A Portfolio of Study, Practice & Research

including

"Does smoking a nicotine yielding cigarette provide psychological benefits in non-abstinent smokers?"

by

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

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Copyright Statement

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© Sophie Browning, August 1999.
This volume of the portfolio contains a separate section for each of the three main components (Academic Clinical and Research) of the three year Clinical Psychology Doctorate course (PSYCH D). The academic section comprises five selected essays which cover both core and specialist topics. The clinical section includes a brief summary of the clinical experience gained on each of the six placements, a copy of each placement contract and a summary of five formal clinical case reports. Finally, the research section comprises a literature review completed in year I, a piece of research that fulfils the requirement for Service Related Research (completed in year II) and a small scale research project carried out in year II. Also, a large scale research project completed in year III. A separate confidential clinical volume has been submitted containing the five formal case reports in full and all placement documentation including clinical activity log books and evaluation forms.

The work presented in each section reflects the variety of clients, presenting problems and approaches covered during the course. In each section the work is presented in the order in which it was completed, in order to demonstrate how my thinking and interests have developed during the course.
Academic Section
Summary of the Academic Section

This section comprises five selected essays completed during training, including one essay chosen from each of the four core client groups worked with during the first and second years and one specialist essay from the third year. These particular essays have been chosen to reflect the depth and breadth of work covered during the course.
Adult Mental Health Essay

“Discuss the efficacy of cognitive-behavioural interventions for eating disorders”

Year I

May 1997
Adult mental health essay: Discuss the efficacy of cognitive-behavioural interventions for eating disorders

Introduction
More psychologists are becoming involved in the difficult task of attempting to treat eating disorders such as anorexia and bulimia (Brownell & Foreyt, 1996). Despite the long term interest in interventions for anorexia, there have been few empirical outcome studies of psychological interventions. In contrast, although it is only recently that the DSM-III-R (American Psychiatric Association; APA, 1987) included bulimia as a distinct eating disorder, there have been a relatively large number of empirical studies of treatment effectiveness. Many of these studies have focused on cognitive-behavioural interventions and this essay aims to explore the effectiveness of this treatment approach for bulimia.

Bulimia is characterised by recurrent episodes of binge eating accompanied by a feeling of loss of control, self induced vomiting, use of laxatives, strict dieting, or vigorous exercise to prevent weight gain, and a persistent over concern with body shape and weight. This psychopathology has been characterised as "a morbid fear of fatness" or a "weight phobia" (Crisp, 1967). Initial treatments of bulimia were predominantly in the behavioural domain (Fairburn, 1981). Within this model, binge eating and vomiting are linked in a vicious circle by anxiety. Eating causes anxiety, so is avoided. Vomiting and other compensatory behaviours serve to temporarily reduce the anxiety which reinforces these responses. Treatment consisted of identifying the restricted dietary pattern via self monitoring, and de-conditioning the anxiety associated with eating via systematic desensitisation (Wolpe, 1958). This involved graduated exposure to anxiety provoking stimuli such as ‘danger’ foods which are usually consumed in a binge, coupled with relaxation and the shaping of more healthy eating with reinforcement. This type of treatment was shown to lead to decreased anxiety and an increase in the variety of foods eaten (Fairburn, 1985).
However, therapists and researchers have progressively noticed the limitations of behavioural treatments in isolation. Although such interventions were often successful in terms of weight gain and reducing frequency of bingeing and vomiting, the relapse rates were high and disturbed attitudes to eating and weight gain often remained (Morgan & Russell, 1975). Further evidence to support this claim came from Hsu (1980) who reviewed sixteen eating disorder outcome studies. He concluded that pathological beliefs and values concerning eating, weight and shape often persist in clinically recovered patients. Maladaptive thinking patterns have long been felt to be an important element in the development and maintenance of anorexia nervosa and it seems likely that this is also true in the case of bulimia (Bruch, 1973; Ushakov, 1971). Cooper & Fairburn (1984) suggested that most features of bulimia are secondary to these overvalued ideas about shape and weight. This way of conceptualising bulimia led to typical cognitive distortions of patients with bulimia being identified, such as, all or nothing thinking e.g. "If I am not completely in control, I am completely out of control" and overestimating the significance of undesirable events (Garner & Bemis, 1982). However, as Garner & Bemis (1982) point out, the question of whether cognitive mechanisms can be implicated in the production of symptoms is both conceptually and methodologically separate from the utility of cognitive-behavioural therapy in treating the disorder.

This cognitive way of conceptualising bulimia has lead to the development of cognitive-behavioural models and frameworks for interventions which are directed at the specific cognitive and behavioural disturbances which characterise these patients (Smith, Marcus & Eldridge, 1994). The principles involved in this therapy are derived largely from the cognitive models of anxiety and depression postulated by Beck (1976), but behavioural principles remain a major element. Cognitive-behaviour therapy (CBT) is semi-structured, problem-orientated, and concerned with the present and the future. It is an active process, where responsibility for change rests with the patient, whilst the therapist provides information, advice, support, and encouragement. (Fairburn, 1985). Fairburn, (1981) was one of the first researchers to detail a comprehensive cognitive-behavioural treatment programme for bulimia. The aim was to help disrupt the cycle of
dietary restriction, binge eating and compensatory behaviour whilst challenging the accompanying distorted beliefs about weight and shape. He distinguished three treatment stages. The first focused on establishing some control over eating, utilising behavioural techniques such as self monitoring, stimulus control, exposure and response prevention (prevention of vomiting). The second stage focused on identifying and modifying dysfunctional thoughts, beliefs and values via cognitive restructuring and problem solving. The final stage focused on relapse prevention. Most cognitive-behavioural interventions for bulimia contain elements of Fairburn's package and researchers have attempted to establish the utility of this model in the treatment of bulimia.

Outcome Studies
There are, as yet, relatively few controlled outcome evaluations of CBT for bulimia as long term evaluation is required and there are often not enough numbers for valid treatment trials. Most of the evidence therefore comes from uncontrolled case studies and cross-over designs comparing two treatments. (Cooper & Fairburn, 1984; Wilson, 1986). As can be seen below, the preliminary results are mixed.

Fairburn (1981) treated eleven bulimics who were vomiting several times a week with the CBT approach outlined earlier. The treatment proved acceptable to all the patients. Following treatment, nine patients were engaging in self induced vomiting less than once a month. There was also a reduction in their abnormal attitudes to body shape and weight and in depression. Six of the patients had maintained their improvements at a twelve month follow up. Fairburn later reported results from a larger study of fifty patients and confirmed that most patients benefit from the CBT approach and require no further treatment. Although these studies were experimentally uncontrolled, the description of the treatment process was systematic and detailed, allowing easy replication of treatment.

Many between studies have examined the effectiveness of CBT as opposed to standard behavioural treatments. Freeman, Barry, Dunkfeld-Turnbull & Henderson. (1988) found no significant differences between CBT and purely behavioural treatment
approaches. More recent studies however have demonstrated CBT to be a superior intervention. Fairburn, Jones, Peveler, Hope & O'Connor (1993) investigated the longer term effects of interpersonal psychotherapy (IPT), behaviour therapy and cognitive-behaviour therapy to determine whether CBT has a specific therapeutic effect. Interpersonal psychotherapy focuses on the identification and modification of interpersonal difficulties thought to be responsible for the problem. This approach takes the focus off eating and helps to equip the people with skills for coping with life. They found a high rate of attrition and withdrawal and poor outcome among those who received behaviour therapy alone. The CBT and IPT treatment groups made equivalent, substantial and lasting changes across all areas of symptoms, such as reductions in binge eating and vomiting, decreased dietary restraint and improved attitudes to shape and weight. However, IPT took longer to achieve its effects.

Ordman & Kirschenbaum (1985) assigned twenty bulimic women to either a 'full intervention' or a 'brief intervention' group. The full intervention treatment consisted of cognitive restructuring, exposure with response prevention, behavioural contracting and process-orientated therapy. The brief intervention group received three assessment sessions whilst on the waiting list. The full intervention group improved significantly more than the comparison group. They showed substantially reduced bingeing and vomiting, improved psychosocial adjustment and more healthy attitudes towards their bodies, food and dieting. They also showed reduced urges to vomit and less discomfort than the second group. This study lends support to the suggestion that working directly on patient's self-destructive cognitions and problem behaviours is effective in improving general functioning. However, no follow up data was obtained.

Loro (1984) found verbal cognitive restructuring coupled with exposure and vomit prevention to be significantly more effective in reducing bingeing and vomiting than purely verbal cognitive restructuring. At one year follow up the patients in the combined treatment group were completely abstinent. Wilson, Rossiter, Kleifried & Lindholm (1986) also compared cognitive restructuring to CBT plus response prevention. Those who received response prevention treatment lowered their vomiting by 94%, whereas those in the other group reduced their vomiting by 71%. Although this study appears to
suggest the utility of adding a response prevention component to treatment, the 
cognitive treatment in this study focused exclusively on cognitions and ignored 
behavioural change.

The first controlled treatment study was carried out by Lacey (1983). He used a ten 
week programme of modified CBT combined with "insight therapy." This was compared 
to a waiting list control group. Lacey (1983) found a 96% reduction in binge eating and 
purging amongst the treatment group. Twenty four of the thirty patients had stopped 
bingeing and vomiting completely and there was little evidence of relapse at follow up. 
Those in the control group demonstrated no improvement. Kirkley, Schneider, Agras & 
Bachman (1985) carried out a controlled study on a group of twenty eight bulimic 
women where they compared CBT with a non-directive control group (where discussion 
of eating behaviours took place, without instruction on how to alter these behaviours). 
Both groups showed reductions in depression, anxiety and cognitions associated with 
eating disorders, but the CBT group experienced significantly greater reductions in 
binge eating and vomiting and fewer of these patients dropped out. However, at a brief 
follow up, more of the CBT group had relapsed resulting in little difference between the 
two treatment groups. This once again raises concerns about the long term treatment 
specific effects of CBT. Lee & Rush (1986) compared CBT with a waiting list control 
group and found the CBT group showed a reduction in vomiting from 13 to 4.2 times a 
week and binges had reduced from 12.5 to 3.7, whereas the control group showed no 
change. However, only two of the treatment group had ceased vomiting altogether and 
there seemed little change in dysfunctional attitudes. At three month follow up the 
treatment subjects had maintained their improvement. The authors suggested that a 
longer treatment duration may have strengthened the therapeutic efficacy of this 
package. In addition, Fairburn & Wilson (1993) reviewed clinical trials for CBT and 
found mean reductions in binge eating of 73-94% and reductions in purging of 77-94%. 
The mean rates of abstinence post treatment were, binge eating, 51-71% and purging, 
36-56%.

Although many of these studies appear highly promising, CBT is usually labour 
intensive and requires specialist therapists which can also prove very costly. Cognitive-
behaviourally orientated self help and group treatment programmes for bulimia are now being increasingly developed and evaluated.

Self Help and Group CBT Treatments
In a study involving 100 bulimic patients, Treasure, Schmidt, Troop, Tiller, Todd & Turnbull (1986) compared a cognitive-behavioural self care manual followed by eight sessions of attenuated CBT, with a group who received sixteen sessions of CBT. In both groups there was a significant reduction in bulimic symptoms (self help alone = 20% success rate, self help plus eight CBT sessions = 30%, sixteen CBT sessions = 30%). There were therefore no significant differences between the two groups at the end of treatment or at eighteen months post treatment. These results suggest that the sequential approach, which demands less therapist contact may be equally as effective as CBT but is likely to be more cost effective. Patients who do not require extra treatment could be filtered out allowing more resources to be reserved for those needing more extensive therapy.

Schneider & Agras (1985) treated thirteen bulimic women with a self reported average of twenty four episodes of vomiting per week in a cognitive behavioural group. They found that vomiting frequency reduced to an average of 2.2 times per week, with seven patients being abstinent at the end of treatment. There was also a reduction in depression and improved assertiveness and attitudes to eating. At six months follow up however, the mean vomiting frequency had risen to 3.8 per week. Although these results are not as positive as those obtained by Fairburn (1981), they are promising for the development of a cost effective treatment. Olmsted, Davis, Rockert, Irvine, Eagle & Garner (1991) investigated the efficacy of a brief educational intervention group for bulimia. They compared this group with a longer course of individual CBT and found that although individual CBT was more effective for the more severe patients, the group treatment was just as effective on several important outcome indices for the other two thirds of the sample. This also supports the suggestion that group treatment could be the treatment of choice for most patients, reserving CBT for the more severe cases. Group therapy for bulimia may provide a supportive environment which helps reduce patients sense of shame and isolation. However Garner, Fairburn & Davis (1987) found
the drop out rate for individual therapy to be 15.3% whereas for group treatment it was 29.3% suggesting many bulimic patients may find the group format too difficult to engage in.

Other Therapies

Family therapy may prove useful in helping many young bulimic patients. However, adults with bulimia are often far removed from their families and are therefore likely to prefer to maintain autonomy and independence by receiving individual therapy.

There is evidence that antidepressants can be helpful in treating bulimia by alleviating depression and acting as an appetite suppressant. A study by Agras, Dorian Kirkley Arnow & Bachman (In press) provided some evidence for the efficacy of imipramine in treating bulimia, however, many studies have demonstrated CBT to produce a superior outcome than pharmacotherapy (Agras, Rossiter, Arnow, Schneider, Telch, Raeburn, Bruce, Perl & Koran, 1992). Agras et al (1992) also concluded from their study that the addition of medication to CBT does not significantly improve outcome. Ordman & Kirschenbaum (1985) suggest that CBT helps clients make internal attributions for success which facilitates long term improvements better than pharmacological interventions. There are a number of things that may make treating this client group with medication alone difficult, such as the unpleasant side effects which include weight gain, and the fact that they may vomit medication along with food.

Garner & Bemis (1982) suggest that a strong therapeutic relationship is a precondition for successful treatment whatever the model of therapy. Bulimic patients however may be unable or unwilling to form this alliance as they are often poorly motivated to change because their behaviour fits with their beliefs and values. However, Garner & Bemis suggest that some elements of the cognitive-behavioural approach may still prove useful if the patient is unable to do this. CBT can help increase motivation for treatment by stressing the dangers of starvation and purging and providing patients with a clear rationale for treatment whilst allowing them to retain control.
Although CBT is the most extensively studied psychological intervention for bulimia, there are other promising interventions that have not yet been evaluated. This includes cognitive analytic therapy (CAT; Ryle, 1990). CAT is another collaborative, time limited approach which looks at providing a detailed reformulation of problems to help identify key patterns of object relations to help work through transference issues. Bell (1996) criticises CBT for failing to “take sufficient account of the depth and source of feelings of worthlessness and the function of these behaviours in the avoidance of or disassociation from negative emotions.” She also refers to the fact already mentioned that IPT, another brief focal psychotherapy, has an equivalent outcome to CBT at twelve months follow up (Fairburn, Marcus & Wilson, 1993). However, CAT and IPT are likely to need therapists with even more specialist training and expertise, and to take up more time than CBT. Bell therefore advocates the stepped care approach, suggesting we offer most bulimic clients self help with support and offer CAT or IPT to those clients who fail to respond to a short course of CBT. Bell also hypothesises that these focal psychotherapies may be the treatment of choice for clients with unresolved emotional or relationship problems and those with personality disorders who may have a limited capacity to consistently manage behavioural change.

Methodological Issues
Although cognitive-behavioural interventions appear promising, many of the studies outlined above are in some way methodologically flawed (Hsu, 1980). Various problems somewhat undermine the value of comparison between studies, such as sampling biases, varying definitions of the disorders, variation in treatment packages going by the same label, wide variation in treatment duration, and varying length of follow up and therapist. There are also likely to be outcome differences between those who attended follow up appointments and those who did not. Also, many of the follow up periods were inadequate so the long term efficacy remains unclear. Large numbers of variables are likely to affect outcome apart from the type of treatment, such as age of onset and number of past treatment failures (Szmuckler & Russell, 1986). In addition, Garner, Fairburn & Davis (1987) suggest that the very positive outcome data obtained should be interpreted with caution as this data often does not include those who dropped out of treatment. The variation in outcome measures utilised again makes
comparison difficult and the validity of the measures is also questionable, particularly those relying on self report. Another problem is that patients may have just been being compliant by rating themselves as much improved, to please their therapist conducting the outcome evaluation.

Conclusions
The results obtained in the studies above are mostly impressive in terms of CBT reducing binge eating and vomiting and improving general psychological functioning. However, in most of these studies abstinence from symptoms was rare and there was a frequent problem with relapse. The methodological problems discussed above must also be addressed in the interpretation of findings. If we are to be able to confidently conclude that improvements obtained are due to specific cognitive-behavioural interventions, more controlled outcome studies are needed, including data other than self reports of bingeing and vomiting. Future research is also needed into identifying the essential components of CBT and which clients are likely to benefit as well as further investigating other emerging interventions such as CAT.

In conclusion, although further well controlled research is needed, CBT does appear to be a promisingly effective and acceptable intervention for many bulimic patients, at least in the short term. Currently, it is therefore is likely to be regarded as the treatment of choice for most patients suffering from bulimia.
References


PLD Essay

"Concern has been raised regarding a relationship between two clients of the same sex but of differing levels of ability living in a staffed home. What are the areas that need to be considered when reflecting on this relationship, with specific reference to consent and policy issues?"

Year I

Nov 1997
Learning disabilities essay: Concern has been raised regarding a relationship between two clients of the same sex but of differing levels of ability living in a staffed home. What are the areas that need to be considered when reflecting on this relationship, with specific reference to consent and policy issues?

Introduction

The widespread institutionalisation of people with learning disabilities during the 19th Century and the myths and misconceptions that abounded resulted in their access to sexual expression being restricted by other people. The Universal Declaration of General and Specific Rights of the Mentally Retarded (1971) however helped prompt a fresh look at the rights of people with learning disabilities. This progress was furthered by the philosophies of care that followed such as Normalisation and Social Role Valorisation (Wolfensberger, 1972). During the 1980's, O'Brien reformulated Normalisation as the five accomplishments which advocate that people with learning disabilities be enabled to make choices in their lives and participate fully in community life. Due to their particularly vulnerable position in society however, it has been felt necessary to define their rights regarding sexuality more closely. Craft (1987) suggested that there are six specific rights pertaining to sexuality:

1. The right to be treated with dignity and respect.
2. The right to be sexual and make and break relationships.
3. The right not to be sexually abused.
4. The right to humane and dignified environments.
5. The right to as much information about sexuality as the person can assimilate.
6. The right not to be at the mercy of the individual sexual attitudes of different care givers.

