception of the researcher's clients (to preserve confidentiality) and six clients who attended a group over this period. Therapists included Clinical Psychologists, Counselling Psychologists and a Counsellor. A variety of therapeutic orientations were utilised within the department, including cognitive-behavioural, systemic-narrative and psychodynamic psychotherapy. 105 clients with a mean age was 37 (SD = 11; range 18-59) were contacted.

**Procedure**

The questionnaire was developed by the service prior to the researcher's involvement and is shown in appendix 1. The service did not wish to make any alterations to the questionnaire for the purpose of this research. On the questionnaire, clients were asked to rate (on a five-point scale) the overall satisfaction with the service, the extent to which their problems were solved, their confidence in sustaining changes made in therapy, and the extent to which their therapist understood the client, made themselves clear to the client and respected the client. Clients were also asked to describe their experience of therapy, their suggestions for improvements, and any other comments via open-ended
questions. In addition clients were asked whether they would refer a friend, or return to the department if they needed more help (yes/no answers) and asked to indicate if their therapist would be able to see their completed questionnaires.

As the questionnaire had already been piloted it could not be ensured that participants contacted retrospectively would not already have completed the questionnaire. Thus, prospectively-discharged clients were contacted for the study. As memory deteriorates over time surveys should be conducted as soon as possible after an event (Baddeley, 1979). Therefore all clients received the questionnaire just after discharge.

To maximise generalisability of findings to the service it is considered essential to achieve a high response rate. Typically response rates to postal questionnaires are low (e.g. 50% in Hutchings & Pope, 1998) and particularly so with non-completers of therapy (e.g. 25% in Jefferis & Porter, 1996).

Response rate is influenced by education and literacy (Baker, Pistrang & Elliot, 1994) and degree of interest in the study (Fowler, 1993). The covering letter accompanying the questionnaire used basic English and did not use technical language, which might deter potential responders. Additionally the letter aimed to stress the importance of clients' views for future development of the service, which aimed to increase motivation to respond. Dillman (1978) stated that increasing the benefit:cost ratio of completing a study is key in maximising response rates. Therefore, the covering letter informed potential participants of the short time involved to complete the questionnaire, and the potential benefits, for themselves and other service users. To reduce the costs to potential participants a pre-paid addressed envelope was enclosed. The format of the covering letter was a similar format to that used in a similar study of service users' views, which achieved a high response rate (Ryden, 1999), and contained headings to aid comprehension and draw attention to aspects of the study. Clients were contacted by post within one week of discharge with a request to participate (see appendix 2) and a questionnaire and pre-paid, addressed envelope enclosed.
Reminders increase response rates (Dillman, 1978). The benefits of high response rates were weighed against the ethical issue of repeatedly contacting clients. Two mailings were considered acceptable by the researcher and the service. Mangione (1995) suggested that responses drop off after fourteen days, so second mailings (see appendix 2) of the questionnaire and pre-paid envelope were performed just after this time lapse at three weeks if clients had not responded to the initial request.

Degree of professional appearance, attractiveness and personalisation in correspondence have been shown to enhance response rates (Fowler, 1993). Therefore covering letters were personalised, on department-headed paper and individually signed. Dillman (1978) suggested that misplacing or forgetting about a questionnaire is a likely reason for non-response to mail surveys. Therefore questionnaires were printed on green coloured paper to increase attractiveness and distinctiveness.

Statistical analyses

Quantitative data from the scales were converted to numerical scores for the purpose of analysing the data as follows:

| "Very Dissatisfied" | 0 |
| "Dissatisfied"     | 1 |
| "Uncertain"        | 2 |
| "Satisfied"        | 3 |
| "Very Satisfied"   | 4 |

Ratings scales were analysed using Mann-Whitney U tests. Qualitative data were subject to content analysis to extract main themes.
**Results**

*Response rate*

Of the 105 clients contacted 49 responded (response rate = 46.7%). 35 clients (71.4%) responded after the initial request to participate and 14 (28.6%) responded after a reminder.

*Response characteristics*

One client returned the questionnaire uncompleted, stating that they had already filled out an identical questionnaire. One client returned the questionnaire with their client number cut off the top and consequently could not be matched up with the demographic data. The data for this client was excluded from the analysis and was not included in calculation of response rate. Instead of circling the appropriate response on the scales, three clients treated the scales as continuous Likert scales and marked in between points. Such responses were scored as 0.5 greater than the lowest of the points between which the response rested. For example, responses between “uncertain” and “satisfied” were coded as 2.5. Some clients did not complete all of the questions.

Clients varied in the amount of qualitative information provided. Seven clients did not respond to the open-ended questions. In response to the qualitative questions it was noted that clients often used the sections as if they were generic sections in which anything could be written. That is, an aspect of therapy one client may have mentioned under Q4 may have been mentioned by another client under Q7. For this reason all the data from the three sections were collapsed into a whole data set for analysis together.

*Assessment of representativeness of the sample*

Age of responders and non-responders was comparable, as was number of sessions attended and cancelled (shown in table 1). There was a trend for non-
completers to have a higher DNA rate, however this was not statistically significant \((t = 1.563; p = 0.122)\)

**Table 1: Background data for responders and non-responders**

<table>
<thead>
<tr>
<th></th>
<th>Responders Mean (SD)</th>
<th>Non-responders Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38 (12)</td>
<td>35 (11)</td>
</tr>
<tr>
<td>Number of sessions attended(^1)</td>
<td>7.7 (5.6)</td>
<td>7.4 (9.1)</td>
</tr>
<tr>
<td>Number of sessions cancelled(^2)</td>
<td>0.8 (1.2)</td>
<td>0.6 (1.0)</td>
</tr>
<tr>
<td>Number of sessions did not attend(^3)</td>
<td>0.5 (1.2)</td>
<td>1.0 (1.5)</td>
</tr>
</tbody>
</table>

\(^1\) Age data were unavailable for 2 clients (both non-responders).

\(^2\) Number of sessions attended data were unavailable for 5 clients (1 responder, 4 non-responders).

\(^3\) Number of sessions cancelled and did not attend data were unavailable for 16 clients (4 responders and 12 non-responders).

Response rate across settings was comparable, as shown in table 2.

**Table 2: Percentages of clients in different settings who responded and did not respond (data available for 89 clients)**

<table>
<thead>
<tr>
<th></th>
<th>Responded % (N)</th>
<th>Did not respond % (N)</th>
<th>Whole sample % (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary care</td>
<td>48.5% (32)</td>
<td>51.5% (34)</td>
<td>100% (66)</td>
</tr>
<tr>
<td>CMHT</td>
<td>48.3% (14)</td>
<td>51.7% (15)</td>
<td>100% (29)</td>
</tr>
<tr>
<td>Other</td>
<td>50% (2)</td>
<td>50% (2)</td>
<td>100% (4)</td>
</tr>
</tbody>
</table>
Response rate across discharge status is shown in table 3. There was a tendency for lower response rates from clients who were seen for assessment only and clients who did not complete therapy. The differential response rate was significant for completers vs. non-completers ($\chi^2 = 3.878; p = 0.049$).

**Table 3: Treatment status of responders and non-responders**

<table>
<thead>
<tr>
<th></th>
<th>Responded % (N)</th>
<th>Did not respond % (N)</th>
<th>Whole sample % (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>25% (2)</td>
<td>75% (6)</td>
<td>100% (8)</td>
</tr>
<tr>
<td>Completed</td>
<td>65.2% (30)</td>
<td>34.8% (16)</td>
<td>100% (46)</td>
</tr>
<tr>
<td>Did not complete</td>
<td>39.3% (11)</td>
<td>60.7% (17)</td>
<td>100% (28)</td>
</tr>
<tr>
<td>Referred on</td>
<td>40% (2)</td>
<td>60% (3)</td>
<td>100% (5)</td>
</tr>
</tbody>
</table>

**Quantitative data: whole sample**

The percentages of clients who rated different aspects of the service positively (i.e. above the “uncertain” category are detailed in table 4 below.
Table 4: Percentages of clients rating different aspects of the service positively (i.e. above “uncertain”)

<table>
<thead>
<tr>
<th></th>
<th>Percentage of clients rating aspect of therapy positively i.e. above “uncertain”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Overall satisfaction</td>
<td>80.9 (very satisfied or satisfied)</td>
</tr>
<tr>
<td>Q2 Problem solved</td>
<td>63.0 (completely or pretty much)</td>
</tr>
<tr>
<td>Q3 Confidence in sustaining changes made</td>
<td>55.6 (totally or quite)</td>
</tr>
<tr>
<td>Q5a Therapist understood client</td>
<td>84.8 (completely or quite a lot)</td>
</tr>
<tr>
<td>Q5b Therapist clarity to client</td>
<td>89.4 (completely or quite a lot)</td>
</tr>
<tr>
<td>Q5c Therapist respect for client</td>
<td>91.5 (completely or quite a lot)</td>
</tr>
<tr>
<td>Q6a Would refer a friend to department</td>
<td>85.1 (yes)</td>
</tr>
<tr>
<td>Q6b Would come back to department</td>
<td>85.1 (yes)</td>
</tr>
</tbody>
</table>

* Q1, 5b, 5c, 6a, 6b, N = 47
Q2, 5a, N = 46
Q3, N = 45

The distributions for data from the rating scales were negatively skewed, with a tendency for ratings towards the more satisfied range. Means are shown in addition to medians as they are more discriminating between the questionnaire items.
### Table 5: Mean and median satisfaction ratings given by clients

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Median “range”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction (Q1)</td>
<td>3.2 (1.0)</td>
<td>3.0 “satisfied”</td>
</tr>
<tr>
<td>Therapy sorted out problems (Q2)</td>
<td>2.4 (1.0)</td>
<td>3.0 “Pretty much”</td>
</tr>
<tr>
<td>Confidence in sustainment of therapeutic changes (Q3)</td>
<td>2.4 (1.0)</td>
<td>3.0 “Quite”</td>
</tr>
<tr>
<td>Therapist understanding of client (Q5a)</td>
<td>3.2 (0.9)</td>
<td>3.0 “Quite a lot”</td>
</tr>
<tr>
<td>Therapist clarity to client (Q5b)</td>
<td>3.4 (0.8)</td>
<td>3.5 “Quite a lot”</td>
</tr>
<tr>
<td>Therapist respect for client (Q5c)</td>
<td>3.5 (0.7)</td>
<td>4.0 “Completely”</td>
</tr>
</tbody>
</table>

### Table 6: Comparison of rating scales for clients 1st vs. 2nd time responders

<table>
<thead>
<tr>
<th></th>
<th>1st time responders (N = 35) Mean (SD)</th>
<th>2nd time responders (N = 14) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Overall satisfaction</td>
<td>3.3 (1.0)</td>
<td>2.9 (1.1)</td>
</tr>
<tr>
<td>Q2 Therapy sorted out problems</td>
<td>2.6 (0.9)</td>
<td>1.8 (1.1)</td>
</tr>
<tr>
<td>Q3 Confidence in sustainment of therapeutic changes</td>
<td>2.6 (1.0)</td>
<td>1.9 (1.0)</td>
</tr>
<tr>
<td>Q5a Therapist understanding of client</td>
<td>3.3 (0.8)</td>
<td>3.0 (1.3)</td>
</tr>
<tr>
<td>Q5b Therapist clarity to client</td>
<td>3.5 (0.6)</td>
<td>3.1 (1.1)</td>
</tr>
<tr>
<td>Q5c Therapist respect for client</td>
<td>3.5 (0.7)</td>
<td>3.5 (0.8)</td>
</tr>
</tbody>
</table>

* 1st time responders Q1, 2, 5a, 5b and 5c N = 33, Q3 N = 32
* 2nd time responders Q2, 3 and 5a N = 13.
Mean ratings for first time responders show a trend to be higher than second time responders. This difference reached statistical significance for Q2 and Q3 in that first time responders tended to rate degree to which therapy helped sort out their problems and degree of confidence in sustainment of changes as higher than second time responders (Q2 \( Z = 2.277, p = 0.023 \); Q3 \( Z = 2.184, p = 0.029 \)).

Table 7: Comparison of satisfaction ratings for completers vs. non-completers of therapy.

<table>
<thead>
<tr>
<th></th>
<th>Completers (N = 31) Mean (SD)</th>
<th>Non-completers (N = 12) Mean (SD)</th>
<th>Mann-Whitney U-test Z (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Overall satisfaction</td>
<td>3.6 (0.6)</td>
<td>2.1 (1.3)</td>
<td>( Z = 3.760, p &lt; 0.001^{**} )</td>
</tr>
<tr>
<td>Q2 Problem solved</td>
<td>2.8 (0.7)</td>
<td>1.8 (1.1)</td>
<td>( Z = 3.043, p = 0.005^{**} )</td>
</tr>
<tr>
<td>Q3 Sustainable changes</td>
<td>2.7 (0.8)</td>
<td>1.8 (1.2)</td>
<td>( Z = 2.761, p = 0.010^{**} )</td>
</tr>
<tr>
<td>Q5a Therapist understanding</td>
<td>3.6 (0.5)</td>
<td>2.4 (1.1)</td>
<td>( Z = 3.738, p &lt; 0.001^{**} )</td>
</tr>
<tr>
<td>Q5b Therapist clarity</td>
<td>3.6 (0.5)</td>
<td>2.7 (1.2)</td>
<td>( Z = 2.605, p = 0.018^{**} )</td>
</tr>
<tr>
<td>Q5c Therapist respect</td>
<td>3.7 (0.6)</td>
<td>3.1 (0.8)</td>
<td>( Z = 2.033, p = 0.080 )</td>
</tr>
</tbody>
</table>

*One person who completed therapy and one person who dropped out did not complete the rating scales.

** Significant difference at 0.05 level.

On all ratings there was a tendency for completers to rate higher than non-completers. This reached statistical significance for all comparisons except therapist respect for client.
Mean satisfaction overall, degree to which problem was solved, therapist understanding, clarity and respect are comparable between Primary care and CMHT clients. There was a trend for CMHT clients to rate their confidence in sustaining changes made in therapy lower than Primary care clients, but this did not reach statistical significance.

Qualitative data: whole sample

Previous studies have explicitly looked at the therapeutic process itself (as shown in review by Elliott & James, 1989). However, in the present study clients were also asked for their suggestions for improvement of the service and any other comments. For this reason, it was not possible to employ pre-defined categories solely from the literature. Instead, categories were created through both consideration of the literature and through gaining familiarity with the data, a process recommended by Day (1989).
Responses were not necessarily confined to the pre-imposed categories on the questionnaire. For example clients might make suggestions for improvement in the “experience of therapy” section, and conversely might report their experience of therapy in the “suggestions for improvement” section. Therefore data from qualitative sections were combined for analysis.

Four main categories of aspects of therapy emerged from the data: practicalities of therapy, therapeutic relationship, therapist action and outcome for client. Clients also tended to express appreciation and made comments about other professionals.

Comments regarding practicalities were a mixture of appreciation of aspects of the service and suggestions for improvement (shown in table 9).
Table 9: Practicalities: number of clients who reported positive comments or made requests

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Positive comment N =</th>
<th>Request N =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting time for appointment</td>
<td>2 (appreciation of speed with which seen)</td>
<td>3 (requested shorter)</td>
</tr>
<tr>
<td>Timing of referral from other professional</td>
<td></td>
<td>3 (requested sooner)</td>
</tr>
<tr>
<td>Length of sessions</td>
<td></td>
<td>2 (requested more flexible and longer)</td>
</tr>
<tr>
<td>Timing of sessions</td>
<td>2 (appreciation of flexibility in session times)</td>
<td>2 (requested more flexibility)</td>
</tr>
<tr>
<td>Amount of sessions</td>
<td></td>
<td>5 (requested more, follow up and flexibility)</td>
</tr>
<tr>
<td>Punctuality of sessions</td>
<td>2 (appreciation of appointments to time)</td>
<td>1 (requested replacement for illness)</td>
</tr>
<tr>
<td>Flexibility (access to therapist outside arranged times)</td>
<td>1 (appreciation of access to therapist on phone outside of appointment times)</td>
<td>2 (requested ad-hoc groups and drop-in time)</td>
</tr>
<tr>
<td>Additional resources</td>
<td></td>
<td>3 (requested information leaflet re: psychology, e-mail counselling, video, reading list)</td>
</tr>
<tr>
<td>Specialist resources</td>
<td></td>
<td>2 (requested tranquilliser addiction group and more specialists in eating disorders)</td>
</tr>
<tr>
<td>Referral on</td>
<td>1 (appreciation of therapist knowing when to refer on)</td>
<td>1 (requested help from psychology and not referral on)</td>
</tr>
<tr>
<td>Therapy physical environment</td>
<td></td>
<td>1 (requested less “shabby room”)</td>
</tr>
</tbody>
</table>
Aspects of the therapeutic relationship that clients mentioned are detailed in table 10.

**Table 10: Therapeutic relationship**

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Examples</th>
<th>Aspect present N =</th>
<th>Aspect absent N =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking</td>
<td>“X was good to talk to”</td>
<td>11</td>
<td>1 (but wanted to talk)</td>
</tr>
<tr>
<td>Listening</td>
<td>“I found X listened to me”</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td>“she was very good at understand (sic) what I have been through”</td>
<td>12</td>
<td>2 (one suggested employment of people with mental health problems)</td>
</tr>
<tr>
<td>Openness: supportive/non-judgemental/safe/trust</td>
<td>“It was a relief telling someone everything about myself and what I’ve done who is prepared to listen and not judge you”</td>
<td>10</td>
<td>1 (did not feel safe)</td>
</tr>
<tr>
<td>Respect</td>
<td>“I am a very private person and this was respected as well”</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>“I felt X valued me”</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>“she was interested in me”</td>
<td>2</td>
<td>2 (disinterested)</td>
</tr>
<tr>
<td>Rapport</td>
<td>“I related well to her”</td>
<td>3</td>
<td>1 (unable to build rapport)</td>
</tr>
<tr>
<td>Non-clinical style</td>
<td>“it would be better if you felt like it was a one to one conversation rather than somebody receiving therapy”</td>
<td>2 (liked being informal)</td>
<td>1 (too formal)</td>
</tr>
<tr>
<td>Generic positive statement about therapist</td>
<td>“was pleasant” “friendly”</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Therapists’ actions fell into four sub-categories: professional explanation, normalisation, collaborative or a directive style (table 11). The data suggests that some clients would value a professional explanation for their problem and that clients prefer a collaborative style of therapy as opposed to directive style. Where not explicitly stated, rating of an action as helpful was inferred from the context in which the action was referred to. Clients who rated a particular action as unhelpful tended to state explicitly so, and therefore it may be assumed that those who did not complain about something are implicitly suggesting its usefulness.

Table 11: Therapists’ action

<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Examples</th>
<th>Rated positively N =</th>
<th>Rated negatively N =</th>
<th>Requested (did not receive) N =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional explanation of problem</td>
<td>“I feel that it would help me a lot if next time we meet my psychologist could help explain to me the cause of my condition in her professional opinion”</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Normalisation</td>
<td>“made me feel normal”</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Collaborative style: guided questions</td>
<td>“she allowed me to talk through my problems and discover my own answers”</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Non-collaborative style: therapist-directed</td>
<td>“at times I was a little unclear with what I had to do”</td>
<td>1 (initially rated negatively, then positively)</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

139
Client reported outcomes are shown in table 12. The most frequently reported outcome was change in perspective, followed by self-understanding. Only three clients reported specific improvement in problem, yet only one client stated that they did not experience improvement. Ten clients reported that therapy had been helpful, but did not describe in what way.
<table>
<thead>
<tr>
<th>Sub-categories</th>
<th>Examples</th>
<th>Positive comments</th>
<th>Negative comments</th>
<th>Requested N =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-understanding/discovery of problem and why occurred</td>
<td>“I don’t feel we got to the root of why I feel the way I do”</td>
<td>6</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>“opened my eyes to a few things I either didn’t realise or didn’t want to realise”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off-loading of problem/emotional expression</td>
<td>“sessions were...load-lifting”</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“to me I felt I was going crying for an hour and that was it. We would speak about my problems but I was coming out feeling no different”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in perspective (e.g. more able to cope, shift of focus, life goes on, acceptance of problem)</td>
<td>“I have my life back now”</td>
<td>12</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>“the things I was worrying about really didn’t matter”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“life goes on”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific improvement in problem</td>
<td>“helped build my confidence”</td>
<td>3</td>
<td>1 (not got)</td>
<td></td>
</tr>
<tr>
<td>Change of mind about therapy (i.e. sees as more positive)</td>
<td>“I used to be the biggest sceptic out but I am glad I tried all the help offered”</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Generic statement of helpfulness</td>
<td>“I feel that the therapy I received has been very valuable and productive and beneficial”</td>
<td>10</td>
<td>3 (unhelpful)</td>
<td></td>
</tr>
<tr>
<td>Thanks/appreciation</td>
<td>“thanks for your help”</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-blame for outcome</td>
<td>“I am unable to cope at the level of therapy”</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
In addition, four comments were made about other professionals, one of which was positive, and three of which were complaints.

**Discussion**

*Client satisfaction*

80.9% of clients reported that overall they were satisfied with the service (mean overall satisfaction was in the “satisfied” to “very satisfied” range). 63.0% of clients reported that their problems had either completely or pretty much been resolved (mean rating was in the “uncertain” to “pretty much” range). 55.6% of clients were confident in sustaining changes made in therapy (mean ratings was in the “undecided” to “quite” range). This suggests that although the majority of clients were satisfied overall with the service, fewer had their problems sorted out and even fewer felt confident in sustaining changes, illustrating the difference between satisfaction and outcome (Hutchings & Pope, 1998). It also might reflect the effect of the time interval after which clients were asked to complete the form (Elliott & James, 1989): just after discharge. Ratings of confidence in sustaining changes might be different dependent on the clients’ experience in the time after discharge.

The percentage of clients who rated that the therapist understood them, made themselves clear and respected them was high (84.8%, 89.4% and 91.5% respectively), which suggests that clients generally had good therapeutic relationships with their therapists.

As predicted clients who did not complete therapy were significantly less satisfied on all but one of the ratings (therapist respect). Although data does not imply a causal relationship and reasons for not completing therapy can vary (Hughes, 1997), it is possible that clients are not completing therapy due to dissatisfaction. Nevertheless, despite lower overall ratings, clients who dropped out of therapy did still tend to report fairly high levels of satisfaction.
Contrary to the prediction made that CMHT clients would be less satisfied than primary care clients, ratings by clients seen in a CMHT setting were only slightly lower than those seen in a primary care setting for confidence in sustaining changes (but not significantly so), and comparable for all other questions. Therefore, clients in the CMHT service were not significantly less satisfied than primary care clients.

Generalisability of the results

The response rate achieved in the study was 46.7%. Although this is higher than some studies the fact that over half of the sample’s views were not represented in the data will to some extent limit the generalisability of the findings. The trend for lower ratings from second-time responders compared with first-time responders suggests that non-responders might be even less satisfied.

A lower response rate was obtained from clients who had been referred for assessment only, indicating that a questionnaire about therapy may be considered inappropriate by these clients. A lower response rate was also obtained from clients who did not complete therapy, and it is possible that clients who did not respond might be less satisfied (Stallard, 1995; cited in Stallard, 1996), which may bias the results.

The response rates across primary care and CMHT clients were comparable, which suggests that results from the comparison between the two settings may be representative.

Experience of therapy

Clients’ comments were separated into four main categories, practicalities, therapeutic relationship, therapists action and outcomes. Clients clearly valued aspects of the therapeutic relationship. There was also evidence that clients prefer a collaborative as opposed to directive style. The most frequently reported outcome was change in perspective, followed by self-understanding. Specific improvements were less frequently reported, and interestingly were only
requested by one. This might suggest that clients have a realistic perspective of what they can achieve in therapy, i.e. they do not expect to be "cured". Further analysis between satisfaction ratings and client reported experiences may further illuminate what clients find useful in therapy; however this was beyond the scope of the present study.

Critique

Biases may be present in that some clients' views may not be represented due to limited vocabulary (Elliott & James, 1989). Furthermore, one cannot assume that because a client did not mention a particular aspect of therapy, they did not experience it, or did not find it useful. It is also important to note that the content analysis was performed by a trainee clinical psychologist, who may have classified the data differently both from clients or more experienced therapists.

Implications for the service

The high levels of satisfaction reported and high rate of positive experiences in therapy are encouraging for the service. In addition, client reported experience of the therapeutic relationship and outcomes were overwhelmingly positive.

Suggestions made by clients for service improvement mainly concerned practicalities, for example, shorter waiting times, earlier referral from other professionals, more sessions and more flexible times for sessions and additional resources. One such request, for more information about the service is being considered in the form of an opt-in leaflet.

References


**Appendices**

Appendix 1: Questionnaire
Appendix 2: Initial covering letter
Appendix 3: Second covering letter
Appendix 1: Questionnaire
User Satisfaction Survey for Psychology Service

Our department is conducting a survey, involving all our users, in order to gather opinions on our service. We value your views of our service, so please take your time in filling out this questionnaire. Your participation is entirely voluntary, and information given by you will be strictly confidential and be used for audit and research purposes only. Please try to answer all of the questions, including those on the reverse of this page.

Please circle on the following scales the point which you feel best describes your opinions.

1. Overall, how satisfied are you with the service that you received from our department?

<table>
<thead>
<tr>
<th>Satisfied</th>
<th>Uncertain</th>
<th>Very Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Did therapy help you to sort out your problems/symptoms?

<table>
<thead>
<tr>
<th>Completely</th>
<th>Uncertain</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How confident do you feel in the long term with sustaining any changes that you may have made through therapy?

<table>
<thead>
<tr>
<th>Totally</th>
<th>Undecided</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. In your own words, if you would like to, please describe your own experience of the therapy you received from your psychologist

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
5. Please circle a point on the following scales which you feel describes your view of whether your psychologist:

a) Understood you?