This placed demands on services to provide the opportunity and privacy that clients require in exercising their rights. As this essay will explore, however, ensuring these
rights are respected and facilitated is not always straightforward. Sexuality can present a complicated professional dilemma for people working in learning disability services as they are often caught between the desire to promote clients' rights and their duty to protect them from sexual abuse or exploitation, from which they are particularly vulnerable (Sobsey, 1996). This "empowerment Vs protection dilemma" (Craft, 1994) poses a difficult challenge to service providers to help channel clients' needs into sexual experiences that are both personally satisfying and safe. This essay will explore this, and other issues that need consideration, when reflecting on a sexual relationship between two men living in a staffed home who differ in their levels of learning disability.

The Law and Consent
It would be important to consider the legal position when reflecting on this relationship as the law can help reconcile the conflicts between these obligations. The issue of consent is paramount to understanding how the law categorises and deals with sexual activities (Stavis, 1991). It is the absence of consent that can make sex between two adults illegal and the inability to consent due to a person's learning disability that triggers the provider's obligation to protect them from harm (Sundram & Stavis, 1994). Stavis (1991) suggests that all clinical professionals should therefore be aware of the law and regulations in the jurisdictions of their practice and know the bounds of their decision making authority within their professional standards and ethics.

The law requires the following three elements for recognising genuine consent (Stavis, 1991). These criteria were established to protect people from sexual coercion and exploitation and to discourage relationships with unequal power structures:

2. Intelligence in realising the benefits and risks of the activity.
3. Voluntary agreement to engage in that activity.

Assessing whether both men possessed the minimum competence to freely consent to the sexual relationship may therefore necessitate assessment of their IQ's, their
understanding of sexual relationships, social functioning and their ability to say no to unwanted sexual advances.

These criteria for consent could however be disadvantageous if the men were classified as "severely disabled", as they would be excluded from ever engaging in mutual sexual behaviours (Friedman, 1975). Cambridge (1994) therefore suggests that attempts should be made to ascertain what the clients desire and enjoy. He listed indicators of mutuality which could aid this assessment:

1. Whether both parties seek each other out and restrict activities with other potential partners.
2. Whether they could remove themselves from an unwanted activity or alert staff.
3. Whether they appear happy and to be engaging willingly.

The law governing sexuality however still contains a number of gaps and ambiguities. As Craft (1987) points out, this could leave the staff with ethical and moral decisions to make, uncertain about where they stand and what constitutes a criminal offense, with the interpretation of “appropriate” behaviour being left open to the discretion of individual workers, whose views and attitudes differ. This could result in confusing and conflicting messages for service users. Sexuality policies and Abuse Procedures are therefore needed to help staff respect clients' rights and facilitate their sexual activity whilst also protecting them from harm.

Sexuality Policies
Something that is therefore likely to have a strong influence on this case would be whether the service had a Sexuality Policy in place. Sexuality Policies provide many advantages to both the staff and clients. As Craft (1987) points out, they should interpret and supplement the law, provide statements of rights and principles to aid service delivery and clinical practice, provide a baseline for consistency of response, clarify the boundaries of sexual behaviour, allocate responsibilities for teaching and counselling and provide a baseline for discussions with parents (Craft, 1987). Policies are also important for ensuring that professionals receive specific training, which is
essential if they are to respond positively to the sexual needs of people with learning disabilities. Policies can also facilitate a more empowering environment for clients by providing explicit acknowledgment of their right to ordinary sexual experiences, respecting their privacy and dignity and ensuring appropriate sex education is provided. They can also help safeguard against staffs' idiosyncratic beliefs, attitudes and responses.

Risk Analysis and Sexual Abuse
Policies are also needed on how the service should conduct risk assessment. A risk analysis would need to be conducted in this case to ensure the expected benefits of the sexual relationship are likely to outweigh the potential costs (Craft, 1987). This would necessitate establishing whether the men were placing themselves at risk of abuse or sexual health problems, e.g. whether they use condoms and their knowledge and skill levels in terms of safe sex practices. Sex is abusive if the person did not or could not consent or if they were pressured into consenting in an unequal relationship (McCarthy & Thompson, 1992). Cambridge (1994) identified vulnerability and risk factors which could be useful in assessing the likelihood of sexual abuse occurring in this case. He found that: communication difficulties, power differences, lack of assertiveness and a poor understanding of peoples' right to choose or not to choose sexual partners or acts made people particularly vulnerable to abuse.

Cambridge (1994) and Matthews (1996) also outlined the following signs to be aware of in detecting abuse:

1. Disturbed behaviour, such as disturbances in sleep and appetite, loss of skills, social withdrawal, aggression, self injury or increased sexualised behaviour.
2. Physical problems such as bruising or urinary tract infections.
3. Personality change.

An abuse procedure should be in place which clearly states the actions to be taken where there is concern about abuse, including how to protect the person from further
abuse and whether to involve the police. It would seem appropriate to organise a case conference to help assess the risks involved to both the clients and others in the home and to establish what the service response should be. Regular network meetings may then be needed to explore their continued vulnerability to abuse and review future developments. Brown (1996) states that the alleged abuser's motivation to stop, his empathy for the victim and how he could learn to control his abusive behaviour should all be assessed. Opportunities to re-abuse should also be considered along with consideration of the appropriateness of the placement.

Involving the Police
If the police were notified they would investigate and decide whether there was sufficient evidence of a case to answer. If they believed the case should be pursued, it would be passed to the Crime Prosecution Service (CPS) who would need to determine whether their evidence would be reliable and the likelihood of it producing a conviction. Carson (1995) listed the following factors as important for establishing the credibility of evidence: Whether the facts are verifiable, accurate, first-hand, complete and corroborated. However, successful convictions of perpetrators are rarely achieved due to people with learning disabilities often being deemed incompetent to give evidence. Diesfeld (1996) however sees it as important to challenge the assumption that people with learning disabilities are not credible witnesses as this can lead to managers failing to respond to allegations of abuse. If abuse was suspected in this case the victim's views must be sensitively considered as he may not wish to be involved in the prosecution as the interviews etc. can be traumatic. Alternative methods of responding to the abuse other than prosecution would then have to be sought.

Relationships Between Men with Differing Abilities
The fact that the two men in this case have different levels of ability would potentially be an area of concern. These relationships are often abusive or exploitative due to a differential power imbalance based on ability and physical strength (Thompson, 1996). Thompson consistently found that sex between two men with learning disabilities is decided by just one person who controls the encounters, seeking activities that meet
his sexual desires with no attention to the desires of his partner. He found that sexual acts that stimulate the penis of the more able partner dominate and that being anally penetrated is usually perceived as negative by the passive partner who is often devoid of choice and control (Thompson, 1996). Thompson (1996) also found a high incidence of threatened violence and 'payments' for sex amongst these relationships. It would, therefore, be important to assess the effect of any power differentials in the relationship.

Living Environments
The impact of the clients' living environment should be considered when reflecting on this relationship as environments play a significant role in shaping behavioural and emotional responses.

Haavik & Menninger (1981) found that even in community based group homes, denial and prohibition of sexual behaviour often remain. There is frequently a lack of opportunity and privacy to engage in sexual relationships due to close supervision, little physical contact being permitted, and little sex education (Heshusuis, 1982). Sexual behaviour is therefore often visible, public and devalued. In addition, as highlighted by Thompson (1994), passiveness, dependency and respect for authority are often encouraged which can make people more vulnerable to sexual exploitation. Craft (1987) suggested that feelings of resentment, despair, frustration and loneliness can result from denial of sexuality. In addition, Shore & Gochros (1981) stated that in a suppressive atmosphere, sexual fantasies and actions are accompanied by guilt and fear which in turn may stimulate inappropriate or maladaptive behaviour.

Sexual Health Problems and Sex Education
Another area that would need consideration would be the risk of the men contracting any sexual health problems and their need for sex education. Research indicates a high incidence of people with learning disabilities at high risk of contracting HIV (Cambridge, 1994). Men with learning disabilities who have sex with men in public toilets (cottaging) are at an especially high risk as they have different partners and are
usually penetrated anally by men from high risk groups (Cambridge, 1996). Whether either men were engaging in this activity should therefore be considered.

As Williams (1995) points out, sexual ignorance leaves people vulnerable to exploitation and harm and to unwittingly offending others. If these men are to develop the ability to initiate and maintain fulfilling relationships, it is essential that they be provided with adequate knowledge of their sexuality and ways of expressing it. Sadly, this education is often not considered until social rules are broken (Williams, 1995). Also, Cambridge (1996) found that Sex Education resources rarely assess individual client's needs, tend to avoid addressing issues around HIV and are predominantly heterosexual, lacking positive images of same sex relationships, thus missing the needs of those most at risk. There has also been a reluctance to use explicit language in sex education resources which can make it hard to understand.

Education programmes are needed which encourage assertiveness, heightened self esteem and dignity. Both mens' abilities and their need for education, protection, training support and guidance should be assessed with teaching geared towards each individual. Explicit and positive images of men having sex with men in sex education resources are also needed.

Senker (1997) points out that many people with learning disabilities however lack power, self esteem, communication skills and manual skills, all of which combine to reduce the possibility of safer sex. Also, safer sex often only happens if the more able and powerful man makes a personal decision to use a condom. If sex education is not an option and the risks are perceived as great, the dilemma arises regarding whether services should find other ways to stop the relationship. Staff would initially need to consider whether a management plan could be implemented to ensure a reasonable degree of client health and safety, whilst allowing the relationship to continue.

Policies Concerning Sexual Health Problems
Policies should advise on enabling clients access to sexuality resources and services without compromising their confidentiality (Senker, 1997). Policies should insist that
disclosure be kept to an absolute minimum and clearly define what this is. They should also provide guidance on the use of language and concepts appropriate to the individual's culture, gender, sexual behaviour and their ability to comprehend (Craft, 1987).

The British Medical Association makes it clear that HIV antibody testing should only occur if informed consent has been obtained. Policies therefore insist that legal approval is sought if a person's ability to consent is in question, thus guarding against indiscriminate testing of residents. If there were concerns about HIV in this case it would have to be established whether the client could understand and cope with the possible consequences of testing (Craft, 1994). Cambridge (1996) outlined questions which could provide a useful reference when assessing informed consent for an HIV test e.g. Do you want an HIV test and why? and What happens to someone with HIV?. It would be necessary to go through courts to reach a final decision if the client could not consent. The service would therefore have to carefully weigh up what stands to be gained from the test and the cost of legal proceedings, against the potential benefits of early medical intervention and ensuring other residents are not knowingly put at risk (Senker, 1997).

Attitudes of Caregivers and Families
The prevailing attitudes towards sexuality of the staff and relatives is likely to profoundly influence the clients and would therefore need to be considered. Mitchell, Doctor & Butler (1978) found that no sexual expression was deemed appropriate by the majority of caregivers in staff homes for people with learning disabilities. Research has also demonstrated care staffs' acceptance of sexual activities to be far below the actual occurrence (Mulhem, 1975). Negative attitudes towards homosexual relationships unfortunately still abound. For example, Shaddock (1979) found positive responses from caregivers of people with learning disabilities regarding heterosexual relationships but largely negative attitudes towards homosexuality. The theory of "Institutional homosexuality" suggests that men with learning disabilities have sex with each other because of restricted opportunities to have sex with someone of the opposite sex (Gebhard, 1973). This suggests a lack of acceptance of same-sex relationships and
gives the impression that sex with women would be 'better' without giving any attention to the quality of the relationship (Gebhard, 1973). These attitudes have been found to result in the clients developing negative self images regarding their own sexual behaviour (Bratlinger, 1987). If the men have been assessed as being able to freely consent then ways should be found to facilitate this relationship without detriment to their self esteem.

Giami (1987), however, suggests that caregivers would often like to adopt a more permissive approach to sexual expression of people with learning disabilities, but are restricted by concerns about the law and the response of the client's family. In the absence of a sexuality policy, Giami (1987) reports that staff are likely to respond to difficult situations as their personal feelings and attitudes demand, or as they judge their managers would wish them to (Craft, 1987). This can lead to confusion and inconsistent management. Even if policies are in place, they often contain many omissions and fail to reflect the real sexuality issues which staff have to deal with. This can lead to hopelessness if the only sexuality which is respected or acknowledged is heterosexual and this is not a viable or desired option for that person at that time (Craft, 1994).

Watson & Rogers (1980) found that families also often deny the existence or relevance of their relatives sexual feelings and needs. In general, parents focus their concerns on inappropriate sexual expression (Craft, 1987) and fears of exploitation (Hall, 1974) and many do not want them to receive sex education (Dupras & Trembly, 1976). Craft (1994) also suggested that working with parents of learning disabled adults can however present a major challenge to the residential staff as it can draw them into unhelpful dynamics and competition due to conflicts of interest.

Both the staff and the clients' families may need training and support to help create new opportunities for men with learning disabilities and to act in a respectful way towards them. Bratlinger (1987) found that an in-service training day for staff in a residential home resulted in positive re-definitions of attitudes concerning the sexual needs and rights of people with learning disabilities.
Risk Taking
Staff often find it hard to allow people with learning disabilities "the dignity of risk" (Perske, 1972). This can result in over protection and control which has implications for independence and personal growth. Services should also, therefore, have a risk taking policy which acknowledges that relationships may have negative consequences for clients but they have the right to experience them and learn from this, particularly if the risks can be minimised and the relationship managed in a reasonably safe manner. Relinquishing this power and taking risks is likely to produce feelings of frustration and anxiety. Adequate support and supervision would therefore need to be provided to all those involved with this case.

Conclusions
There has clearly been a great deal of progress made concerning peoples' attitudes towards people with learning disabilities since these clients were institutionalised and denied any form of sexual expression. However, this progress needs to continue, particularly in terms of the attitudes held by professionals working with this client group regarding same sex relationships between people with learning disabilities. All such services must have adequate sexuality policies and abuse procedures which balance the facilitation of the sexual rights of people with learning disabilities with protecting them from harm.
References


Matthews, H. (1996). *What Staff Need to Know*. Lecture given to staff at St. George's Hospital Medical School.


Children & Adolescents Essay

"Compare and contrast models of bereavement in relation to children's experience of death, in the context of loss of an attachment figure"

Year II

Jan 1998
Child and adolescent essay: Compare and contrast models of bereavement in relation to children’s experience of death, in the context of loss of an attachment figure

Introduction
The range of theoretical models that attempt to explain bereavement are complex and diverse. This essay will focus on models of the bereavement process, rather than the reactions associated with grief or the therapeutic interventions that follow. Particular attention will be paid to how the models view children’s concept of death and their ability to mourn as these are major areas where models conflict.

Psychodynamic Models
The earliest theoretical models of bereavement emerged from the psychoanalytic tradition. Freud (1917; cited in Raphael, 1992), viewed mourning as “a process concerned with removing the libido from the lost object and its attachment to a new object. The reality principle forces a recognition of the loss and demands detachment of emotional energy from the dead person. Withdrawal is accomplished by the ego’s identification with, and internalisation with, the lost object”.

Freud (1917; cited in Raphael, 1992) and Klein (1940) agreed that the continuous confrontation with the reality via reviewing memories, is the most important factor inducing the person to detach his love from the lost object, freeing them to reinvest in other relationships.

Most early psychodynamic theorists (e.g. Freud, 1917; Nagera, 1970; Miller, 1971) strongly argued that true mourning could not occur until the end of adolescence as children lacked adequate reality testing and their ego’s lacked the capacity to bear the
stress of strong feelings. They believed that children employ defensive phenomena to
deny the painful affect of loss.

Pynoos (1992) agrees that children do not have the capacity to deal with the strong
feelings evoked by bereavement but explains this in overt behavioural terms (their
inability to search for the lost object) rather than intrapsychic processes. In contrast,
Furman (1974) stated that children as young as three can mourn when object
constancy has been achieved, if additional factors obtain, such as realistic education
about the concept of death and acceptance of their feelings.

In terms of the complications associated with the bereavement process, the Freudian
perspective focuses on the degree of ambivalence in the lost relationship and the guilt
resulting from fulfillment of unconscious death wishes. To some this is an essential
feature (e.g. Klein, 1940). To others it represents a developmental, or circumstantial
variation leading to denial of the loss (Freud, 1923; cited in Raphael, 1992; Bowlby,
1963; Furman, 1974). The threat to the child’s “narcissistic equilibrium” is also viewed
as a major obstacle to the acceptance of the death, as the child may fear that he will
die himself (Klein, 1940).

Psychodynamic models have been widely criticised. They were primarily concerned
with the inner, intrapsychic processes rather than the more generic aspects of
bereavement and these processes are not observable and are therefore hard to verify.
Most papers were based on a small number of case studies of children in
psychotherapy and Klein’s research stemmed primarily from considerations of
depressive illness rather than observations of the bereavement process. Freud also
used terms such as “detaching the survivor’s hopes and memories from the dead”
which sounds very final and mechanical, whereas Volkan, (1985) argued that people
never really lose memories of a significant relationship. Psychodynamic models also
neglect the social and subjective meaning of bereavement. However, the rich clinical
vignettes of the children’s behaviour provided important material for future reference
and study.
As highlighted by Raphael, 1992, other models emphasise clinical manifestations and behavioural adaptation, concerning themselves less with intrapsychic processes (Engel, 1961; Bowlby, 1963; Parkes, 1970).

Attachment Theory
The principal dissenter from the psychoanalytic consensus on the nature of children's responses to death was Bowlby (1963). Whereas most psychodynamic models use the word mourning to describe psychological processes eventuating in a single, specific outcome of detachment, others regard it more broadly as signifying "a fairly wide array of psychological processes set in train by the loss of a loved person irrespective of outcome" (Bowlby, 1980). In contrast to Freud, Bowlby emphasised the similarities between the responses of children and adults and his work was critical in acknowledging that children as young as six months old could experience grief and go through periods of mourning.

Bowlby's attachment theory, which incorporates both an evolutionary and a psychodynamic perspective, proposed that "there are sound biological reasons for separation to be responded to in an automatic, instinctive way with behavioural responses, geared towards re-establishing a relationship with the lost object" (Bowlby, 1980). His (1963) theory suggested that attachments arise early in life from a need for security and safety. When the attachment figure disappears, the child responds with intense anxiety and emotional protest. In this first phase of mourning the most powerful forms of attachment behaviour become activated, such as clinging, crying and anger (Ainsworth & Wittig, 1969). If not adequately acknowledged, this anger can lead to a complicated bereavement. Bowlby sees this as inherited genetically to give the message "don't leave me again". Their anger needs to be identified and appropriately targeted towards the deceased or it may be handled in less adaptive ways, through displacement or turning this anger inward against the self. As Mitchell (1986) points out, a more psychoanalytic interpretation of this retroflected anger response was provided by Klein (1940) who suggested it is caused by a feeling of "triumph over the dead". The second phase sees attempts at recovery diminish if children repeatedly fail to achieve reunion with the lost object. Withdrawal, apathy and despair follows and behaviour
becomes disorganised (Mitchell, 1986). Bowlby believed that depression accompanies
this phase and represents an adaptive force that results from the realisation that the
former mode of behaving and communicating is now inappropriate. He named a third
phase of reorganisation of behaviour in relation to new objects.

Bowlby's model provided a paradigm that could encompass all age groups and made
significant contributions towards understanding the more uncomplicated experiences of
bereavement. This model influenced the thinking of many such as Parkes (1970).
Bowlby and Parkes believed the role prescribed to identification in the psychodynamic
models to be overrated, suggesting that much of the evidence explained in
identification terms can be better understood as the person striving to recover the one
they have lost. However, Bowlby's model does not clearly delineate developmental
stages and his theory ignores the context in which a child lives.

Freud (1917) and Bowlby's (1980) models are both depression models of grief which
analysed grief as an emotional reaction and helped explain emotional symptomatology
in response to loss.

Phase Versus Task Based Models
Bowlby and Parkes's models are examples of phase based models of bereavement.
Worden (1983) however criticised phase models for implying passivity, something
which the mourner must simply pass through. Corr & Doka (1994) suggest that these
models have also been criticised for stereotyping responses, losing the individual
experiences and for implying that these stages are passed through in a linear fashion.

Task based models provide a framework for understanding the specificity of individual
experiences and tasks and imply that the mourner can take action which can instill
hope and develop coping skills (Worden, 1983). After a loss, Worden (1983) believes
there are four 'tasks' (which do not proceed in a linear fashion) that must be
accomplished for equilibrium to be re-established and for the process of mourning to be
completed, or further growth and development will be impaired. Worden (1983) firmly
believed that children do mourn and that their feelings following a bereavement have
depth and intensity. He suggested that the following four tasks could relate to children as well as to adults:

1. To accept the reality of the loss.
2. To work through to the pain and grief.
3. To adjust to an environment in which the deceased is missing, which will greatly depend on the roles the attachment figure fulfilled in the child's life.
4. To emotionally relocate the deceased and move on with life.

Worden's account therefore gives primary attention to the psychosocial aspects of bereavement and grief work.

Developmental Models
The psychoanalytic literature through the 1960's halted the exploration of mourning in children. A model of mourning was needed that could fit the experience of children, rather than imposing an adult model.

Young children may demonstrate grief reactions when faced with the death of an attachment figure, but they need a certain level of cognitive development to understand death (Worden, 1983). Worden lists some of the concepts needed in order to fully understand death: Time (including forever), transformation, irreversibility, causality and concrete operation. Developmental models provided a framework for understanding how bereavement is experienced and expressed in different ways at different developmental phases (Gudas, 1993).

Koocher (1973) linked the development of the concept of death and the bereavement response with the Piagetian stages of cognitive development: Piaget (1955), cited in Raphael (1992) suggested that object constancy does not develop until the child is nearly a year old. In the first two years, during the sensori motor period of cognitive development, thinking is pre-logical, magical and egocentric and these children have a poor concept of time. Koocher (1973) suggested that without a concept of constancy, death is perceived as temporary and reversible. Vulnerability would seem to be related
to the quality of care provided after the loss. By the middle of the first year however, children can retain an image of the attachment figure in her absence and recognition and searching for lost objects occurs.

Pre-operational stage (two to seven years), children may start to understand the concept of death but their egocentric view of the world and poor understanding of cause and effect, makes it likely that they will feel responsible for the death of someone for whom they harbored antagonistic or ambivalent feelings. Their grief responses are intermittent and they may use play or drawing to express thoughts and feelings and even to re-enact the death whilst remaining at one stage removed from it (Koocher, 1973).

Koocher, (1973) suggests that by the concrete operational stage (seven to eleven), children can understand causal and logical explanations and can grasp concepts of time and space. Grief responses following the death of an attachment figure often manifest themselves in school or learning problems (Bedell, 1973), heightened separation responses (Bowlby, 1980), somatic complaints and enuresis (Bedell, 1973), sleep disturbances and depression (Worden & Silverman, 1986), socialisation problems (Felner et al, 1981) and behaviour problems (Furman, 1974). They may also experience more anxiety than younger children as they now understand the permanence of death and their own mortality.

The formal operational stage (eleven to fifteen years) is when children begin to analyse information systematically, to generate hypotheses and think futuristically. Their understanding of death and the way they approach mourning is more like an adult and they now have better coping skills. Their responses to death are however complicated by developmental issues such as striving for independence (Rando, 1988). The quality of life takes on meaning and a shattering of life assumptions can lead to depression, mood swings etc. Older children show less aggression than younger children and grief may be expressed in risk taking behaviours (Koocher, 1973).
Raphael (1992) also devised a developmental model which largely coincides with Piaget's levels of cognitive development, but puts greater significance on psychodynamic internal processes and Bowlby's attachment theory than other developmental models. She proposed that the child's grasp of death does not depend solely on the maturation of his/her thought processes. It is affected by many factors from within his personality and without. Among these are his "instinctual impulses at each developmental phase with attendant anxieties and defensive measures" (Raphael, 1992). Her model therefore largely agrees with the cognitive development model above but includes the following: Between six months and two years of age conflicts over weaning and separation, and oral aggression emerge. "The child's immature ego cannot tolerate the pining and so infants lapse into withdrawal to protect them from pain, or distracting denying activity such as behavioural aggression". This gives way to depression and despair when the attachment figure does not return. Support from others provides additional ego resources, helping them deal with grief (Raphael, 1992).

Raphael (1992) suggested that this capacity of the ego to tolerate intense feelings grows as the child develops. Children aged between two and five gain more control of their feelings and their responses can become more disguised. The Oedipal conflict occurs at this stage and children may equate death with killing, seeing it as a consequence of their potent wish fulfilment. Common patterns emerge such as regression and withdrawal if they believe their own survival is at stake.

During the fifth to eighth years of life, Raphael's (1992) model suggests that the child may have a better understanding of death from the cognitive perspective, but lacks the ego skills to deal with their intense emotions. The conscience, super ego and sense of guilt has developed and their defense may still be against direct expression with denial remaining prominent in their reactions (Nagera, 1970). Nagera (1970) suggests that children may strongly cathect a fantasy life that attempts to keep the idealised relationship with the attachment figure. Reminiscing is not easy as they may have lost the custodian of many of their memories and they lack an adequate strategy of retrieval of their own. They may therefore require assistance to gain the corresponding verbal
translation required in the cognitive and emotional task of changing their immature mental schema (Nagera, 1970).

Between the ages of eight and twelve, children have usually left Oedipal struggles behind and are making more intense relationships with peers and friends. Their new level of independence is however fragile and parental loss reawakens childish feelings such as helplessness. They also may identify with their lost attachment figure’s style or behaviour to try to continue the relationship (Raphael, 1992).

Factors Influencing Outcome
The models described above agree on many of the factors influencing the outcome in childhood bereavement. Such factors have been identified as: who the person was, the strength and security of the attachment (Parkes & Weiss, 1983; Bowlby, 1980), the degree of ambivalence and dependence in the relationship (Bowlby, 1980; Freud 1917) the mode of death and whether it was anticipated. Also, personality and social variables (Blazer, 1982., Koocher 1973), the degree of perceived emotional and social support (Parkes & Weiss, 1983; Bowlby, 1980; Blazer, 1982; Koocher 1973).

Systemic Models
There has been a neglect of considering the family within the models of bereavement described above. Systemic models view the child’s responses to death within the family context, viewing family processes as the crucial determinants of healthy or dysfunctional adaptations to loss.

Bowen (1976) suggested that death disrupts the family’s functional equilibrium. The meaning of the death and responses to it are shaped by the family belief system, which in turn is modified by all loss experiences (Reiss & Oliveri, 1980). The intensity of the emotional reaction is governed by the level of emotional integration and the functional importance of the member lost (Bowen, 1976).
The family life cycle model of Carter & McGoldrick (1989) offers a framework for taking into account the reciprocal influences of several generations, as they move forward over time and react to loss. Death poses shared adaptational challenges requiring family reorganisation and changes in the family's definitions of its identity and purpose. Walsh & McGoldrick (1983) and Corr & Doka (1994) suggest crucial family adaptational tasks which, if not dealt with, leave families vulnerable to dysfunction. They suggest modifying Worden's model to the following:

Task 1: To share acknowledgment of the reality of the death. This is facilitated by clear, open communication about the facts and circumstances of the death. Funerals provide the ideal opportunity to confront the reality of death and share grief. If parental grieving is blocked, the child is more likely to become symptomatic.

Task 2: To share in the process of working through to the pain of grief.

Task 3: To reorganise the family system. Reorganisation is facilitated by cohesiveness and a flexible, yet clear, family structure.

Task 4: To restructure the family's relationship with the deceased and reinvest in other relationships. The multiple meanings of death are transformed throughout the life cycle, as they are experienced and integrated with life experiences.

Adaptation does not mean resolution, rather finding ways to put the loss into perspective and move on with life (Corr & Doka, 1994). The psychoanalytic ideas of working through loss to accomplish a complete resolution does not fit the experience of most individual's and their families (Wortman & Silver, 1991).

Corr & Doka (1994) suggest that "Dysfunctional families show maladaptive patterns in dealing with loss, clinging together in fantasy and denial". One systemic explanation (e.g. Walsh & McGoldrick, 1983) for morbidity following loss of an attachment figure is that children need to be parented. The absence of one parent distorts their experience which makes it harder for them to learn how to be a mother, wife and adult woman etc.

The factors influencing family adaptation to loss named in systemic models are similar to those thought to influence the individual's experience in other models but also
include the timing of the loss in the family life cycle and the role the deceased person played in the system. Knowledge of the normative developmental tasks at each stage in the family life cycle can help clinicians be aware of and respond to the ways loss is likely to intersect with salient family life cycle issues which could have important preventative value.

Methodological Issues
The research behind these models is fraught with methodological difficulties such as a lack of replication of results, the use of different samples, theoretical perspectives and measuring techniques which make it hard to generalise the results. For example, the wide divergence amongst the models regarding the timing of the establishment of the concept of death may stem from researchers referring to different levels of conceptual development and studying the child's use of the concept in different contexts. Also, research with infants has to be done by behavioural observation only and there has been a shortage of longitudinal studies. Those that do assess long term effects of early bereavement are flawed by relying on retrospective data and lack non bereaved control groups.

Conclusions
Early psychodynamic models of bereavement believed that children were incapable of mourning. The more recent models reviewed in this essay, however, suggest that children do mourn and experience a wide range of bereavement responses. These models, however, still differ in terms of when children are able to mourn and how much the bereavement process is influenced by factors such as their environment, developmental level and family variables. Part of this controversy may stem from the different definitions used, for example having different views of what actually constitutes mourning.

Childhood bereavement needs to be understood from a sound base of theoretically orientated and empirically derived knowledge. Models of bereavement in childhood should help us to understand the complex symptomatology and individual differences in
experiences and outcomes following the death of an attachment figure, whilst allowing us to develop improved therapies to ameliorate distress and help prevent pathology. Each of the models described above contributes something towards this, but there is as yet no one model that fulfills all of these expectations.
References


Older Adults Essay

“What specific factors need to be considered in assessing and treating depression in older people? In what ways do therapeutic approaches need to be adapted to meet the needs of this client group? Discuss evidence on the emotional impact of such work on therapists”

Year II

June 1998
Older adults essay: What specific factors need to be considered in assessing and treating depression in older people? In what ways do therapeutic approaches need to be adapted to meet the needs of this client group? Discuss evidence on the emotional impact of such work on therapists.

Introduction
Depression is the most common psychiatric disorder in those aged over 65, with the community prevalence rate reported to be approximately 16% (Livingstone, Hawkins, & Graham, 1990). Primary care studies however suggest the rate may be double this (Macdonald, 1996). Depression amongst older adults however remains under detected, under treated (Katona, Freeling, Hinchcliffe, Blanchard & Wright, 1995) and carries a worse prognosis than for younger adults (Cole, 1990).

This lack of recognition and intervention seems partly due to the fact that depression in older people presents particular problems which can pose a diagnostic and management challenge. This essay will explore the specific factors that therapists need to consider when assessing and treating depression in older adults, along with the therapeutic modifications that may be necessary. The emotional impact of this challenging work on the therapist will also be explored.

Specific Factors to Consider in Assessment
Older adults frequently present with a complex range of problems and interactions which makes accurate differential diagnoses difficult. Therapists must understand the variety of possible competing explanations for the presenting problems.

A particular problem is that depression frequently presents with quite different symptom patterns than with younger adults. Depression in older adults has been found to be more likely to manifest itself in the following ways: physical complaints and somatic symptoms, such as sleep or appetite changes (Kivela, Pahkala & Laippat, 1988), guilt
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(Brodaty, Peters & Boyce, 1991), loneliness, anxiety and behavioural problems (Katona, 1994). These symptoms can mask or complicate the underlying mood disorder. Another factor to consider is the overlap in symptoms found in non-depressed older people (Katona, 1994). Therapists therefore need a good understanding of the "normal" changes that occur with age, along with an awareness of the differences in presentation compared to younger adults, in order to accurately recognise indicators of depression.

The high incidence of physical health problems amongst older adults necessitates a thorough inquiry into medical history and a consideration and reconsideration of physical explanations for presenting problems. In addition, the criteria used to diagnose depression in younger people may be unsuitable for use with older adults. The inclusion of somatic symptoms can artificially elevate scores on rating instruments, leading to the over diagnosis of depression. The different clinical characteristics of depression in old age, therefore, need to be incorporated into the classification systems such as the Diagnostic and Statistical Manuals (DSM IV: APA, 1994).

The presentation of depression in older adults may be particularly confusing in the contexts of bereavement and dementia. Older adults suffering from depression also occasionally present with cognitive impairments which are extremely difficult to distinguish from dementia. Clinicians need to be adept at knowing how to distinguish between functional or organic impairments when conducting psychometric assessments (Lynsdale & Powell, 1994).

Older adults' complex problems, such as the frequency of chronic illness and disability, means that many other agencies are often involved in their care. There is, therefore, an increased need for these services to work cohesively. Therapists must be able to work well with other agencies which may include them requiring more specialised knowledge and skills. There are also a number of problems with the present assessment scales available for detecting and measuring the severity of depression in older adults. For example, many measures lack specificity as they were originally designed for use with younger age groups (Flint & Rifat, 1996). Further evaluation of the scales is needed.
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along with a consensus on the preferred range of measures to use. Depression within Alzheimer's disease is particularly difficult to measure, partly due to the lack of a "gold standard" and the fact that the DSM criteria may be misleading, since many items for depression are found in non depressed dementing patients (Katona, 1994).

**Treating Depression in Older People**

Most psychological therapies used with younger clients are applicable to older adults. However, older peoples' complex and multi-faceted health and social needs means that there are a number of specific factors to consider which may necessitate modifications to therapy. Knight (1996) discusses these factors under three main headings (maturation, cohort and social effects) which will be explored here, along with similar findings from other researchers.

**Maturation**

A number of changes frequently occur as a result of aging. A high percentage of older adults have some degree of sensory impairment. Handling these impairments well is an important part of communicating and building rapport. For example, if hearing is impaired, the therapist needs to attend to certain practical considerations, such as speaking clearly and facing clients with an unobstructed view. Therapists may also need to be more adept at utilizing multi-modal presentations of information with clients with sensory impairments.

The treatment of older people needs to be modified in view of the "normal" cognitive changes associated with the ageing process (Church, 1983). Slowing has been found to occur in all cognitive tasks in which speed of response is a factor (e.g. Salthouse, 1991). This slowing of response speed can affect communication between the therapist and the client. There is also a consensus amongst the research that inferential reasoning (Church, 1983) and working memory (e.g. Salthouse, 1991) typically deteriorate with age. This could affect new learning, generalisation, language comprehension and processing of conversation and written materials (Botwinick, 1994).
These findings suggest that therapists may need to modify their style. In particular, sessions may need to be more structured, with therapists conducting the therapy at a slower pace, using simpler phrasing and repeating information to enable clients to process it. Material should also be presented in smaller chunks, with written summaries to assist recall. Older clients may also require a more concrete problem solving approach with a greater emphasis on behavioural aspects. Sparacino (1979) also suggested that therapists frequently need to be more active and directive in therapy with older adults.

The emotional changes that occur across the life span are also very important in therapy. The accumulation of experience often leads to more complex and less extreme emotional experiences in later life which therapists must be prepared for (Schultz, 1982). In addition, the content of therapy is likely to differ with older adults. Knight (1996) suggested that accepting the proximity of death and adjusting to physical disabilities and ill health are more likely to form the focus of therapy. Also older adults are more likely to have concurrent physical problems and it is important to note that pain can make clients irritable and pre-occupied and affect their attention and concentration. In these cases, focused contacts should be shorter. Interventions such as relaxation training may need to be taught more flexibly, taking any physical problems into account. Also, as treatment is often interrupted by illness, therapists may need to be more flexible than usual.

Cohort Differences

Knight (1996) suggests that many differences between older and younger adults are partly due to cohort effects. "Older adults have been socialised into certain beliefs and attitudes which stay stable with age. There are variations across cohorts in terms of cognitive abilities, education and vocabulary" (Knight, 1996). Therapists must therefore communicate with appropriate language and check out shared meanings (Schaeie, 1990). The lower levels of education of earlier cohorts may make them less able to abstract and generalise, suggesting therapists should be more concrete and use less complex terminology.
Knight (1996) also suggests that therapists need to know what is normative for an older client. It can greatly benefit the therapeutic relationship if the therapist learns about historical events that influenced their client's life, important values to members of that cohort etc. This helps clients feel understood, builds rapport, and provides rich information for understanding clients' ideas about themselves and others (Knight, 1996).

Social Factors
Therapists need to be particularly careful to listen and respond to the client directly rather than to their relatives. Powers & Powers (1991) discussed how older people are also usually not as socialised to therapy as younger age groups, having frequently had less exposure to and less education about mental health services. They have been found to be less likely to seek out mental health services and less likely to label problems as psychological, tending to conceptualise them as physical (Emery, 1981). Therapists must therefore, actively educate clients and their families about therapy. Knight (1996) recommends orientating older clients to therapy by resolving misconceptions about the therapeutic process. He suggests the following: explaining the therapeutic rationale in a step-by-step manner, stating clearly where the therapy will take place and the structure of the sessions. Also, explaining that it will take more than one session to see progress and that you do not have to be mentally ill to benefit from therapy.

Therapists also need to understand their client's separate social milieu (Lindsay & Powell, 1994). For example, being aware of local community resources and facilities, so that clients can be helped to make informed choices. This may involve therapists providing more practical support than usual. Therapists must however assess the effect this may have on their relationship. Older adults are also more likely to be house bound by illness or disability making home visits more likely. Home visits can change the environment of the therapeutic relationship, e.g. the client may begin to relate to therapist as a "friend". Therapists therefore, need to reinforce the importance of the formal character of the sessions.
It is also important to remember that older adults suffering from depression are likely to have faced other specific challenges and real life hardships such as multiple losses (Pahkala, Kivela & Laippala, 1991). Grief is therefore a more common theme in therapy with older adults which therapists should be prepared for.