Completely       Uncertain       Not At All

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quite a lot</td>
<td>Not Much</td>
</tr>
</tbody>
</table>

b) Made herself/himself clear to you?

Completely       Uncertain       Not At All

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quite a lot</td>
<td>Not Much</td>
</tr>
</tbody>
</table>

c) Respected you?

Completely       Uncertain       Not At All

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quite a lot</td>
<td>Not Much</td>
</tr>
</tbody>
</table>

6. Would you:
   (Please tick a box)
   a) Refer a friend to this department? Yes ☐ No ☐

   b) Come back if you needed more help? Yes ☐ No ☐

7. Do you have any suggestions to enable our service to suit you better?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

If you have any other comments, please write them below.
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

3. Please tick the box if it would be OK if we put this survey in your file for your psychologist to see? ☐
Appendix 2: Initial covering letter

Psychology Department
ADDRESS

DATE

CLIENT ADDRESS

Dear CLIENT NAME

Here in the department we have realised we do not really know much about peoples' views of the psychology service. I understand that you recently saw a member of the psychology department. We would be very interested to know your views in order to improve the service other people experience in the future.

How?
I have enclosed a questionnaire, which will only take 10 minutes to complete, and a pre-paid envelope for its return.

Why you?
Everyone who has recently seen a member of the psychology department is being asked to complete a questionnaire.

Who will see your questionnaire?
No one outside the psychology department will see your questionnaire. The questionnaire will not have your name on it and will be kept separate from your file unless you tick the box saying you would not mind if we put the questionnaire in your file for your psychologist to see.

What will happen to the results?
Your opinions will help us to improve services in the future. I hope that everyone will respond as the service really does want to consider the views of everyone.

Will it affect my treatment?
Participation is voluntary. Your future treatment will not be affected by whether you choose to complete the questionnaire or not. However, we do hope that gaining everyone’s views of the service will enable improvement of the service for everyone in the future.

I hope I have answered any questions you may have, but if you would like more information please contact me on 01403 227000 ext. 7272.

Thanking you in advance for your time
Yours sincerely

RESEARCHER’S NAME
Trainee Clinical Psychologist
Enc: Questionnaire, pre-paid envelope
Appendix 3: Second covering letter

Psychology Department
ADDRESS

DATE

CLIENT ADDRESS

Dear CLIENT NAME

I recently wrote to you inviting you to give your views of the psychology service. If you have already replied to this request, please ignore this letter. If not, I apologise for bothering you again, but wanted to let you know how important your views are for the future development of the service. In order to improve the service we would like to consider the views of everyone – including you!

How?
I have enclosed a questionnaire, which will only take 10 minutes to complete, and a pre-paid envelope for its return.

Who will see your questionnaire?
No one outside the psychology department will see your questionnaire. The questionnaire will not have your name on it and will be kept separate from your file unless you tick the box saying you would not mind if we put the questionnaire in your file for your psychologist to see.

What will happen to the results?
Your opinions will help us to improve services in the future. I hope that everyone will respond as the service really does want to consider the views of everyone.

Will it affect my treatment?
Participation is voluntary. Your future treatment will not be affected by whether you choose to complete the questionnaire or not. However, we do hope that gaining everyone’s views of the service will enable improvement of the service for everyone in the future.

I hope I have answered any questions you may have, but if you would like more information please contact me on 01403 227000 ext. 7272.

Thanking you in advance for your time
Yours sincerely

RESEARCHER’S NAME
Trainee Clinical Psychologist
Enc: Questionnaire, pre-paid envelope
Literature review

Year 2

September 2001
What is insomnia and how do we measure it?: A review of the literature

Introduction

It is estimated that between 15 to 20% of the population (Ford & Kamerow, 1989) and over 75% of people with mental health problems (Morin, 1993) suffer from sleeping difficulties. Clinical psychologists generally receive only limited training in treatment of sleeping difficulties (Stores & Wiggs, 1998), despite the fact that sleeping difficulties are prevalent in people with mental health problems. Psychological therapies based on behavioural and cognitive theories have demonstrated efficacy (e.g. Morin, Culber & Schwartz, 1994a; Murtagh & Greenwood, 1995). Given that clients often prefer psychological to pharmacological treatments (Morin, Gaulier, Barry & Kowatch, 1992; Vincent & Lionberg, 2001), there may be increasing demand for clinical psychologists to provide these treatments. Such treatments may be particularly important in mental health services, as sleeping difficulties are thought to increase the risk for developing depression (Ford & Kamerow, 1989). In order for efficacy literature to be interpreted and decisions to be made regarding resource allocation and treatment protocols, it is important for clinical psychologists to have a knowledge of definitions of insomnia, as these vary in the literature.

Defining insomnia is problematic; it is difficult to know when “sleep problems” become clinical insomnia and are in need of treatment. The Oxford Dictionary (1995) defines insomnia as, “Chronic inability to fall asleep or enjoy uninterrupted sleep” The definition of chronicity and enjoyment is inherently subjective, which highlights difficulties in the definition of insomnia.

In order for a definition of insomnia to be useful for the work of a clinical psychologist, it needs to be clinically relevant and needs to be valid and reliably measured. Three main classifications have been developed and are in use: International Classification of Sleep Disorders (ICSD); Diagnostic and Statistical
Manual of Mental Disorders – fourth edition (DSM-IV) and International Classification of Diseases – tenth edition (ICD-10). The diagnostic categories for insomnia within the two most widely cited classification systems in the literature (ICSD and DSM-IV) that are particularly relevant to the work of clinical psychologists will be described, i.e., insomnia alone, or related to a mental health problem. In particular, each of the main diagnostic classifications assumes separate categories for insomnia in people with and without mental health problems. This begs the question, is insomnia different when it occurs in people with mental health problems from those without? This is important as treatment recommendations differ depending on diagnosis. The validity of this distinction will be one of the main foci of this review. Research that has examined the validity of this diagnostic distinction will be critically evaluated.

Inevitably, the nature of the definition of insomnia will affect assessment procedures. Therefore, it is important for the clinical psychologist to know about different assessment tools and the problems inherent in their use. Therefore, both subjective and objective assessment tools for insomnia will be evaluated.

**Description of classification systems**

The DSM-IV and ICSD classification systems are described here. There are too many sub-classifications within insomnia to describe these in detail, therefore, the focus will be on those of particular relevance to clinical psychologists: insomnias alone (unrelated to physical difficulties) and insomnias related to mental health problems.

**DSM-IV**

Sleep disorders criteria in DSM-IV are broad compared with ICSD. Insomnia in DSM-IV (American Psychiatric Association, 1994) is classified according to whether it is primary, or secondary to a mental disorder or a general medical condition. The latter will not be described here. Criteria for primary insomnia state that the person must have difficulty initiating or maintaining sleep, or nonrestorative sleep, for at least one month. It also states that the sleep
disturbance must cause clinically significant distress in important areas of
functioning. The insomnia must not be related to another sleep disorder and must
not occur exclusively within the course of another mental disorder or general
medical condition. Criteria for insomnia related to a mental disorder are the same
as those for primary insomnia, but state that the insomnia is related to another
axis I or axis II disorder, and that the insomnia is sufficiently significant to
warrant separate attention. Therefore, the distinction in DSM-IV between primary
insomnia and insomnia related to a mental disorder implies differences in
conceptualisation of insomnia in people with and without mental health
difficulties.

ICSD

The ICSD (American Sleep Disorders Association, 1990, 1997) is the only one of
the three classification systems to be developed exclusively for diagnosis of
sleeping difficulties. Hence, its sleep disorder categories are much more specific
than DSM-IV. Criteria are also more detailed and thus the reader is referred to the
original texts for a complete description. It was first developed in 1990 from the
American Classification of Sleep Disorders (ACSD), a result of a survey of
clinicians, therefore, it is based on expert opinion. It has since been revised
(ICSD-R, 1997). ICSD is designed to reflect the presumed pathophysiology
behind the sleep disturbance. It includes a category of dyssomnias, within which
sub-categories of disorders thought to be due to factors within the body (intrinsic)
and factors outside the body (extrinsic) exist. ICSD diagnoses, thought to be due
to intrinsic factors, of psychophysiologic (learned sleep preventing associations)
and idiopathic insomnia (no known causes, with childhood onset) and sleep-state
misperception (when sleep deficit is perceived, rather than actual) are likened to
the more general DSM-IV diagnosis of primary insomnia (Sateia, Doghramji,
Hauri & Morin, 2000). The validity of specific sub-categories, as opposed to a
general category is debatable and has been subject to review (Reynolds, Kupfer,
Buysse, Coble & Yeager, 1991) and will not be discussed here.

The ICSD includes a separate category from the dyssomnias for disorders of
sleep related to medical or psychiatric conditions. In addition, unlike DSM-IV,
which assumes all insomnias secondary to psychiatric disorder under the one category, ICSD contains separate sub-categories according to the specific psychiatric disorder; anxiety, affective disorders, psychosis and panic disorder.

In summary, both DSM-IV and ICSD specify a minimum duration of one month. Despite the intended objectivity, the DSM-IV classification system requires subjective interpretation, for example, in defining “difficulty” sleeping and deciding what constitutes “clinically significant distress” (in DSM-IV). ICSD is more objective by giving criteria related to the actual amount of sleep obtained; however, it does not state how this should be judged (i.e. through laboratory tests or self-report measures). ICSD is also more specific in that it allows for a “complaint of insomnia”, rather than leaving the interpretation of the sleeping difficulty (i.e. objective or subjective) up to the clinician. This begs the question, should we classify people on the basis of more objective measures, or on the basis of subjective complaints. This point will be examined in more detail below.

Both ISCD and DSM-IV both classify people with insomnia differently on the basis of whether the insomnia is thought to be related to mental health problems or not. The validity of this distinction will be addressed. Whether such a distinction is valid has not been explicitly questioned in the literature, and therefore this distinction seems to be accepted. Given the implications for different treatment (e.g. Morin, 1993), this should be subject to enquiry.

Insomnia versus insomnia related to mental health problems

Validity and clinical usefulness

Both DSM-IV and ICSD distinguish between primary insomnia versus insomnia related to mental health problems; however, it is not clear on what basis this decision was made. Establishing the validity of such a distinction is very important, given that diagnoses give rise to different treatment recommendations within the literature. For example, Morin (1993) recommends that where insomnia is related to mental health problems, the mental health problems should be the primary focus of treatment. However, if an individual receives a diagnosis
of primary insomnia, they will receive treatment for that difficulty. Although DSM-IV is intended to be atheoretical (American Psychiatric Association, 1994), its distinction between these categories implies, and has led in clinical practice, to distinctions between the underlying causality. ICSD is explicit in its presumption of different underlying causality.

It is possible that such a distinction is valid on the basis of polysomnographic data; however, an evaluation of the evidence is beyond the scope of this review. Furthermore, in clinical practice polysomnographic data is expensive to obtain, and can be problematic in terms of ecological validity (see below), and therefore such a conceptual distinction that requires sophisticated evaluation techniques may not be useful in clinical practice.

In an attempt to support the distinction between diagnostic criteria for DSM-IV and ICSD, as part of the DSM-IV field trials, Buysse, Reynolds, Kupfer, Thorpy, Bixler et al. (1997) asked clinicians to make treatment recommendations after diagnosing clients with sleep disorders at specialist sleep centres. Treatment recommendations differed between insomnia diagnoses. Psychiatric interventions tended to be the first recommendation for insomnia related to mental health problems (DSM-IV) and insomnia related to mood or anxiety disorder (ICSD). Sleep hygiene was the first recommendation for primary insomnia (DSM-IV) and psychophysiological insomnia (ICSD). The authors suggest that as differences in treatment recommendations were found across the diagnoses, this lends support to the face validity of the diagnoses. However, just because clinicians have a conceptualisation of the cause of a disorder on the basis of its classification description, it does not mean that such a distinction between disorders is valid. Furthermore, Buysse et al. (1997) found that sleep hygiene was also a second or third choice of treatment for insomnia related to mental health problems, and psychiatric intervention was rated as a fourth treatment by non-sleep specialists for primary insomnia. This suggests that clinicians are confused with regard to aetiology and appropriateness of treatment and further refutes the authors’ claims that the study supports the face validity of the diagnostic distinctions.
Further evidence that clinicians have difficulty in distinguishing between primary insomnia and that related to mental disorders was found by Nowell, Buysse, Reynolds, Hauri, Roth et al. (1997), also as part of the DSM-IV field trial. Clinicians were asked to provide at least one diagnosis and a second, third or unlimited number of rule-out diagnoses. Of 216 participants, 147 were diagnosed to have either primary insomnia or insomnia related to mental disorders. Of these 147, only 11 received a diagnosis of pure primary insomnia (i.e. no additional diagnosis of insomnia related to mental disorders) and only 63 received a diagnosis of pure insomnia related to mental disorders (i.e. no additional diagnosis of primary insomnia). In the remaining 73 participants both diagnoses were applied. The results do suggest that clinicians may have difficulty in distinguishing between the diagnoses in individual clients, although with increasing numbers of rule-out diagnoses included in the statistics, the number of clients with both diagnoses will obviously increase. The authors do not specify the number of diagnoses applied to the individuals in the above cases. A limiting factor of this research was that it only included people from specialist sleep disorders centres, not mental health services, in whom the differentiation between primary and secondary insomnia might be even more difficult.

A useful way of determining the validity of the distinction between types of insomnia alone and those related to mental health problems would be to test the treatment response of clients in different groups (Buysse et al., 1994a). If both responded equally to a standard intervention for insomnia, it may be that such a conceptual distinction is not clinically relevant or valid. However, if, as the literature suggests (e.g. Morin, 1993), that clients with insomnia related to mental health difficulties require treatment of those mental health difficulties for insomnia to improve, this would lend support to the validity and clinical usefulness of the diagnostic distinction. Morin et al. (1994) showed that people with insomnia secondary to psychopathology (anxiety and affective disorders) demonstrated a comparable treatment response to people with psychophysiological (primary) insomnia to a cognitive-behavioural treatment for insomnia. However, participants who had sufficiently severe mental health problems to warrant treatment were referred elsewhere and not included in the study. Therefore, findings might not generalise to people with severe or enduring
mental health problems, whose insomnia may not improve in response to the
treatment. Future research would need to address this question. Dashevsky &
Kramer (1998) also demonstrated significant improvements in people with
insomnia plus psychiatric disorders following a behavioural intervention that
specifically targeted insomnia. Unfortunately this study did not employ a control
group of people with primary insomnias and therefore treatment response cannot
be compared. A further problem with this study was that, like Morin et al.
(1994b), the participants were recruited from specialist sleep disorder centres and
not from mental health services. Therefore, preliminary evidence suggests that
the distinction between the diagnostic categories of insomnia alone and related to
mental health problems may be of questionable validity when judged by
treatment outcome. Findings require further evaluation, in particular with people
from mental health populations, who may show problems on the more severe end
of the spectrum and therefore may respond differently from those with primary
insomnia to treatment.

The author does not know of data pertaining to the validity of this distinction in
ICSD. ICSD is more specific than DSM-IV in that it includes specific sub-
categories of secondary insomnia depending on the psychiatric disorder to which
it relates. It is possible that someone with insomnia secondary to anxiety may
need different treatment from someone with insomnia secondary to affective
disorders. Examining treatment response across groups of individuals could test
the validity of these sub-categories.

For distinctions in classification systems to be clinically useful, they also need to
be reliable.

Inter-rater reliability

Inter-rater reliability was assessed as part of the field trial for DSM-IV.
Agreement was assessed by asking two clinicians, one sleep specialist and one
general clinician at five different sites to interview patients with sleep complaints
together and then independently decide on a diagnosis. Inter-rater kappa co-
efficients between the two interviewers ranged from 0.28 to 0.59 across sites for a
diagnosis of primary insomnia, and 0.34 to 0.60 for a diagnosis of insomnia related to another mental disorder (Buysse et al., 1994b). (Kappa coefficients of 0.20 to 0.40 are considered “poor” and 0.41 to 0.60 are considered “moderately good”, Landis & Kock, 1977; cited in Buysse et al., 1994b). Therefore, it is likely that agreement between the two individual clinicians’ conceptualisation of the DSM-IV insomnia classification system varied across sites.

Buysse et al. (1994b) also found high variation in prevalence of specific diagnoses across the five sites. In particular, there was often disagreement over the diagnoses of primary insomnia versus insomnia related to another mental disorder. Buysse et al. (1994b) suggest that clinicians differ in their perception of the importance of psychiatric factors. The authors raised the possibility that this could be due to variation in client samples across the sites. However, further research that required clinicians from other sites to diagnose clients from videotapes of original interviews for the study found large site-related differences in diagnosis (Buysse et al., 1994c; cited in Buysse et al., 1994a).

Therefore, it seems that at least for DSM-IV criteria for primary insomnia and insomnia related to a mental disorder, inter-rater reliability and reliability in diagnosing across different sites is fairly low. Buysse et al. (1994b) note that the research did not employ structured interviewing techniques and therefore may have compromised the diagnostic reliability. Nevertheless, the research does more closely reflect clinical diagnostic practice. Poor reliability is a threat to the utility of this diagnostic system, as diagnosis appears to depend on whom the client is referred to, and at which sleep disorders centre the client is seen. Given that diagnosis is expected to aid treatment decisions, such variation in diagnostic practice may mean that clients do not receive the most appropriate treatment. Unfortunately, as clients were seen in specialist sleep disorders centres, results cannot be generalised to population, or psychiatric samples. Furthermore, the population of participants for the DSM-IV field trials was highly educated (Buysse et al., 1994), a factor which is likely to have increased communication between client and interviewer and possibly have increased reliability, thereby decreasing the generalisability of the findings to the general population.
The author does not know of reliability data for the ICSD.

**Assessment of insomnia**

It is important that assessment tools are both reliable and valid, and in particular, that they measure the client’s presenting problem. Assessment methods may also be used to determine outcome of an intervention and in this respect, it is also important that they reflect outcome that is clinically meaningful, both to the clinician and to the client.

Definition of insomnia varies widely within the research literature. Rather than being based on defined criteria, or even any standard methods, methodologies of eliciting sleeping difficulties from participants vary widely between research studies, making comparison between them difficult (Ford & Kamerow, 1989). This is a particular factor in epidemiological research, as estimates of prevalence vary widely depending on how members of a population are assessed. Even within formal assessment methods, variation in method of assessing for insomnia alone or related to mental health difficulties exists. As research discussed above shows, it is also difficult for clinicians to judge when insomnia is primary or when it is related to mental health difficulties, or indeed to decide when the insomnia should be subsumed under a definition of mental health difficulties. Such decisions will inevitably be affected by assessment methods.

*Global assessment measures*

Even formal assessment methods based on diagnostic categories can differ in their approach and therefore bias assessment results. For example, using a computerised telephone interview system based on DSM-IV, which incorporated decision making flow-charts, prevalence of insomnia that had prevailed for at least a month and affected daily functioning in a French population was 12.7% (Ohayon, 1997). Formal DSM-IV sleep disorder diagnoses were applied in 5.6% of the population (Ohayon, 1997). That a formal sleep disorder diagnosis was not applied in the other 7.4% reflects the decision-making process during the
assessment, where even though participants experienced insomnia that affected their daily functioning for at least a month, they stated that this impact was small relative to the impact of their psychiatric symptoms. In effect, the assessment process implies that even if a person is experiencing symptoms of insomnia that impact on their daily life, if they are experiencing greater difficulties with their psychiatric symptoms, they will not receive a diagnosis of insomnia. This illustrates that interpretation of diagnostic definitions will inevitably bias assessment procedures.

Schramm, Hohagen, Grasshoff, Riemann, Hajak et al. (1993) investigated the reliability and validity of the Structured Interview for Sleep Disorders (SIS-D) according to DSM-III-R in 68 patients. Good reliability was demonstrated between two different interviewers. Validity was evaluated by blind comparison of clinician-generated diagnosis with polysomnographic data (only available for 30 of the participants). Agreement existed in 27 of the 30 cases, which the authors suggest demonstrates good validity. An advantage of this study was that it included patients who had been referred to a sleep laboratory and psychiatric inpatients who complained of a sleep problem. The procedure differed from Ohayon's (1997) methodology in that it used clinician's judgements following administration of a semi-structured interview, rather than a computerised diagnostic decision-tree process. Although good reliability and validity were demonstrated with the diagnostic interview based on DSM-III-R and Ohayon's computerised system has also demonstrated good reliability and validity (Ohayon et al., 1997; cited in Ohayon, Cauet & Lemoine, 1998), both methods use different decision making processes, and therefore may arrive at different diagnoses. Future research needs to compare diagnostic processes.

A diagnostic interview schedule has been developed that closely matches DSM-IV for diagnoses of insomnia. Psychometric properties are in the process of being collected (Harvey, 2001; personal communication).

Numerous sleep questionnaires have been employed in the assessment of people complaining of insomnia. A detailed evaluation is beyond the scope of this review; therefore, the focus will be on the most widely used of these, the
Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Monk, Berman & Kupfer, 1989). The PSQI is a self-report measure completed by clients (and their bed-partner if applicable). It yields an overall score on the basis of seven subscales; subjective sleep quality, sleep latency, sleep duration, sleep efficiency (amount of sleep obtained compared with amount of time spent in bed), sleep disturbances, use of medication to sleep and daily functioning. Validity was investigated by comparing overall scores on the PSQI with final clinical diagnoses (based on variety of measures including semi-structured interviews, sleep diaries and also polysomnographic data in some cases). A cut-off score of 5 on the questionnaire that was imposed post-hoc correctly identified 88.5% of the patients with sleep problems and controls (on the basis of clinical diagnosis), which suggests that this may be a useful global assessment tool in the assessment of sleep problems. The PSQI also showed good internal consistency and reliability (Buysse et al., 1989). Advantages of the PSQI over other questionnaires are its ease of administration, assessment of sleep difficulties over the last month (hence in accordance with diagnostic definitions), and its validation with a population from mental health services. On a cautionary note, as the cut-off score was imposed post-hoc, the validity of this cut-off score may not be as good in another population: the validity of the cut-off score should be replicated further with different samples.

It is difficult to know which is the best assessment method, one that employs a relatively stringent criteria, as in the case of diagnostic interviews discussed above or one that allows a broader definition of insomnia, for example asking people whether they have difficulty sleeping. Specific assessment tools that examine specific diagnostic criteria for insomnias have been developed.

Amount of sleep and sleep quality

Differences in assessment have arisen due to the ambiguity in diagnostic classification systems regarding objective or subjective definitions. ICSD defines normal sleep as when sleep onset latency is greater than 20 minutes and when sleep duration is less than 6.5 hours (Hauri, 2000). This criteria can be assessed
objectively or subjectively (Sateia et al., 2000). Sometimes there are discrepancies between the two methods.

To assess for number of hours slept and waking times, people with insomnia may complete a daily log after each night. In a review of the literature, Sateia et al. (2000) reported that such sleep diaries show modest to poor correlations with objective measures of sleep quantity and many studies have shown that they tend to over-estimate the deficit compared with objective measures (Harvey, 2001). Under-estimations of sleep duration have also been demonstrated with subjective reports (Vanable, Aikens, Tadimeti, Caruana-Montaldo & Mendelson, 2000). The degree of subjective misperception depends on the actual amount of sleep obtained: when a sufficient amount of sleep is obtained, estimates are more accurate (Vanable et al., 2000). Therefore, insomniacs are particularly liable to provide inaccurate reports. However, sleep logs do discriminate between people with insomnia from normal sleepers (Knab & Engel, 1988; Chambers & Kim, 1993; cited in Sateia et al., 2000), which supports their validity and clinical utility. The author does not know of reliability data for sleep logs.

Objective measures of sleep include polysomnography (PSG) (electroencephalogram measures of sleep) or actigraphy (a watch worn on the wrist to detect movement). Although both aim to be objective in the assessment of actual sleep obtained, such measures can have problems with validity. Firstly, PSG is often conducted in a sleep laboratory, therefore, it may not be ecologically valid. The effect of being in a laboratory may either enhance sleep, through the absence of cues that have learned associations with difficulty in getting to sleep, or it may impair sleep, through the fact that the client is in an unfamiliar, non-relaxing environment. PSG is not recommended for routine assessment of people complaining of insomnia (Reite, Buysse, Reynolds & Mendelson, 1995), and may also be unhelpful as it may exacerbate a person’s beliefs in physical, as opposed to behavioural, causes (Chervin, 2000).

Actigraphy may also have inherent methodological problems as it measures the amount of sleep obtained by measuring wrist movement during the night; it assumes that if the person is not moving, they are sleeping. However, it is
possible that people with insomnia lie very still during the night, but do not sleep (Sadeh, Hauri, Kripke & Lavie, 1995). This may explain the reported discrepancy between actigraphy and subjective measures of amount of sleep obtained by insomniacs. Actigraphy is not recommended for routine assessment of insomnia (American Sleep Disorders Association, 1995).

Given the discrepancy between methods, it is difficult to determine which method is most valid in assessment of insomnia. Even though polysomnography has been traditionally considered the “gold standard” in assessing the amount of sleep obtained (Sadeh et al., 1995), there are problems in that polysomnographic results are often inconsistent with clients’ reports. Therefore, they may neither be clinically useful, nor a valid measure of clients’ complaints. In evaluating assessment methods, it may be valuable to consider which is most meaningful for the person being assessed.

Another important consideration is the normal variation in amount of sleep needed. To illustrate this point, Sateia et al. (2000) reported that 8.5% of people who define themselves as good sleepers sleep for six hours or less. This suggests that objective assessment of amount of sleep may not be the best criterion with which to use to define insomnia. However, these findings should be interpreted with caution: considering the lack of correlation between self-report measures and objective measures of sleep duration, it is possible that these ‘good sleepers’ are underestimating the amount of sleep they obtain each night.

*Impact on daily functioning*

Given the problems in defining insomnia from actual or perceived amount of sleep obtained, it is also useful to assess the impact of the sleep problem on daily functioning. As with amount of sleep, this can be assessed objectively or subjectively. The extents to which measures are valid assessment tools depend on their discriminatory power between insomniacs and normal sleepers.