Despite the generalisations made above, each older adult suffering from depression requires an individualised approach, according to their particular needs, aspirations, lifestyle and resources etc.

Therapy Outcome Research
The effectiveness of different therapeutic approaches with older adults should be considered when choosing a treatment model. Outcome research has generally shown psychological treatment for depressed older adults to be as effective as medication (e.g. Knight, Kelly & Gatz, 1992).

The adaptations described above suggest that in some ways behavioural or cognitive-behavioural approaches may be particularly suited to this client group, as there tends to be more structure and the goals are more concrete than in other approaches. Both behavioural (Gallagher, 1981) and cognitive (e.g. Emery, 1981) therapies have indeed been specifically modified for use with older adults, with clinical trials suggesting they are as effective for depression in older adults than in earlier life. However, many of the points raised above are relevant to all therapeutic approaches. Gallagher (1981) found Brief Insight Therapy to be as effective as CBT and Thomson, Gallagher & Breckenridge (1987) found Behaviour Therapy, CBT and Psychodynamic therapies to be equally effective. These studies however, include a number of methodological shortcomings. For example, there were number of variables that may have affected outcome such as coinciding medical problems. Further evaluation of these interventions is therefore needed.

The Emotional Impact on Therapists
Currently, the literature (particularly evidence based) concerning the emotional impact on therapists of working with older adults is sparse. The largely anecdotal reports regarding this topic have, however, been reasonably consistent in their findings.
Genevay & Katz (1990) found that therapists often express doubt regarding their ability to understand and empathise with older adults and are more likely to perceive themselves as lacking in experience in treatment for depression in older adults. Knight (1996) also suggested that the complex needs of older adults frequently elicit feelings of impotence in therapists. Therapists may feel pessimistic about the effectiveness of therapy due to certain stereotypes resulting from a lack of knowledge and experience (Semel, 1993). Knight proposed that a common misconception remains that depression in old age is "understandable, even inevitable, in the face of multiple loss, deteriorating health and impending death" (Knight, 1996). The reluctance to use psychological approaches when working with this client group may also partly stem from the Freudian view that older adults lack the capacity for mental change that is necessary to engage in therapy (Freud, 1953).

Older adults frequently view their therapists as authority figures or magical experts (Knight, 1996). They may feel powerless due to younger people exerting a great deal of control over their lives and may therefore expect the therapist to make major decisions for them etc. Martindale (1989) suggested that this, coupled with the constant exposure to the dependency needs of old people, frequently leads to therapists feeling overburdened, helpless and frustrated.

Genevay & Katz (1990) suggested that the countertransference experiences (the therapists emotional reactions to the client) are different with this client group as the therapist may be confronting current, rather than past, issues and fearful fantasies. "Many of life's most difficult problems are represented in the aged population and having to possibly face those problems oneself arouses a different level of fear" (Knight, 1996). Therapists are likely to experience personal conflicts and anxieties due to the exposure to high levels of illness, dependency and death which society teaches us to avoid. Working with older adults forces earlier confrontation of these issues (Kastenbaum, 1964). For example, Knight (1996) noted that it forces an appreciation of the finitude of life which young therapists may not yet have acknowledged and with which the middle aged may be actively struggling which can be highly anxiety.
Older Adults Essay - Year II

provoking. Chronic physical disability and the sight of clients forced into dependency can arouse powerful emotions in therapists. They may feel the problems are beyond the reach of therapy and therefore out of their control (King, 1980). Home visits can exacerbate this problem since leaving the clinic setting can weaken therapists sense of authority and control.

King (1980) suggested that the age difference may lead to different transference patterns. For example, Knight (1996) suggested that clients frequently remind therapists of their own parents. Therapists' own anxieties about the likely future needs of their parents may mean that they become preoccupied with their own problems and withdraw from addressing their clients' worries. Alternatively, they may be overly committed to seeing client change, becoming irrationally angry if they feel a client is not moving on. If the therapist's parents are currently facing the same issues, there is a danger that the therapist's problems and values will intrude into therapy. In these situations therapists may begin to influence families overtly, for example, by recommending certain causes of action, or become overwhelmed by facing the same emotional and painful issues at home and at work. Grandparent countertransferences can also occur. In these instances Knight suggests that therapists tend to experience positive feelings for the client and a strong need to protect them from the middle generation. This may prevent their perception of the client's real problems, or bring them into unnecessary conflict with the client's children.

Knight (1996) proposed the following factors, which can indicate that a countertransference issue has arise: A conviction not supported by accurate diagnosis that the client will not benefit from therapy, preoccupation that they have dementia, a desire to have them treated medically, a sense of fatigue or helplessness in the client's presence and intense emotional reactions to clients. King (1980) proposed that if therapists are not aware of these issues they are likely to avoid working with these clients or experience stress and burnout. Avoiding issues such as death is also likely to be unhelpful to clients. Therapists therefore need to examine their own attitudes and beliefs that can inhibit the use of therapeutic skills with this client group. Frequent contact with healthy, coping old people may help combat such attitudes.
The countertransference needs to be recognised, studied and discussed in supervision (Sparacino, 1979). In addition King (1980) suggests that therapists must be taught to find a realistic view of therapy's ability to resolve clients problems and recognise the value of small improvements.

**Conclusion**

There is evidence that depression is becoming more common amongst successive birth cohorts (e.g. Warner, 1996). Future strategies, such as education programs, are therefore needed to challenge ageist assumptions and improve diagnosis and acceptance of treatment by clients. GP training on psychological treatment of older adults may help make referrals more appropriate and improve patient care. Primary prevention, such as counselling after bereavement, may also have a role in reducing depression but needs further evaluation (Brodaty & Anstey, 1994). In addition, as poverty and social isolation are known to increase vulnerability to depression in old age (Katona, 1994), efforts should be made to combat these social problems.

Warner (1996) however suggests that funding for older adults services is restricted, being reserved for higher profile and more popular services. It is therefore vital to raise the profile of depression amongst older adults, and the profile of the specialty in general. Sufficient resources must also be generated into this specialty to enable research progress to be translated into better clinical practice.

This essay highlights the fact that the current literature regarding working with depression in older adults tends to focus on the negative and problematic aspects of this work. In particular, the literature regarding the emotional impact on the therapist largely fails to address the positive aspects of countertransference and how this can be used as a therapeutic tool. Many older adults bring to therapy a broader range of experience and richer psychological histories than younger people. Data from their past, relevant to current issues, can therefore be interpreted in ways that can enhance the therapeutic process greatly. King (1980) also suggested that the gradual
awareness of changes in their lives, experienced by older adults, can introduce a new sense of urgency to therapy, thus facilitating a more productive therapeutic alliance. These positive aspects of working with older adults should be further acknowledged.

In conclusion, it seems important to note that despite the generalisations made in this essay, the older adult population includes a diversity of people and problems the majority of whom do not become depressed despite multiple adversity.
References

American Psychiatric Association (1994). Diagnostic and Statistical Manual of Mental Disorders IV, Washington, DC. APA.


Specialist Essay

"Critically evaluate the evidence that a strong family history of breast cancer has psychological consequences that effect screening and surveillance health behaviours"

Year III

Dec 1998
Specialist essay: Critically evaluate the evidence that a strong family history of breast cancer has psychological consequences that effect screening and surveillance health behaviours

Introduction
The existing literature on the psychological impact of breast cancer on the patient herself (e.g. Wellisch, Hoffman & Gritz, 1996); the patient's spouse (e.g. Northouse, 1989), and on the family as a whole (e.g. Pederson & Valanis, 1988) is extensive. However, where the breast cancer patient's daughter, or other first degree female relative is specifically concerned, the psychological literature becomes rather sparse. As Wellisch, Hoffman & Gritz (1996) point out, this is grossly out of proportion to the potential size of this population, especially considering the fact that these women are believed to be at high risk for developing breast cancer themselves.

This essay will explore the psychological impact and behavioural consequences (screening and surveillance health behaviours) that can result from having a strong family history of breast cancer. For the purposes of this essay, the focus will be on adult women, and a strong family history will be defined as having at least one first degree relative who has, or has had, breast cancer.

Risk of Developing Breast Cancer
Approximately 1 in 12 women in the UK will develop breast cancer during their life time (Watson, 1991). Estimations of familial risk however vary greatly, due in part to the fact that studies have used different research designs and different populations. However, the most consistent estimate seems to be that this risk is approximately three times greater in women who have one first degree relative with breast cancer, and fourteen times greater in women with two first degree relatives (Costanza, Stoddart, Gaw & Zapka, 1992). In women with a first degree relative with pre-menopausal breast cancer, the risk may increase to around 50% (Berger & Bostwick, 1994). The highest risk lies in
women with a family history of Hereditary Breast Cancer (HBC). Of all the women who develop breast cancer, around 5%-10% have HBC (Berger & Bostwick, 1994).

Clearly, however, it is not only "true risk" that is important, but also personal risk perception. That women with a family history of breast cancer tend to overestimate their risk has been quite a consistent finding (e.g. Evans, Burnell, Hopwood & Howell, 1993; Kelly, 1983) and has lead other researchers to investigate the psychological impact of both objective and subjective risk.

Psychological Consequences
Gilbar (1997) compared 16 women with a strong family history of breast cancer with 37 matched controls all attending a "Well Woman" breast health clinic. He found that the high risk women experienced higher levels of psychological distress, as measured by the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982). Three larger research studies have provided data consistent with this finding. Lerman, Daly, Sands, Balshem, Lustbader, Heggan, Goldstein, James, & Engstrom (1993), with a sample of 180 women over 35 years, compared those with a strong family history of breast cancer to those without. They found that the women with a family history of breast cancer experienced higher levels of distress, including intrusive thoughts about developing breast cancer. Wellisch, Hoffman & Gritz (1996) carried out a study in an American breast clinic with women attendees aged over 35 years with a strong family history of breast cancer. They found that of 161 women, 22% exhibited clinically significant symptoms of depression, as measured by the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) and 45% were experiencing clinically significant symptoms of anxiety, as measured by the State-Trait Anxiety Inventory (STAI; Speilberger et al, 1970). In addition, Kash, Holland, Halper & Miller (1992), carried out a study involving 217 women on their initial visit to a breast protection program. The program provided a clinical breast examination (CBE), mammography and instruction in breast self examination (BSE). Using standardised cut offs for the BSI, 27% of these women were defined as having a level of psychological distress consistent with the need for psychological intervention, reaching levels found in survivors of Hodgkin's disease and Leukemia (Kornblith, Anderson & Cella, 1990).
Kash et al (1992) did not however include a comparison group, so we cannot conclude that these findings are significantly different to other populations.

The above findings differ from the research carried out by Wellisch et al (1991) which compared 60 daughters with a mother with breast cancer with 60 comparison control subjects matched for age, educational level and race. The participants were university graduates recruited by a newspaper advertisement who completed a single structured interview. No significant differences were found in psychological symptoms between the two groups. One possible explanation for these discrepant findings may be the difference between the study samples. For example, unlike Wellisch et al's (1991) study, Kash et al's (1992) study was based entirely on clinical, help seeking populations. These women may have been particularly distressed because the study was carried out at the time of their clinic visit for breast cancer screening. Secondly, the majority of participants in Wellisch et al's study had reached higher educational levels and were more affluent than those in Kash et al's study. This may have provided a "buffering effect" from some of the stress patterns described in the clinical populations.

It is tempting to conclude from most of the studies described above, that women with higher levels of objective risk, perceive themselves at higher risk and therefore have chronically higher levels of psychological distress. However, these studies have neglected to consider aspects of family history of breast cancer other than perceived threat of breast cancer, that may account for these higher levels of distress. For example, these women may be taking care of an affected relative, or have experienced a recent bereavement. Alternatively, as suggested by Wellisch et al (1991), chronically elevated distress may have its origins in the interactions between a newly diagnosed mother and a daughter at a critical developmental stage.

Impact on Screening and Surveillance Behaviour
This essay will now explore whether the psychological consequences outlined above impact on whether these women engage in breast screening and surveillance behaviours.
Theoretical models of adherence with medical recommendations could serve as useful guides to research in this area. In the area of breast cancer, the research seems to have focused primarily on the Health Belief Model (HBM; Becker, 1974). The HBM identifies factors that facilitate or inhibit adherence. This model states that to take preventative action against a disease, the person must 1. Perceive themselves as susceptible. 2. Perceive the disease as severe. 3. Believe preventative behaviour will reduce the threat. 4. Believe that barriers to action do not outweigh the benefits and 5. Have a 'cue' to action. This model has received some support in the area of breast cancer (e.g. Janz & Becker, 1984). There have however been a number of criticisms of the HBM. For example, Calnan (1984) reviewed studies of HBM applied to breast cancer and found the amount of variance accounted for by the model rarely rose above 15 percent. Also, additional social cognitive variables found to be highly predictive of health behaviour in other models are not incorporated, e.g. intentions to perform a behaviour and social pressure (Conner & Norman, 1996). In addition, as Conner & Norman (1996) point out, "the lack of specification of a causal ordering among the variables in the HBM precludes more powerful analysis of data and clearer indications of how interventions may have their effects". The model has also been criticised for not distinguishing between a motivational stage, dominated by cognitive variables, and a volitional phase where action is planned, performed and maintained (Schwartzer, 1992).

The Fear Arousing Communications Theory (FACT; Janis & Fleshbach, 1953) has been applied in a few breast cancer studies. According to this model, a moderate level of arousal or fear is considered optimal for predicting engagement in preventative health care behaviours. Too little arousal may promote denial of risk, and too much arousal may lead to avoidance. This model would therefore predict that a family history of breast cancer would exert an inverted U-shaped curve on screening behaviour. Anxiety should facilitate screening up to a point, but beyond this point, screening adherence should decline as anxiety increases (Thirlaway & Fallowfield, 1993).
The Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975) has been widely applied to the understanding of health behaviours and overcomes some of the criticisms of the HBM. The TRA proposes that a person's intention to engage in a behaviour is the most important determinant of that behaviour. There has, as yet, been very little research utilising this model in the area of breast cancer. McCaul, Sandgren, O'Neill & Hinsz (1993) however demonstrated that the TRA components of attitudes and subjective norms do successfully predict BSE intentions and behaviours. There have however been criticisms of this model. One such criticism being that it does not make an assessment of health threat, as included in HBM (Pitts & Phillips, 1991). Another problem is that intentions are not always translated into actions. Also, other factors, such as habits (Bentler & Speckart, 1981) have been shown to influence behaviour. The Theory of Planned Behaviour (TPB; Ajzen, 1988) was developed to expand the TRA model to include an individual's perception of control over performance of the behaviour (Conner & Norman, 1996). This model may not help directly with predicting who would engage in screening and surveillance behaviour or help increase the percentage of women with strong family histories of breast cancer who do. However, it may help in planning education programs on breast cancer and detection.

Another theory that incorporates both the HBM and FACT models and expands them is the self-regulation model of illness (Leventhal et al., 1984). This model is currently very popular in research exploring a variety of health behaviours (e.g. Clark, 1997). This model stresses the individual as an active problem solver whose behaviour reflects an attempt to reach an "ideal state". It proposes that peoples' representation of risk; reasons for illness or disease; self-efficacy; ability and motivation for change and the consequences of a particular behaviour guide people's actions towards this goal. This model may provide a more relevant method for explaining and promoting breast cancer early detection behaviours.

Women at greater risk of developing breast cancer need to be monitored more closely with regular mammograms and breast examinations as these methods have been shown to be effective in early diagnosis (Tabar, Nicholas & Dean, 1988). A number of
researchers have however shown that many women with a strong family history do not adhere to breast cancer screening recommendations (e.g. Kaplan et al, 1991). Research in this area has produced conflicting results. Vogel, Graves, Vernon, Lord, Winn & Peters (1990) interviewed 150 breast screening participants aged over 35 years who had first degree relatives with breast cancer. They reported that only 35% of these women had ever had a mammogram. However, Kash et al. (1992) investigated 217 first degree relatives self referred to the high risk program described earlier and found the percentage who had had mammograms to be 94%. These studies focused on women who were self selected for interest in screening or counselling, suggesting these observed adherence rates may not be representative. Other studies have attempted to minimise self-selection bias by recruiting through cancer registries. Rates of mammography use in these studies have, however, also varied greatly, ranging from 15% in an interview study by Kaplan et al (1991) of 2471 first degree relatives of breast cancer patients aged over 35, to 65% in a telephone survey by Lerman et al (1993) with 180 participants from a similar population.

In terms of rates of uptake for CBE, Kaplan et al (1991) found that 67% of 2471 women with a strong family history of breast cancer aged over 50 had had a CBE in the past year. In contrast, Stefanek and Wilcox (1992), in a telephone interview study with a similar sample (125 first degree relatives of breast cancer patients aged over 50 years), found rates of adherence to CBE to be around 84%.

Screening Practices of High vs. Average Risk Women
Research comparing the mammography screening practices of high vs. average risk women has also yielded mixed results. The HBM would predict that women with a strong family history of breast cancer will be more likely to adhere to mammography screening and breast examinations than those at "normal risk". A few studies involving women aged over 35 years attending for breast screening have indeed found this to be the case (e.g. Bondy, Vogel, Halabi & Lustbader, 1992), with two studies reporting a specific positive association between psychological distress and adherence to mammography and CBE (Stefanek & Wilcox, 1992; Lerman, Trock, Rimer, Jepson, Brody & Boyce, 1991). There are also reports that for a minority of these women, their
fears of breast cancer develop into a cancer phobia, leading them to examine their breasts up to 60 times a day (e.g. Holland & Rowland, 1990).

However, contrary to the predictions of the theoretical models described above, a number of other studies have found no effect of a positive family history on screening practices. For example Costanza et al. (1992) conducted a matched group telephone survey of 1603 women aged over 35 years with and without family histories of breast cancer. They found no significant difference between the two groups in their screening practices. Similar results were reported by Vogel et al (1990) and Wellisch et al (1991). Furthermore, the majority of recent studies have found a negative effect of a strong family history on screening and surveillance health behaviour. For example, in their study described earlier, Kash, Holland, Halper & Miller (1992) utilised the HBM and investigated via questionnaire, the beliefs of 217 women at high risk for breast cancer about their breast cancer risk and the impact of this information on their surveillance behaviours and psychological distress. Contrary to the HBM predictions, they found that increased perceived susceptibility predicted engagement in fewer preventative health care behaviours. Specifically, as cancer anxiety increased, breast examination and attendance at mammography appointments decreased. Lerman et al (1993), Laville, Vernon, Jackson & Hughes (1989) and Josten, Evans & Love (1985) found similar results. One hypothesis is that women who think they will definitely get breast cancer feel powerless and therefore do not engage in preventative health care behaviours. Kash et al (1992) concluded that being at high risk may not be a cue to initiate surveillance behaviours, but instead may increase a woman’s fears and act as a deterrent or “barrier” to screening. The FACT model was not supported either in Kash et al’s (1992) study, as a negative linear relationship was found between anxiety and BSE and perceived susceptibility and BSE, rather than a curvilinear relationship as was predicted. It seems important, however, to note that this research paper did not clarify whether the relationship between perceived susceptibility and BSE existed after anxiety was controlled for.