Objective measures of daytime sleepiness (the amount of time it takes people to get to sleep during daytime naps) have failed to demonstrate that insomniacs are
no sleepier during the daytime than normal sleepers (Research cited in Edinger, Fins, Sullivan, Marsh, Dailey et al., 1997). However, Edinger et al. noted that each of these studies have involved participants who underwent laboratory PSG the night before, whereas studies that documented deficits were conducted on participants who had spent the night at home. Edinger et al. (1997) compared groups of insomniacs and normal sleepers, each assigned either to sleep in a laboratory, or to sleep at home. Results showed that insomniacs tended to be more alert than normal sleepers after both had spent a night sleeping in the laboratory. When the groups who had slept at home were compared, there was a trend for insomniacs to be sleepier on the objective test than normal sleepers. This suggests that methodology and context is a very important factor when assessing the impact of insomnia on daily functioning for ecological validity. However, group differences were small and failed to reach statistical significance. Therefore, this would need replication, possibly with more participants (only 8 were in each group; it is possible that the study did not have the power to find a significant difference). A further limitation of the study was that insomniacs were mostly not clinical patients.

Contrary to the trends reported for the objective measure of sleepiness by Edinger et al. (1997), the authors reported that insomniacs tended to perform better on a test of ability to switch attention. Therefore, effects on daily functioning might be dependent on the measures used. Unfortunately data are not available on participants general ability level. It is possible that the insomniac group were on average of higher ability than the non-insomniac group, which could have produced the above findings. Roth and Ancoli-Israel (1999) cited Hauri’s (1997) research that did demonstrate impaired reaction times, digit span performance and balance in insomniacs relative to controls when the groups were well-matched for age, education and occupation.

The Stanford Sleepiness Scale (Hoddes, Zarcone, Smythe, Phillips & Dement, 1973) is a self-report measure to assess daytime sleepiness. The instrument was validated on sleep-deprived participants (Hoddes et al., 1973), who showed significantly higher scores than on days when they obtained a normal amount of sleep. Results obtained using insomniac samples are mixed; four out of seven...
studies reported no difference in sleepiness between insomniacs and controls (Sateia et al., 2000). This may be explained by the fact that the original validation was conducted following a whole night’s sleep deprivation: milder effects, to which the questionnaire may be insensitive, might be expected from a reduced amount of sleep loss akin to that experienced in insomnia.

Other research shows that if you ask people to report subjectively their daily functioning, people with insomnia do report impairments. For example, Roth and Ancoli-Israel (1999) conducted a telephone survey of 1,000 randomly selected Americans, who were grouped into chronic insomnia, occasional insomnia and no insomnia groups. They found that people with chronic insomnia were significantly less likely to rate quality of life, enjoyment of relationships, wellness, ability to carry out tasks and ability to handle minor irritations as good or excellent than non-insomniacs. Chronic insomniacs were also more likely to report concentration and memory problems, tiredness and falling asleep whilst doing daily activities than people in the no insomnia group. Therefore, research on peoples’ subjective experience of insomnia in their daily life suggests that it causes a significant impact on daily functioning. This was a population study rather than a clinical sample, therefore results are not generalisable to a clinical population; however, one might predict a clinical sample to report even greater impact of insomnia on daily life.

In summary, studies that investigate the impact of insomnia differ in their definitions of insomnia, thereby making comparisons between studies difficult. It is possible that some measures are not sensitive enough to problems with everyday functioning. Given this, perhaps the most clinically relevant way of obtaining information is to rely on client report.

Conclusion

Two main diagnostic classifications (DSM-IV and ICSD) distinguish between primary insomnia and insomnia related to mental health problems. This distinction is questionable on the basis of research that has showed that people classified into the different groups demonstrate similar treatment response.
However, much of the research is conducted on clients from sleep disorders centres, which may not be generalisable to clients from mental health services. Further research needs to be conducted, specifically to compare populations with primary insomnia with those recruited from mental health services, as these are likely to represent the more severe end of the spectrum. Similarly, other reliability and validity studies need to be replicated with this population.

Inevitably the definition of insomnia will influence assessment methods. There are often discrepancies between objective and subjective measures of both sleep characteristics, such as sleep-onset latency and sleep duration, and objective and subjective measures of impairment in daily functioning. This leaves the clinician wondering which is the ‘best’ method to use. Given the individual variation in amount of sleep required, it may be important to give greater weight to subjective measures, as, coming from the client themselves, they are more likely to represent the clients’ perception of their difficulties.

References


Literature review


Major Research Project: An investigation of maintaining factors of insomnia in people with co-morbid anxiety
Abstract

Recently, there has been much research into cognitive factors that may be maintaining insomnia. This research has outlined potential treatment strategies. However; there is a paucity of research into the maintenance of insomnia in people with co-morbid anxiety. Conflicting recommendations, which are not supported by research, are made in the literature regarding treatment. Therefore, research into the maintaining factors of insomnia in people with additional co-morbid anxiety was necessary. The aim of the present research was to test aspects of Harvey’s (2002) cognitive model of the maintenance of insomnia in terms of its applicability to people with co-morbid anxiety. Fourteen participants with anxiety plus insomnia, 22 participants with insomnia only, four participants with anxiety only and 22 good sleepers were recruited into the study. Between group comparisons were made on the following cognitive factors: cognitive arousal, thought content (sleep- and anxiety-related), thought control strategies and beliefs about sleep. Results showed that both people with anxiety plus insomnia and people with insomnia only had significantly higher cognitive arousal in the pre-sleep period and significantly higher endorsement of unhelpful beliefs about sleep than good sleepers. They did not differ significantly from each other on these variables. Similarly, a significantly higher proportion of both people with anxiety plus insomnia and insomnia only reported thinking sleep-related and anxiety-related thoughts prior to sleep than good sleepers. Again, the two insomnia groups did not differ significantly from each other in the proportion thinking sleep-related or anxiety-related thoughts. Thus, on cognitive arousal, levels of reporting of sleep- or anxiety-related cognitions, and endorsement of unhelpful beliefs about sleep, the people with anxiety plus insomnia showed a similar cognitive profile to people with insomnia only. However, in use of thought control strategies, the anxiety plus insomnia group differed significantly from the insomnia only group. The anxiety plus insomnia group used the strategies of worry and punishment significantly more than the insomnia only group, who in turn used these strategies significantly more frequently than the good sleeper group. Thus, in the use of thought control strategies, the insomnia plus anxiety group used unhelpful strategies significantly more than the insomnia only group. Therefore, some treatments derived from the model might also be applicable to
people with co-morbid anxiety. However, there may also be other factors involved, which therefore need attention in treatment, in people with co-morbid anxiety. Further research into effectiveness of treatments would provide more conclusive evidence regarding the maintaining factors in insomnia in people with anxiety.
**Introduction**

**Why research insomnia in people with anxiety?**

**Prevalence of insomnia**

Insomnia is an important area of research as it has been estimated that between 15 and 20 percent of the population suffer from insomnia (Ford & Kamerow, 1989). The percentage of people with mental health problems who experience insomnia is thought to be much higher, and has been estimated at 75 percent (Morin, 1993). Some studies have investigated the prevalence of insomnia in individual anxiety disorders. In a review of the research, Monti & Monti (2000) noted that between 1.5 and 35.9 percent of people with anxiety disorders have insomnia. Furthermore, they noted that people with generalised anxiety disorder (GAD) are more likely to report difficulties with initiating and maintaining sleep than people without an anxiety disorder. However, the review included studies that differed in their criteria for both insomnia and GAD, and therefore conclusions regarding the prevalence rate of people meeting formal criteria cannot be made. Differences in diagnostic criteria and assessment procedures for insomnia is a common problem in comparison of different studies of insomnia. Insomnia is also a common problem in social phobia. Stein, Croft & Walker (1993) found that 60 percent of people with social phobia had moderately or markedly disturbed sleep on the Pittsburgh Sleep Quality Index (PSQI) (the PSQI differentiates insomnia with a 90 percent sensitivity and 87 percent specificity; Buysse, Reynolds, Monk, Berman & Kupfer, 1989), compared with only seven percent of people without social phobia. Similar results have been reported for panic disorder: Stein, Chartier & Walker (1993) reported an insomnia prevalence rate of 68 percent (on the PSQI), compared with only 15 percent of people without panic disorder.

**Correlates of insomnia**

Insomnia is associated with many difficulties in daily life, including concentration and memory problems, difficulty in carrying out daily tasks, poorer
enjoyment of relationships and a low sense of well-being (Roth & Ancoli-Israel, 1999). Also, in comparison with good sleepers, people with insomnia had significantly lower quality of life scores, measured by the SF-36 (Zammit, Weiner, Damato, Sillup & McMillan, 1999). Research also shows that insomnia increases vulnerability to mental health problems; for example, depression (Ford & Kamerow, 1989). Although studies have not explicitly reported the effect of insomnia in people with co-morbid anxiety, one might expect that insomnia would exacerbate any difficulties due to the anxiety, thus causing further distress.

Treatment of insomnia in people with anxiety: gaps in literature/clinical practice

Despite the high prevalence of insomnia in people with anxiety disorders, and the reported consequences of insomnia, very little is written in the psychological literature about insomnia in people with co-morbid anxiety, or indeed mental health problems in general. In the literature available, conflicting recommendations are made for treatment, but these are not based on theoretical research or outcome studies.

Currently, medication is the most widely used treatment for insomnia (Hauri, 1997); however, service users mostly prefer psychological therapies for insomnia (Morin, Gaulier, Barry & Kowatch, 1992). It would therefore be important to identify effective therapeutic psychological interventions for insomnia in this population.

Opinions regarding how insomnia should be treated psychologically in people with co-morbid mental health problems differ. On the one hand, there is a suggestion that where insomnia co-occurs with another psychiatric disorder, treatment of that psychiatric disorder should take place first (Morin, 1993), implying that this would resolve the insomnia. Monti & Monti (2000) make similar recommendations for the treatment of insomnia in people with GAD; however, they also outlined the benefits of sleep hygiene (sleep-promoting habits). Research evidence for these conclusions was not cited. Other authors take a different perspective: for example, Espie (2002) noted that, "A common
misconception is that insomnia is a symptom not meriting treatment in its own right...The misconception is particularly evident in the mental health field, but is unsupported by the literature". (2002; p.219). Stein et al. (1993) also recommended that clinicians should consider specific sleep interventions in people with social phobia, in addition to normal treatment. Despite the lack of research evidence to support either of these positions, there is anecdotal evidence that even when people receive treatment for a mental health problem, the insomnia often persists (Harvey, 2001; personal communication). This suggests that interventions specifically targeted at insomnia may be appropriate for this client group.

In the pursuit of appropriate treatment guidelines for treatment of insomnia in people with anxiety disorders, it is first important to consider existing psychological theories, research evidence, and how these both might apply to people with co-morbid anxiety. It should be noted that different factors have been implicated in the development of insomnia, including biological, behavioural and cognitive factors. The role of behavioural factors of poor sleeping habits in insomnia were first outlined by Bootzin (1972; cited in Espie, 2002); however, research has failed to differentiate between people with and without insomnia in use of unhelpful sleep behaviours (Harvey, 2000b). Increased physiological arousal was also implicated in insomnia (Monroe, 1967; cited in Borkovec, 1982; Bonnet & Arandt, 1997); however, this lost popularity following the discovery that cognitive arousal was more prominent and more frequently cited by people with insomnia as a reason for difficulty in sleeping (Gross & Borkovec, 1982). Therefore, concentration was turned towards cognitive theories as explanation for the maintenance of insomnia. These theories are reviewed below.

**Cognitive theories of insomnia**

Morin (1993) suggested that chronic insomnia is maintained by psychological factors after the original precipitant, for example, a stressful life event, has resolved. His theory incorporates both behavioural and cognitive factors. He suggested that hyperarousal, cognitive, somatic or behavioural, is key in insomnia. He noted the importance of behavioural factors, such as conditioning,
for example an association between the bed and anxieties about not sleeping, in exacerbation of insomnia. He also implicated cognitive factors, such as worries about the consequences of insomnia, and somatic factors, such as bodily tension, in the exacerbation of insomnia, mediated by the resultant increase in attempts to fall asleep, which has a paradoxical effect. He also noted the role of cognitive arousal in the increased perception of time latency, so that the person believes they have been awake for longer than they really have, which is likely to further fuel anxiety about not sleeping. Morin also incorporates the theory of learned helplessness into his model: he suggests that as sleeping difficulties continue, perceptions of sleep become more negative, which leads in turn to more cognitive and emotional arousal. He also notes that behaviours to cope with reduced sleep can be unhelpful in the long-term, and further exacerbate the insomnia.

Harvey (2002) proposed a purer cognitive model of the maintenance of insomnia, developed from a synthesis of available research evidence that examined cognitive factors in insomnia. In individuals who have developed insomnia through a variety of causes, the first stage of the maintenance model suggests the presence of excessively negative cognitive activity regarding whether the individual will get enough sleep, and the consequences of this for daily functioning. This then leads to emotional arousal, which in turn leads to selective attention towards sleep-related stimuli (for example, signs of falling asleep, or clock watching and calculating how much sleep is yet to be gained). Furthermore, as the individual focuses on the threat of sleep-related stimuli (for example, having monitored the self for signs of tiredness and found none), the selective attention will lead to a distorted perception of the deficit (for example, “I am never going to get to sleep tonight”). This distorted cognition produces further autonomic and emotional arousal and has the paradoxical effect of creating a physiological state that is incompatible with sleep inducement, and thereby a real deficit in sleep (insomnia) is maintained. Other cognitive factors are suggested to contribute to the maintenance of insomnia. Beliefs are thought to contribute to the negative cognitive activity (Harvey, 2002) and may provide a schema through which sleep-related stimuli are perceived. For example, if a person believes strongly that they need eight hours of sleep in order to function well the next day,
a glance at the clock and a mental calculation that there are only five hours left in which to

Figure 1: Cognitive model of the maintenance of insomnia (Harvey, 2002)
gain sleep may be interpreted more catastrophically than a person who did not believe this as strongly. Safety behaviours designed to promote sleep are also thought to contribute to the problem by having a paradoxical effect (Harvey, 2002). In particular attempting to control thoughts at night time, or performing other behaviours that, although the person believes them to be conducive to sleep, are actually counter-productive, for example drinking alcohol.

When compared, Harvey's model outlines more specifically the processes involved, and in particular the interaction between the different aspects are specified in more detail than Morin’s model. Furthermore, Harvey's model makes specific testable predictions and has been subject to some research investigation and testing, whereas Morin’s model has not been explicitly tested. Also, Harvey’s model incorporates some of the more recent developments in cognitive research, for example, the role of beliefs, safety behaviours and selective attention. Therefore, Harvey’s model will be considered in more detail here. The evidence for Harvey’s model as it relates to people without mental health problems will be considered first. Then possible relevance for people with anxiety will be considered in the light of the available research. As will be seen, this is difficult to ascertain as categorisation of research regarding whether it investigates the former or the latter client group is problematic due to lack of availability of data regarding participant samples in the study.

**Evidence for Harvey’s cognitive model of insomnia**

**Cognitive arousal**

Research supports the notion that cognitive arousal is key in insomnia. For example, 55 percent of people with insomnia cited cognitive arousal to be the main problem in their insomnia (Lichstein & Rosenthal, 1980). Furthermore, people with insomnia experience higher levels of cognitive activity in the pre-sleep period than good sleepers (Nicassio, Mendlowitz, Fussell & Petras, 1985), and are more likely to state that they cannot sleep due to cognitive arousal than controls (Harvey, 2000a). Research shows that cognitive arousal is associated with sleep-onset latency (Nicassio et al., 1985) and experimental induction of
high cognitive arousal prior to sleep was shown to increase sleep-onset latency in good sleepers (Haynes, Adams & Franzen, 1981; Gross & Borkovec, 1982).

*Cognitive content and distress*

Harvey’s model suggests that pre-sleep cognitive activity mainly concerns sleep and consequences of not having enough sleep, but also other negative topics. It further predicts that these cognitions should lead to distress. Studies that have investigated pre-sleep content (and associated distress) will be considered here. They are grouped into those that investigate cognitions in-vivo, i.e. whilst people are attempting to get to sleep, and those that ask for retrospective reports of cognitive content.

VanEgeren, Haynes, Franzen & Hamilton (1983) conducted a study that involved prompting participants with beeps to report cognitions while they were waiting to go to sleep in a laboratory. They found that number of pre-sleep cognitions about physical sensations, environmental noise, and negative cognitions about sleep was associated with longer sleep-onset latency, which would be supportive of Harvey’s model. Whether other types of cognitive content were prevalent in the pre-sleep period is unknown as the research employed only the three above categories of thought in their analysis. Affect ratings did not account for a significant proportion of the variance in sleep-onset latency; however, these were only measured on three-point scales, which might not have been sufficiently sensitive to variation in affect.

Wicklow & Espie (2000) also found that thoughts about sleep and its consequences were a predominant thought in people with insomnia (20 percent of total thoughts reported), and exceeded in frequency of reporting only by thoughts concerning rehearsing/planning/problem-solving (43 percent of total thoughts reported). Both of these categories, and one other category of thought regarding bodily sensations, were associated with objective sleep-onset latency. Furthermore, unpleasant emotional affect ascribed to cognitions was also associated with objective sleep-onset latency. Unfortunately, this research did not employ a control group of good sleepers, and therefore it is uncertain as to
whether participants with insomnia experience these thoughts significantly more than good sleepers.

Ecological validity is a problem in in-vivo studies as the procedure of reporting cognitions is likely to interfere with the normal sleep process, in particular in VanEgeren et al.'s study which employed beeps to prompt for cognitions. Furthermore, the beeps were judged to have disrupted actual thought content by 21 percent of participants (VanEgeren et al., 1983). Wicklow & Espie's provision of a voice-activated tape recorder in the home to participants was likely to have reduced, but not eradicated the procedure's effects on the sleep process.

Difficulties with in-vivo studies can be resolved by retrospective studies. For example, Fichen, Libman, Creti, Amsel, Tagalakis & Brender (1998) investigated thoughts experienced by good sleepers compared with poor sleepers and also poor sleepers who exhibited distress about a lack of sleep. They used a previously devised questionnaire, which examined three factors; positive thoughts, negative thoughts and sleep-related thoughts. A comparison of the groups revealed that highly distressed poor sleepers experienced significantly more negative than positive thoughts, whereas the reverse was true for good sleepers and poor sleepers with low distress. Highly distressed poor sleepers experienced significantly more negative thoughts than low-distress poor sleepers, who experienced significantly more negative thoughts than good sleepers. Therefore, findings are in keeping with the suggestion that people with insomnia do experience excessively negative cognitive activity in the pre-sleep period. Furthermore, the authors reported that frequency of negative cognitions was significantly related to frequency of sleep difficulty (in days per week) and frequency of distress experienced about the sleep problem. Unfortunately, the authors did not report frequency data for sleep-related thoughts. Also, participants were over the age of 55 and therefore, results might not generalise to younger people.

On a checklist of 29 items of possible pre-sleep thought content, people with insomnia reported significantly more pre-sleep thoughts about not sleeping and going over things that had happened that day in detail than good sleepers
Major research project: introduction

(Harvey, 2000a). Furthermore, people with insomnia reported that they spent longer thinking about these topics than good sleepers did. This study had the advantage of employing a comparison control group and therefore lends further support to the model’s proposition that sleep-related thoughts have a role in the maintenance of insomnia.

In summary, research shows that sleep-related thoughts are more prevalent in people with sleeping difficulties or insomnia, and that furthermore, the extent of this relates to sleep-onset latency. However, a potential problem with thought content research is that total time awake might be a confounding variable not accounted for by the research methodology: perhaps the longer someone is awake, the more likely they are to experience/report certain thoughts. A further limitation of the studies reported is variation in the criteria used to specify people with insomnia/sleeping difficulties. Two studies did not use any formal criteria (VanEgeren et al., 1983 and Fichten et al., 1998). The other two studies did use formal criteria, but different ones: Wicklow & Espie (2000) used International Classification of Sleep Disorders (ICSD) criteria (American Sleep Disorders Association, 1997) and Harvey (2000) used DSM-IV criteria (American Psychiatric Association, 1994).

**Thought control**

Harvey’s model suggests that people with insomnia adopt unhelpful strategies to deal with their thoughts, that actually refuel the cognitive activity and exacerbate the insomnia. People with insomnia were compared to those without insomnia on a questionnaire adapted (from the Thought Control Questionnaire; Wells & Davies, 1994) to examine thought control strategies in the pre-sleep period (Thought Control Questionnaire-Insomnia; Harvey, 2001). People with insomnia reported significantly higher utilisation of the thought control strategies of worry, reappraisal, and, when data from the previous night were enquired after, suppression also (Harvey, 2001). This lends support for the model that certain thought control strategies are used more frequently by people with insomnia. These strategies of worry and suppression have been reported to be unhelpful in other psychological disorders and are thought to fuel cognitive activity further
Major research project: introduction

(e.g. Wegner, Schneider, Carter & White, 1987; Wells & Papageorgiou, *in press*; cited in Wells & Davies, 1994), which explain the mechanism of their maintaining role in insomnia. Further support for this aspect of the model comes from evidence that instructing people with insomnia to suppress their thoughts actually increases sleep-onset latency (Harvey, *in press a*).

Using a different measure, the Structured Neutralisation Interview, Gendron, Blais & Morin (1999) did not find any difference between the percentage of people with insomnia and good sleepers who utilised thought stopping (suppression) as a strategy to deal with their thoughts. Nor were there any group differences in the percentage of people using other strategies. This finding would appear to contradict the above evidence. However sample sizes in this study were smaller than in Harvey (2001); 14 people with insomnia and 20 good sleepers, compared with 30 and 29 respectively. Furthermore, more detailed information regarding the frequency of utilisation of the different strategies was not collected by Gendron et al.; therefore the design may have been insensitive to group differences.

**Beliefs**

The model proposes that beliefs have a contributory role to the maintenance of insomnia. This is supported by the limited research available. For example, it has been shown that people with insomnia endorse unhelpful beliefs about sleep (deleterious consequences of insomnia, lack of control and unpredictability of sleep, expectations about sleep, and the importance of sleep-promoting practices) more strongly than good sleepers (Morin, Stone, Trinkle, Mercer & Remsberg, 1993). However, it should be noted that participants were over the age of 55, and therefore data may not be generalisable to a younger sample. Further support for the role of beliefs in the maintenance of insomnia comes from a treatment study that found an association between reduction in strength of belief and clinical improvement on objective sleep measures (Edinger, Wohlgemuth, Radtke, Marsh & Quillian, 2001a).
**Applicability of research to people with co-morbid anxiety**

Given that cognitive-behaviour therapy has been shown to be effective in people with insomnia (Edinger, Wohlgemuth, Radtke, & Quillian, 2001b), it is essential to ascertain to what extent the above cognitive model applies to people with co-morbid anxiety disorders to apply theory to devising a non-pharmacological treatment strategy in this group.

Generalisability of much of the above research to people with insomnia, with or without co-morbid anxiety disorders, is difficult due to variations in diagnostic criteria of insomnia between samples. Some studies do not use a definition of insomnia. Also studies often do not report whether participants were screened for psychiatric co-morbidity and percentages of participants who meet criteria. In those that do, data is sometimes not compared between those who do, and those who do not have co-morbid psychiatric disorders. Table 1 illustrates these differences between the above studies.

The limited available research that has compared people with co-morbid anxiety disorders with those with insomnia and good sleepers on aspects of Harvey’s model will now be discussed.

There is evidence to suggest that Harvey’s model does apply to people with co-morbid GAD, as this group has been shown to have higher levels of cognitive activity and a higher frequency of intrusive thoughts in the pre-sleep period than people with insomnia without GAD (Gendron, Blais & Morin, 1998). There is also evidence to suggest that people with GAD and insomnia tend to use cognitive avoidance strategies more often than people with insomnia only or good sleepers (Gendron et al., 1998), suggesting that similar thought control strategies may be contributing to maintenance of the insomnia in this group also. Unfortunately, the thought avoidance questionnaire used is not referenced and therefore, the similarity of this scale to the TCQ-I thought suppression scale could not be ascertained. This research was limited to people with co-morbid GAD only, and may not generalise to people with other anxiety disorders. The
### Table 1: Use of formal diagnostic criteria to diagnose insomnia and psychiatric co-morbidity in studies described above

<table>
<thead>
<tr>
<th>Authors</th>
<th>Were formal criteria used for diagnosis of insomnia?</th>
<th>Were participants screened for psychiatric co-morbidity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lichstein &amp; Rosenthal (1980)</td>
<td>No, the authors report that participants “satisfied conservative criteria for insomnia”, but do not specify what this is</td>
<td>Not reported</td>
</tr>
<tr>
<td>Nicassio et al. (1985)</td>
<td>No, used &gt;30 minute sleep-onset latency on every night per week as cut-off and added that participants must have impairment in mood and functioning as a result of sleeping difficulty (NB: similar to DSM-IV criteria)</td>
<td>Not reported</td>
</tr>
<tr>
<td>VanEgeren et al. (1983)</td>
<td>No, used &gt;45 minute sleep-onset latency as cut-off</td>
<td>Not reported, but excluded participants who were receiving psychotherapy</td>
</tr>
<tr>
<td>Wicklow &amp; Espie (2000)</td>
<td>Yes, ICSD</td>
<td>Yes, and excluded from study</td>
</tr>
<tr>
<td>Fichten et al. (1998)</td>
<td>No, used cut-off measure on a questionnaire</td>
<td>Not reported</td>
</tr>
<tr>
<td>Harvey (2000a)</td>
<td>Yes, DSM-IV</td>
<td>Unclear, but reported 10% of sample had received previous psychological treatment</td>
</tr>
<tr>
<td>Harvey (2001)</td>
<td>Yes, DSM-IV</td>
<td>Unclear, but reported 10% of sample had received previous psychological treatment</td>
</tr>
<tr>
<td>Harvey (2002)</td>
<td>Yes, DSM-IV</td>
<td>Yes, using DSM-IV, percentages described, but results not compared between those with and without co-morbidity</td>
</tr>
<tr>
<td>Gendron et al. (1999)</td>
<td>Yes, DSM-IV</td>
<td>Yes, participants with GAD were identified and analysed separately.</td>
</tr>
<tr>
<td>Morin et al. (1993)</td>
<td>No, but used cut-off criteria as &gt;30 minute sleep-onset latency for at least three nights per week. Used at least one night’s polysomnography to verify this</td>
<td>Yes, using DSM-IV: 72% had Primary Insomnia; 28% had Insomnia secondary to medical or psychological disorders, but results were not compared between the two groups</td>
</tr>
<tr>
<td>Edinger et al. (2001)</td>
<td>Yes, DSM-III-R</td>
<td>Yes, using DSM-III-R, and excluded from study</td>
</tr>
</tbody>
</table>

The study did not include a group with GAD but no insomnia and therefore was not able to highlight cognitive factors that differ between people with GAD plus
insomnia and people with GAD only. Such a comparison would be important to discover factors specific to the maintenance of insomnia in people with anxiety.

Other research suggests that there might be qualitative differences in the maintenance of insomnia in people with co-morbid anxiety. Twenty-six percent of people with panic disorder, compared with none of healthy controls, reported sleeping difficulties because they “could not breathe comfortably” (Stein et al., 1993). This might suggest that night-time panic cognitions could be a maintaining factor in insomnia in people with co-morbid panic disorder; however, the research did not employ a group of people with insomnia only, and so comparisons could not be made. Although previous research on thought content in people with insomnia only did not find evidence of panic disorder cognitions, they were not specifically assessed for, and therefore, the possibility that they experience these kinds of cognitions cannot be excluded. Also, this research looked only at people with panic disorder, and therefore it is unknown whether people with other anxiety disorders experience night-time anxiety cognitions that interfere with sleep.

Whether people with insomnia and co-morbid anxiety disorders hold unhelpful beliefs about sleep that might be contributing to the maintenance of insomnia is unknown.

In summary, very little research has been conducted into maintaining factors of insomnia in people with co-morbid anxiety. Evidence from the Gendron et al. (1998) study suggests that the increased negative cognitive arousal is present in both types of insomnia, but occurs to a greater extent in people with additional co-morbid anxiety disorder (GAD). This would suggest that the elements of increased cognitive arousal in Harvey’s model would also be applicable to people with co-morbid anxiety disorder. Evidence also suggests there may be additional contributory factors in the maintenance of insomnia in people with co-morbid anxiety. For example, Stein et al.’s (1993) report that people with co-morbid anxiety disorder (PD) experience night-time cognitions related to their anxiety disorder, suggests that other (possibly additional) maintaining factors exist in this population. This would suggest that Harvey’s model might need modification to
include these possible additional factors in people with co-morbid anxiety disorder.

The applicability of Harvey’s model to people with co-morbid anxiety disorder is the subject of the present research. It should be noted that a full evaluation of the model is beyond the scope of this research. Therefore, aspects that have direct treatment implications: cognitive arousal and content, thought control strategies and beliefs about sleep are investigated.

**Aims of present research**

The aim of the present research was to consider four aspects of Harvey’s model; higher cognitive arousal, sleep-related thought content, use of unhelpful thought control strategies and endorsement of unhelpful beliefs about sleep. In particular to ascertain whether they are also found in people with insomnia plus co-morbid anxiety disorders. That is, it aimed to determine whether people with insomnia plus co-morbid anxiety disorders showed similarly high levels of cognitive arousal, sleep-related thoughts, use of unhelpful thought control strategies and unhelpful beliefs about sleep compared to people with insomnia only, and relative to good sleepers. A related aim was also to test the ability of the four aspects of the model to distinguish between people with insomnia plus co-morbid anxiety and people with anxiety only. If the model was specific to the maintenance of insomnia, one might expect people with insomnia plus anxiety to have higher night-time cognitive arousal, more sleep-related thoughts, higher use of unhelpful thought control strategies, and endorse more strongly unhelpful beliefs about sleep, compared with people with anxiety only (and no insomnia). Such a distinction, if found, would lend further support to the four aspects of the model as being implicated in the maintenance of insomnia.

**1: Cognitive arousal**

Does Harvey’s (2002) suggestion that people with insomnia experience increased cognitive arousal at bedtime apply to people with co-morbid anxiety? If so, is this higher in people with co-morbid anxiety disorders than people with insomnia?
only (as would be predicted from the GAD study; Gendron et al., 1998)? Do people with anxiety only experience less cognitive arousal at bedtime than people with anxiety plus insomnia?

2: Thought content

a) Are sleep-related thoughts reported as much by people with insomnia plus co-morbid anxiety as people with insomnia only, and more than people with anxiety only or good sleepers? Are anxiety-related thoughts reported more by people with co-morbid anxiety than people with insomnia only?

b) Is amount of time/proportion of time taken up by sleep-related thoughts similar between people with insomnia, with or without co-morbid anxiety, and less than those with anxiety only or good sleepers. Is amount of time/proportion of time taken up by anxiety-related thoughts greater in people with insomnia plus co-morbid anxiety compared with people with insomnia only?

c) In those who do think sleep-related or anxiety related thoughts, do people with insomnia plus co-morbid anxiety and people with insomnia only experience these thoughts as more distressing at bedtime compared with people with anxiety only or good sleepers?

3: Thought control

Do people with insomnia plus co-morbid anxiety use the same thought control strategies and as frequently as people with insomnia, and more frequently than people with anxiety only or good sleepers?

4: Beliefs about sleep

Do people with insomnia plus anxiety hold similar levels of unhelpful beliefs about sleep as people with insomnia only, and at levels greater than people with anxiety only or good sleepers?
Method

Measures

Background information was collected regarding gender, age, and years of education.

Diagnosis of insomnia

Insomnia was diagnosed using the Interview for the Diagnosis of Insomnia (IDI; appendix 1), based on the Diagnostic and Statistical Manual- fourth edition (DSM-IV) criteria for insomnia (appendix 2) (American Psychiatric Association, 1994), which requires the person to experience difficulty in initiating or maintaining sleep, or nonrestorative sleep for at least one month. DSM-IV criteria were chosen over ICSD classification systems, as DSM-IV does not rely on polysomnographic data for diagnosis, and thus was within the scope of this study. In addition, DSM-IV requires that a person experiences clinically significant distress in relation to their sleep complaint or impairment in functioning, a criterion which is likely to be a relevant inclusion to research attempting to address how something should be treated. A further advantage of using DSM-IV criteria is that it is widely used in other published studies looking at cognitive factors in insomnia (e.g. Harvey, 2000a), enabling comparisons with other literature. Research suggests that diagnostic interviews have high levels of inter-rater agreement (over 90%; kappa over 80%) for insomnia diagnoses and show good concordance with polysomnographic data (Schramm, Hohagen, Grasshoff, Riemann, Hajak, Weess et al., 1993). The IDI is in the process of being validated. Although the DSM-IV and therefore the IDI allows differentiation between primary insomnia, and insomnia secondary to mental health problems, this distinction was not made in the present research. This was because such a diagnostic distinction is both difficult to make (Nowell, Buysse, Reynolds, Hauri, Roth et al., 1997) and varies in reliability (Buysse, Reynolds, Hauri, Roth, Stephanski et al., 1994). Nevertheless, participants were only included if their sleep problem alone caused significant impairment in daily
functioning i.e. the impairment was not explained by any other mental health difficulties.

**Diagnosis of anxiety**

The anxiety section of the Structured Clinical Interview for DSM (Spitzer, Williams, Gibbon & First, 1990), a structured interview for the diagnosis of psychiatric disorders according to DSM, was used to obtain diagnostic information for current (in the last month) anxiety disorders (lifetime disorders were not included as the research involved current status). Its modular approach to diagnosis of different disorders allows adaptation to include only sections of relevant interest (Spitzer, Williams, Gibbon & First, 1992). Research suggests that the SCID has fair inter-rater agreement (kappa values of between 0.5 and 0.7) for diagnoses of panic disorder, social phobia, simple phobia and obsessive compulsive disorder. Inter-rater agreement was poor for agoraphobia without panic disorder (kappa = 0.48). Insufficient data were available for generalised anxiety disorder (Williams, Gibbon, First, Spitzer, Davies, Borus, et al., 1992). In another study of patients with symptoms of panic disorder, inter-rater agreement was very good (kappa = 0.87) (Williams, Spitzer & Gibbon, 1992). The research version of the SCID, rather than the clinician version, was chosen as it contains diagnostic questions for Social Phobia, Agoraphobia Without History of Panic Disorder, Specific Phobia and Generalized Anxiety Disorder, which are not in the clinician version.

Research suggests that telephone administration of the SCID may result in false negative diagnoses compared with in-person administration (Cacciola, Alterman, Rutherford, McKay & May, 1999); however this was based on a community sample and had low base rates of disorder in the sample. In contrast, using a different interview method, Rohde, Lewinsohn & Seeley (1997) reported excellent agreement between telephone and face-to-face DSM anxiety disorder diagnoses (Kappa = 0.84) and concluded “assessment of anxiety disorders is unaffected by interview method” (p.1596). The consideration of a possible bias by method of data collection was balanced against the need to allow participants to participate over the telephone in order to boost recruitment. Cacciola et al.
(1999) suggested that rapport building may improve comparability between the two administration conditions. Therefore, the SCID was the last measure to be used, to enable rapport to be established over administration of the other measures.

**Measures of anxiety and depression**

The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) (appendix 3) was used to collect descriptive information on the severity of any anxiety or depression. The HADS was chosen over the separate Beck Depression (BDI) and Anxiety (BAI) Inventories as it was shorter to complete. Also, as it was intended to measure symptoms only associated with mood, and not those that could also be due to physical problems, it was judged to be more appropriate for those with sleep problems, who might score high on the somatic items of the BDI. The HADS has acceptable reliability (Crawford, Henry, Crombie & Taylor, 2001) and correlations with other measures of anxiety and depression were medium to strong (0.60-0.80) suggesting good validity (Bjelland, Dahl, Haug & Neckelmann, 2002).

**Aim 1: Measure of cognitive arousal**

The Sleep Disturbance Questionnaire (SDQ; Espie, Brooks & Lindsay, 1989) (appendix 4), developed in order to assess people with insomnia, was used to collect information regarding levels of cognitive arousal experienced by participants prior to sleep. The SDQ contains 12 items, each rated by participants for degree of descriptiveness of their sleep pattern on a five-point scale, ranging from “never true” to “very often true”. It yields three factors: “mental anxiety”, “sleep pattern problem”, and “physical tension”. There are no data available regarding reliability or internal consistency. People with insomnia rate “mental anxiety” items most highly (Espie et al., 1989; Harvey 2000).
Aim 2: Measure of thought content

Measures of thought content available in the literature were not deemed to be suitable for this study as they did not include anxiety-related cognitions. In-vivo collection of thought content (e.g. Wicklow & Espie, 2000), which may have highlighted anxiety-related cognitions, was considered, but the procedure itself may affect cognitions and was also deemed impractical given the large numbers needed for the study. Therefore, it was necessary to devise a new measure for the purpose of the study.

Thought content was measured by asking participants an open-ended question about the thoughts that they are having prior to going to sleep, and whilst awake in the night. The previous night was chosen to maximise ease and accuracy of recall. In order to answer the specific hypotheses about whether cognitions were sleep- or anxiety-related, probe questions were devised to ask specifically about these areas. In devising the wording of the questionnaire, DSM-IV (American Psychiatric Association, 1994) was consulted to obtain summaries of cognitions associated with the different anxiety disorders. In choosing the wording of the sleep-related prompt, the literature on sleep-related cognitions was considered. One prompt was included in the questionnaire for each anxiety disorder (panic disorder, agoraphobia, GAD, OCD and social phobia), plus one prompt for sleep related cognition. Items were shown to a specialist CBT practitioner to check content validity. The thought content measure is shown in appendix 5.

Literature suggests that frequency of thought occurrence differentiates between people with insomnia and good sleepers (Harvey, 2000). Therefore, participants were asked to rate the length of time spent thinking about these thoughts (as in Harvey, 2000), and asked to estimate total time awake. This allowed calculation of the proportion of time taken up by certain thoughts and thus data would not be confounded by increased thinking time likely to be experienced by the insomnia groups (Morin, 1993).

As it is thought that emotional appraisal, rather than thought content per se, is key in the maintenance of psychological disorders (Clark & Purdon, 1995), it was
considered important to include a measurement of this in the present study. Previous research has required participants to rate their thoughts on a variety of descriptive scales in order to measure emotional meaning ascribed to thoughts, for example, controllability, discomfort, unpleasantness (Clark & Purdon, 1995). In measurement of the emotional meaning ascribed to thoughts in the present study the term “distressing” was adopted, as this is a term used by Clark & Purdon (1995) in their description of the kind of thoughts that maintain psychological disorders. It was also thought that “distress” might capture the emotional meaning in general, rather than specific terms. Therefore, participants were asked to rate each thought in terms of how distressing it was on a scale of 0 to 100 (0 = not at all distressing, 100 = the most distressing it could be).

The thought content measure was piloted on four people (non-clinical sample) to ascertain its comprehensibility and usability. As a result examples were given in addition to some of the prompts.

**Aim 3: Measure of thought control**

The Thought Control Questionnaire – Insomnia (TCQ-I; appendix 6) was used to measure use of strategies to deal with thoughts experienced in the pre-sleep period. The TCQ-I was developed from the TCQ (Wells & Davies, 1994), which measures thought control strategies used in general. The TCQ requires rating of use of particular strategies on a four-point scale (Never, Sometimes, Often, Almost Always). The original TCQ was re-worded to ask about thoughts in the pre-sleep period, and the questionnaire was supplemented with 13 additional items relevant to sleep. Suppression and replacement formed one scale of “distraction” in the original TCQ, but were separated given recent differentiation between different types of thought suppression (Salkovskis & Campbell, 1994; cited in Harvey, 2001). The TCQ-I contains 43 items and yields six sub-scales; suppression, replacement, reappraisal, worry, punishment and social control. The sub-scales of suppression, worry and punishment have been shown to differentiate people with insomnia from good sleepers (Harvey, 2001). The original TCQ sub-scales showed moderately high internal consistency (Wells & Davies. 1994). Reliability data were not available for the TCQ-I.
Aim 4: Measure of beliefs about sleep

The shorter 10-item of the Dysfunctional Beliefs and Attitudes about Sleep scale (DBAS-10; Morin, Stone, Trinkle, Mercer & Remsberg, 1993) (appendix 7) was used in order to measure participants attitudes about sleep and its function. The DBAS-10 is a shorter version of the full, 30-item, DBAS. The 10 items were chosen for their sensitivity to improvement following cognitive treatment for insomnia (Espie et al., 2000). The DBAS-10 correlates highly with the full DBAS \((r = 0.83;\) Espie, Inglis, Harvey & Tessier, 2000) and has acceptable internal consistency \((\text{Cronbach’s alpha} = 0.69;\) Espie et al., 2000). Reliability data were not available for the DBAS-10. Both the DBAS and the DBAS-10 have been shown to discriminate people with insomnia from good sleepers (Edinger & Wohlgemuth, 2001). Solutions to factor analysis of the DBAS have not been consistent across studies (Espie et al., 2000; Edinger & Wohlgemuth, 2001) and therefore, a mean of all 10 items was used, as in Edinger & Wohlgemuth (2001).

Participants

All participants were in the 18 to 65 age range.
Participants in both the “anxiety only” and “anxiety plus insomnia” were people attending a Community Mental Health Team and had one or more of the following anxiety disorders: obsessive compulsive disorder (OCD), generalised anxiety disorder (GAD), social phobia, post-traumatic stress disorder (PTSD) panic disorder with or without agoraphobia, or simple phobia. Participants with sleep disturbance due to nightmares occurring in the context of PTSD were excluded. The “anxiety plus insomnia” met DSM-IV criteria for Primary Insomnia in addition.
Participants in the “insomnia only” group were people who met DSM-IV criteria for Primary Insomnia.
Participants in the “good sleeper” group were people who defined themselves as sleeping “very well”, as opposed to “moderately well” or “not very well” (screening question on the IDI).
**Procedure**

**Recruitment**

- **"Anxiety only" and "anxiety plus insomnia" participants**

"Anxiety only" and "anxiety plus insomnia" participants were recruited via a Community Mental Health Team (CMHT). CMHT team members gave clients who met the above criteria information packs, containing an information sheet (appendix 8), a consent form (appendix 9) and a freepost envelope during consultation sessions. Participants who opted in to the study by returning the consent form were then contacted by the researcher. Participants were mostly seen at the CMHT; however there were some exceptions to this. In order not to exclude participants whose work hours did not permit them to come into the CMHT in person, they were offered the option of answering the questions over the telephone and questionnaires by post.

- **"Insomnia only" participants**

"Insomnia only" participants were recruited via two means. Information packs, containing an information sheet (appendix 10) and a consent form (appendix 11) were given to clients who met the criteria at a specialist diagnostic and research sleep service during consultations. The sleep service used ICSD criteria in their practice and therefore guidelines were given to include people diagnosed with sleep-state misperception, psychophysiological insomnia and idiopathic insomnia, thought to be subsumed under the DSM-IV category of Primary Insomnia (Reynolds, Kupfer, Buysse, Cobel & Yeager, 1991). Participants were also recruited via advertisements placed around the University (via departmental email lists, posters and a student newspaper) for people who had difficulty sleeping. People who replied to the advertisement were sent an information sheet (appendix 12) and a consent form (appendix 13).
As an incentive to participate, participants in the above three groups were given a self-help booklet on sleeping difficulties (appendix 14). The booklet was designed on the basis of literature that reviewed treatment efficacy in insomnia (Morin, Culbert & Schwartz, 1994; cited in Ballantyne, 2000) and designed for use with clients with sleeping difficulties (Ballantyne, 2000). Participants were also given feedback about their responses.

- "Good sleeper" participants

Participants for the "good sleeper" group were recruited via trainees on the author’s course, who were asked to pass on information about the study to anyone who met the criteria. People who expressed an interest in taking part were then sent an information sheet (appendix 15) and consent form (appendix 13). Care was taken not to include qualified, or trainee psychologists, as they may have been aware of the research aims and thus there was a potential for their responses to subject to demand characteristics.

Data collection

All participants completed all measures, with the exception of the good sleeper group, who did not complete the anxiety section of the SCID. As base rates of anxiety disorders in the general population are low, the extra time to complete this measure was considered to be unnecessary.

Power analysis

The number of participants required for the study was calculated by doing a power analysis using GPOWER (Faul & Erdfelder, 1992). The effect sizes were calculated for the TCQ-I (Harvey, 2001), the only questionnaire for which the necessary data was available at the time of planning the study, and the lowest effect size was used in the calculation. Of the three scales which showed a significant difference between people with insomnia and controls, the suppression scale in Harvey (2001) yielded the lowest effect size on t-test of 0.58, a medium effect size. Therefore, a medium effect size was used to calculate number of
participants needed for ANOVA (medium effect size in ANOVA = 0.25). Power criteria was set at 0.80 and alpha was set at 0.05. Power analysis indicated that 180 participants, 45 in each group, were required. A Power analysis was also conducted on the basis of the largest effect size in Harvey’s sample. This indicated that 76 participants, 19 in each group, were required.

Staff at the CMHT thought approximately two hundred of their clients met the research criteria. Staff at the Sleep Clinic said that 45 people did meet the research criteria.

Two hundred and sixty information packs were given to staff at the CMHT for distribution to clients meeting the criteria. Fifty packs were initially given to staff at the Sleep Clinic.

Ethical approval

The research was approved by East Surrey Local Ethics Research Committee and University of Surrey ethics committee (appendices 16 and 17 respectively).

Data analysis

Data were analysed using the statistical package SPSS – version 10. Between-groups analysis of variance (ANOVA) was planned to investigate differences between groups on the TCQ-\(^1\), SDQ and DBAS-10. ANOVA assumes that data are normally distributed and variances between the groups are equal (Coolican, 1990). Therefore, prior to analysis, histograms were performed on variables to check for normal distribution and the assumption of equal variances was checked. Where assumptions were not met, variables were either transformed in order to meet assumptions, or if this was not possible, were analysed using Kruskall-Wallis, the non-parametric equivalent of ANOVA.

\(^1\) ANOVA is a parametric test and thus should only be used on data that is at least at the interval level of measurement (Coolican, 1990). It could be argued that frequency data on TCQ-I and the degree of truth statements on the SDQ are nominal data, and as such should be analysed by non-parametric tests; however, previous research has analysed the TCQ-I with parametric statistics (Harvey, 2001).
Thought content questionnaire was analysed by first grouping thoughts into three categories: sleep-related, anxiety-related, and other. For definitions, see appendix 18. A second rater (a Clinical Psychologist) rated the transcripts blind to participant category. Any thoughts that were difficult to classify were discussed between raters. Percentage of participants in each group thinking sleep-related thoughts was subject to a Chi-Square test, as was percentage thinking anxiety-related thoughts. Between-groups ANOVA was planned to investigate differences between groups on amount of time spent thinking different categories of thoughts, and mean proportion of total time awake spent thinking different categories of thoughts. Mean distress ratings were calculated for each participant for both sleep-related and anxiety related thoughts and were subject to a between-groups ANOVA. Only those participants who thought sleep-related thoughts (or anxiety-related thoughts respectively) were included in this type of analysis.
Results

Participants

In total 62 participants were recruited into the study.

Of 88 information packs given to the CMHT group, 20 opted into the study, giving a response rate of 22.7%. Two participants did not attend their appointments and thus were lost from the study, leaving 18 CMHT participants. Fourteen met DSM-IV criteria for insomnia. Four did not meet the criteria for insomnia. It should be noted that those who did not meet the criteria for insomnia did experience some kind of sleeping difficulty, but typically did not meet criteria B, that the sleeping difficulty causes significant distress or impairment in functioning.

Although 45 people had been identified at the sleep clinic, only six packs were given out. This was due to the fact that once staff at the sleep clinic had examined their prospective participants' details more closely, they noted that most of the 45 identified were judged to have mental health problems, which was an exclusion criteria for the insomnia only group. Of the six packs given out to people at the sleep clinic, four responded, thus giving a response rate of 67%. All four met the criteria for insomnia. Thirty-nine participants responded to the advertisements around the University for people who experienced sleeping difficulties. Of these, 17 did not opt into the study, three were excluded due to failure to meet diagnostic criteria, one was excluded due to being over the age limit, leaving 18. In total there were 22 participants in the insomnia group.

Twenty-nine people responded to the request for people who slept very well. Of these three did not opt into the study, and four were excluded because they did not meet criteria (they slept only “moderately well”, instead of “very well”). Therefore, 22 people who described themselves as sleeping “very well” were recruited into the good sleeper group.
**Data screening**

Variables were screened for whether they were normally distributed and equal variances between the groups. Where data did not meet these criteria, they were either transformed where possible (as in the case of TCQ Worry and TCQ Punishment scores), or subject to non-parametric statistical tests (in the case of thought content variables).

**Validation of group status**

Of the fourteen people in the CMHT group with insomnia, 13 met formal criteria for an anxiety disorder, and one did not. Of the four in the CMHT group without insomnia, all of them also met criteria for an anxiety disorder.

Of the planned insomnia group (recruited via the sleep clinic and University), eight also met formal diagnostic criteria for an anxiety disorder. Numbers in each group who met diagnostic criteria are shown in table 2.

Because some of the participants recruited via the sleep clinic or University also met anxiety disorder criteria, the groups were not as they had originally been defined. Therefore, the analysis was conducted in two separate ways. Firstly, the groups were analysed as originally planned, comparing CMHT participants with and without insomnia, those recruited via the sleep clinic or University (referred to as Other Insomnia), and good sleepers. This comparison would test the hypotheses in relation to applicability of the model of insomnia in relation to different participant groups. Secondly, the participants were re-grouped according to whether they had an anxiety disorder or not and whether they had insomnia or not, and compared with good sleepers. This comparison allowed a theoretical test of the hypothesis regarding applicability of the model to participants with co-morbid anxiety disorders.

Although descriptive statistics are shown for the CMHT No Insomnia group (anxiety only group), it was excluded from the statistical analyses due to small numbers.
Table 2: Numbers in each group (and percentages of total in group) who met DSM anxiety disorder diagnostic criteria

<table>
<thead>
<tr>
<th></th>
<th>CMHT Insomnia (n = 14)</th>
<th>No insomnia (n = 4)</th>
<th>Sleep clinic and university - insomnia (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic disorder</td>
<td>6 (42.9%)</td>
<td>1 (25.0%)</td>
<td>2 (9.1%)</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>7 (50%)</td>
<td>0 (0%)</td>
<td>2 (9.1%)</td>
</tr>
<tr>
<td>Social phobia</td>
<td>4 (28.6%)</td>
<td>0 (0%)</td>
<td>3 (13.6%)</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>2 (14.3%)</td>
<td>1 (25%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>OCD</td>
<td>6 (42.9%)</td>
<td>2 (50%)</td>
<td>1 (4.5%)</td>
</tr>
<tr>
<td>PTSD(^1)</td>
<td>3 (21.4%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>GAD(^2)</td>
<td>6 (42.9%)</td>
<td>0 (0%)</td>
<td>5 (22.7%)</td>
</tr>
<tr>
<td>No anxiety disorder</td>
<td>1 (7.1%)</td>
<td>0 (0%)</td>
<td>14 (63.6%)</td>
</tr>
</tbody>
</table>

\(^1\) Data missing for two CMHT participants and two insomnia only participants due to discontinuation of SCID interview

\(^2\) Data missing for one CMHT participant and one insomnia only participant due to discontinuation of SCID interview

Analysis 1: Comparison between groups based on source of recruitment and presence of insomnia

Background characteristics of the sample

Gender distribution, mean ages, HAD anxiety and depression scores of the groups are shown in table 3. CMHT participants had a higher mean age than the Other Insomnia and Good Sleeper groups, but group differences were not significant: F (2, 54) = 2.914, p = 0.063.