Possible explanations for the divergent findings regarding the impact of risk and corresponding psychological distress on screening and surveillance behaviour include
variation in methods of recruiting high risk subjects and differences in psychological factors which mediate the effects of a positive family history on screening adherence. In addition, both Kash et al's (1992) and Lerman et al's (1993) studies, which found negative associations between distress and adherence, used measures of psychological symptomatology that were developed for clinical populations. Women who scored high on these measures are likely to present a seriously psychologically distressed population. By contrast, the studies that found a positive association between psychological distress and adherence (e.g. Stefanek & Wilcox, 1992; Lerman et al, 1991), employed measures of breast cancer worries and concerns. The moderate levels of anxiety experienced by these women may be high enough to motivate vigilant screening behaviour, whilst not high enough to produce avoidance of screening, as would be predicted by the FACT model.

Although each theoretical model provides insights into factors that are necessary to predict and improve participation in breast cancer screening, it seems that no one theoretical model is currently sufficient. It is also important to note that there are many other variables which may potentially impact on screening behaviours in these women, such as survival status of the affected relative (Wellisch et al., 1992). Also, Costanza (1992) found that knowing about familial risk, regardless of personal history, increased utilisation of mammography. Knowledge of screening procedures available and breast cancer treatment options have also been related to the frequency of BSE (e.g. Glenn & Moore, 1990).

Genetic Screening
A breast cancer susceptibility gene, BRCA1, has been identified in families with a strong history of breast cancer (Porter, Steel, Cohen, Wallace & Carter, 1993), and genetic screening and counselling programs are now becoming increasingly available.

Lerman et al (1997) examined the relationships between psychological distress and use of BRCA1 testing by 149 high risk women. After controlling for demographic factors and risk status, cancer specific distress (intrusive thoughts and feelings related to cancer risk) was significantly positively related to BRAC1 test use. Additional studies
are needed to validate these findings, but Lerman et al (1997) suggested that the apparent divergent associations between psychological distress and cancer related health-behaviours can be reconciled by considering the nature of the behavioural outcome examined. He proposed that genetic testing offers the potential to take action to reduce risk before cancer develops, e.g. by opting for a preventative (prophylactic) mastectomy with reconstruction. Because of their potential to reduce risk and manage anxiety, risk assessment behaviours are likely to be promoted by distress. In contrast, breast cancer screening is designed to detect an already existing cancer. Under these circumstances distress can act as a deterrent, particularly if distress levels are clinically elevated (Kash et al, 1992).

Conclusions
Research on the psychological functioning of women with a strong family history of breast cancer, and the impact of risk and psychological factors on their screening and surveillance behaviours has produced widely divergent information. Most of the recent evidence appears to indicate that a strong family history of breast cancer leads to increased psychological distress. High levels of anxiety appear to act as a deterrent to mammography and breast screening (apart from genetic testing). The most important factors that control screening behaviours in this population are as yet unclear. It seems likely that there is a complex interaction between family and personal history, perceived risk and psychological distress in these women. Further empirical studies testing the theoretical models and how they relate to breast cancer are now required.

A further problem with arriving at any firm conclusions from the research carried out in this area is that many of these studies are methodologically flawed. Particular problems have included a lack of control groups and primarily small samples made up of predominantly white, middle class and well educated women. The literature therefore evaluates only a very small portion of the population whereas there may, for example, be ethnic diversity in relation this problem so generalisations should not be made. In addition, the validity, reliability, and norms for this population on the assessment instruments used have not been established. Meaningful comparison between the studies is also difficult due to the huge variation in assessment measures and inclusion
criteria employed, resulting in very different subjects being evaluated. These inconsistencies may partly explain the different results obtained. The findings must be replicated including age matched controls of healthy women without a positive history of breast cancer and similar data collected for minority, socially disadvantaged and less well educated women. It also seems important to compare women with family histories of breast cancer to relatives of people suffering from other forms of cancer.

The findings described above support the need for the development of psychological and educational interventions for immediate female relatives of women with breast cancer, in an effort to improve psychological adjustment and screening and surveillance adherence, to ensure the earliest detection of breast cancer. There is currently however, a scarcity of research to guide what type of interventions will prove helpful, and this also requires further investigation.
References


Clinical Section
Summary of the Clinical Section

This section contains a placement contract for each of the four core clinical placements, as well as the two specialist placements completed during training. Five formal clinical case reports have been submitted in full in a confidential clinical volume, which also contains a record of all clinical activity and supervisor evaluation forms. A summary of each of those clinical case reports is provided here. The case reports reflect the variety of clinical work carried out across the placements. They include the following: a cognitive behavioural assessment and treatment of an adult client with social phobia; an assessment and treatment (Behavioural and Rational Emotive Therapy) of a learning disabled client presenting with verbally offensive behaviour; an assessment and psychodynamic treatment of a young child presenting with eating problems; a neuropsychological assessment of an older adult presenting with memory difficulties and an assessment and treatment utilising Worden's grief therapy model.

*All client names and identifiers have been changed or removed in order to preserve confidentiality.*
Adult Mental Health Core Placement
Adult Mental Health Core Placement Summary

Trust: Merton, Sutton & Wandsworth NHS Trust
Placement locations: Springfield Hospital, Tooting, London.
Morden Hall Medical Centre, Morden, Surrey.
Dates: October 1996 to February 1997
Supervisor: Jane Street
Departmental Base: Psychology Department, Springfield Hospital, 61 Glenburnie Rd, Tooting, London, SW17
Adult Mental Health Placement Contract

Aims:
1. To develop and consolidate skills in the assessment and treatment of adults with mental health problems. This will involve gaining experience of working with a range of clients across the age span, within a range of settings (primary and secondary care) and covering a range of issues.

2. To develop confidence and competence in the practice of clinical psychology.

Objectives:

Therapy/Client Related Skills
- To be able to relate to clients and relevant others in a professional manner.
- To be able to engage clients in therapy and demonstrate basic counselling skills.
- To be able to carry out an independent assessment of the presenting problems and wider issues. To be able to handle unexpected variations.
- To be able to plan and implement therapy independently, using a particular model while understanding how other therapeutic perspectives can contribute to work with clients. Specifically, to gain experience in CBT and Solution Focused Therapy.
- To be able to identify the process issues facilitating or impeding therapy.
- To become competent in the use of questionnaires and rating scales. To use the WAIS-R independently.
- To co-facilitate a structured group for women with post natal depression.

Organisational Issues
- To liaise with relevant networks. To be able to elicit and communicate information with other agencies.
• To gain an understanding of the roles of a clinical psychologist and the roles of the other team members.
• To gain awareness of issues relating to primary versus secondary care psychological services.

Formulating Issues
• To gain an understanding of how different models may contribute to the understanding of clients’ problems.
• To be able to develop and write up a formulation in one particular model.

Methods via which objectives will be achieved
a. Client/Therapy Related Skills
• To have a case load of 8 clients. For Jane to observe some of my work, providing me with constructive feedback.
• To work with both sexes, across the age span, with a variety of mental health problems.
• To work with at least one client from a different ethnic/cultural background.
• To work independently with clients with anxiety, depression and adjustment difficulties, OCD, eating disorders and survivors of abuse. Also, to see at least one client with a more somatic emphasis and one area from social skills, assertiveness, suicidal or para-suicidal clients or those with addictive or offending behaviour.

b. Organisational skills
• To spend time observing Jane and other members of the team carrying out their various roles.
• To attend regular clinical and team meetings.
• To receive two hours supervision weekly with Jane.
J, a client in her forties, was referred for psychological treatment by her GP. Following assessment, it appeared that J was suffering from a social phobia. On psychometric assessment she obtained a Beck Depression Inventory (BDI) score of 23, indicating moderate depression; a Beck Anxiety Inventory (BAI) score of 44, indicating severe anxiety and a Fear of Negative Evaluation Scale (FNE) score of 26, indicating a strong fear of negative evaluation from others.

This case was formulated both from a cognitive behavioural and a systemic perspective, but the intervention was based primarily on the cognitive formulation. Negative comparison with her sisters when J was young and her father's frequent criticism had a negative effect on J's self esteem and led her to form certain dysfunctional assumptions e.g. that her worth was based on her physical appearance and the approval of others. These beliefs were reinforced in her relationship with a critical husband. Her husband's illness and retirement seem likely to have been the primary trigger for her current problems. J's difficulties appeared to be being maintained primarily by certain Negative Automatic Thoughts (NAT's) produced by her unhelpful beliefs which led to avoidance behaviour.

Cognitive Therapy techniques were utilised to help J to focus on her NAT's and dysfunctional assumptions in order to help her to think in a more realistic and constructive way. This was coupled with a graded exposure programme. Treatment ended with a planned discharge at which time J obtained a BDI score of 7, indicating no clinical depression, a BAI score of 17, indicating moderate anxiety and a FNE score of 9, suggesting low fear of negative evaluations. J could also cope with many previously avoided situations. The strengths and limitations of this work are discussed.
Learning Disabilities Core Placement
Learning Disabilities - Placement Summary

Learning Disabilities Core Placement Summary

Trust: Richmond, Twickenham and Roehampton NHS Healthcare Trust.
Placement Location: Richmond Community Team for People with Learning Disabilities, 27 Sheen Lane, London, SW14 8LP.
Dates: March 1997 to September 1997
Supervisor: Abi Herbert.
Departmental Base: Queen Mary's University Hospital, Roehampton.
Learning Disabilities Placement Contract

Aims:
1. To gain experience of working with learning disabled adults.
2. To gain experience of working in a Community Learning Disability Team.
3. To gain experience of working in a joint health and social service.

Objectives:
1. Clinical Work
   a) To undertake direct and independent clinical assessment and intervention using cognitive and behavioural models.
   b) To observe and/or work jointly with psychologists and other health or social service professionals.
   c) To work with learning disabled adults of various ages, levels of disability and ethnic backgrounds who are living in community settings.
   d) To work with individuals presenting with the following issues:
      Sexuality
      Abuse
      Autism/Social disability
      Challenging behaviour
      Forensic
   e) To attend the Abuse Working Group, Psychology LD Specialty meeting (and lead a seminar), Community team meetings, LD SIG and Psychology Department meetings.
2. Service Structure
To become familiar with the joint service by visiting a range of residential, day service, education, employment and community support services.

3. Supervision
To receive one and a half to two hours of supervision per week to discuss clinical work, models of therapy, service, training and professional issues.

4. Research
To undertake research on placement
Learning Disabilities Case Report Summary

An assessment and treatment of a learning disabled client presenting with verbally offensive behaviour

M, a client in her late eighties with mild learning disabilities, was referred to Psychology by her Care Manager. The request was to assist the staff in their management of M as she was being verbally offensive towards other residents.

The following emerged as significant aspects of M's family and medical history: M had been diagnosed as suffering from Manic Depression. In 1959, shortly after her parents death, she was placed in N. Hospital where she remained until her recent relocation into a staffed group home.

The presenting problems were formulated within both the behavioural and cognitive models. At assessment, M obtained a Beck Depression Inventory (BDI) score of 10 (not depressed). ABC recordings showed that she made 22 offensive remarks during one week. These recordings and the Motivational Assessment Scales (MAS) completed by the staff indicated that social attention was the primary trigger/motivator for her behaviour. When M was verbally offensive, staff did not challenge her, responding instead by providing her with attention or dealing with other residents who were disturbing her, thus reinforcing this behaviour. Also, leaving N had resulted in multiple losses in quick succession which may have triggered the increase in the frequency of her offensive remarks. M's communication skills were impeded by both her learning disability and her mental illness. Being verbally offensive may therefore, have been the only response available to M to communicate her unhappiness.

A behavioural management plan was implemented to reduce the frequency of M's offensive remarks and to help her find alternative ways to communicate her needs and
feelings. Individual work with M was also undertaken to help her acknowledge and come to terms with the loss of N and adjust to her new environment.

A second problem which became evident was the staffs' anxiety about managing M's behaviour. This problem was largely formulated within the Rational Emotive Therapy (RET) approach. Predisposing factors appeared to be M's previous failed community placement and the staff's lack of knowledge and understanding regarding Manic Depression. The staff demonstrated a strong tendency to irrationally appraise events related to M. For example, believing that challenging M or talking to her about the loss of N would trigger another manic or depressive episode. These thinking biases served to further maintain their anxiety and subsequent responses. RET and staff training were therefore carried out to help reduce the staffs' anxiety and facilitate their management of M.

Treatment ended with a planned discharge, at which time ABC recordings indicated that the incidences of M being verbally offensive had fallen to an average of 3 incidences per week. There also appeared to have been a major shift in the staff's attitudes towards M, and the team reported feeling far less anxious about M's mental health. The strengths and limitations of this work are discussed.
Children & Adolescents Core Placement
Children and Adolescents Core Placement Summary

Trust: Chichester Priority Care Services NHS Trust
Placement location: Child and Family Services for Mental Health. Orchard House, 9 College Lane, Chichester.
Dates: October 1997 to April 1998
Supervisor: Carmel Jennings
Departmental Base: Graylingwell Hospital, 9 College Lane, Chichester.
Children and Adolescents Placement Contract

Primary Aims of the Placement:
1. To gain experience of working with children across the age range of 0 - 16 years who are experiencing a wide range of emotional, behavioural and developmental problems. This should include both male and female clients and at least one child from a different cultural background.
2. To become familiar with the range of psychometric tests used for assessing children and adolescents.
3. To be able to select treatments from a range of psychological models such as: Cognitive, Behavioural, Psychodynamic, Counselling and Systemic and be able to integrate information from these different models.
4. To gain experience of working systemically as part of a Family Therapy Team.
5. To work in a range of different settings.

Secondary Aims of the Placement:
1. To gain an understanding of the roles of other professional working within the service and to become familiar with the network of services available for this client group.
2. To develop skills of observation, assessment, interpretation, reporting and evaluation.
3. To develop her teaching skills.
4. To understand the role and organisation of Clinical Psychology at local, Trust and Regional levels.

Specific Recommendations for the Placement
1. Sophie should see approximately 10 clients independently for treatment. This should include working with clients from the following groups:
• Children with normal development who present with behaviour management problems such as sleep problems or temper tantrums.
• Children whose development is delayed or impaired.
• Children with mild to severe emotional, educational and conduct problems. This should include anxiety, phobias, ADHD and post trauma problems.
• Children where there is a parenting issue and those experiencing separation problems.
• Experience (either directly or through observation) of children with long term difficulties (e.g. developmental delay, severe physical emotional or behavioural disturbance, chronic adverse social circumstances).
• Children diagnosed as having a psychiatric illness such as Anorexia Nervosa, OCD or a Psychotic Disturbance.
• Children who have experienced physical or sexual abuse or who are beyond parental control and may be living in Foster Care or Children’s Homes.

2. Sophie should gain direct experience with issues of child protection.
3. Sophie should have limited involvement with specialist areas such as Paediatrics and Child Neuropsychology.
4. Sophie should gain knowledge of the following organisational issues:
   • The interface between Health, Social Services and Education.
   • The Education Act.
   • The Children’s Act.
   • Statutory Responsibilities.

These aims and recommendations will be achieved by:
1. Experience of formal assessment of children. Sophie should administer at least 3 assessments measuring intelligence and development. This should include assessment of a child under 5 years and a child of middle school age. Sophie should become familiar with the following tests:
2. Attendance at Psychology meetings and team meetings where possible.

3. Observational visits to:
   - A local nursery, primary schools and schools for children with learning disabilities.
   - Larchwood and Colwood in-patient units.
   - Outpatient clinic at St. Richard's Hospital.

4. Meeting and liaising with the following professionals:
   Hospital Paediatric Social Work Team, Health Visitors, Paediatric medical staff, and the Child Assessment Team (Paediatricians, OT, SLT, Play Therapists and Ophthalmologists).

5. Attendance at the Child Psychology Special Interest Group.

6. Observation of, and joint work with, Supervisor and opportunity to be observed by Supervisor. Supervision: One hour per week individual supervision. Also informal supervision and occasional joint supervision with fellow trainee and Consultant Clinical Psychologist.

**Personal and Professional Development**

By the end of placement Sophie will have achieved a gradual but significant increase in the following areas:

- Her professional approach to her work in terms of reliability, independence and use of initiative.
- Her capacity to communicate ideas clearly to others in both verbal and written form.
- Her awareness of her own attitudes and behaviour and her capacity to reflect on difference in terms of race, gender, culture.
- A realistic awareness of her own capacity, limitations and management of boundaries and conflict.
- Knowledge of developmental and clinical issues.
• Understanding of the management structure within Chichester Priority Care Services Trust and how Child and Families fits into the overall service structure.

Skills and Techniques
By the end of placement Sophie will have achieved a gradual but significant increase in the following areas:

• Competence in assessment, interpreting and integrating information coherently, to form hypotheses, formulate and reformulate methods of intervention and evaluate work carried out.
• Ability to produce effective and appropriate treatment plans.
• Skills in evaluating outcome.
• Ability to follow a new referral through from assessment, treatment and discharge using supervision to fine tune the work undertaken.
• Confidence in interviewing clients, their families and other professionals and integrating this understanding.
L, a four year old child, was referred to the Child and Family Service by her Paediatrician for assessment and intervention. She had been refusing to eat and had become preoccupied with her shape and weight, which had included her saying things like “I don't want to have a fat tummy, I want to be slim like Mr. Skinny”. A recent dietary assessment had placed her on the 10th percentile for weight, and between the 25th and 50th percentile for height.

The Children's Apperception Test (CAT), drawings and play all formed part of the assessment. The following emerged as significant aspects of M’s family and medical history: L’s mother reported feeling sick throughout her pregnancy and being upset that she had such a small bump that “no-one even noticed”. L reached all of her developmental milestones early, and her parents described her as a “high achiever”. They also reported that she had always demanded a regimented routine in most aspects of her daily life. L’s mother reported that her own parents blamed L’s problems on the fact L and her parents were vegetarian and were critical and undermining of her to L.

The formulation utilised aspects of both Klein’s psychodynamic model and transgenerational models. The assessment suggested that L was caught between, and within, some complex family dynamics and eating had become a “battle ground” for her. It was hypothesised that L’s problems stemmed largely from her lacking a sense of safety and security. L’s mother seemed unable to contain and work through the anxieties L projected onto her. L therefore had difficulty thinking and talking about painful experiences and tolerating uncertainty and change. Her eating problems seemed to be a focus for the expression of this anxiety. L had developed ways of
avoiding this anxiety (which she located anxiety in her tummy). It also became clear as therapy progressed that L was extremely able intellectually, and that this was exerting a far greater impact on her presenting problems than initially hypothesised.