Participants recruited via the sleep clinic or University, and Good Sleepers tended to have more Years Education than the people in the CMHT groups. This was significant: Chi-Square = 27.780; df = 2; p < 0.0005\(^2\).

HADS Anxiety scores tended to be the highest in the CMHT Insomnia group, followed by the Other Insomnia and CMHT no Insomnia group, followed by the

\(^2\) Although there was a difference between years in education between the groups, no research has found a link between years of education and insomnia.
Good Sleepers. The group difference was significant: Chi-Square = 34.495; df = 2; p < 0.0005.

HADS Depression scores tended to be highest in the CMHT Insomnia group, followed by the CMHT no Insomnia group, followed by the Other Insomnia group, then the Good Sleepers. This difference was significant: Chi-Square = 32.890; df = 2; p < 0.0005.

The difference between the CMHT Insomnia and the Other Insomnia group was larger on HADS Depression scores than on HADS Anxiety scores.

Table 3: Gender distribution, and mean ages, years of education, HAD anxiety and depression scores of groups

<table>
<thead>
<tr>
<th></th>
<th>CMHT Insomnia (n = 14)</th>
<th>No insomnia (n = 4)</th>
<th>Sleep clinic and University - insomnia (n = 22)</th>
<th>Good sleepers (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Mean (SD)</td>
<td>42.8 (12.9)</td>
<td>44.5 (11.2)</td>
<td>33.1 (10.7)</td>
<td>34.2 (13.7)</td>
</tr>
<tr>
<td>Years Education Mean (SD)</td>
<td>11.1 (1.1)</td>
<td>12.0 (1.8)</td>
<td>17.2 (3.5)</td>
<td>16.7 (2.4)</td>
</tr>
<tr>
<td>HAD Anxiety score Mean (SD)</td>
<td>14.0 (3.3)</td>
<td>9.0 (3.4)</td>
<td>9.4 (3.5)</td>
<td>5.2 (1.8)</td>
</tr>
<tr>
<td>HAD Depression score Mean (SD)</td>
<td>11.2 (4.0)</td>
<td>7.0 (2.7)</td>
<td>5.7 (3.1)</td>
<td>2.2 (1.9)</td>
</tr>
</tbody>
</table>

Aim 1: Cognitive arousal

Means and standard deviations for the groups on the three factors of the SDQ are shown in table 4.

The CMHT Insomnia group had the highest mean Mental Anxiety, followed by the Other Insomnia group, followed by the CMHT no Insomnia group, followed
Major research project: results

by the good sleepers. ANOVA revealed a significant group difference for Mental Anxiety, $F(2, 55) = 49.707, p < 0.0005$.

Table 4: Means and standard deviations of SDQ factors by group

<table>
<thead>
<tr>
<th>SDQ Mental Anxiety</th>
<th>CMHT</th>
<th>Other insomnia (n = 22)</th>
<th>Good sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insomnia (n = 14)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td></td>
<td>23.6 (3.4)</td>
<td>19.0 (2.4)</td>
<td>22.5 (4.7)</td>
</tr>
<tr>
<td>No insomnia (n = 4)</td>
<td>Mean (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.6 (2.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDQ Sleep pattern problem</td>
<td>Mean (SD)</td>
<td>8.0 (1.4)</td>
<td>10.0 (2.4)</td>
</tr>
<tr>
<td></td>
<td>11.7 (2.3)</td>
<td>8.0 (1.4)</td>
<td>9.8 (2.3)</td>
</tr>
<tr>
<td>SDQ Physical Tension</td>
<td>Mean (SD)</td>
<td>5.4 (1.1)</td>
<td></td>
</tr>
</tbody>
</table>

Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia group and the Good Sleepers ($p < 0.0005$) and between the Other Insomnia group and the Good Sleepers ($p < 0.0005$). There were no significant differences between the CMHT insomnia group and the Other Insomnia group ($p = 0.737$).

The CMHT Insomnia group also had the highest mean Sleep Pattern Problem, followed closely by the Other Insomnia group, then the CMHT no Insomnia group, then the Good Sleepers. Group differences were significant: $F (2,55) = 29.304, p < 0.0005$. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia group and the Good Sleepers ($p < 0.0005$), and between the Other Insomnia group and the Good Sleepers ($p < 0.0005$), but differences between the CMHT Insomnia and Other Insomnia groups were not significant ($p = 0.779$).

The CMHT Insomnia group had the highest mean Physical Tension score, followed by the Other Insomnia group, then the CMHT no Insomnia group, then the Good Sleepers. There was a significant group difference: Chi-Square = 204
Major research project: results

37.831; df = 2; p < 0.0005. Post-hoc Mann-Whitney U tests, with correction for multiple comparisons (p < 0.017) were performed. There were significant differences between the CMHT Insomnia group and Good Sleepers (Z = 5.005; p < 0.0005), and between the Other Insomnia group and Good Sleepers (Z = 5.124; p < 0.0005), but the difference between the CMHT Insomnia and Other Insomnia groups did not reach the level required for significance (Z = 2.313; p = 0.021).

Aim 2: Thought content

A second rater rated fifty-six of the sixty-two transcripts. Agreement was 78.3% for sleep-related thoughts, 70.1% for anxiety-related thoughts, and 69.1% for other thoughts.

Sleep-related thoughts

Thought content data are shown in table 5. Time spent thinking about thoughts was analysed in two ways: firstly, as other researchers have done, by taking total amount of time spent thinking about a thought (e.g. Harvey, 2000), and secondly, by taking proportion of total time awake spent thinking about a thought, as it has been suggested that total time spent may be confounded by amount of total time awake (e.g. Morin, 1993).

The highest percentage of participants thinking sleep-related thoughts was in the CMHT Insomnia and the Other Insomnia group, followed by the CMHT no Insomnia group, then the Good Sleeper group. Group differences were significant: $\chi^2 = 17.818$; df = 2; $p < 0.0005$. Paired chi-square tests revealed that group differences existed between the CMHT Insomnia and the Good Sleeper groups ($\chi^2 = 9.972$; df = 1; $p = 0.002$), and between the Other Insomnia and Good Sleeper groups ($\chi^2 = 13.538$; df = 1; $p < 0.0005$). There was no significant difference between the CMHT Insomnia and Other Insomnia groups ($\chi^2 = 0.003$; df = 1; $p = 0.956$).
Mean total time spent thinking about sleep-related thoughts was highest in the CMHT Insomnia group, followed by the Other Insomnia group, then the CMHT no Insomnia group, then the Good Sleeper group. Group differences were significant: Chi-Square = 21.393; df = 2; p < 0.0005. Post-hoc Mann-Whitney U

Table 5: Percentage thinking sleep-related thoughts and time spent thinking sleep-related thoughts by group of participant

<table>
<thead>
<tr>
<th></th>
<th>CMHT Insomnia (n = 13)</th>
<th>CMHT No insomnia (n = 4)</th>
<th>Other insomnia (n = 22)</th>
<th>Good sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentage in group reporting sleep-related thoughts (n)</strong></td>
<td>85.7% (n = 12)</td>
<td>75% (n = 3)</td>
<td>86.4% (n = 19)</td>
<td>31.8% (n = 7)</td>
</tr>
<tr>
<td><strong>Time (in minutes) spent thinking sleep-related thoughts Mean (SD)</strong></td>
<td>27.1 (24.1)</td>
<td>13.9 (27.4)</td>
<td>15.6 (22.3)</td>
<td>1.4 (3.2)</td>
</tr>
<tr>
<td><strong>Percentage of total time awake spent thinking sleep-related thoughts Mean (SD)</strong></td>
<td>1.2 (1.1)</td>
<td>3.5 (3.7)</td>
<td>8.2 (23.6)</td>
<td>6.6 (21.4)</td>
</tr>
<tr>
<td><strong>Mean distress rating for sleep-related thoughts / 100 Mean (SD)</strong></td>
<td>51.8 (25.5) (N = 12)</td>
<td>30.6 (22.4) (N = 3)</td>
<td>47.5 (28.1) (N = 19)</td>
<td>16.9 (15.9) (N = 7)</td>
</tr>
</tbody>
</table>

Tests corrected for multiple comparisons revealed significant differences between the CMHT Insomnia and the Good Sleeper groups (p < 0.0005), and between the Other Insomnia and the Good Sleeper groups (p < 0.0005). The difference between the CMHT Insomnia and Other Insomnia groups did not reach the level required for statistical significance (p = 0.890).

When taken as a percentage of total time awake, time spent thinking about sleep-related thoughts was highest in the Other Insomnia group, followed by the Good Sleepers, followed by the CMHT no Insomnia group. The CMHT Insomnia
group spent the least percentage of time awake thinking sleep-related thoughts. Group differences were not significant: Chi-Square = 4.643; df = 2; p = 0.098.

Mean distress ratings for sleep-related thoughts was highest in the CMHT Insomnia group, followed closely by the Other Insomnia group, then the CMHT no Insomnia group, then the Good Sleepers. Group differences were significant: F (2, 35) = 4.628, p = 0.160. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia and the Good Sleeper groups (p = 0.019), and between the Other Insomnia and the Good Sleeper groups (p = 0.028). There were no significant differences between the two insomnia groups (p = 0.895).

Anxiety-related thoughts

Table 6: Percentage thinking anxiety-related thoughts and time spent thinking anxiety-related thoughts by group of participant

<table>
<thead>
<tr>
<th></th>
<th>CMHT</th>
<th>Other</th>
<th>Good sleeper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insomnia (n = 13)</td>
<td>No insomnia (n = 4)</td>
<td>(n = 22)</td>
</tr>
<tr>
<td>Percentage in group reporting anxiety-related thoughts (n)</td>
<td>78.6% (11)</td>
<td>50% (2)</td>
<td>86.4% (19)</td>
</tr>
<tr>
<td>Time (in minutes) spent thinking anxiety-related thoughts Mean (SD)</td>
<td>55.2 (52.2)</td>
<td>8.8 (14.4)</td>
<td>29.4 (35.0)</td>
</tr>
<tr>
<td>Percentage of time of total time awake spent thinking anxiety-related thoughts Mean (SD)</td>
<td>38.0 (29.0)</td>
<td>6.9 (8.3)</td>
<td>27.9 (27.8)</td>
</tr>
<tr>
<td>Mean distress rating for anxiety-related thoughts / 100 Mean (SD)</td>
<td>67.7 (25.1) (N = 11)</td>
<td>30.0 (14.1) (N = 2)</td>
<td>45.2 (22.6) (N = 19)</td>
</tr>
</tbody>
</table>
Percentage of people reporting anxiety-related thoughts was highest in the Other Insomnia group, followed closely by the Insomnia group. A lower percentage of people in the CMHT no Insomnia group reported thinking anxiety-related thoughts than the other two insomnia groups. The Good Sleeper group had the lowest percentage of people reporting anxiety-related thoughts. The differences in percentages reporting anxiety-related thoughts across the groups was significant: $\chi^2 = 15.914; \text{df} = 2; p < 0.0005$. Paired chi-square tests revealed that group differences existed between the CMHT Insomnia and the Good Sleeper groups ($\chi^2 = 7.481; \text{df} = 1; p = 0.006$), and between the Other Insomnia and Good Sleeper groups ($\chi^2 = 13.538; \text{df} = 1; p < 0.0005$). There was no significant difference between the CMHT Insomnia and Other Insomnia groups ($\chi^2 = 0.374; \text{df} = 1; p = 0.541$).

Time spent thinking anxiety-related thoughts was highest in the CMHT Insomnia group, followed by the Other Insomnia group, followed by the CMHT no Insomnia group, then the Good Sleepers. Group differences were significant: Chi-Square = 19.437; df = 2; $p < 0.0005$. Post-hoc comparisons with significance level adjusted for multiple comparisons ($p < 0.017$) revealed significant differences between the CMHT Insomnia and Good Sleeper groups, $Z = 3.730, p < 0.0005$, and between the Other Insomnia and Good Sleeper groups, $Z = 3.740, p < 0.0005$. There were no significant differences between the CMHT Insomnia and Other Insomnia groups, $Z = 1.317, p = 0.188$.

Percentage of time spent thinking anxiety-related thoughts was highest in the CMHT Insomnia group, followed by the Other Insomnia group, followed by the Good Sleepers, then the CMHT no Insomnia group. Group differences were significant: Chi-Square = 9.724; df = 2; $p = 0.008$. Post-hoc comparisons with significance level adjusted for multiple comparisons ($p < 0.017$) revealed significant differences between the CMHT Insomnia and Good Sleeper groups, $Z = 2.656, p = 0.008$, and between the Other Insomnia and Good Sleeper groups, $Z = 2.612, p = 0.009$. There were no significant differences between the CMHT Insomnia and Other Insomnia groups, $Z = 1.001, p = 0.317$. 
Mean distress rating for anxiety-related thoughts was highest in the CMHT Insomnia group, followed by the Other Insomnia group, followed by the Good Sleepers, then the Anxiety only group. Group differences were significant: $F (2, 34) = 5.206$, $p = 0.011$. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia and the Other Insomnia group ($p = 0.041$), and between the CMHT Insomnia and the Good Sleeper group ($p = 0.014$). There were no significant differences between the Other Insomnia and the Good Sleeper groups ($p = 0.522$).

**Aim 3: Thought control**

Means and standard deviations for the groups on the six sub-scales of the TCQ-I are shown in table 7.

<table>
<thead>
<tr>
<th></th>
<th>CMHT Insomnia (n = 14) Mean (SD)</th>
<th>No insomnia (n = 4) Mean (SD)</th>
<th>Other insomnia (n = 22) Mean (SD)</th>
<th>Good sleeper (n = 22) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worry (Max. score = 28)</td>
<td>16.1 (3.4)</td>
<td>12.0 (1.7)</td>
<td>12.5 (3.4)</td>
<td>9.3 (2.1)</td>
</tr>
<tr>
<td>Punishment (Max. score = 24)</td>
<td>12.4 (3.9)</td>
<td>8.3 (2.6)</td>
<td>9.6 (3.0)</td>
<td>7.6 (1.8)</td>
</tr>
<tr>
<td>Social (Max. score = 28)</td>
<td>13.1 (4.2)</td>
<td>17.3 (3.4)</td>
<td>15.1 (4.7)</td>
<td>17.4 (2.8)</td>
</tr>
<tr>
<td>Suppression (Max. score = 20)</td>
<td>11.4 (2.5)</td>
<td>12.5 (3.3)</td>
<td>12.0 (2.5)</td>
<td>11.3 (2.4)</td>
</tr>
<tr>
<td>Replacement (Max. score = 36)</td>
<td>19.4 (3.4)</td>
<td>19.8 (4.6)</td>
<td>20.0 (4.8)</td>
<td>18.0 (3.8)</td>
</tr>
<tr>
<td>Reappraisal (Max. score = 36)</td>
<td>19.1 (3.3)</td>
<td>19.3 (1.0)</td>
<td>20.6 (4.3)</td>
<td>19.1 (4.2)</td>
</tr>
</tbody>
</table>

1 Based on $n = 13$
2 Based on $n = 3$
3 Based on $n = 21$
4 Based on $n = 21$

Mean Worry score was highest in the CMHT Insomnia group, followed by the Other Insomnia group and the CMHT no Insomnia group, followed by the Good
Sleeper group. ANOVA revealed a significant group difference, $F(2, 54) = 24.557; p < 0.0005$. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia group and the Other Insomnia group ($p = 0.006$), between the CMHT Insomnia group and the Good Sleeper group ($p < 0.0005$), and between the Other Insomnia group and the Good Sleeper group ($p < 0.0005$).

Mean Punishment score was highest in the CMHT Insomnia group, followed by the Other Insomnia group, followed by the CMHT no Insomnia group, followed by the Good Sleeper group. ANOVA revealed a significant group difference, $F(2, 55) = 12.382$, $p < 0.0005$. Post-hoc Tukey tests showed significant differences between the CMHT Insomnia and the Other Insomnia groups ($p = 0.024$), between the CMHT Insomnia and the Good Sleeper groups ($p < 0.0005$), and between the Other Insomnia and the Good Sleeper groups ($p = 0.035$).

Mean score for the Social scale of the TCQ-I was highest for the CMHT no Insomnia group and the Good Sleeper group. It was slightly lower for the Other Insomnia group and lowest for the CMHT Insomnia group. ANOVA revealed a significant group difference, $F(2, 55) = 5.176$, $p = 0.009$. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia and the Good Sleeper groups ($p = 0.007$). There were no significant differences between the Other Insomnia group and either the Good Sleeper group ($p = 0.148$) or the CMHT Insomnia group ($p = 0.303$).

Mean scores for Suppression, Replacement and Reappraisal scales were comparable across the groups. ANOVA did not reveal any significant group differences for any of these three scales: $F(2, 55) = 0.563$, $p = 0.573$; $F(2, 53) = 1.274$, $p = 0.288$; $F(2, 55) = 0.969$, $p = 0.386$ respectively.

**Aim 4: Beliefs about sleep**

Mean and standard deviations for the groups on the mean DBAS-10 score are shown in table 8.
The CMHT Insomnia group had the highest mean score on the DBAS, followed closely by the Other Insomnia group, followed by the CMHT no Insomnia group, then the Good Sleeper group. ANOVA revealed a significant group difference, $F(2, 54) = 19.208$, $p < 0.0005$. Post-hoc Tukey tests revealed significant differences between the CMHT Insomnia group and the Good Sleeper group ($p < 0.0005$), and between the Other Insomnia group and the Good Sleeper group ($p < 0.0005$). There was no significant difference between the CMHT Insomnia group and the Other Insomnia group ($p = 0.965$).

Table 8: Mean and standard deviation for the groups on the mean DBAS-10 score

<table>
<thead>
<tr>
<th></th>
<th>CMHT</th>
<th>Other insomnia</th>
<th>Good sleeper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insomnia (n = 13)</td>
<td>No insomnia (n = 4)</td>
<td></td>
</tr>
<tr>
<td>DBAS Mean (SD)</td>
<td>65.8 (17.5)</td>
<td>51.4 (8.5)</td>
<td>64.6 (11.1)</td>
</tr>
<tr>
<td></td>
<td>41.2 (14.6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis 2: Comparison between groups based on presence of anxiety disorder and presence of insomnia

Table 9: Numbers in each group (and percentages of total in group) who met DSM anxiety disorder diagnostic criteria

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21)</th>
<th>Anxiety only (n = 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panic disorder</td>
<td>8 (38.1%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>9 (42.9%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Social phobia</td>
<td>7 (33.3%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Specific phobia</td>
<td>2 (9.5%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>OCD</td>
<td>7 (33.3%)</td>
<td>2 (50%)</td>
</tr>
<tr>
<td>PTSD$^1$</td>
<td>3 (14.3%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>GAD$^2$</td>
<td>11 (52.4%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

$^1$ Data are unavailable for four participants in the anxiety plus insomnia group, who discontinued the interview

$^2$ Data are unavailable for one participant in the anxiety plus insomnia group, who discontinued the interview

Groups were not significantly different in age. There was a tendency for the insomnia only and the Good Sleeper groups to have higher mean years spent in
education than the anxiety groups. The difference between the groups was statistically significant: Chi Square = 11.999; df = 2; p = 0.002.

Mean HAD Anxiety score tended to be higher in the Anxiety plus Insomnia group, followed by the Anxiety only and Insomnia only groups. The Good Sleeper group had the lowest mean HADS Anxiety score. Group differences were significant: Chi-Square = 7.009; df = 2; p = 0.30. HADS Depression scores did not differ significantly across groups; Chi-Square = 4.184; df = 2; p = 0.123.

Table 10: Gender distribution, and mean ages, years of education, HAD anxiety and depression scores of groups

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21)</th>
<th>Anxiety only (n = 4)</th>
<th>Insomnia only (n = 15)</th>
<th>Good Sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: M : F</td>
<td>9 : 12</td>
<td>3 : 1</td>
<td>7 : 8</td>
<td>9 : 13</td>
</tr>
<tr>
<td>Age Mean (SD)</td>
<td>39.2 (12.7)</td>
<td>44.5 (11.2)</td>
<td>33.5 (11.4)</td>
<td>34.2 (13.7)</td>
</tr>
<tr>
<td>Years Education Mean (SD)</td>
<td>13.1 (3.5)</td>
<td>12.0 (1.8)</td>
<td>17.3 (3.7)</td>
<td>16.7 (2.4)</td>
</tr>
<tr>
<td>HAD Anxiety score Mean (SD)</td>
<td>12.6 (3.7)</td>
<td>9.0 (3.4)</td>
<td>9.2 (3.8)</td>
<td>5.2 (1.8)</td>
</tr>
<tr>
<td>HAD Depression score Mean (SD)</td>
<td>9.1 (4.8)</td>
<td>7.0 (2.7)</td>
<td>6.1 (3.2)</td>
<td>2.2 (1.9)</td>
</tr>
</tbody>
</table>

**Aim 1: Cognitive arousal**

Means and standard deviations for the groups on the three factors of the SDQ are shown in table 11.

Mean Mental Anxiety was highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, followed by the Anxiety only group, followed by the Good Sleeper group. This group difference was significant, F (2, 55) = 55.645, p < 0.0005. Post-hoc Tukey tests revealed significant group differences between the Good Sleeper group and both the Anxiety plus Insomnia (p < 0.0005) and Insomnia only group (p < 0.0005). The difference between the Anxiety plus
Insomnia group and the Insomnia only group did not reach the level of statistical significance (p = 0.080).

Table 11: Means and standard deviations of SDQ factors by group

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21) Mean (SD)</th>
<th>Anxiety only (n = 4) Mean (SD)</th>
<th>Insomnia only (n = 15) Mean (SD)</th>
<th>Good Sleeper (n = 22) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDQ Mental Anxiety</td>
<td>24.1 (3.6)</td>
<td>19.0 (2.4)</td>
<td>21.3 (4.6)</td>
<td>12.1 (3.6)</td>
</tr>
<tr>
<td>SDQ Sleep pattern problem</td>
<td>11.0 (2.5)</td>
<td>8.0 (1.4)</td>
<td>9.3 (2.1)</td>
<td>5.5 (1.8)</td>
</tr>
<tr>
<td>SDQ Physical Tension</td>
<td>11.0 (2.7)</td>
<td>8.0 (1.4)</td>
<td>9.8 (1.9)</td>
<td>5.4 (1.1)</td>
</tr>
</tbody>
</table>

The SDQ factors of Sleep Pattern Problem followed the same pattern. The group difference was also significant: F (2, 55) = 34.157, p < 0.001. Post-hoc testing revealed significant differences between the Good Sleeper group and both the Anxiety plus Insomnia (p < 0.0005) and Insomnia only (p < 0.0005) groups. The difference between the Anxiety plus Insomnia and the Insomnia only groups did not reach statistical significance (p = 0.067).

The Anxiety plus Insomnia group also had the highest mean score on the Physical Tension factor, followed by the Insomnia only, then the Anxiety only, then the Good Sleeper groups. The group difference was significant: Chi-Square = 36.138; df = 2: p < 0.0005. Post-hoc Mann-Whitney U Tests corrected for multiple comparisons (critical p < 0.017) revealed significant differences between the Anxiety plus Insomnia and the Good Sleeper groups (p < 0.0005), between the Insomnia only and the Good Sleeper groups (p < 0.0005), but not between the Anxiety plus Insomnia and Insomnia only groups (p = 0.108).
These findings replicate the results of comparisons in analysis 1. Therefore, results did not differ, regardless of whether participants with insomnia were grouped based on source of recruitment or presence of anxiety disorder.

**Aim 2: Thought content**

**Sleep-related thoughts**

*Table 12: Percentage thinking sleep-related thoughts and time spent thinking sleep-related thoughts by group of participant*

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21)</th>
<th>Anxiety only (n = 4)</th>
<th>Insomnia only (n = 15)</th>
<th>Good sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage in group reporting sleep-related thoughts (n)</td>
<td>90.5% (n = 19)</td>
<td>75.0% (n = 3)</td>
<td>80.0% (n = 12)</td>
<td>31.8% (n = 7)</td>
</tr>
<tr>
<td>Time (in minutes) spent thinking sleep-related thoughts Mean (SD)</td>
<td>25.7 (23.2)</td>
<td>13.9 (27.4)</td>
<td>12.7 (22.3)</td>
<td>1.4 (3.2)</td>
</tr>
<tr>
<td>Percentage of time of total time awake spent thinking sleep-related thoughts Mean (SD)</td>
<td>1.2 (1.0)</td>
<td>3.5 (3.7)</td>
<td>10.9 (27.7)</td>
<td>6.6 (21.4)</td>
</tr>
<tr>
<td>Mean distress rating for sleep-related thoughts /100 Mean (SD)</td>
<td>57.7 (25.5) (N = 19)</td>
<td>30.6 (22.4) (N = 3)</td>
<td>35.6 (23.7) (N = 12)</td>
<td>16.9 (15.9) (N = 7)</td>
</tr>
</tbody>
</table>

The highest percentage of participants thinking sleep-related thoughts was in the Anxiety plus Insomnia and the Insomnia only group, followed by the Anxiety only group, then the Good Sleeper group. Group differences were significant: \( \chi^2 = 18.242; \text{ df} = 2; p < 0.0005 \). Paired chi-square tests revealed that group differences existed between the Insomnia plus Anxiety and the Good Sleeper
Major research project: results

groups ($\chi^2 = 15.465; \text{df} = 1; p < 0.0005$), and between the Insomnia only and Good Sleeper groups ($\chi^2 = 8.288; \text{df} = 1; p = 0.004$). There was no significant difference between the Anxiety plus Insomnia and Insomnia only groups ($\chi^2 = 0.803; \text{df} = 1; p = 0.370$).

Mean total time spent thinking about sleep-related thoughts was highest in the Anxiety plus Insomnia group, followed by the Anxiety only group, then the Insomnia only group, then the Good Sleeper group. Group differences were significant: Chi-Square = 23.426; df = 2; $p < 0.0005$. Post-hoc Mann-Whitney U tests corrected for multiple comparisons revealed significant differences between the Anxiety plus Insomnia and the Good Sleeper groups ($p < 0.0005$), and between the Insomnia only and the Good Sleeper groups ($p = 0.004$). The difference between the anxiety plus insomnia and insomnia only groups did not reach the level required for statistical significance ($p = 0.026$).

When taken as a percentage of total time awake, time spent thinking about sleep-related thoughts was highest in the Insomnia only group, followed by the Good Sleepers, followed by the Anxiety only group. The Anxiety plus Insomnia group spent the least percentage of time awake thinking sleep-related thoughts. Group differences were not significant: Chi-Square = 4.581; df = 2; $p = 0.101$.

Mean distress rating for sleep-related thoughts was highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, then the Anxiety only group, followed by the Good Sleeper group. Group differences were significant: $F(2, 35) = 8.592, p = 0.001$. Post-hoc Tukey tests revealed significant differences between the Anxiety plus Insomnia and the Good Sleeper groups ($p = 0.001$), and between the Anxiety plus Insomnia and the Insomnia only group ($p = 0.039$). There were no significant differences between the Insomnia only and the Good Sleeper groups ($p = 0.234$).

These results replicate those in analysis 1. Therefore, results did not differ whether participants with insomnia were grouped on the basis of source of recruitment, or on the basis of presence of DSM anxiety disorder diagnosis.
Anxiety-related thoughts

Table 13: Percentage thinking anxiety-related thoughts and time spent thinking anxiety-related thoughts by group of participant

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21)</th>
<th>Anxiety only (n = 4)</th>
<th>Insomnia only (n = 15)</th>
<th>Good sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage in group reporting anxiety-related thoughts (n)</td>
<td>85.7% (18)</td>
<td>50% (2)</td>
<td>80.0% (12)</td>
<td>31.8% (7)</td>
</tr>
<tr>
<td>Time (in minutes) spent thinking anxiety-related thoughts Mean (SD)</td>
<td>49.9 (48.4)</td>
<td>8.8 (14.4)</td>
<td>27.5 (35.7)</td>
<td>3.1 (6.9)</td>
</tr>
<tr>
<td>Percentage of time of total time awake spent thinking anxiety-related thoughts Mean (SD)</td>
<td>34.1 (26.5)</td>
<td>6.9 (8.3)</td>
<td>29.5 (30.9)</td>
<td>13.6 (23.4)</td>
</tr>
<tr>
<td>Mean distress rating for anxiety-related thoughts / 100 Mean (SD)</td>
<td>63.9 (20.5) (N = 18)</td>
<td>30.0 (14.1) (N = 2)</td>
<td>37.8 (25.0) (N = 12)</td>
<td>33.9 (23.1) (N = 7)</td>
</tr>
</tbody>
</table>

The percentage of participants reporting anxiety-related thoughts was highest in the Anxiety plus Insomnia group, followed closely by the Insomnia only group, then the Anxiety only group, then the Good Sleeper group. Group differences were significant: $\chi^2 = 15.813; \text{df} = 2; p < 0.0005$. Paired chi-square tests revealed that group differences existed between the Anxiety plus Insomnia and the Good Sleeper groups ($\chi^2 = 12.824; \text{df} = 1; p < 0.0005$), and between the Insomnia only and Good Sleeper groups ($\chi^2 = 8.288; \text{df} = 1; p = 0.004$). There was no significant difference between the Anxiety plus Insomnia and Insomnia only groups ($\chi^2 = 0.206; \text{df} = 1; p = 0.650$).
Time spent thinking anxiety-related thoughts was highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, then the Anxiety only group, then the Good Sleeper group. Group differences were significant; Chi-Square = 19.981; df = 2, p < 0.0005. Post-hoc tests corrected for multiple comparisons (p < 0.017) revealed significant differences between the Anxiety plus Insomnia and the Good Sleeper groups; Z = 4.196, p < 0.0005, and between the Insomnia only and the Good Sleeper groups; Z = 3.174, p = 0.002. There were no significant differences between the two Insomnia groups; Z = 1.409, p = 0.159.

Percentage of total time awake spent thinking anxiety-related thoughts was also highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, then the Good Sleeper, then the Anxiety groups. Group differences were significant; Chi-Square = 9.425, p = 0.009. Post-hoc tests corrected for multiple comparisons revealed a significant difference between the Anxiety plus Insomnia and the Good Sleeper group, Z = 2.830, p = 0.005; however, the difference between the Insomnia only and the Good Sleepers did not quite reach the level of statistical significance, Z = 2.385, p = 0.017. Differences between the two Insomnia groups were not significant, Z = 0.557, p = 0.578.

Mean distress ratings for anxiety-related thoughts were highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, followed by the Good Sleepers, then the Anxiety only group. Group differences were significant: F (2, 34) = 7.017, p = 0.003. Post-hoc Tukey tests revealed significant differences between the Anxiety plus Insomnia and the Insomnia only groups (p = 0.010), and between the Anxiety plus Insomnia and the Good Sleeper groups (p = 0.014). There were no significant differences between the Insomnia only and the Good Sleeper groups (p = 0.929).

Results replicated those described in analysis 1, with the exception of distress ratings, which were significantly higher in the Anxiety plus Insomnia group than the Insomnia only group (the CMHT Insomnia and Other Insomnia groups did
not differ from each other on distress ratings concerning anxiety-related thoughts).

**Aim 3: Thought control**

Means and standard deviations for the groups on the six sub-scales of the TCQ-I are shown in table 14.

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 21) Mean (SD)</th>
<th>Anxiety only (n = 4) Mean (SD)</th>
<th>Insomnia only (n = 15) Mean (SD)</th>
<th>Good Sleeper (n = 22) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Worry (Max. score = 28)</strong></td>
<td>14.6 (4.3)$^1$</td>
<td>12.0 (1.7)$^2$</td>
<td>12.9 (2.7)</td>
<td>9.3 (2.1)</td>
</tr>
<tr>
<td><strong>Punishment (Max. score = 24)</strong></td>
<td>11.4 (3.6)</td>
<td>8.3 (2.6)</td>
<td>9.7 (3.5)</td>
<td>7.6 (1.8)</td>
</tr>
<tr>
<td><strong>Social (Max. score = 28)</strong></td>
<td>13.9 (4.9)</td>
<td>17.3 (3.4)</td>
<td>14.9 (4.2)</td>
<td>17.4 (2.8)</td>
</tr>
<tr>
<td><strong>Suppression (Max. score = 20)</strong></td>
<td>11.8 (2.6)</td>
<td>12.5 (3.3)</td>
<td>11.7 (2.5)</td>
<td>11.3 (2.4)</td>
</tr>
<tr>
<td><strong>Replacement (Max. score = 36)</strong></td>
<td>19.7 (3.5)</td>
<td>19.8 (4.6)</td>
<td>19.9 (5.3)$^3$</td>
<td>18.0 (3.8)$^4$</td>
</tr>
<tr>
<td><strong>Reappraisal (Max. score = 36)</strong></td>
<td>19.6 (4.0)</td>
<td>19.3 (1.0)</td>
<td>20.7 (3.9)</td>
<td>19.1 (4.2)</td>
</tr>
</tbody>
</table>

1 Based on n = 20
2 Based on n = 3
3 Based on n = 14
4 Based on n = 21

Mean Worry scale scores were highest for the Anxiety plus Insomnia group, followed by the Insomnia only group, then the Anxiety only group, then the Good Sleeper group. Group differences were significant, $F (2, 54) = 17.429$, $p < 0.0005$. Post-hoc Tukey tests revealed significant differences between the Anxiety plus Insomnia group and the Good Sleeper group ($p < 0.0005$), and between the Insomnia only group and the Good Sleeper group ($p = 0.001$).
Differences between the Anxiety plus insomnia and Insomnia only group were not significant (p = 0.440).

Mean Punishment scale scores were highest for the Anxiety plus Insomnia group, followed by the Insomnia only group, then the Anxiety only group, then the Good Sleeper group. Group differences were significant, F (2, 55) = 9.840, p < 0.0005. Post-hoc Tukey tests revealed a significant difference between the Anxiety plus Insomnia group and the Good Sleeper group (p < 0.0005). Differences were not significant between the Insomnia only and the Good Sleeper groups (p = 0.082) nor between the Insomnia only and Anxiety plus Insomnia groups (p = 0.170).

Mean Social scale scores were highest for the Good Sleeper and the Anxiety only group, then slightly lower for the Insomnia only group, then slightly lower still for the Anxiety plus insomnia group. Group differences were significant: Chi-Square = 7.096; df = 2; p = 0.029. Post-hoc Mann-Whitney U tests, corrected for multiple comparisons, revealed a significant difference between the Good Sleeper and the Anxiety plus Insomnia group (p = 0.014). The difference between the Insomnia only and the Good Sleeper group did not reach the level of statistical significance (p = 0.058). The difference between the Insomnia only and the Anxiety plus Insomnia was not significant (p = 0.450).

Mean scores on the Suppression, Replacement and Reappraisal scales were comparable across groups and not significantly different: F (2, 55) = 0.235, p = 0.791; F (2, 53) = 1.196, p = 0.310; F (2, 55) = 0.673, p = 0.515 respectively.

Compared with analysis 1, analysis 2 yielded different results for the Worry and Punishment sub-scales. When participants were grouped on the basis of source of recruitment, participants with Insomnia recruited from the CMHT used Worry and Punishment significantly more than participants with Insomnia recruited via the Sleep Clinic and University. However, when grouped on the basis of presence of anxiety disorder, the Anxiety plus Insomnia group did not differ significantly on use of either Worry or Punishment from the Insomnia only group. In addition, when grouped on the basis of presence of anxiety disorder, the Insomnia only group were no different from Good Sleepers in use of Punishment; however,
when the groups had been based on source of recruitment, the Other Insomnia group used Punishment significantly more than Good Sleepers.

Group comparisons for the other TCQ-I sub-scales of Social Control, Suppression, Replacement and Reappraisal yielded the same results as analysis 1.

**Aim 4: Beliefs about sleep**

Mean and standard deviations for the groups on the mean DBAS-10 score are shown in table 15.

<table>
<thead>
<tr>
<th></th>
<th>Anxiety plus Insomnia (n = 20)</th>
<th>Anxiety only (n = 4)</th>
<th>Insomnia only (n = 15)</th>
<th>Good Sleeper (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DBAS Mean (SD)</strong></td>
<td>67.9 (14.2)</td>
<td>51.4 (8.5)</td>
<td>61.2 (12.2)</td>
<td>41.2 (14.6)</td>
</tr>
</tbody>
</table>

Mean score on the DBAS was highest in the Anxiety plus Insomnia group, followed by the Insomnia only group, followed by the Anxiety only group. The Good Sleeper group had the lowest mean DBAS score. Group differences were significant, $F (2, 54) = 20.860$, $p < 0.0005$. Post-hoc Tukey tests revealed significant group differences between the Anxiety plus Insomnia and the Good Sleeper groups ($p < 0.0005$), and between the Insomnia only and Good Sleeper groups ($p < 0.0005$). There were no significant differences between the Anxiety plus Insomnia and Insomnia only groups ($p = 0.341$).

The results replicated those in analysis 1. Therefore, regardless of whether participants with insomnia were grouped on the basis of source of recruitment, or presence of anxiety disorder, they were still not significantly different from each other, and were still significantly different from Good Sleepers in ratings of unhelpful beliefs about sleep.
Discussion

Main findings

This study aimed to test out Harvey’s (2002) model of the maintenance of insomnia in a population of people with co-morbid anxiety disorders. In particular, its aims were to investigate the degree of applicability of the model to people with co-morbid anxiety compared to those with insomnia only. The study also aimed to test the relevance of the model to people with insomnia plus co-morbid anxiety by comparing this group to those with anxiety only. Unfortunately, insufficient numbers of people with anxiety only were recruited; therefore, the second aim of the study could not be fulfilled by making statistical comparisons.

With respect to the main aim of the study, the results were supportive of Harvey’s model. They suggest that most aspects of the model apply equally to those with insomnia and co-morbid anxiety or those from a CMHT, when compared with those with insomnia only, or those recruited from usual sources in the literature (i.e. a Sleep Clinic or a University). Specifically, regardless of the presence of anxiety, people with insomnia have higher cognitive arousal and higher endorsement of unhelpful beliefs about sleep than good sleepers. This replicates previous research findings from studies of people with insomnia only (Lichstein & Rosenthal, 1980; Nicassio et al., 1985; Harvey, 2001; Morin et al., 1993). Harvey’s model’s prediction that people with insomnia think more about sleep at bedtime was also supported. This replicates previous findings concerning people with insomnia only (Wicklow & Espie, 2000; VanEgeren et al., 1983) and extends them to find that sleep-related thought content is also a feature of insomnia in people with co-morbid anxiety disorders. The present research also found anxiety-related thoughts at bedtime to be a feature of insomnia, regardless of the presence of anxiety. This raises the possibility that anxiety-related thought content might be implicated in the maintenance of insomnia in addition to sleep-related thoughts, which is a new finding.
The research also supported the aspect of Harvey’s model concerning the use of unhelpful thought control strategies in people with insomnia, and furthermore demonstrated that frequency of use is even higher in people attending a CMHT than people with insomnia recruited from other sources. That people with insomnia use worry as a strategy to deal with unwanted thoughts more frequently than good sleepers is consistent with previous research outlining the prominence of worry in insomnia (e.g. Harvey, 2001; Borkovec, Robinson, Pruzinsky & DePree, 1983). That people with insomnia use punishment as another strategy is also consistent with other studies that have demonstrated the role of putting pressure on the self to sleep in insomnia (Ansfield, Wegner & Bower, 1996) and the association of punishment and self-blame with poor sleep (Harvey, 2001; Gregory and Eley, in preparation). Thus, the present study suggests that use of worry and punishment may be particularly prominent factors in the maintenance of insomnia in people from a CMHT. Alternatively, the higher use of punishment could be due to the fact that the people with insomnia from the CMHT had higher depression levels than people with insomnia from the Sleep Clinic or University, as the tendency to be self-critical (i.e. punishing of the self) is a common feature of depression. Therefore, punishment is not necessarily maintaining the insomnia in this population. In order to address this the study could be replicated using groups matched for levels of depression.

The study also extended previous research to demonstrate that although not a feature of insomnia only (Harvey, 2001) people with insomnia from the CMHT tended to use the thought control strategy of sharing thoughts with others sleepers (measured on the Social Control sub-scale of the TCQ-I) less frequently than good sleepers. Low utilisation of this strategy could be contributing to the maintenance of high cognitive arousal and insomnia by two mechanisms. Firstly, the role of reduced emotional processing has been implicated in insomnia (Farrell & Harvey, 2001). Therefore, discussing thoughts with others may help to reduce cognitive arousal at night and thereby be a preventative factor in insomnia. Secondly, discussion of thoughts with others may allow an alternative perspective on the thought, thereby facilitating dealing with the thought in a helpful way.
Contrary to predictions, the use of the unhelpful thought control strategy of thought suppression did not differ between the groups. It is unclear as to why this was. Although this may be due to lower group numbers in the study relative to previous research (e.g. Harvey, 2001), there was not even a trend towards higher use of suppression in the insomnia groups.

**Implications of findings for treatment**

The present results suggest that interventions based on the model of insomnia for primary insomnia may also be appropriate for people with insomnia and co-morbid anxiety disorders. Interventions designed to address high cognitive arousal at bedtime in poor sleepers, such as the Pennebaker writing technique, which is thought to be effective by aiding people to process and deal with problematic thoughts prior to going to bed (Farrell & Harvey, 2001), may also be suitable for people with co-morbid anxiety disorders. Similarly, cognitive-behavioural treatment focusing on unhelpful beliefs about sleep (Edinger et al., 2001a) is also likely to benefit people with insomnia plus co-morbid anxiety. Furthermore, the high levels of physical tension found in people with insomnia plus anxiety at bedtime might suggest that interventions used to reduce this, such as relaxation, might be appropriate.

When considering the type of cognitive content to address in treatment, the present results suggest that both sleep- and anxiety-related thoughts might need to be addressed in both people with insomnia only and people with insomnia plus anxiety. The high co-morbidity between the two disorders lends further support to the use of a treatment approach that addresses both types of cognitions.

This research suggests that for people from a CMHT with insomnia, a special focus on use of unhelpful thought control strategies might be needed. For example, treatment for worry, analogous to that for GAD, may be appropriate. In addressing the tendency to punish oneself, paradoxical experiments might be helpful in illustrating the role of performance anxiety in insomnia. Cognitive-behavioural intervention addressing the tendency to be self-critical may also be appropriate.
Future research could address the use of the above recommended components in cognitive-behavioural treatment in order to establish their effectiveness and furthermore, would have implications for whether they hold key maintaining roles in insomnia.

**Implications of findings for diagnosis**

That the anxiety plus insomnia and insomnia only groups were similar on several of the measures in this study may question the usefulness of the diagnostic distinction between primary insomnia and that due to a mental health problem, such as anxiety. Indeed, the tendency to worry is a shared factor between insomnia and GAD/anxiety.

It is of relevance to note that of the participants recruited via the sleep clinic or University, eight (36%) met the criteria for DSM-IV anxiety disorder, and 5 (23%) met criteria for GAD. Therefore, a high degree of co-morbidity was found between insomnia and GAD in the present sample. Given the implicated role of high cognitive arousal and the strategy of worry to deal with this in the maintenance of insomnia, this finding is not surprising. There may be a high degree of overlap between GAD and insomnia: it may be that they share maintaining factors, for example, the perceived usefulness of worry. Previous research has demonstrated this as a strategy to deal with high cognitive arousal in people with insomnia (Harvey, *in press b*). This parallels findings in the GAD literature (Wells, 1997).

**Implications for future research**

People with insomnia tend to employ certain thought control strategies, such as worry, and, in the case of those with co-morbid anxiety, increased use of punishment, and decreased use of discussing thoughts with others. These findings are likely to be reflective of meta-cognitive beliefs regarding the appraisal of thoughts and how they should be dealt with (Wells, 1997). Indeed, the higher distress ratings associated with sleep- and anxiety-related thoughts in people with
co-morbid anxiety could be reflective of meta-cognitive appraisals regarding the nature of their pre-sleep thoughts. These beliefs could be the subject of future research.

This research was an assessment of the cognitive factors thought to be involved in the maintenance of insomnia. However, it should be noted that the group differences observed could be a result of, rather than a maintaining factor in insomnia. Further research could address this issue in treatment studies in order to further elucidate the key maintaining factors in insomnia. The role of different thought control strategies could also be addressed in thought control manipulation experiments, for example in people with anxiety without insomnia.

An aspect of the model that was not tested in the present research was the predicted tendency of people with insomnia to selectively attend to and monitor sleep-related stimuli (Harvey, 2001). This could be a subject of further research within a population of people with anxiety in order to determine whether this has a possible maintaining role.

**Strengths and limitations of the study**

**Participant recruitment**

The research was limited by the low numbers in the anxiety only group, which prohibited inclusion of the group in statistical comparisons. Ideally, with sufficient group numbers, data would have been analysed using a 2 X 2 factorial ANOVA, which would have allowed exploration of main and interaction effects of insomnia and anxiety on the key cognitive variables. That there were more people with insomnia than without in the anxiety sample is discrepant with the proportions that would be expected in an actual anxiety sample based on previous research; for example, 60% prevalence of insomnia in a sample of people with social phobia (Stein et al., 1993), 68% prevalence of insomnia in a sample of people with panic disorder (Stein et al., 1993). There are several possible explanations for the low prevalence of participants without insomnia in the present sample. One reason could be that the two studies cited reported data for
participants with only the specified anxiety disorder, whereas co-morbid other psychiatric diagnoses were not an exclusion criteria for the present research. Therefore, prevalence of insomnia in the present sample may have been higher than reported in the research. Alternatively, the low numbers of participants without insomnia from the CMHT may be explained by the recruitment procedure. People with sleeping difficulties had an increased incentive to take part in the form of the booklet outlining strategies to improve sleep and the promise of feedback. This may have led to a differentially higher response from participants with sleeping difficulties.

Further research could address these issues. Firstly, the prevalence of insomnia in people who attend CMHTs, who are likely to have co-morbid psychiatric diagnoses, could be assessed in a separate study. Secondly, in the present study, clinicians were simply asked to give out information packs to anyone with anxiety, and not asked to assess for whether people had insomnia or not. Therefore, it is unclear whether there was a response bias. Clinician assessment of insomnia would allow such a calculation to be made. Thirdly, the possible bias in recruitment could possibly be remedied by providing an incentive for the anxiety only group to participate, such as a handout on anxiety.

There were also lower numbers than had been expected in the other groups, which reduced the power of the study to find significant differences. In particular, that significant differences on the use of some thought control strategies, and not any other of the cognitive variables, between the insomnia plus anxiety and the insomnia only groups could reflect that there was insufficient power in this study to find a difference. Therefore, the study needs replication, or extension, with sufficient numbers of participants to properly investigate whether people with insomnia plus co-morbid anxiety disorders display similar, or different, levels of cognitive arousal and reporting of sleep- or anxiety-related thoughts to people with insomnia only.
Generalisability of findings

It should also be noted that the response rate in the CMHT was 22.7%. Data regarding non-responders were not collected, and therefore the degree of generalisability is uncertain. In the present study, clinicians were not asked to provide descriptive data on participants given information packs due to constraints on their time; however, such data would have highlighted possible biases in recruitment. It should also be noted that the advertisements around the University would have been accessible to a large number of people although only a small proportion of people responded. Therefore, this sample is highly self-selected, and their results may not be generalisable to a larger sample of people with insomnia.

It should be noted that CMHT participants were all receiving some kind of treatment for their problems, which may have biased their responses on the dependent variables. For example, one participant reported that she had received cognitive-behaviour therapy and therefore did not worry so much about her thoughts. Therefore, the generalisability of this research to people with untreated anxiety disorders is unclear. Future research could replicate this research in an equally severe, but untreated population; for example admissions to CMHTs, where higher levels of cognitive arousal and more utilisation of unhelpful thought control strategies (e.g. worry and punishment) might be expected.

Critique of assessment procedures

A strength of this study was that formal DSM diagnostic procedures were used to classify the sample according to presence of insomnia and anxiety disorders. The extent of generalisability of previous research on insomnia to people with co-morbid anxiety disorders/those attending CMHTs was unclear as studies either did not include a formal diagnostic procedure as part of the study, did not report the data, or did not compare populations. The detailed description of participants, and comparisons made in the present study, aids clarification of the features of insomnia in people both with and without co-morbid anxiety disorders.
A limitation of this study was that alternative causes or maintaining factors for insomnia were not definitively identified. Polysomnography was only performed in four participants recruited from the sleep clinic. The IDI included probe questions for sleep apnoea and other explanations for insomnia; however, more detailed investigation to exclude these possibilities was beyond the scope of the study.

Previous research has used a variety of methods for collecting data regarding thought content, including both in-vivo and retrospective report. That participants were required in the present study to report retrospectively may have biased the results. It is well known that beliefs can bias information processing in a variety of mental health problems. Thus participants with insomnia might be more likely to remember negative cognitions than those who were satisfied with their sleep. This process is implied by Harvey (2002) in discussion of the tendency of people with insomnia to focus on lack of sleep during the daytime; therefore, congruent information may be more readily recalled by this group. The present study attempted to increase accuracy by collecting data from the previous night, which was likely to have aided recall and accuracy compared to asking about cognitions at night-time in general. However, using only one night as the period of measurement potentially made the research biased by specific events the day before, and may not have been representative of a typical night. A further possible bias of the results was that, participants were required to make time estimates, both in terms of total time awake, and time spent thinking each thought listed. Participants reported that they found the former difficult, and the latter particularly difficult. Previous research has demonstrated a tendency for people with insomnia to over-estimate time (Tang & Harvey, 2001). Therefore, the accuracy of the time estimates is likely to be questionable. Using in-vivo data collection methods might increase reliability, but such methods are less ecologically valid as they are likely to interfere with cognition content. A further complication, applicable to all methods of assessing thought content, is individual variability in accessibility of cognitions; clinicians may spend some time in therapy using a variety of techniques (e.g. Beck, 1995) to access clients' cognitions, but research design requires that participants have easy access to
cognitions. Further research could examine the effects on sleep of instructing participants to think particular types of cognitions in the pre-sleep period.

A limitation of the study was that the thought content questionnaire was a new measure and therefore its psychometric properties are unknown. In particular, reliability of the participants' reports over time was not investigated. This could be the subject of future research using a repeated-measures design.

A further limitation of the thought content questionnaire was that only anxiety-related cognitions were probed for. Due to the nature of difficulties of people attending a CMHT, participants were likely to have other, unrecorded DSM diagnoses, including, for example, personality disorders, eating disorders, or depression. Thus, the thought content measure may have been insensitive to measurement of other night-time cognitions related to other psychiatric diagnoses, that may have contributory maintaining roles, such as depressive cognitions regarding sadness and loss. Future research could replicate the present methodology to people with other psychiatric diagnoses, for example, depression, to investigate the extent to which Harvey's model of insomnia is applicable in other groups, and the extent to which other psychiatric-related cognitions are implicated in the maintenance of insomnia in other groups.