Psychodynamic concepts (largely rooted in Kleinian theory), including play therapy, drawings and the CAT, were utilised to provide a safe environment where L had the time and space she needed to express and work through her anxieties more directly. Meanwhile, the author's supervisor worked with L's mother to help facilitate her differentiation from her own parents, so she could become more able to function autonomously as a parent.

At the end of the author's work with L, she reported having less "scary feelings" and was more open about her concerns. Overt behavioural changes were also evident. She was eating significantly better, her drawings had become more varied, and her play more energetic and less rigid. L had also gained 1.7 Kgs. and almost 3 CMS which was a significant improvement on her previous rates of growth and placed her on the 25th percentile for weight and between the 25th and 50th percentile for height.

This progress was likely to have been partly due to the fact that L had begun to feel contained which allowed feelings which were previously hidden to be thought about and expressed more explicitly. Towards the end of the sessions, L was demonstrating an awareness of the secure base and boundaries.
Older Adults
Core
Placement
Older Adults Core Placement Summary

Trust: Kingston & District Community NHS Trust
Placement location: Elmside Psychology Department, 1 Oak Hill, Surbiton, Surrey, KT6 6DR
Dates: April 1998 to October 1998
Supervisor: Catherine Dooley.
Departmental Base: Elmside Psychology Department
Older Adults Placement Contract

Aims:
- To gain an overview of the services available for older adults in the district and an understanding of how these fit together to form an organisation.
- To gain an understanding of the role of the Clinical Psychologist providing services for older adults and how this differs from other professions.
- To have experience of working in a variety of work settings, with a range of client groups and problems and to develop skills and approaches when carrying out interventions e.g. networking, liaising with other professionals, family therapy, marital therapy, behavioural management, personal construct therapy, bereavement counselling etc. In particular, dealing with clients with physical health problems.
- To undertake some area of service development/project work/training.

Objectives:
1. To carry out assessment and intervention with approximately ten clients with functional and organic conditions including the following:
   - Direct work with clients and families in outpatient/community settings including problems of anxiety, depression, bereavement, adjustment to disability, health issues and carers' issues.
   - Indirect work with clients and staff including dementia care in inpatient or residential settings. Specifically at Amy Woodgate.
2. To become familiar with different settings such as:

- Oak Day Hospital
- Wards for older adults with mental health problems at Tolworth Acacia Unit.
- Wards for older adults with physical health problems at Tolworth Hospital.
- Social Services Residential Homes, e.g. Amy Woodgate.
- Private and Voluntary Residential Homes.

3. To spend time with a Consultant Psychiatrist, Consultant Geriatrician, Social Worker and CPN, both in client meetings and, if possible in individual client work.

4. To meet managers within EMI Service and Elderly Community Service.

5. To run a therapeutic group for older adults.

6. To observe and carry out neuropsychological assessment using WAIS-R, Coughlan, MEAMS or Mini Mental State and relevant others for older clients.

7. To attend meetings and seminars in Psychology Department and other meetings within services for older adults.

8. To have 1.5 hours of supervision on a weekly basis.

9. To have one session of study time per week.

10. To undertake an area of project work to familiarise self with organisational issues.

11. To further knowledge of the roles and application of clinical psychology skills within the wider organisation.

**Personal Goals**

1. To have a more thorough understanding of the process issues that emerge in therapy. To integrate this into my conceptualisation of client work such that it can be applied more generally as well as to increase the efficacy of therapy.

2. To be able to write reports that:

   - Integrate different models
   - Are well structured
   - Demonstrate clear written formulation
3. To have extended confidence and competence in neuro-psychology. Specifically, to have successfully completed a case study involving a neuro-psychological assessment of an older adult.

4. To work with a case utilising narrative therapy techniques.
Older Adults Case Report Summary

A neuropsychological assessment of an older adult presenting with memory difficulties

A 74 year old man, Mr. M, was referred by a Consultant Neurologist for formal cognitive assessment. The aim of the assessment was to assist diagnosis, and identify Mr. M's particular cognitive strengths and areas of difficulty, in order to help understand the difficulties he had been experiencing with his memory.

Mr. M and his wife reported a number of problems in Mr. M's everyday functioning, including him: misplacing things; forgetting names and appointments; losing track of conversations and repeating himself. Mr. M also complained of a lowered ability to concentrate and a lack of motivation and enjoyment of activities. Mr. M's mood was rather "flat" and he was tearful on a couple of occasions.

Mr. M had become confused and disorientated shortly after their eldest son's funeral two and a half years prior to the assessment. Marital tensions were also evident between Mr. M and his wife, this was exacerbated by Mr. M's limited awareness of the extent, and severity of, his difficulties.

Mr. M was assessed using the WAIS-R, NART, AMIPB, HADS and the Verbal Fluency Test. The results showed that although Mr. M was functioning within the average range of abilities, compared with pre-morbid estimates, his current Verbal IQ was significantly lower than expected and suggested a deterioration in verbal abilities. In addition, although highly variable, his performance on tasks on the memory tests was very poor when compared with his reported and estimated pre-morbid cognitive abilities. The cognitive profile did not seem to be consistent with the picture one would expect from a primary progressive dementia. It seemed likely that Mr. M was depressed following the
death of his son, which was likely to have been having a significant impact on his cognitive functioning.

The results were fed back to Mr. M and his wife. Re-assessment of Mr. M's cognitive functioning in 6-12 months time was recommended and Mr. M was offered further sessions to explore practical strategies he might use to ameliorate the effects of his memory impairment. Both Mr. And Mrs. M were also offered bereavement counselling and Mr. M. was referred to Psychiatry to assist in establishing the nature and extent of the depression. The strengths and limitations of this work are discussed.
Adult Psycho-Oncology Specialist Placement
Specialist Placement in Adult Psycho-oncology Summary

Trust: Royal Marsden NHS Trust
Placement location: Department of Psychological Medicine, Royal Marsden Hospital, Downs Rd. Sutton, Surrey.
Supervisor: Dr. Maggie Watson
Departmental Address: Department of Psychological Medicine, Royal Marsden Hospital, Downs Rd. Sutton, Surrey.
Adult Psycho-Oncology Specialist Placement Contract

Aims:
1. Gain understanding and experience of the impact of physical illness on individual and family functioning.
2. Gain experience of multi-disciplinary team work.
3. Experience a range of therapeutic models and techniques.
4. Undertake psychometric testing.
5. Gain experience of the different roles of the psycho-oncologist.
6. Participate in ongoing research and/or teaching.

Objectives:
1. Gain experience in facilitating a psycho-educational support group for women with breast cancer.
2. See a minimum of four patients from Neuro-Oncology.
3. Gain experience of working with at least one patient in relation to the following:
   a) Treating anticipatory (i.e. conditional) nausea.
   b) Implementing a programme of pain management.
   c) Implementing a brief intervention based on cognitive behaviour therapy principles.
   d) Developing a psychological care plan within the palliative setting.
4. Gain knowledge relating to use of psychotropics with cancer patients.
5. Gain experience in conducting a mental status examination appropriate for cancer patients.
7. Gain knowledge and awareness of the psycho-sexual problems of cancer patients.
Specialist Placement Case Report Summary

An assessment and treatment utilising Worden’s grief therapy model

JM, a forty one year old woman, was referred to the Department of Psychological Medicine by her Clinical Nurse Specialist in Breast Care. She had been feeling low in mood since the death of her mother three years previously. She described how distressing thoughts and images about her mother’s death raced through her mind during the day, and that she experienced nightmares. JM had also become extremely anxious about developing breast cancer, following having a benign breast lump excised three months previously, saying “the cancer hasn’t got me now but it will get me later.”

The following emerged as significant aspects of M’s family history: JM’s mother developed breast cancer aged 58, and died aged 68 of colon cancer. JM described her mother as the “best mother in the world”; and reported that they always confided in each other. JM’s maternal grandmother died of breast cancer, which she developed in her late 50’s. JM described her relationship with her husband as always having been “distant”.

This case was formulated within the cognitive behavioural model of depression and within Worden’s Grief model, as JM’s presentation of symptoms appeared to meet the criteria for Complicated Grief Disorder. Bowlby’s Attachment Theory was also a helpful supplement to this grief model. JM’s over attachment to her mother, and her distant attachment to her husband resulted in her feeling helpless when her mother died and led to an increase in tension between JM and her husband. It seemed, therefore, that she was unable to relinquish emotional attachment to her mother and complete the four tasks of mourning. The pain of losing her mother was manifesting itself through other symptoms or behaviours. It seemed likely that JM presented to our department at the time she did due to the crisis of finding a lump in her breast.
JM' was facilitated through the tasks of mourning, by assisting her to explore and resolve the factors impeding this process. It was decided to combine Worden's Grief Therapy Model with CBT to help JM identify, question and test the NAT's maintaining her depression, such as "I can't survive without mum", and to challenge the dysfunctional assumptions upon which these were based.

The intensity of JM's grief appeared to have greatly diminished by the end of therapy, and this was maintained at a six weeks follow up appointment. In addition, JM showed improvements on the Hospital Anxiety and Depression Scale moving from nine to four on the depression scale and from ten to five on the anxiety scale. The strengths and limitations of this work are discussed.
Adolescents
Specialist Placement
Specialist Adolescent Placement Summary

Trust: Kingston & District Community NHS Trust
Placement location: Child and Family Consultation Centre, Kew Foot Rd, Richmond.
Dates: April 1999 to September 1999
Supervisor: Sophie Gosling
Departmental Base: Child and Family Consultation Centre, Richmond.
Aims:
1. To gain experience of a range of therapeutic models (e.g. cognitive behavioural, developmental and systemic) and techniques for working with adolescents (aged 14-18 years) with mental health problems.
2. To gain experience of multidisciplinary team work with adolescents.
3. To gain experience of the different roles of a Clinical Psychologist working within an Adolescent Service.
4. To gain an understanding of the roles of other professionals working within the service, and to become familiar with the network of services available for this client group.

Objectives:
1. Observation of, and joint work with, Supervisor. Supervision: 1.5 hours weekly.
2. To work with young people, both individually and with their families, who present with a range of emotional, behavioural and developmental difficulties. This is likely to involve the following presenting problems:

A. Anxiety
B. Depression
C. Conduct Disorder
D. Exclusion from School
E. Bereavement
F. Asperger's Syndrome
G. Family Relationships
H. Deliberate Self Harm
I. Eating Disorders
This client work will involve both male and female clients, and at least one young person from a different cultural background.

3. To participate in the Family Assessment Clinic.
4. To be involved in the Adolescent Crisis Intervention Service.
5. To engage in joint work with other members of the Adolescent Team.
6. To attend and participate in multidisciplinary team meetings; Psychology Department meetings; Adolescent Team meetings and Network meetings.
7. To visit the following local community services for adolescents:
   A. The Strathmore Centre. This is a service for young people experiencing educational, social or emotional difficulties.
   B. Off The Record. A voluntary, confidential counselling service for young people.
   C. Woodside Adolescent Unit. A regional in-patient facility.
   D. Social Services.
8. To attend a “Deliberate Self Harm” conference.
Research Section
Summary of the Research Section

This section contains the four research components of the course completed over the three years of training. The first component comprises a literature review from Year I, covering the topic area of cognitive behaviour therapy for psychosis. This theme is continued in the research on placement carried out in that Year which explores the practice of, and attitudes towards, cognitive behaviour therapy, by clinical psychologists in the management of psychotic delusions. As this research was conducted in the context of a placement, the implications for service provision are considered as well as the theoretical aspects. The small scale research project, completed in Year II demonstrates my continuing interest in the management of psychotic delusions. Finally, the large scale research project, completed in Year III is concerned with a different topic area, thus developing my understanding of research methodologies in differing contexts. This research investigates the psychological effects of smoking.
Literature Review

“The application and effectiveness of cognitive-behaviour therapy as a treatment for psychotic delusions: A review of the literature”

Year I

Sept 1997
1.0 Introduction
This review explores research into the application and effectiveness of Cognitive-Behaviour Therapy (CBT) for psychosis. This is based on interest stimulated by clinical experience and research sought from both "Psych-lit" and "Med-line" literature searches. The primary aims of this review are to explore the evolution of CBT and why this approach to managing psychosis has been so slow to develop, to critically evaluate the efficacy of CBT for psychosis, and to consider the practical implications and suggest future directions for this work. There are currently three major classes of CBT, those concerned with enhancing coping skills, those concentrating on problem solving and finally, cognitive restructuring methods. The focus of this literature review will be on individual cognitive-behavioural approaches which utilise cognitive restructuring methods for managing delusions in psychosis.

2.0 Evolution of CBT for the emotional disorders
A "cognitive revolution" occurred in psychology in the 1960's (Mahoney, 1977; Dobson & Block, 1988). Assumptions were made about cognition and these theoretical constructs were later adapted for use with clinical populations. The theoretical and practical underpinnings of this approach were shaped by a variety of sources from within both the general field of psychology and clinical practice, such as the phenomenological approach (Alder, 1936) and structural theory, (Piaget, 1972). However, CBT largely grew out of the traditional behaviour therapies which were themselves innovations from radical behavioural approaches based on the principles of classical and operant conditioning. Although there was general acceptance by psychologists of the usefulness of behaviour therapy (Rachman & Wilson, 1980), this approach left many issues unresolved. A number of factors made the incorporation of the cognitive perspective into the traditional behavioural approaches possible at this
Towards the mid 1960's it was becoming apparent that the theoretical underpinnings of this approach were not expansive enough to account for complex human behaviour (Beck, 1967; Ellis, 1962). There were also many client difficulties for which observable behaviour was either absent, or formed only a minor component, as in obsessive ruminations (Dryden & Rentoul, 1991). Behaviour therapy had also proved largely ineffective in the treatment of a number of psychological problems, such as depression (Hammen & Glass, 1975) and obsessive-compulsive disorder (Foa, 1979). This culminated in Foa & Emmelkamp's (1983) book on behavioural treatment failures.

The gradual inclusion of cognitive mediational concepts in behaviour therapy was first seen in areas that defied traditional behavioural explanation, such as delay of gratification and the application of behavioural principles to self talk and covert behaviour (e.g. Homme, 1965; Meichenbaum & Goodman, 1971; Mahoney, 1974). Bandura's (1977) accounts of observational learning and Lazarus's (1966) theory of emotion also attributed a primary role to cognition in emotional and behavioural change.

As Dryden & Rentoul (1991) pointed out, another influential factor highlighting the importance of cognitive variables was the proposition that three separate response systems, physiological, behavioural and cognitive mediate human activity (Lang, 1971). Lang (1971) suggested that inappropriate responding in any system could cause clients' difficulties and that interventions could therefore be directed at any one of these systems. It was proposed that these systems, although linked, could be "desynchronous" (Rachman & Hodgson, 1974). Predictions of treatment outcome were later derived from these notions of synchrony and desynchrony as interventions primarily directed at the one system were predicted to result in the greatest and most rapid changes in that system. This three system model therefore had the following implications: it helped move away from the unitary view of psychological problems, accounted for a wider range of symptom patterns and encouraged a more focused approach to treatment outcome research.
At this time, a number of theorists and therapists were starting to refer to themselves as Cognitive-Behavioural in orientation (e.g. Beck, 1967; Ellis, 1962; Mahoney, 1974; Meichenbaum, 1977), and a new journal (Cognitive Therapy and Research), specifically tailored to the Cognitive-Behavioural approach was developed. It was however Ellis's (1962) and Beck's (1976) models which really established CBT as a useful clinical intervention. Ellis's (1962) Rational -Emotive Therapy (RET) encapsulated the principle of the primacy of cognition for clinical intervention and emphasised the control that can be gained over patterns of thinking and behaviour. Beck (1979) then developed a tripartite cognitive model which incorporated the idea of different levels of cognition, advancing the understanding of psychological problems beyond content. Central to Beck's model are the ideas that cognitions affect behaviour, that psychological problems are partly caused by cognitive function and that negative thinking plays a central role in maintaining depression. The implication was that patients could be treated by being helped to identify and modify these thoughts.

All modern cognitive approaches are united by the following assumptions: a) cognitions mediate clinical problems b) these mediating factors can be identified and changed by the client and c) cognitions are the primary targets for change in attempting to address clients' cognitive, affective and behavioural difficulties. Blackburn & Twaddle (1996) outlined the defining characteristics of the approach.

1. Models are conceptually driven.
2. Emphasis on individual phenomenology.
3. Emphasis on the formation of a collaborative therapeutic relationship.
4. Clients are actively involved.
5. Techniques of Socratic questioning and guided discovery are employed.
6. The therapist is explicit.
7. Emphasis on empiricism.
8. Treatment entails homework tasks to facilitate generalisation of within session change.
Over the past twenty years, Cognitive-Behavioural theories and therapies have been developing rapidly. There is now a wealth of empirical evidence that CBT can produce cognitive, behavioural and affective changes, if used in the treatment of the emotional disorders. Specifically, CBT for reducing depression has been found to be superior to other forms of psychological intervention (McLean & Hakstian, 1979), as effective as pharmacotherapy (Rush, Beck, Kovacs & Hollon, 1977; Teasdale, Fennel, Hibbert & Amies, 1984) and possibly more effective than antidepressants in preventing relapse (Kovacs, Rush, Beck & Hollon, 1981; Blackburn, Eunson & Bishop, 1986). CBT has also proved effective for treating Generalised Anxiety Disorder (Durham & Allen, 1993), Panic Disorder (Shear, Pilkonis, Cloitre & Leon, 1994) and Bulimia Nervosa (Fairburn, 1981; Kirkley, Schneider, Agras & Bachman, 1986). These positive outcomes have resulted in CBT being extensively applied to the treatment of emotional disorders (Fowler, Garety & Kuipers, 1995). Clinical trials are currently underway to test the efficacy with other disorders, including Post Traumatic Stress Disorder (PTSD), substance abuse and marital problems (Beck, 1993).

3.0 Why did CBT for psychosis remain outside the cognitive revolution for so long?

Schizophrenia remained outside the cognitive approach in psychology until very recently and has subsequently been referred to as "the last remaining bastion of psychopathology" (Chadwick, Birchwood and Trower, 1996), and as "psychology's forgotten child" (Bellack, 1986). As Haddock & Slade (1996) point out, this neglect is surprising as it was as early as 1919 that Kraepelin recognised the role of experience and personality in determining the content of psychotic experiences...... "even in clear cases of cerebral pathology there is an interplay of forces at work......it seems absurd to propose that syphilis causes patients to believe they are the proud possessor of cars......rather the general desires of people are reflected in their delusions........his expectations play a decisive role. (Kraepelin, 1919; quoted in Berrios & Hauser, 1988).