A limitation of previous research (e.g. Harvey, 2000) that has examined thought content is that studies have not accounted for total time awake. This is important, as the longer someone has to think, the more likely a given thought is to come into mind (Morin, 1993). A strength of the present study was that it examined presence of thoughts, time thinking about the thoughts, and proportion of time spent thinking particular categories of thoughts; however this highlighted discrepancies in results depending on method of analysis. Time spent thinking sleep-related thoughts were highest in the anxiety plus insomnia group; however, when calculated as proportion of total thinking time, the anxiety plus insomnia group spent the least proportion thinking sleep-related thoughts of all of the groups. This discrepancy between the results might be due to a suggested phenomenon of inaccuracy in time-estimation when people are highly cognitively aroused (Morin, 1993). Alternatively, the discrepancy could suggest that when
time is controlled for, there really are no differences in time spent thinking sleep-related thoughts. In this case, sleep-related thoughts might be as a result of, rather than a maintaining factor in, insomnia (Freedman & Sattler, 1982; Morin, 1993). Further research needs to develop accurate and reliable methods of measuring time if this is to be investigated in future studies.

**Conclusions**

This research has investigated cognitive factors that may maintain insomnia in people with co-morbid anxiety disorders. Cognitive arousal and beliefs about sleep are at similar levels in people with insomnia, both with and without co-morbid anxiety relative to good sleepers. This suggests that they may be involved in the maintenance of insomnia in both groups. Similarly, the content of thoughts appears to be both sleep- and anxiety-related in both people with and without co-morbid anxiety disorders, which suggests that both types of thought content may have a maintaining role in insomnia. The use of worry and punishment strategies were more prominent in people with insomnia plus co-morbid anxiety, compared to those with insomnia only. This suggests that use of these strategies may be particularly relevant to the maintenance of insomnia in this population through tendency to view worry and self-criticism as helpful strategies to deal with thoughts, thereby increasing threat interpretations of thoughts and thus increasing arousal, making sleep less likely. Additionally, people with insomnia plus anxiety had a reduced tendency to discuss their thoughts with others. This could result in lack of emotional processing or external input on thoughts, which could maintain appraisals about thoughts as threatening and increase cognitive arousal, thereby maintaining the insomnia. As the group differences between use of punishment and discussion of thoughts with others have not been demonstrated in previous research, these should be replicated in further research.

Overall these findings suggest that people with anxiety plus insomnia may benefit from similar treatment to people with insomnia only. Treatment might specifically target reduction of mental activity at bedtime, and modification of unhelpful beliefs about sleep. Attention needs to be given to the possible role of anxiety-related thoughts in insomnia, and conversely, the role of sleep-related
thoughts in people with anxiety plus insomnia, in addition to the thoughts associated with their diagnosis. Special attention might need to be given to reducing the use of unhelpful thought control strategies such as worry, punishment, and keeping the thought to oneself in people with co-morbid anxiety disorders. Further research employing manipulation of thought control strategies, or response to treatment studies, on the basis of the above recommendations, would clarify the question regarding the possibility that the cognitive factors identified are a mere result of insomnia, as opposed to key maintaining factors.
References


Harvey, A.G. (*in press b*) Trouble in bed: the role of pre-sleep worry and intrusions in the maintenance of insomnia.


**Appendices**

Appendix 1: Interview for the Diagnosis of Insomnia

Appendix 2: DSM-IV criteria for insomnia

Appendix 3: Hospital Anxiety and Depression Scale

Appendix 4: Sleep Disturbance Questionnaire

Appendix 5: Thought content measure

Appendix 6: Thought Control Questionnaire – Insomnia

Appendix 7: Dysfunctional Beliefs About Sleep – ten item questionnaire

Appendix 8: Information sheet for CMHT participants

Appendix 9: Consent form for CMHT participants

Appendix 10: Information sheet for participants recruited via the sleep clinic

Appendix 11: Consent form for participants recruited via the sleep clinic

Appendix 12: Information sheet for participants recruited via the University

Appendix 13: Consent form for participants recruited via the University (and good sleepers)

Appendix 14: Self-help booklet given to participants

Appendix 15: Information for good sleepers

Appendix 16: Ethics approval granted from East Surrey Local Ethics Research Committee

Appendix 17: Ethics approval granted from University of Surrey ethics committee

Appendix 18: Definitions for thought content analysis
Appendix 1: Interview for the Diagnosis of Insomnia
Interview for the Diagnosis of Insomnia (IDI)

Demographics
Name: 
Age: 
Phone: 
Sex: 
Address: 
Occupation: 
Education: 

Cluster A - The predominant complaint is difficulty initiating or maintaining sleep, or nonrestorative sleep, for at least 1 month.

1. Would you say you sleep very well, moderately well or not very well? (interviewer to circle one)

If answered "sleep very well" patient does not meet criteria for insomnia (may need to go to Cluster C & D when using for research purposes).

2. Which aspects of your sleep do you have difficulty with? (interviewer to circle answer)

(SHOW Card B)
Falling asleep
Staying asleep
Waking up too early

Waking up in the morning and feeling like the sleep you have had was not restorative

If patient responded "yes" to more than one item ask You have said that you have problems with <list them>. Which of these do you regard as the biggest problem? Which do you regard as the second biggest problem? Etc. Put a number from 1 to 4 next to circled items to indicate the biggest problem (1) to the least biggest problem (4)

Frequency. Please indicate on the following scale how many nights/days a week you <have trouble falling asleep, staying asleep, waking up too early, waking up in the morning and feeling like the sleep you have had was not restorative>? (write a, b, c, d, or e next to the relevant area of difficulty above) (SHOW CARD A)

a. never or less than once per month
b. less than once per week (score 1)
c. on 1 night a week (score 2)
d. on 2 nights a week (score 2)
e. on 3 nights a week (score 3) - cutoff
f. on 4 nights a week (score 3)
g. on 5 nights a week (score 3)
h. on 6 nights a week (score 4)
i. on every night or almost every night (score 4)

Total across each area of difficulty Score 2 = ________
Severity. If difficulty falling asleep... When you are having trouble getting to sleep, how long does it take you to fall asleep? (SHOW Card C)

- less than 10 minutes
- 15-20 minutes (score 1)
- 20-25 minutes (Score 1)
- 25-30 minutes (score 1)
- 30-60 minutes (score 2) - cutoff
- 60-90 minutes (score 3)
- more than 90 minutes (score 4)

Score 3 =

If difficulty staying asleep... When you are having difficulty staying asleep, how much time are you awake during the night? (SHOW Card C)

- less than 10 minutes
- 15-20 minutes (score 1)
- 20-25 minutes (Score 1)
- 25-30 minutes (score 1)
- 30-60 minutes (score 2) - cutoff
- 60-90 minutes (score 3)
- more than 90 minutes (score 4)

Score 4 =

If difficulty waking too early... When you are experiencing difficulties with waking too early, how much earlier do you wake in the morning compared to your 'ideal' waking time? (SHOW Card C)

- less than 10 minutes
- 15-20 minutes (score 1)
- 20-25 minutes (Score 1)
- 25-30 minutes (score 1)
- 30-60 minutes (score 2) - cutoff
- 60-90 minutes (score 3)
- more than 90 minutes (score 4)

Score 5 =

3. How long ago did you first start having problems sleeping?

To meet criteria for Cluster A, the patient must have slept "moderately well" or "not at all well" for more than one month. For the frequency and severity criteria there are two pathways (1) the frequency must be at least 3 nights/week or (2) the frequency must be at least 1 night per week but the severity must be 60 minutes or more.

Cluster A MET: Yes No

Subtotal =
Cluster B - The sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

1) Have your sleeping difficulties caused you to feel distressed, upset or bothered? YES NO

*If yes, please indicate on the following scale* How many days a week do your sleeping difficulties cause you to feel upset or bothered? (circle one) (SHOW CARD A)
- a. never or less than once per month (score 0)
- b. less than once per week (score 1)
- c. on 1-2 nights per week (score 2)
- d. on 3-5 nights per week (score 3)
- e. every night or almost every night (score 4)

Could you give me an example of a time you felt upset or bothered? ______________________

2) Have your sleeping difficulties kept you from socialising or talking with people? YES NO

*If yes, please indicate on the following scale* How many days a week have your sleeping difficulties kept you from socialising or talking with people? (circle one)
- a. never or less than once per month (score 0)
- b. less than once per week (score 1)
- c. on 1-2 nights per week (score 2)
- d. on 3-5 nights per week (score 3)
- e. every night or almost every night (score 4)

Could you give me an example of a time you were kept from socialising or talking with people? ______________________

3) Have your sleeping difficulties kept you from completing your normal work? YES NO

*If yes, please indicate on the following scale* How many days a week have your sleeping difficulties kept you from completing your normal work? (circle one)
- a. never or less than once per month (score 0)
- b. less than once per week (score 1)
- c. on 1-2 nights per week (score 2)
- d. on 3-5 nights per week (score 3)
- e. every night or almost every night (score 4)

Could you give me an example of a time you were kept from completing your normal work? ______________________

4) Have your sleeping difficulties kept you from doing other things you need to do? YES NO

*If yes, please indicate on the following scale* How many days a week have your sleeping difficulties kept you from doing other things you need to do? (circle one)
- a. never or less than once per month (score 0)
- b. less than once per week (score 1)
- c. on 1-2 nights per week (score 2)
- d. on 3-5 nights per week (score 3)
- e. every night or almost every night (score 4)

Could you give me an example of a time you were kept from doing other things? ______________________

If any of the above cluster B items are answered "yes", Cluster B is met

Cluster B MET: Yes____ No____

Subtotal = ____
**Cluster C** - The sleep disturbance does not occur exclusively during the course of narcolepsy, breathing-related sleep disorder, circadian rhythm sleep disorder, or a parasomnia.

I am now going to read out a list of things that you or your bed partner may have noticed during the night. I would like you to let me know which of these you have noticed and to estimate in a typical week how many nights you experience these symptoms? Have you or your partner noticed........

a. snoring  
   YES NO  How many nights/wk?

b. pauses in your breathing at night  
   YES NO  How many nights/wk?

c. shortness of breath during the night  
   YES NO  How many nights/wk?

d. choking at night  
   YES NO  How many nights/wk?

e. morning headaches  
   YES NO  How many nights/wk?

f. difficulty getting breath or breathlessness on waking  
   YES NO  How many nights/wk? (If "yes" was answered to one of questions a to f consider diagnosis of sleep apnea)

g. sleep attacks  
   YES NO  How many nights/wk? (when standing up, when doing physical exercise; Reite et al., 1997)

h. cataplexy  
   YES NO  How many nights/wk? (sudden and complete loss of muscle tone - sometimes just in face, neck, and limbs in response to sudden emotional stimuli such as laughter, anger, surprise; Reite et al., 1997) (If "yes" was answered to one of questions g to h consider diagnosis of narcolepsy)

i. nightmares  
   YES NO  How many nights/wk? (must provoke intense fear and anxiety, must be repeated awakenings)

j. sleep paralysis  
   YES NO  How many nights/wk? (waking from sleep and unable to move or speak)

k. night terrors  
   YES NO  How many nights/wk?

l. sleepwalking/talking  
   YES NO  How many nights/wk? (repeated episodes of walking about during sleep - the person has a blank, staring face and is unresponsive)

m. bruxism  
   YES NO  How many nights/wk? (repetitive teeth grinding during sleep)

n. Periodic limb movements of sleep  
   YES NO (uncomfortable sensations in the legs while trying to get to sleep)  
   (If "yes" was answered to one of questions i to m consider diagnosis of parasomnia)

o. Does your job involve rotating shift work or night shift work OR has your job ever involved rotating shift work or night shift work.  
   YES NO  
   (Do not get sleepy until well past the normal sleep onset time. Complaints of inability to get to sleep until the early hours of the morning but little difficulty sleeping once asleep. If they are able to not get up until they had a normal amount of sleep they have no impairment) 

   If yes, record details  
   (If "yes" was answered to question n consider diagnosis of circadian rhythm disorder)

If the reported insomnia cannot be explained by sleep apnea, narcolepsy, parasomnias or a circadian rhythm disorder, Cluster C is met  

Cluster C MET: Yes____ No____
Cluster D - The disturbance does not occur exclusively during the course of another mental disorder (e.g., major depressive disorder, generalised anxiety disorder, a delirium) — included ax of all DSM-IV disorders for which insomnia is a symptom.

Ask the SCID screening questions listed below. If the patient answers yes then complete appropriate section of the SCID.

1. Have you ever had a period when you were feeling depressed or down most of the day nearly every day. Or a time when you lost interest or pleasure in things you usually enjoyed? (Major depressive disorder) YES NO

2. For the past couple of years, have you been bothered by depressed mood most of the day, more days than not? (Dysthmic disorder) YES NO

3. In the last 6-months, have you been particularly nervous or anxious? (Generalised anxiety disorder) YES NO

4. Sometimes things happen to people that are extremely upsetting - things like being in a life threatening situation like a major disaster, very serious accident or fire; being physically assaulted or raped; seeing another person killed or dead, or badly hurt, or hearing about something horrible that has happened to someone you are close to. At any time during your life, have any of these kinds of things happened to you? YES NO

If any events listed: Sometimes these things keep coming back in nightmares, flashbacks, or thoughts that you can’t get rid of. Has that ever happened to you? YES NO

If no: What about being very upset when you were in a situation that reminded you of one of these terrible things? (Posttraumatic and Acute stress disorder) YES NO

6. Has there been any time in your life when you had five or more drinks (beer, wine, or liquor) on one occasion? YES NO

Have you ever used street drugs? YES NO

Have you ever become “hooked” on a prescribed medication or taken a lot more of it than you were supposed to? YES NO

(Substance abuse disorder, Substance-induced disorder, Alcohol withdrawal, Caffeine withdrawal, Amphetamine withdrawal, Cocaine withdrawal, Nicotine withdrawal, Opioid withdrawal, sedative, hypnotic, or anxiolytic withdrawal)

7. Have you ever experienced a disturbance of consciousness, a time when your ability to focus, sustain or shift your attention has been impaired? YES NO

(Delirium)

If the reported insomnia cannot be explained by another mental disorder, Cluster D is met

Cluster D MET: Yes No

Cluster E - The disturbance is not due to the direct physiological effects of a substance

Just before developing your problems with sleeping were you taking any drugs, caffeine, diet pills or medicines? YES NO

Describe

In the last month have you been taking any drugs, caffeine, diet pills or medicines? YES NO

Describe

How much coffee and tea do you drink a day? _______ cups of coffee _______ cups of tea

What time of the day do you drink your last cup of tea or coffee?

How much alcohol do you drink a day?

What time of the day do you drink your last glass of alcohol?

If the reported insomnia cannot be explained by the direct physiological effects of a substance, Cluster E is met

Cluster E MET: Yes No
Appendix 2: DSM-IV criteria for insomnia

A. The predominant complaint is difficulty initiating or maintaining sleep, or nonrestorative sleep, for at least 1 month.

B. The sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The sleep disturbance does not occur exclusively during the course of Narcolepsy, Breathing-Related Sleep Disorder, Circadian Rhythm Sleep Disorder, or a Parasomnia.

D. The disturbance does not occur exclusively during the course of another mental disorder (e.g., Major Depressive Disorder, Generalized Anxiety Disorder, a delirium).

E. The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.
Appendix 3: Hospital Anxiety and Depression Scale

**HAD Scale**

Date:

---

**Major research project: appendices**

*Play an important part in most illnesses. If your doctor knows about these feelings he will be able to help you more.*

This questionnaire is designed to help your doctor to know how you feel. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week.

Don’t take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought-out response.

Tick only one box in each section.

---

### I feel tense or 'wound up':
- Most of the time ........................................
- A lot of the time ........................................
- Time to time, Occasionally ............................
- Not at all ...................................................

### I feel as if I am slowed down:
- Nearly all the time ......................................
- Very often ................................................
- Sometimes ................................................
- Not at all ...................................................

### I still enjoy the things I used to enjoy:
- Definitely as much ........................................
- Not quite so much ........................................
- Only a little ..............................................
- Hardly at all ..............................................

### I get a sort of frightened feeling as if something awful is about to happen:
- Very definitely and quite badly .....................
- Yes, but not too badly ..................................
- A little, but it doesn’t worry me ....................
- Not at all ..................................................

### I can laugh and see the funny side of things:
- As much as I always could ............................
- Not quite so much now .................................
- Definitely not so much now .........................
- Not at all ..................................................

### Worrying thoughts go through my mind:
- A great deal of the time ...............................
- A lot of the time ........................................
- From time to time but not too often ................
- Only occasionally ......................................

### I feel cheerful:
- Not at all ..................................................
- Not often ..................................................
- Sometimes ...............................................  
- Most of the time ......................................

### I can sit at ease and feel relaxed:
- Definitely ................................................
- Usually ....................................................
- Not often ..................................................
- Not at all ..................................................

### I get sudden feelings of panic:
- Very often indeed ......................................
- Quite often ..............................................
- Not very often ..........................................  
- Not at all ..................................................

### I can enjoy a good book or radio or TV programme:
- Often ......................................................
- Sometimes ...............................................  
- Not often ..................................................

---

*All items are scored from 'Not at all' to 'Very often'. The total score can range from 0 to 21, with higher scores indicating greater levels of anxiety and depression.*

---

*Note: This questionnaire is designed for use by doctors to help them understand their patients' feelings.*
Appendix 4: Sleep Disturbance Questionnaire

**SDQ**

Please circle the appropriate number, depending upon how true you feel each of the following statements are for your typical sleep pattern.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never True</th>
<th>Seldom True</th>
<th>Sometimes True</th>
<th>Often True</th>
<th>Very often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can’t get into a comfortable position in bed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My mind keeps turning things over</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can’t get my sleep pattern into a proper routine</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I get too “worked up” at not sleeping</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find it hard to physically “let go” and relax my body</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My thinking takes a long time to “unwind”</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I don’t feel tired enough at bedtime</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I try too hard to get to sleep</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My body is full of tension</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am unable to empty my mind</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I spend time reading/watching TV in bed when I should be sleeping</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I worry that I won’t cope tomorrow if I don’t sleep well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have got into bad sleeping habits</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>It’s just because I am getting older</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Which one of the above statements is most relevant to you?
Appendix 5: Thought content measure

**Thought Content Questions**

"I would like you to think about when you were lying in bed last night and I would like to ask you some questions about the kinds of thoughts that were going through your mind."

"When you were lying in bed last night, what did you think about?"

**Prompt with specific questions**

"Now I'll run through a list of thoughts some people have to see whether these were thoughts that you were thinking about last night..."

(If yes, prompt with, "Could you tell me more about that?") NB: BE SURE TO PROMPT WHEN ANSWERS ARE VAGUE OR CANNOT BE CLASSIFIED – "COULD YOU TELL ME MORE ABOUT THAT?"

(If person is unclear, can prompt with examples in brackets)

**(Sleep)**

"When you were lying in bed last night, did you find yourself thinking about the amount of sleep you would have, or how tired you would feel the next day?"

**(Anxiety)**

"When you were lying in bed last night, did you find yourself thinking about the possibility that something awful might happen to you, or that you might lose control, or have a panic attack?"

"When you were lying in bed last night, did you find yourself thinking about what would happen if you go out?" (for example, that you might go out and then become very anxious)

"When you were lying in bed last night, did you find yourself thinking about anxieties and worries?"

"When you were lying in bed last night, did you find yourself thinking about whether you have done things that you should have done and what might happen if you had not done them?" (for example, checking that the door is locked, or washing your hands?)

"When you were lying in bed last night, did you find yourself thinking about social situations and other people's reactions or judgements about you?"

Then, go back over each thought and ask...

"For how long, roughly, were you awake last night?"

"When you thought about ...X..., how distressing did you find that on a scale of 0 to 100, with 0 being not at all distressing, and 100 being the most distressing?"

"When you thought about ...X..., how long would you estimate you were thinking about that for whilst in bed last night?"

(NB: If times do not add up, prompt for thoughts in spare time)
Appendix 6: Thought Control Questionnaire – Insomnia

Thought Control Questionnaire – Insomnia

Many people find that as they are trying to get to sleep at night thoughts relating to the day they have just had or thoughts about tomorrow come to mind. Other times thoughts relating to ongoing problems or stressors at work or in your home life come to mind. Sometimes these thoughts make it hard to fall asleep.

How often does thinking too much keep you awake?

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Below are a number of things that people do to control these thoughts. Please read each statement carefully and indicate how often you use each technique to control the thoughts that run through your mind as you are trying to get to sleep at night by circling the appropriate number. There are no right or wrong answers. Do not spend too much time thinking about each one.

When thoughts running through my mind keep me awake at night ....

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I tell myself not to think about them now</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I try to push the thoughts out of my head</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I count sheep</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I call to mind positive images instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. If the thoughts relate to a problem I make a decision about it in order to solve the problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I try to block them out by reading a book, watching TV or listening to the radio</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I ruminate about them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I decide to put them “on hold” until the morning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I get out of bed and write about them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I let my mind go blank</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I tell myself not to be so stupid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I focus on the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I replace the thought with a more trivial bad thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I don’t talk about the thought to anyone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I punish myself for thinking the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I dwell on other worries</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I keep the thought to myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I think about something else instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>19. I challenge the thoughts validity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I get angry at myself for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. I avoid discussing the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. I shout at myself for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. I analyse the thought rationally</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. I slap or pinch myself to stop the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. I think pleasant thoughts instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. I find out how my friends deal with these thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. I worry about more minor things instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. I do something that I enjoy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. I try to reinterpret the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. I occupy myself with work instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. I think more about the more minor problems I have</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. I try a different way of thinking about it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. I think about past worries instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. I ask my friends if they have similar thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. I focus on different negative thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. I question the reasons for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. I tell myself that something bad will happen if I think</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. I talk to a friend about the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. I keep myself busy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. I prefer to think things through than distract from them</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. I seek reassurance from others (eg. my bed partner or a friend on the following day)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. I say &quot;stop&quot; to myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. I do something physical to block them (eg. turn over, get out of bed)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix 7: Dysfunctional Beliefs About Sleep – ten item questionnaire

**DBAS**

Please indicate to what extent you personally agree or disagree with each of the statements listed below. There is no right or wrong answer. For each statement, place a mark ( / ) along the line whenever your personal rating falls. Try to use the whole scale, rather than placing your marks at one end of the line.

1. I need 8 hours of sleep to feel refreshed and function well during the day.

   Strongly disagree  ________________________________  Strongly agree

2. When I don’t get a proper amount of sleep on a given night, I need to catch up on the next day by napping or on the next night by sleeping longer.

   Strongly disagree  ________________________________  Strongly agree

3. I am concerned that chronic insomnia may have serious consequences for my physical health.

   Strongly disagree  ________________________________  Strongly agree

4. When I have trouble getting to sleep, I should stay in bed and try harder.

   Strongly disagree  ________________________________  Strongly agree

5. I am worried that I may lose control over my abilities to sleep.

   Strongly disagree  ________________________________  Strongly agree

6. After a poor night’s sleep, I know that it will interfere with my daily activities on the next day.

   Strongly disagree  ________________________________  Strongly agree

7. When I feel irritable, depressed, or anxious during the day, it is mostly because I did not sleep well the night before.

   Strongly disagree  ________________________________  Strongly agree

8. When I sleep poorly on one night, I know it will disturb my sleep schedule for the whole week.

   Strongly disagree  ________________________________  Strongly agree

9. When I feel tired, have no energy, or just seem not to function well during the day, it is generally because I did not sleep well the night before.

   Strongly disagree  ________________________________  Strongly agree

10. I get overwhelmed by my thoughts at night and often feel I have no control over my racing mind.

    Strongly disagree  ________________________________  Strongly agree
Appendix 8: Information sheet for CMHT participants
Why is this research important?
We spend 1/3 of our lives sleeping yet we understand so little about sleep and about how to correct sleep problems. Sleeping difficulties can cause people a lot of distress. Research suggests that people who attend a Community Mental Health Team (CMHT) often experience difficulties in sleeping. However, most of the research into sleeping problems has not included people who also have other difficulties. This study aims to find out about factors that are maintaining sleeping difficulties in people who attend a CMHT. It is hoped that once these factors are identified, we will know more about how to best help sleeping problems in people who attend CMHTs.

Do I need to have sleep problems in order to participate?
No! It does not matter whether you have sleep problems or not. We hope to be able to compare responses from people who have difficulty sleeping with those who do not. This will hopefully let us know more about how to help people with sleeping problems.

What does taking part involve?
It is very easy and should take no more than one hour of your time. If you take part you will first need to sign a consent form (enclosed), fill out your contact details and post this back in the freepost envelope provided (no stamp needed). Then a researcher, Rachel Blake, will contact you to arrange for you to answer some questions about your sleep. This interview will take place at Clarendon House, or over the telephone if you prefer. You will then be given some questionnaires to complete and return. You can either complete these at Clarendon House, or take them home and return them by post. If you choose to return them by post the researcher will give you a stamped addressed envelope.

Do I have to take part?
No! It is entirely up to you whether or not you decide to take part in this research. You do not have to give any reasons for not taking part. Even if you do decide you want to take part, and then later change your mind, you can tell the researcher that you no longer want to take part. You do not have to give a reason. If you decide not to take part, either now or later, the standard of care you receive at the community mental health team will not be affected. The research will not be mentioned to you by your clinician during your consultations.

What will be the benefits of taking part?
If you take part in this research, afterwards you will be given a booklet telling you about strategies to improve your sleep. You will also have the opportunity to meet with/speak to the researcher over the telephone to discuss your answers to the questions. If you decide to take up this opportunity, you will be given feedback about potentially helpful and unhelpful strategies in getting to sleep. This research will hopefully lead to greater understanding of sleeping difficulties, and how to treat them.

Who will see the questionnaires?
Your answers will be kept confidential. Only the researchers will see the questionnaires or answers you give in response to questions about your sleep. If you take part in the study, you will be assigned a number. Questionnaires will only have this number on them and not your name. Only numbers, and not names, will be stored on a computer. The contact details you provide on the consent form will be kept confidential and will be destroyed after you have talked to the researcher about your sleep.