CBT would seem a highly logical approach to treating psychosis as disturbances in thought and content (which is the focus of CBT) are central to it's psychopathology (Kingdon & Turkington, 1991). However, as Haddock & Slade (1996) point out, four
decades have now past since Beck (1952) offered an embryonic cognitive formulation and treatment of delusions. He reported on a case of a man who believed he was being followed by fifty members of the FBI. Beck demonstrated how discussing psychotic experiences within a therapeutic relationship, suggesting alternative explanations and systematically reality testing aspects of delusions could result in both a reduction in the number of delusions experienced and in belief conviction (Beck, 1952). However, only a handful of studies followed over the subsequent three decades. This poses the question of why CBT for psychosis has not followed the smooth evolutionary course as the emotional problems. Within psychology there may be a reluctance to get involved with psychosis at all, rather than a specific reluctance to employ CBT (Bellack, 1986). Other models such as behaviour therapy and family therapy have also seemed less readily applied to the management of psychosis than to the emotional disorders.

Bellack (1986) suggested that the lack of interest psychologists held in developing treatments for psychosis has largely been due to the following four common misconceptions: (1) that schizophrenia does not exist. (2) It is a wholly biological disorder. This is a view shared by Guze (1989) who said “There can be no such thing as a psychiatry that is too biological”. (3) It is adequately handled by medication. This is, however, over optimistic as many sufferers do not respond to medication (Brown & Herz, 1989), or experience adverse and distressing side effects (Breggin, 1993). (4) It is too severe. Likewise, Fowler, Garety & Kuipers, (1995), suggest this reluctance may partly reflect the severity and daunting array of problems associated with schizophrenia.

The eight assumptions of CBT referred to earlier provide further possible reasons for this reluctance. Although CBT's emphasis on phenomenology fits extremely well with psychoses, engaging clients suffering from psychosis in a collaborative, working relationship is likely to be far more difficult than with clients with emotional disorders (Alford & Beck, 1994). These clients often have a history of impoverished relationships and thus find one-to-one interactions stressful (Birchwood, Hallet & Preston, 1988). Also, their negative symptoms, such as poor motivation and cognitive deficits, can
impair their ability to become actively engaged in therapy (Perkins & Dilks, 1992). Therapists may also feel that they cannot be explicit with these clients and that they will not complete homework tasks, therefore reducing the likelihood that progress will generalise to other settings.

Chadwick, Birchwood & Trower (1996) and Fowler, Garety & Kuipers (1995) however suggested that these obstacles can be overcome with certain adaptations to the CBT techniques used in the treatment of the emotional disorders. These include devoting more time to individual assessment and formulations; spending a longer time building rapport and trust; adapting communication and presentation style and taking a more flexible approach by having shorter sessions and more frequent breaks. Therapists undertaking this work are therefore likely to need extra training, support and supervision.

In Haddock & Slade's (1996) recent book on CBT for psychosis, Bentall suggests that the pessimism around employing psychological interventions with this client group stems largely from the assumption that psychotic disorders should be studied according to diagnostic grouping, based on the identification of common clusters of symptoms. The assumption was that these symptoms reflect a common anatomical and physiological brain abnormality. An emphasis was therefore placed on the qualitative difference between “normal experience” and psychosis. In contrast, the emotional disorders were viewed as continuous with normal experience (Fowler, Garety & Kuipers, 1995). This view was also shared by influential psychiatrists such as Berrios (1991) who went on to infer that the content and themes of delusions were therefore meaningless and insignificant. Most initial research therefore, focused on attempting to identify the common cognitive deficits causing the disorder of mental functioning that led to psychotic symptoms (Hemsley, 1992; Gray et. al., 1991). Research into cognitive biases (a tendency to process some kinds of information rather than others), which is the focus of CBT for emotional disorders, was largely neglected (Bentall, 1990). This is likely to have further impeded the development of psychological approaches as any therapy would first have to rectify this deficit.
These assumptions have recently however been shown to be unjustified. There is no convincing evidence that delusions result from qualitatively different reasoning, whilst there is increasing evidence emerging that points to normal experience and psychosis existing on ends of a continuum (Strauss, 1969; Claridge, 1972; Oswald, 1985). This shift has been reflected in the less absolute DSM-IV definition of delusions (American Psychiatric Association, 1994) which moved away from earlier definitions of delusions as not being weakened by counter argument. The evidence for a common deficit is also weak, whereas evidence for a reasoning or attributional bias in psychosis (which lends support to a cognitive approach) is mounting (Garety, 1991; Huq, Garety & Helmsley, 1988).

Jaspers' (1913/1963) suggestion that delusions are a form of psychological defense without which the person would 'inwardly collapse' has also been used to justify pessimism about the value of CBT for psychosis. The studies reviewed later in this paper suggest that this assumption is false, although the importance of first checking the likely impact for the client of modifying their delusions is recognised.

The next section of this review will explore outcome research into the effectiveness of CBT as a treatment for psychosis. However, research shows that even when there is an abundance of evidence suggesting that a new treatment approach is effective, this alone may not be sufficient for interventions to become implemented into clinical practice. One of the most well documented findings from individual and organisational behaviour is that people resist change (Robbins, 1994). The theory of Cognitive Dissonance (Festinger, 1959) suggests why people may be reluctant to adopt new interventions even when faced with evidence demonstrating their effectiveness. Festinger (1959) pointed out that individuals strive for consistency within themselves, their opinions and attitudes. If faced with inconsistencies, dissonance occurs which is uncomfortable and motivates them to try to reduce it. Research showing that CBT for psychosis is effective may therefore create dissonance with existing beliefs. Festinger suggested that dissonance can be reduced by people changing their actions in line with the new information, (e.g. by starting to do CBT), or by changing their environment, (e.g. by establishing a social reality via obtaining the agreement and support of others
who agree that CBT approaches to psychosis are ineffective). A third way people attempt to reduce dissonance is by changing their knowledge base to rationalise their original belief (e.g. by selectively seeking information criticising CBT for psychosis and avoiding new information that would increase dissonance). Robbins (1994) suggested that people often feel more comfortable using ineffective but well-practiced approaches. Learning and implementing new approaches can be associated with the following difficulties: threats to existing knowledge base and expertise; a desire to maintain stability and security and to reduce complexity; threats to established resource allocations; and a lack of confidence (Lewin, 1952; Kroese, Dagan & Loumidis, 1997). Also, individuals may wish to change but group norms and inertia act as a constraint (Lewin, 1952).

4.0 Outcome research for CBT for psychotic delusions
Bentall (1990) and Boyle (1991) argued that the concept of schizophrenia should be abandoned and that clinicians should study individual symptoms. Chadwick, Birchwood & Trower, (1996) suggested that this may have been a major catalyst for the psychological exploration of psychosis (Chadwick et al., 1996). People with delusions are now thought to have biased reasoning (Bentall, Kinderman & Kaney, 1994). The modification of delusional beliefs with CBT is based on the assumption that these beliefs develop as a result of normal attempts to make sense of abnormal perceptual experience (Chadwick & Lowe, 1994). CBT attempts to bring about therapeutic change by helping clients to recognise this by modifying the inferences and evaluations with which they construct their world.

In the light of these findings, and recent shifts in perceptions of psychosis, a small number of researchers have begun to investigate the use of CBT for managing delusions in psychosis. These treatments, which have largely been based on the works of Beck (1967) and Ellis (1962), are starting to be supported by empirical evidence.

This review will focus on research carried out into the efficacy of the class of individual CBT approaches which utilise cognitive restructuring methods. The following studies
were all carried out with patients suffering from chronic schizophrenia who were currently experiencing delusions.

4.1 Conviction and Preoccupation
Studies have thus far tended to concentrate on particular dimensions of psychotic delusions in their assessment and outcome measures, whilst neglecting other aspects. The most commonly researched dimensions have been preoccupation and degree of conviction with which a belief is held. Watts, Powel and Austin (1973) described the first explicit CBT approach to delusions. They had noted that over confrontational approaches can result in "psychological reactance" (Brehm, 1966) where original beliefs become strengthened. They therefore developed a belief modification approach (a form of cognitive restructuring) which avoided a confrontational stance and involved sensitive questioning of the evidence underlying beliefs. All three subjects in their study demonstrated significantly reduced ratings of belief conviction after just six sessions. The behavioural intervention carried out sequentially failed to produce any improvements which suggested that the cognitive element was the important treatment component. Similar, if less impressive results, were found by Hole Rush & Beck (1979). Watts et al's findings were also confirmed by Milton, Patawa & Hafner (1978) who carried out a study with sixteen patients, comparing belief modification with direct confrontation. The patients received five treatment sessions over six weeks. Although neither group produced a decrease in social anxiety, both groups reported reductions in their strength of beliefs. At follow up, however, only the clients in the belief modification group had maintained this improvement.

Chadwick and Lowe's (1994) results confirmed that substantial therapeutic gains could be achieved in a relatively small number of sessions. They described the outcome of CBT in a total of twelve outpatients, using a multiple-baseline design. Therapy consisted of verbal challenging and reality testing. Following treatment, ten (83%) reported reductions in level of belief conviction, five having rejected their delusions altogether. They found parallel changes in degree of preoccupation and improved mood. At a six month follow up these improvements were either maintained or further
increased. Many of these improvements were also corroborated by independent assessors and relatives.

Alford (1986) reported successful Cognitive- Behavioural treatment of a twenty two year old inpatient suffering from chronic paranoid schizophrenia. He found decreased belief conviction and a reduced need for neuroleptic medication during the treatment phases. At three months follow up, these improvements had largely persisted. Also, Perris (1989) found that CBT resulted in significant improvements in preoccupation and conviction in twenty one out of thirty subjects, which were maintained at three year follow up.

There are various methodological problems within these studies which impact on the significance of the positive results obtained. Most of these studies included very small patient samples, made up only of "articulate, insightful and co-operative patients drawn from large geographical areas" (Hughes & Budd, 1996). Many lacked a comparison control group and even when this was present, subjects were often not randomly allocated to the groups and assessors were not blind to group assignment, both of which could have led to bias.

4.2 Integrated CBT Approaches
Some researchers have employed broader-based packages incorporating integrated CBT approaches to varied symptoms, in an attempt to reduce all types of psychotic symptoms. Kingdon & Turkington (1991; 1994) developed a belief modification procedure that was primarily based on offering destigmatising information about the nature of psychotic symptoms, and fostering alternative interpretations of individual psychotic experiences, by relating them to culturally acceptable beliefs. In their 1991 study, they reported successful treatment of sixty four psychotic patients. They found that their treatment could facilitate patients and families' understanding of psychosis which in turn led to reductions in fear, blame and criticism and lessened the sense of stigma.
In their recent book, Chadwick, Birchwood & Trower (1996) advocated applying a number of CBT techniques flexibly, depending on the needs of the individual. Their approach is based on detailed case formulation and emphasises relationship building. Therapy is carried out over periods of six months to a year. Two formal evaluations of this approach have so far been conducted. Firstly, Fowler (1992) carried out a series of nineteen single cases. The twelve patients who reported distress associated with delusions or hallucinations received this individualised form of CBT over an average of twenty two sessions. The remaining seven received non-specific supportive therapy. None of the control group significant improved whereas all nine of the twelve patients who accepted the CBT reported clinically significant improvements in psychotic symptomatology. Five of this group also reported improvements in general psychopathology and depression. These improvements were maintained at three month follow up.

Garety, Kuipers, Fowler, Chamberlain & Dunn (1994) also carried out a small controlled trial of CBT for drug resistant psychosis. The treatment group included thirteen patients who received an average of sixteen sessions of individual CBT. Treatment included focusing on coping strategies, relabelling experiences, providing general education and belief modification. This was compared with a control group of seven patients who remained on the waiting list. The treatment group demonstrated significant reductions in belief conviction, preoccupation, distress, and depression compared to the controls. However, there was no change in social functioning, as measured by the life skills profile, and the Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969). The authors suggest that changes in thinking may have successfully translated into broader social changes given a longer time period or more explicit behavioural goal setting.

A number of factors possibly limit the power of this study. The patient sample was small, the duration of therapy relatively short and subjects were not randomly allocated to the two groups. Also, although the two groups seemed reasonably well matched, on closer examination the control group contained more people experiencing hallucinations.
4.3 Large Scale Controlled Research

The above studies although promising, either contained small samples, were uncontrolled or short in duration. This work highlighted the need for more comprehensive, controlled, larger scale research. The final two studies to be reported in this section demonstrate how this research has recently progressed.

The first large, randomised controlled trial of a longer term CBT for medication resistant psychosis was carried out by Kuipers, Garety, Fowler, Dunn, Bebbington, Freeman and Hadley (1997). Their study included sixty patients, randomly allocated to a CBT or control group. A treatment manual (Fowler, Garety & Kuipers, 1995) was followed and the assessments were carried out by independent assessors. The CBT group received nine months of individual therapy which included the following: belief modification, reality testing, improving coping strategies, managing social disability and identifying relapse signatures (Birchwood, 1996). The control group received nine months of standard care only.

Following the intervention, the treatment group showed a 25% reduction on the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) suggesting an improvement in overall mental state and psychotic symptomatology, whereas there was no significant improvement in the control group. There was a low drop out rate amongst the treatment group and they expressed satisfaction with the treatment, which is encouraging as it suggests that this client group can cope with this demanding intervention. No significant improvements were however, found in depression, social functioning or even belief conviction, in contrast to those found in earlier studies. The authors suggest this may be due, in part, to the more stringent methodology employed in this study. Despite this stringent methodology, this study still has many limitations. The authors themselves point out that they could not ensure that the evaluators remained blind to the treatment conditions as they may have been exposed to information concerning the treatment type received whilst conducting the interviews. Also, all of the patients could not be kept on the same medication regime, therefore some of improvements obtained may have been due to medication effects. Individual patients varied considerably in the number of sessions they attended and only 50% were treatment responders. Also, their
treatment contained so many different components that it is difficult to tease out which elements of treatment led to the improvements.

4.4 CBT for Treating Delusions in Acute Psychosis
The second example of a large, controlled study addresses another previously neglected area of research. Most research in this field has thus far been into the persistent, residual symptoms. However, in around one third of patients, impairment seems to worsen after each acute episode in a stepwise fashion and long periods of untreated psychoses have been associated with increased risk of relapse and treatment resistance (Loebel, Lieberman & Alvir, 1992). The experience of acute psychosis has also been linked to PTSD; psychotic depression and an increased suicide risk (Mc Glashen, 1994).

Recognising the importance of these findings, Drury, Birchwood, Cochrane & Macmillan (1996a) carried out a controlled trial of CBT in acute psychosis to see if both the rate of dissolution of positive symptoms and the severity of residual symptoms could be improved. Forty patients suffering from acute, non-affective psychosis were randomly matched and allocated to one of two groups. One group received eight hours of individual and group CBT which included the following: belief modification; reality testing; helping patients face up to and integrate their illness; family engagement and structured activities. The control group received matched hours of structured activities and informal support. Both groups received routine pharmacotherapy. The researchers obtained a high level of continued engagement and found that twelve weeks post treatment, the reduction in belief conviction was significantly greater amongst the CBT group. Both groups also experienced a significant reduction in their negative symptoms, although they did not find any improvements in delusional preoccupation. At nine months follow up, 5% of the CBT group as opposed to 56% of the control group showed moderate or severe residual symptoms. The researchers were interested in whether this intervention would generalise to broader aspects of psychotic recovery. They used the same subjects and employed three increasingly stringent definitions of recovery to include positive symptoms, psychotic thinking, insight and depression.
(Drury et al., 1996b). Encouragingly they found that the CBT intervention did generalise to improvements in these other dimensions.

The two groups in both of these studies were carefully matched on certain prognostic variables such as age, duration of un-treated psychosis and number of prior episodes. There was however a non-significant excess of patients who lived with their families in the CBT group, which may have been a factor in their being discharged earlier. The researchers were confident that the reported effects were not due solely to medication as there was no difference in weekly or cumulative drug exposure between the experimental groups. The researchers were not blind to allocation, but precautions were taken to ensure the reliability of the data. Independent reliability checks were made on the Psychiatric Assessment Scale (PAS; Krawiecka, Goldberg & Vaughn, 1977), administered both before and during the study and self report measures of conviction, preoccupation and insight (Brett Jones, Garety & Hemsley, 1987). They also found a high correlation between the PAS delusional scale and the patient rated delusional conviction scale, suggesting that their data was reliable and uncontaminated by experimenter bias.

The larger patient samples and more stringent methodology employed in the final two studies reported here suggests that more weight should be given to the significance of these results than to those described earlier.

4.5 Further Methodological and Conceptual Problems
Within all of these studies, it was not possible to adopt a double blind placebo method of experimentation which might have avoided experimenter bias. Also, the clients involved in most of the studies were on medication which may have had a significant impact on the results obtained.

Further methodological problems are the difficulty in making meaningful comparisons between these studies due to the huge variation in assessment and outcome measures employed, the lengths of treatment and follow up, and the different inclusion criteria employed (resulting in very different subjects being evaluated). These inconsistencies may partly account for some of the different results obtained. Another large problem
inherent in all these studies is that beliefs are "private events" which cannot be observed. Reported changes could therefore be due to demand characteristics and future studies should ideally include some behavioural measures of change.

5.0 Conclusions
This review has explored the development of CBT for the emotional disorders and suggested hypotheses to explain the slow development of CBT for psychosis. The results of the outcome research reviewed provide an initial demonstration that CBT is effective for reducing the degree of belief conviction and preoccupation with delusions and for lessening associated depression. This has important clinical implications as even small changes in symptom level may make important differences in people's ability to cope in the future. Some of the most the impressive results emerged from Drury et al's (1996) controlled study. They demonstrated that CBT can accelerate recovery and reduce the severity of residual symptoms in acute psychosis. In a number of these studies, the drop out rates were low and the expressed satisfaction with treatment was high, suggesting that CBT is acceptable to most clients. It also has the advantages over medication of not producing physical side effects and in handing more control back to patients. This model also seems to provide a straightforward, conceptual framework for understanding delusions in a manner that patients and families can easily relate to (Kingdon & Turkington, 1994).