Thank you for taking time to read this information and consider your decision. If you would like to speak to someone about this, or would like any more information, please contact Rachel Blake, Trainee Clinical Psychologist, at Department of Psychology, University of Surrey, Guildford, GU2 7XH.
Appendix 9: Consent form for CMHT participants

Consent form: sleep research

I (name)___________________________________________________

have read and understood the information given to me about the above research. I understand that taking part in the study will involve completing some questionnaires and answering some questions about my sleep. I understand that the researcher will contact me to arrange a convenient time to answer the questions about my sleep.

I understand that whether I decide to take part or not, my care in the Community Mental Health Team will not be affected and this research will not be mentioned by my clinician during my consultations.

I understand that my answers will be kept confidential and when entered onto the computer, will be identifiable by a number only. I understand that the contact details I provide will be destroyed after I have spoken with the researcher about my sleep.

I agree to take part in this project and know that I can withdraw at any time without needing to give any reason for doing so.

Signed:__________________________________Date:____________________

If you would like to contact the researchers, please write to Rachel Blake at Department of Psychology, University of Surrey, Guildford GU2 7XH.

In order that the researcher can contact me to arrange a convenient time to ask me some questions about my sleep, please (tick/complete as appropriate)

Telephone me______________________My number is____________________

The best time(s)/day(s) to call me are____________________________________

OR

Contact me by post____________My address is__________________________

Please note, the researcher will arrange with you a convenient time to meet at Clarendon House to ask you some questions about your sleep.

If you would prefer to answer these questions over the telephone, please tick here___

Please now post this form in the stamped addressed envelope enclosed. You will be contacted shortly by Rachel Blake to arrange to ask you some questions about your sleep.

Thank you very much for taking part.
Appendix 10: Information sheet for participants recruited via the sleep clinic
Information sheet: Sleep research

Why is this research important?
We spend 1/3 of our lives sleeping yet we understand so little about sleep and about how to correct sleep problems. Sleeping difficulties can cause people a lot of distress. Researchers are currently developing a new theory about insomnia; however, it is not clear whether the theory is relevant for different types of sleeping difficulties. This study aims to find out about factors that are maintaining different types of sleeping problems. It is hoped that once these factors are identified, we will know more about how to best help people with different types of sleeping difficulties.

Why me?
Your clinician has been asked to give this information to people who have insomnia. We hope to ask people with different kinds of insomnia some questions about their sleep and compare their answers with those from people who sleep well. This should highlight new ways to treat insomnia. By comparing answers from people with different types of insomnia, we should find out whether new treatments are likely to be helpful to everyone, or just people with certain kinds of insomnia. The more people who agree to take part, the more representative the research will be of people with different types of sleeping difficulties.

What does taking part involve?
Taking part is very easy and should take no more than one hour of your time. If you decide to take part you will first need to sign a consent form (enclosed), fill out your contact details and post this back in the freepost envelope provided. Then a researcher, Rachel Blake, will contact you to arrange for you to answer some questions about your sleep over the telephone. After this, you will be sent some questionnaires to complete and return in a stamped addressed envelope.

Do I have to take part?
No! It is entirely up to you whether or not you decide to take part in this research. You do not have to give any reasons for not taking part. Even if you do decide you want to take part, and then later change your mind, you can tell the researcher that you no longer want to take part. You do not have to give a reason. If you decide not to take part, either now or later, the standard of care you receive at the Sleep Laboratory will not be affected. The research will not be mentioned to you by your clinician during your consultations.

What will be the benefits of taking part?
If you take part in this research, afterwards you will be given a booklet telling you about strategies to improve your sleep. If you wish, the researcher can discuss with you the new theory about sleeping difficulties that is being developed. You will also have the opportunity to speak to the researcher over the telephone to discuss your answers to the questions. If you decide to take up this opportunity, you will be given feedback about potentially helpful and unhelpful strategies in getting to sleep. This research will hopefully lead to greater understanding of sleeping difficulties, and how to treat them.

Who will see the questionnaires?
Your answers will be kept confidential. Only the researchers will see the questionnaires or answers you give in response to questions about your sleep. If you take part in the study, you will be assigned a number. Questionnaires will only be labelled with this number, and not your name. Only numbers, and not names, will be stored on a computer. The contact details you provide on the consent form will be kept confidential and will be destroyed after you have talked to the researcher about your sleep.

Thank you for taking time to read this information and consider your decision. If you would like to speak to someone about this, or would like any more information, please contact Rachel Blake, Trainee Clinical Psychologist, at Department of Psychology, University of Surrey, Guildford, GU2 7XH, telephone 01483 259441.
Appendix 11: Consent form for participants recruited via the sleep clinic

**Consent form: sleep research**

I (name)___________________________________________________

have read and understood the information given to me about the above research and have had the opportunity to contact the researcher to ask any questions I may have. I understand that taking part in the study will involve completing some questionnaires and answering some questions about my sleep. I understand that the researcher will contact me to arrange a convenient time to answer the questions about my sleep.

I understand that whether I decide to take part or not, my care at the Sleep Laboratory will not be affected and this research will not be mentioned by my clinician during my consultations.

I agree to the researcher contacting my general practitioner about my participation in the study in confidence.

I understand that my answers will be kept confidential and when entered onto the computer, will be identifiable by a number only. I understand that the contact details I provide will be destroyed after I have spoken with the researcher about my sleep.

I agree to take part in this project and know that I can withdraw at any time without needing to give any reason for doing so.

Signed: ______________________________ Date:____________________

If you would like to contact the researchers, please write to Rachel Blake at Department of Psychology (PsychD Clinical Psychology), University of Surrey, Guildford GU2 7XH, or call 01483 259441.

**In order that the researcher can contact me to arrange a convenient time to ask me some questions about my sleep, please**

Telephone me. My number is ______________________________________________________________________

The best time(s)/day(s) to call me are ______________________________________________________________________

Please now post this form in the freepost envelope enclosed. You will be telephoned shortly by Rachel Blake to arrange with you a convenient time to ask you some questions about your sleep.

Thank you very much for taking part.
Appendix 12: Information sheet for participants recruited via the University
Information sheet: Sleep research

Why is this research important?
We spend 1/3 of our lives sleeping yet we understand so little about sleep and about how to correct sleep problems. Sleeping difficulties can cause people a lot of distress. Researchers are currently developing a new theory about insomnia; however, it is not clear whether the theory is relevant for different types of sleeping difficulties. This study aims to find out about factors that are maintaining different types of sleeping problems. It is hoped that once these factors are identified, we will know more about how to best help people with different types of sleeping difficulties.

Why me?
You have responded to an advertisement for people who have difficulty sleeping. We hope to ask people with different kinds of insomnia some questions about their sleep and compare their answers with those from people who sleep well. This should highlight new ways to treat insomnia. By comparing answers from people with different types of insomnia, we should find out whether new treatments are likely to be helpful to everyone, or just people with certain kinds of insomnia. The more people who agree to take part, the more representative the research will be of people with different types of sleeping difficulties.

What does taking part involve?
Taking part is very easy and will take a maximum of one hour of your time. If you decide to take part you will first need to sign a consent form (enclosed), fill out your contact details and post this back in the freepost envelope provided. Then a researcher, Rachel Blake, will contact you to arrange for you to answer some questions about your sleep over the telephone, or in person, whichever you prefer. After this, you will be given some questionnaires to complete and return in a stamped addressed envelope.

Do I have to take part?
No! It is entirely up to you whether or not you decide to take part in this research. You do not have to give any reasons for not taking part. Even if you do decide you want to take part, and then later change your mind, you can tell the researcher that you no longer want to take part. You do not have to give a reason.

What will be the benefits of taking part?
If you take part in this research, afterwards you will be given a booklet telling you about strategies to improve your sleep. The researcher will also give individual feedback about potentially helpful and unhelpful strategies in getting to sleep on the basis of your answers, which should be helpful in learning how to improve your sleep. This research will hopefully lead to greater understanding of sleeping difficulties, and how to treat them.

Who will see the questionnaires?
Your answers will be kept confidential. Only the researchers will see the questionnaires or answers you give in response to questions about your sleep. If you take part in the study, you will be assigned a number. Questionnaires will only be labelled with this number, and not your name. Only numbers, and not names, will be stored on a computer. The contact details you provide on the consent form will be kept confidential and will be destroyed after you have talked to the researcher about your sleep.

Thank you for taking time to read this information and consider your decision. If you would like to speak to someone about this, or would like any more information, please contact Rachel Blake, Trainee Clinical Psychologist, at Department of Psychology, University of Surrey, Guildford, GU2 7XH, telephone 01483 259441.
Appendix 13: Consent form for participants recruited via the University (and good sleepers)

**Consent form: sleep research**

I (name)___________________________________________________

have read and understood the information given to me about the above research and have had the opportunity to contact the researcher to ask any questions I may have. I understand that taking part in the study will involve completing some questionnaires and answering some questions about my sleep. I understand that the researcher will contact me to arrange a convenient time to answer the questions about my sleep.

I understand that it is up to me whether I decide to take part or not.

I understand that my answers will be kept confidential and when entered onto the computer, will be identifiable by a number only. I understand that the contact details I provide will be destroyed after I have spoken with the researcher about my sleep.

I agree to take part in this project and know that I can withdraw at any time without needing to give any reason for doing so.

Signed:_________________________________Date:____________________

If you would like to contact the researchers, please write to Rachel Blake at Department of Psychology (PsychD Clinical Psychology), University of Surrey, Guildford GU2 7XH, or call 01483 259441.

**In order that the researcher can contact me to arrange a convenient time to ask me some questions about my sleep, please (please tick)**

Telephone me ________My number is______________________________

The best time(s)/day(s) to call me are______________________________

OR email me________My email address is__________________________

Please now post this form in the freepost envelope enclosed. You will be telephoned shortly by Rachel Blake to arrange with you a convenient time to ask you some questions about your sleep.

Thank you very much for taking part.
Getting Back to Sleep

A Self-help guide to improving your sleep

Contents

1. Introduction
2. Strategies for improving your sleep
   2.1 Sleep Hygiene
   2.2 Stimulus Control
   2.3 Sleep Restriction
3. If worries are keeping you awake
4. Are your beliefs about sleep part of the problem?
5. What should I do about my sleeping medication?
6. Final Word
Appendix: Sleep Diary
1. Introduction

A good night's sleep is important to all of us as it helps to replenish our energy levels and restore our bodies. If you are reading this booklet you are probably having frustrating problems with your sleep and may have done so for some time. You might be taking sleep medication, but want to try a different way. You might want to stop your sleep medication and are concerned your sleeping problems will get worse.

There are many different causes of sleeplessness including:

- emotional problems such as depression, anxiety
- physical illness
- medication side effects
- drug/alcohol misuse
- environmental causes
- simply getting older

This booklet gives an overview of the different ways you can help yourself to sleep better. The strategies you will learn about have been tried and tested many times. They are shown by research to improve sleeping patterns just as well as medication and to work much better in the long term. In most cases you will see immediate improvements in your sleep but, so long as you stick with your programme, you are likely to notice gradual improvement over several weeks.

A lot of the time we accept that sleeplessness is a short-term problem which will improve with time. However, when it seems to take too long we can get trapped in a vicious circle where our fear about not sleeping causes worry and anxiety which keep the sleep problem going.

In most cases you will see improvements, but not all. If you are still having trouble falling asleep, or your sleep is being disturbed by problems such as nightmares or bedwetting, then this booklet may not be enough for you. You need to see a doctor. Some of the strategies may help you in the short term, but you may need treatment.

The booklet is divided into two sections:

1. Introduction
2. 2. Strategies for improving your sleep

You may not feel motivated or able to read all through this booklet. In this case you could work through these strategies together with your key worker, therapist, or doctor. They can give you further advice and encouragement to stick with it.
Control can be a strategy which helps to make the connection between your bed and your body. Do not sleep very well, your bedroom and bed may have become strongly (and perhaps unconsciously) associated with being awake. If you do not sleep well, your bedroom and bed may have very strongly associated with good sleep. If you do not sleep well, some other strategies may help. For most people who do not sleep well, if you have followed the rules for good sleep, Hypnosis but are still having trouble, here is what you can do:

1.2 Stimulus Control

- Use your bedroom only for sleeping (and sex). Do NOT read, watch TV, place to work during the day.
- After waking from a T/W, the brain is used for sleeping. If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
- If you wake from a T/W, the brain is used for sleeping.
Transfer the workouts of your mind down onto a piece of paper by making

Nature. As the moment is always to do than to do by some of your activities, you may find yourself working on your life, especially if you're working on the hardware, the things that are going wrong in your life, eventually, not working knowing what the things that are going wrong in your life that you need to work on. The time to work on the things that are going wrong in your life is not when you're working on your life, but when you're working on your mind. Sometimes people have difficulty getting to sleep because their minds are

3. If workout are keeping you awake

Single night

No more episodes (not do not expect you should sleep solidly for 8 hours every night)

Nights

If you have trouble sleeping or if you wake up frequently, consider whether you might need to go to sleep earlier or get more sleep. If your body is still broken, you might need to go to sleep earlier or get more sleep. If you have trouble sleeping or if you wake up frequently, consider whether you might need to go to sleep earlier or get more sleep. If your body is still broken, you might need to go to sleep earlier or get more sleep.

If you find that your sleep is not really improved, you might need to go for another week.

2.2 Sleep Restriction

So will go to bed at 1:30am and get up at 7am, so will go to bed at 1:30am and get up at 7am. If you find that your sleep is not really improved, you might need to go to sleep earlier or get more sleep. If your body is still broken, you might need to go to sleep earlier or get more sleep.

So will go to bed at 1:30am and get up at 7am, so will go to bed at 1:30am and get up at 7am. If you find that your sleep is not really improved, you might need to go to sleep earlier or get more sleep. If your body is still broken, you might need to go to sleep earlier or get more sleep.
If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

I. Technique

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to

Be referred to someone who is trained in cognitive-behavioral therapy.

If you want to investigate the role of your beliefs further, you would need to
tr¥-

OQ r t

2 3

P OO

r t

£o

3

a- co rt
r t CD
a O3 3
N

$

H

«—+
r t

CD

5c2 2cd 3

C5 T J

^3 s

CD

rt -^ **
CD

3

<P

rt

O

3 2.

O
O 3CO

03'
0rt3 rt

C55

3CD
3
cr
CD

CD
r t v rt
V- CD
^
CO __
rt O
CD ^
3
o
3r + o •S. g
p c= cr

(55

a.

<!
2

o'

*3
to
Dr

»

*-«
CO Lf>
C
O* 03
«-♦ rt**

S .

St ^

S. o

r-t

3

p\
52 OQ

P
r*

co ^ 3
rt irt §
■8 U v :
P
•—3•-»
CD

05

5

CD

*

o

6

P?

LS

c t.

05
£L
CD

^ 5S

CD
CD
r t
CO

P>

-»
5O

.

rt 3
v:
o
3 (&

C l 05

3

§

s

3r t o3 ^
o’
rt

CD

0 v- £ fo
o
3 2
3
a
E 5*
1 3 ® O3Q r t
g* SL o
8
o ’ ^ r t SL
cd 52.
S
o
CT. l-*5 r - t
0 rt
rt •8 S
3
CO CD
3 Z
3 a °

r t CD a
°
CD
r-t r t
CD

o*
CD
CD

3
P

s3

OQ

to

rt

CD

3

to

g- oa

rt.
co

St
S'
N

s* 9
OQ 2 ? art- Q
rt O a CD g*-t
3. ° 3 CD 5 *
O o O co 3.

r(M
tt

? T oq

01%

o

Z £§
3

rt. o
CT

CD

rt

O- oV 52. £r —.
O r t CO
3 CD t.
OQ O
P

3

CD
5 ’ P CO
CD CO
CO
OQ a
CD CD
rt O — O
p 8 3
r t cL*a r t
a CCDD
CO o
O
p < rt
3 CD , to
*< CO 3
o O
CD CD
3
3 3 O
CO o
o
p
3.
3 3 o
<
O CCOD CaD o
•“ *5
o
rt CT. o
CD* CD
3 c
o
r-t- rt- CD a

C

£» 3’ B* P

fo

IC—
**
O

cd^

a
9s
05
g?
s*

o<
£L
g- B
305 3

g

18

W

S ^

rt

rt

c o o

CD

rt -I
rt cT
S n>
S •°
C
O3
cr d
3 'c
CD r t
q2. 2.
CD
to
^
_ CO
r-t

<rt

i.

S

3s P
^

O’

CD
co

CD

CD

CD

3

CD

^
CD

CD

s £

to

to
O
QX
033
03 *0
3
p

3 to
CO

rt

rCDt
Q - CD

CO

CD
° Cl
*3
CD cr 3
3D . CD
CD *o o
3O CD .
CO *><
CD o S:
&
O a.
2
3 cr
CD R

CD

.

3
&

— C3D

r t_

r t

cT

3CO
3

tO

s:

CD

3

CD

S
*■*4
o3
sr

p

co

3 cr
co CD
3 rt p
O
O
a 3 co rt
CD
P
5 ! <8
rt
o P

2L or Cl
rt* CD Pco
r*
g o ^5
aP
3 rt o
O u CD 3

O

CD
a-

P 'g SL a*
►
—
v: 3 v;
o
o
to a
in P 3 r t
O S'
«—t ’

in'

N

3
P

problems have all come straight back now that they have stopped taking the
medication when in actual fact the medication could be causing the
problems. In all cases, 'you should consult with your prescribing Doctor
about how to come off your medication - this is very important if you have

sleeping patterns to settle down to normal. If you have difficulty with these
techniques then discuss them with your keyworker, therapist or doctor who
should be able to help and encourage you further.

^
o
rt

O
(X

a

cd

r t

t-u

r t 2T n
3‘
co ’ 3
o o

p

cl

rt rt
“ o

CD

co’
C L CT* co
a
CD
CD
P
CL

^ S’ rt
*cT S.rt
- 8
<
Q
t l
O
. £L 3 o3q
3
Z
CD
L^ W
rt ~ O
oH j 3oS o-3
St rt »
o’
TJ £w #C
a
St
P
°3 ^ 3 52 a* o’
o
C
r
t*
a.
•3
C
T.* O
* o*
CD
5
2
o
S
3rs
rt 2
o
O
CD g
3 '§B S*
»
3
_.
*
1
3»
p*
—
CA Q5 M i c
d
rt
^
CO 8 **»
o3 s?
cd
g.
S
“
O
O _
a a
Hp O
rt o
r i01g ^
g>B ■g 8 § ~ s.-a
CD CD
a. ^ cs 3a. w
o ***•
355 g2 O3.
3* ^ o P*
o
03
8
^
g
“ I a.
CO fl>
C
O
3*
C
O
■cS zr” OQ < CD 3
_
a
P
CO
a S*3
CD
r t CD
§- S’ ^ >K ■
CD
§
°
CD
S
S
'g
S 3: 3 rt 3
rt
o
< tC; M
CD 03
e
CD OO s- a 3
-a cd O a CD ?a rt
o
a
05 s*
° CL Q
S a ato
CD
e
>
o o'
rt
>
r**rt
«
>
v< ' O
'S. si.
Q o’ “
3 ? o
R § OQ CD 3 CD Co * 3
r t

—

should I do about mv sleeping medication?

g*
CO O
3o
'■*'
m
05 O
er “ o 8 3
3Q O'
O
3 a 3 in
CD
S. o C L
c< op
s* §

5. EFito

O rt &
rt ft) C/l
rtCD 3 §
CL c
a.d 3CD
r-t

Your Doctor may have prescribed you sleeping pills. The most common
kinds are Zopiclone or Zolpidem but they could also be from the

all and could even develop anxiety symptoms. It is quite normal to suffer this
rebound effect upon coming off regular sleep medication but it does not
usually last for very long. Many people mistakenly believe that their sleeping

CO


### Sleep Diary

#### Example

<table>
<thead>
<tr>
<th>Date</th>
<th>Sleeping pill taken?</th>
<th>Time went to bed</th>
<th>Time taken to fall asleep (in mins)</th>
<th>Number of awakenings</th>
<th>Time arose from bed</th>
<th>Rating of sleep quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: By just looking at the day-to-day figures, (the Weekly Total and Average rows are optional for you to fill in but they will give you a better idea of your progress from week to week than...
Appendix 15: Information for good sleepers
Information sheet: Sleep research

Why is this research important?
We spend 1/3 of our lives sleeping yet we understand so little
about sleep and about how to correct sleep problems. Sleeping
difficulties can cause people a lot of distress. Researchers are
currently developing a new theory about insomnia; however, it is
not clear whether the theory is relevant for different types of
sleeping difficulties. This study aims to find out about factors that
are maintaining different types of sleeping problems. It is hoped
that once these factors are identified, we will know more about
how to best help people with different types of sleeping
difficulties.

Why me?
You have responded to an request for people who sleep well. We hope to ask people with different
kinds of insomnia some questions about their sleep and compare their answers with those from people
who sleep well. This should highlight new ways to treat insomnia. By comparing answers from people
with different types of insomnia, we should find out whether new treatments are likely to be helpful to
everyone, or just people with certain kinds of insomnia. The more people who agree to take part, the
more representative the research will be of people with different types of sleeping difficulties.

What does taking part involve?
Taking part is very easy and will take a maximum of half an hour of your time. If you decide to take
part you will first need to sign a consent form (enclosed), fill out your contact details and post this back
in the freepost envelope provided. Then a researcher, Rachel Blake, will contact you to arrange for you
to answer some questions about your sleep over the telephone, or in person, whichever you prefer.
After this, you will be given some questionnaires to complete and return in a stamped addressed
envelope.

Do I have to take part?
No! It is entirely up to you whether or not you decide to take part in this research. You do not have to
give any reasons for not taking part. Even if you do decide you want to take part, and then later change
your mind, you can tell the researcher that you no longer want to take part. You do not have to give a
reason.

What will be the benefits of taking part?
If you take part in this research, the researcher can give individual feedback about your answers, if you
would like. It is particularly important that we include people who do not have difficulty sleeping in the
research, in order that we can understand more about helpful strategies in getting to sleep. As a person
who sleeps well, by taking part you will be helping the researchers gain a greater understanding of how
people are able to gain a good nights sleep. This will guide treatment of people who have difficulty
sleeping.

Who will see the questionnaires?
Your answers will be kept confidential. Only the researchers will see the questionnaires or answers you
give in response to questions about your sleep. If you take part in the study, you will be assigned a
number. Questionnaires will only be labelled with this number, and not your name. Only numbers, and
not names, will be stored on a computer. The contact details you provide on the consent form will be
kept confidential and will be destroyed after you have talked to the researcher about your sleep.

Thank you for taking time to read this information and consider your decision. If you would like to
speak to someone about this, or would like any more information, please contact Rachel Blake, Trainee
Clinical Psychologist, at Department of Psychology, University of Surrey, Guildford, GU2 7XH,
telephone 01483 259441.
Appendix 16: Ethics approval granted from East Surrey Local Ethics Research Committee

EAST SURREY LOCAL RESEARCH ETHICS COMMITTEE

Santhams,
West Park Hospital,
Horton Lane,
Epsom, Surrey,
KT19 8PB.

SH/AJR
Date: 27th November 2001.

To: Rachel Blake,

Dear Ms Blake,

RE: COGNITIVE FACTORS MAINTAINING INSOMNIA IN PEOPLE WITH ANXIETY WHO ATTEND A CMHT
REF: 19RBIA(333) - to be quoted on all future correspondence please

Thank you for your letter dated 15th October 2001 in response to our letter of concerns dated 27th September 2001. The East Surrey Local Research Ethics Committee discussed these issues at its meeting on Friday, 23rd November 2001 and I am pleased to inform you that approval has been granted to commence this study.

In future, the Committee would like to follow up all new trials. Therefore, we would be grateful if you could send us an update after a period of a year from the commencement of the study with the following details:-

1. Is the research still continuing?
2. If it is, which stage has it reached:-
   2.1. Data being collected
   2.2. Data being analysed
   2.3. Research being written up
   2.4. Research published.

N.B. If you are sending any Protocol Amendments to us, please ensure that you highlight the areas of change.

Thank you for your trouble.

Yours sincerely,

[Signature]

Manager - ESLREC

irr
Appendix 17: Ethics approval granted from University of Surrey ethics committee

29 January 2002

Ms Rachel Blake

Dear Ms Blake

Cognitive factors maintaining insomnia
(ACE/2001/85/Psych)

I am writing to inform you that the Advisory Committee on Ethics has considered the above protocol (and the subsequent information supplied) and has approved it on the understanding that the Ethical Guidelines for Teaching and Research are observed and the following condition is met:

- That the Information Sheet for Volunteers (last paragraph) also includes your direct telephone number at the University (not a private number), should the Volunteers wish to contact you for more information.

For your information, and future reference, the Guidelines can be downloaded from the Committee’s website at http://www.surrey.ac.uk/Surrey/ACE/.

This letter of approval relates only to the study specified in your research protocol (ACE/2001/85/Psych). The Committee should be notified of any changes to the proposal, any adverse reactions, and if the study is terminated earlier than expected, with reasons.

I should be grateful if you would confirm in writing your acceptance of the conditions above, forwarding the amended document for the Committee’s records.

Date of approval by the Advisory Committee on Ethics: 29 January 2002
Date of expiry of approval by the Advisory Committee on Ethics: 28 January 2007

Please inform me when the research has been completed.

Yours sincerely

Catherine Ashbee (Mrs)
Secretary, University Advisory Committee on Ethics
Appendix 18: Definitions for thought content analysis

**Thought content definitions**

**Sleep-related thoughts**

Any thought expressed relating to the amount of sleep, quality of sleep, getting to sleep or waking up, daytime consequences of sleep (e.g. tiredness), thoughts about sleep in the future, monitoring for signs of being tired or strategies to improve sleep.

**Anxiety-related thoughts**

Any thought that relates to the possibility of having a panic attack or losing control, thoughts of checking things, thoughts of how others might perceive the self in social situations, meta-cognitions about thoughts, threat-related thoughts.

**Other thoughts**

Any sadness-related thoughts, or anger-related thoughts, or thoughts that do not fit into the above categories, e.g. looking forward to events, problem-solving going over what has happened in the day, neutral thoughts.