Although these results are promising and exciting, the research and the interventions themselves are still in their infancy. There are clear methodological and conceptual reasons to be cautious when considering the validity of the current research in this field. For example, despite recent efforts (e.g. Kuipers et al., 1997; Drury et al., 1996) there is not yet enough comprehensive, controlled research to provide the evidence to fully establish the efficacy of CBT for psychotic delusions in large groups of patients. Research is therefore needed to add to and strengthen this existing literature base in order to help resolve some of these difficulties. At this point we need to both replicate research already conducted and carry out further comprehensive, controlled group studies.
This review also highlights questions that have not yet been adequately addressed, such as: what are the essential components of CBT?, and is this research transferring to clinical practice? If this is not the case, then the hypotheses considered in this paper regarding why psychologists may be reluctant to apply CBT to psychosis could be further explored. Despite the limitations (including the lack of obtained improvements in social functioning and negative symptoms), the literature explored in this review indicates that CBT for psychotic delusions seems worth pursuing by clinicians working in this field.
References


Service Related Research

(Research on Placement)

"A survey of the practice of, and attitudes towards, Cognitive-Behavioural Therapy, by Clinical Psychologists in the management of psychotic delusions"

Year II

August 1998
Service Related Research

A survey of the practice of, and attitudes towards, cognitive-behavioural therapy, by clinical psychologists in the management of psychotic delusions

Abstract

Background
Research suggests that Cognitive Behaviour Therapy (CBT) is an effective adjunct to standard care for people suffering from psychosis. This approach however seems to have been slow to develop, and recent research suggests that relatively few clients suffering from psychosis actually receive psychological treatment.

Objectives
This study was designed to examine the current practice of, and attitudes towards, CBT for managing delusions in psychosis.

Method
Participants included the Adult Mental Health Clinical Psychologists within two Mental Health Service Trusts. Of 38 questionnaires distributed, a total of 28 were returned. Data was analysed using descriptive statistics and Fisher's Exact Probability test statistics.

Results
The results suggested that most respondents did not utilise CBT for psychosis. Most reported that although they would like to work more with clients suffering from psychosis, and to apply CBT more frequently, they were hindered in doing so mainly by
a lack of referrals, training and knowledge. Training in CBT for psychosis seemed effective, as those who had received specific training, were significantly more likely to perceive themselves as possessing adequate knowledge to practice CBT for psychosis and to want additional psychosis referrals.

Conclusions
The results of the survey were fed back to both services. Implications of these findings for future training of psychologists and education of referrers are discussed.
1.0 Introduction

Over the past twenty years, Cognitive-Behavioural Therapies (CBT) have been developing rapidly. This approach has however, been slow to develop for managing psychosis and various hypotheses have been proposed to attempt to explain this.

There may be a general reluctance to develop and provide psychological treatments for psychosis. For example, whilst recruiting participants for their recent study, Tarrier, Yusupoff, McCarthy, Gledhill, Haddock & Morris (1998) reviewed 470 case notes from clients suffering from schizophrenic type illnesses. They found that only 23 were receiving any psychological treatment. Bellack (1986) suggested that the lack of interest in developing psychological interventions for psychosis is largely due to misconceptions about schizophrenia, such as the following: Schizophrenia is a wholly biological disorder, it is adequately handled by medication and is too severe. Also, engaging these clients in therapy is often more difficult than with clients with emotional disorders (Alford & Beck, 1994).

Bentall (1990) suggested that the reluctance stems largely from the assumption that symptoms in psychosis reflect a common anatomical and physiological brain abnormality. Emphasis is therefore placed on the qualitative difference between “normal experience” and psychosis, whereas, the emotional disorders are viewed as continuous with normal experience. Berrios (1991) inferred that the content and themes of delusions were therefore meaningless and insignificant. There is, however, no convincing evidence that delusions result from qualitatively different reasoning, whilst there is substantial evidence that points to normal experience and psychosis existing on ends of a continuum (Claridge, 1972; Oswald, 1985; Kingdon & Turkingdon, 1991).

1.1 Outcome Research for CBT for Psychotic Delusions

A number of case studies and uncontrolled trials have demonstrated that CBT is effective for reducing specific aspects of delusions, such as belief conviction,
preoccupation and associated depression (e.g. Watts, Powel and Austin, 1973; Chadwick and Lowe, 1990; Garety, Kuipers, Fowler, Chamberlain & Dunn, 1994).

There have, however, recently been four randomised controlled trials. Kuipers, Garety, Fowler, Dunn, Bebbington, Freeman & Hadley (1997) compared CBT plus standard care with standard care alone. The CBT group showed a significant improvement in overall mental state and psychotic symptomatology. Tarrier, Beckett, Harwood, Baker, Yusupoff & Ugartebruru (1993) compared CBT with standard care and found that CBT led to a greater reduction in psychotic symptoms. Tarrier et al. (1998) then compared intensive CBT and routine care, supportive counselling and routine care and routine care alone. Significant improvements in the severity and number of positive symptoms were only found in those who received CBT. In addition, Drury, Birchwood, Cochrane & Macmillan (1996) demonstrated that CBT can accelerate recovery and reduce the severity of positive symptoms, psychotic thinking and depression in acute psychosis. In these studies, the drop out rates were low and expressed satisfaction was high, suggesting that CBT is acceptable to most clients. It also has the advantages over medication of not producing physical side effects and in handing more control back to patients.

Despite certain methodological limitations, such as a lack of blind assessment, these studies suggest that CBT is an effective adjunct to standard care for people suffering from psychosis, and is worth pursuing by Psychologists working in this field. Whilst the author was on clinical placement with two local Health Service Trusts, the Psychology teams expressed an interest in finding out about the practice of CBT for psychosis within their departments. The present study aimed to discover whether the recent research findings described above had transferred to clinical practice and to identify any training needs.
2.0 Method

2.1 Materials and Procedure
A questionnaire (see Appendix A) was devised to obtain data on Clinical Psychologists' current practice of, and attitudes towards, CBT for psychosis.

The questionnaire covered the following areas:
1. Demographics.
2. Referrals.
3. Knowledge of CBT for psychosis and training received.
4. Current practice of CBT.
5. Attitudes towards schizophrenia.

The questionnaires and stamped addressed envelopes were placed in participants' departmental pigeon holes. A covering letter (see Appendix B) was attached which explained the research and thanked participants for their cooperation.

2.2. Participants
Participants included all of the Adult Mental Health Clinical Psychologists within two London Mental Health Service Trusts. Of 38 questionnaires distributed, a total of 28 were returned. This represented a response rate of 73.7% percent.
Table 1. Demographic characteristics of survey participants

<table>
<thead>
<tr>
<th></th>
<th>Number of respondents (n = 28)</th>
<th>Number of non-respondents (n = 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>Years Qualified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>7.7</td>
<td>6</td>
</tr>
<tr>
<td>Range</td>
<td>1-26</td>
<td>1-20</td>
</tr>
<tr>
<td>Main Area of work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CMHT</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Primary Care</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Acute</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Trust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>13</td>
<td>5</td>
</tr>
</tbody>
</table>

As can be seen in table 1, those who did not return their questionnaires appeared to be a roughly comparable sample.

3.0 Results

Data from the questionnaires was analysed using SPSS (Norusis, 1990).

3.1. Referrals

Over the last six months, the total number of referrals received ranged between 4 and 90, with a mean of 44. Referrals for psychological intervention for psychosis ranged from 0 to 17, with a mean of 5.4. Almost a third of participants (8 of 28), had not received any referrals for psychological intervention for psychosis. The mean number of referrals received by respondents working in CMHT's was 5.4. A quarter (4 of 16), of these respondents had not received any such referrals.

The percentage of these clients who were offered an initial appointment ranged from 0 to 100%, with a mean of 62.6 %.
The number of respondents who reported that they would welcome more psychosis referrals for clients can be seen in Figure 1. Nine of the 16 respondents who worked primarily within CMHT's and 2 of the 3 in Rehab wanted more referrals.

![Figure 1. Number of respondents who would welcome more referrals of clients suffering from psychosis n = 28.](image)

3.4 Current practice of CBT

The number of respondents who utilised CBT techniques can be seen in Table 2.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Use CBT “Frequently” or “Always” n=28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>19 (67.8%)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>24 (85.7%)</td>
</tr>
<tr>
<td>OCD / Phobias</td>
<td>23 (82.2%)</td>
</tr>
<tr>
<td>Psychosis</td>
<td>6 (21.4%)</td>
</tr>
</tbody>
</table>

Five participants reported that they were unsure how to evaluate whether CBT for psychosis had been effective.
The factors listed as hindering respondents from employing CBT for treating delusions in psychosis can be seen in Table 3. Respondents were free to list as many factors as they wished.

### Table 3. Factors hindering respondents from employing CBT for psychosis

<table>
<thead>
<tr>
<th>Factors</th>
<th>Number of respondents who mentioned this factor</th>
<th>Examples of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of referrals</td>
<td>10</td>
<td>&quot;It's very difficult to get referrals&quot;</td>
</tr>
<tr>
<td>Insufficient training</td>
<td>8</td>
<td>&quot;I'm not trained to do it&quot;</td>
</tr>
<tr>
<td>Unsuitability of CBT model</td>
<td>8</td>
<td>&quot;unsuitability of patient characteristics&quot;</td>
</tr>
<tr>
<td>Pressure of other work</td>
<td>8</td>
<td>&quot;time constraints from other patients&quot;</td>
</tr>
<tr>
<td>Lack of knowledge</td>
<td>7</td>
<td>&quot;my own limited knowledge&quot;</td>
</tr>
<tr>
<td>Lack of adequate support and supervision</td>
<td>4</td>
<td>&quot;there isn't enough supervision and support&quot;</td>
</tr>
<tr>
<td>Lack of experience</td>
<td>3</td>
<td>&quot;I just haven't got the experience&quot;</td>
</tr>
</tbody>
</table>

### 3.5. Attitudinal Scales

The responses to the attitudinal scale items can be seen in Table 4.

### Table 4. Number of respondents who reported that they agreed or strongly agreed with the following statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Number of respondent who agreed or strongly agreed n=28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia is a wholly biological disorder</td>
<td>7 (25%)</td>
</tr>
<tr>
<td>Schizophrenia is adequately handled by medication</td>
<td>10 (37.5%)</td>
</tr>
<tr>
<td>Schizophrenia is too severe to treat with CBT</td>
<td>16 (57.1%)</td>
</tr>
<tr>
<td>The content and themes of delusions are meaningless and insignificant</td>
<td>6 (21.5%)</td>
</tr>
<tr>
<td>Working with delusions in psychosis is the role of other professionals</td>
<td>5 (17.8%)</td>
</tr>
<tr>
<td>There is no qualitative difference between normal experience and psychosis</td>
<td>20 (71.4%)</td>
</tr>
</tbody>
</table>
3.6. Knowledge of CBT for Psychosis and Training Received

As can be seen in Table 5., 60.7% (17 of 28) of respondents overall, including 62.5% (10 of 16), who worked primarily in CMHT’s had not received any specific training. Also, 57.1% (16 of 28) of respondents overall, including 50% (8 of 16) who worked within CMHT’s, felt that they lacked sufficient knowledge to practice this intervention.

Table 5. Number of respondents from each specialty who had received specific training in CBT for psychosis and who they felt they possessed adequate knowledge to practice this intervention.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Received specific training</th>
<th>Possess adequate knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>CMHT</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehab</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 6. Number of respondents who had received specific training in CBT for psychosis who would welcome more referrals and who felt they possessed adequate knowledge to practice this intervention.

<table>
<thead>
<tr>
<th>Received specific training</th>
<th>Would welcome more psychosis referrals</th>
<th>Possess adequate knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 6 shows that those who had received specific training were more likely to report that they would welcome more psychosis referrals than those who had not (Fisher’s Exact Test probability, df 1, p = 0.005). They were also significantly more likely to report that they possessed adequate knowledge to practice this intervention (Fisher’s Exact Test probability, df 1, p = 0.001).
Table 7. Number of respondents who felt they possessed adequate knowledge who would welcome more psychosis referrals.

<table>
<thead>
<tr>
<th>Think possess adequate knowledge</th>
<th>Would welcome more referrals</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>10</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>4</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Don't Know</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7. shows that those who reported that they possessed adequate knowledge to practice this intervention were significantly more likely to report that they would welcome more psychosis referrals (Fisher’s Exact Test probability, df 1, p = 0.004)

Table 8. shows the number of respondents who had received training who were aware of the literature regarding the efficacy of CBT for psychosis.

Table 8. Number of respondents who had received specific training who knew that research has shown CBT to be an effective intervention for treating some aspects of delusions in psychosis.

<table>
<thead>
<tr>
<th>Received specific training</th>
<th>Highly effective</th>
<th>Effective for some aspects</th>
<th>Not effective</th>
<th>Not aware of the literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>11</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

All eight respondents who did not receive any referrals for psychosis had not received any specific training, whereas, all five respondents for whom more than 25% of their client referrals were for sufferers from psychosis had.

2 of the 11 (18.2%) who had received training, as opposed to 5 of the 17 (29.4%) who had not, agreed or strongly agreed that schizophrenia is a wholly biological disorder.

27.3% (3 of 11) who had received training as opposed to 41.2% (7 of 17) who had not, agreed or strongly agreed that schizophrenia is adequately handled by medication.
4.0 Discussion

Interpretation of the data presented must be tempered in the light of certain weaknesses of the study. Firstly, as the survey relied on self report, respondents may have been reluctant to disclose certain facts to the researcher. There was also a reliance on respondents’ possessing an accurate memory, e.g. of referrals received. A further limitation was the small sample size. The study did, however, yield some interesting results.

Clients suffering from psychosis made up a small percentage of respondents’ referrals, with a third having not received any. Encouragingly, most respondents indicated that they would welcome more such referrals (particularly those working in CMHT’s and Rehab). However, results suggested that they were hindered from carrying out more of this work by a number of factors.

The question was raised regarding whether there is a general reluctance to work with psychosis. This survey seems to partly support this, and Bellack’s (1990) suggestions of common misconceptions. A quarter of respondents viewed schizophrenia as wholly biological, almost a third viewed it as adequately handled by medication and over a third viewed it as too severe to treat with CBT. The results also lend further support to Bentall’s (1996) theory as almost a quarter of respondents thought that the content and themes of delusions are meaningless and insignificant. CBT was employed extensively with emotional disorders, but far less so for psychosis, with almost a third of respondents never adopting this approach.

Other more practical hindering factors emerged, the most common being a lack of psychosis referrals, with even a quarter of those working within CMHT’s having not received any. This suggests that it is important to educate referrers about the role Psychologists can play in treating this client group. Other frequently mentioned hindering factors were insufficient training and knowledge. Most respondents had not received any specific training in CBT for psychosis (including a quarter of those working in CMHT’s), and of those who had, most had only attended single day courses. More than half felt that they did not possess adequate knowledge to practice this
intervention. This has implications for training courses and continued professional development.

It was also hypothesised that Clinical Psychologists may be reluctant to work with psychosis sufferers due to the difficulties engaging them in therapy. A high proportion of respondents mentioned unsuitability of the CBT model as a hindering factor which may relate to this issue. This suggests training is needed on how to adapt CBT successfully to this client group.

The results of this survey suggested that training Clinical Psychologists in CBT for psychosis is effective as those who had received specific training seemed more likely to:

1. Perceive themselves as possessing adequate knowledge to practice CBT for psychosis.
2. Want additional psychosis referrals.
3. Have been referred a higher proportion of clients suffering from psychosis, suggesting that those who receive training are more likely to initiate more psychosis referrals.
4. Be aware of the effectiveness of CBT for psychosis.

Those who had received training also seemed less likely to consider schizophrenia a wholly biological disorder and as adequately handled by medication. It is, however, difficult to ascertain whether training influences attitudes, or whether Psychologists' attitudes determine whether they seek out training.

4.1. Feedback to the Services

The results of the survey were fed back to both services (see Appendix C for confirmation of this), during their Adult Mental Health Team meetings and this generated a great deal of discussion. One team requested that the presentation be repeated to a wider audience within the trust in order to potentially effect change within the service.
Concern was expressed regarding the lack of specific training received by such a high percentage of the sample. There was strong agreement that further training was both desired and needed in order to encourage more Clinical Psychologists to practice this intervention, thereby improving the service offered to clients. They were also concerned about the attitudinal scale responses. There was a great deal of discussion about how Psychologists form such beliefs and stay within the profession and how these beliefs could be challenged.

4.2. Specific Training Needs

Those who attended the meeting clearly expressed the desire to receive further training on the practicalities of how to apply CBT for psychosis, rather than a focus on the theoretical, which they felt they could acquire by personal reading. They also wanted the training to be specifically tailored to Clinical Psychologists, involving intensive workshops (using videos, role plays etc.) rather than seminars. Group supervision and refresher courses were also suggested.

The fact that almost a third of respondents reported that they did not know whether CBT for psychosis had been effective suggests respondents may not have read the literature in this area and need further training on how to evaluate outcome. Educating referrers and providing more training for Psychologists was viewed as a necessary but lengthy process.

5.0 Conclusions

A number of substantive issues were raised by this survey and the feedback meetings. The results suggested that despite recent research, many Psychologists locally are not utilising CBT for psychosis. A third of respondents had not received any referrals for psychological intervention for psychosis and CBT was used far less frequently with this client group than with clients with emotional disorders. Most respondents reported that although they would like to work more with clients suffering from psychosis, and to
apply CBT more frequently, they are hindered in doing so mainly by a lack of referrals, training and knowledge.

This survey highlighted the fact that further training for psychologists in CBT for psychosis is required. Also, further information regarding the efficacy of this intervention needs to be provided to referrers in order to provide a better service to a wider range of clients.
References


Appendix A

A SURVEY EXPLORING THE CLINICAL APPLICATION OF COGNITIVE-BEHAVIOUR THERAPY FOR PSYCHOSIS

A. Demographics
1. How many years have you practiced as a Clinical Psychologist since qualification?

2. Please indicate the number of sessions you spend working in each specialty of Adult Mental Health per week:

   Number of sessions
   
   Community Mental Health Team
   Acute in-patient
   Primary Care
   Rehabilitation
   Other (Please specify)

B. Referrals
3. Please estimate the total number of referrals you received in the last six months (either directly referred to you or via the psychology service).

4. Please estimate the number of referrals you received for psychological intervention for psychosis in the last six months.

PTO

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5. Would you welcome more referrals of clients suffering from psychosis?
   Please circle: Yes No Don't Know
   Further comments:

C. Knowledge
6. From your knowledge of the literature in this area, has Cognitive Behaviour Therapy (CBT) been shown to be an effective intervention for treating delusions in psychosis? Please circle the statement that best fits your response:
   a. CBT is a highly effective intervention for treating delusions in psychosis.
   b. CBT is an effective intervention for treating some aspects of delusions in psychosis.
   c. CBT is not an effective intervention for treating delusions in psychosis.
   d. I am not aware of the literature in this area.
   Further comments:

7. Have you received any specific training in CBT for psychosis?
   Please circle: Yes No
   If yes, please specify:

8. Do you feel that you possess adequate knowledge about CBT for treating delusions in psychosis to practice this intervention?
   Please circle: Yes No Don't Know
D. Application

9. Please estimate the percentage of clients suffering from psychosis referred to you to whom you offered an initial appointment.

10. Do you use CBT techniques when working with any of the following problems?
    You may tick all four or leave some blank.
    never  seldom  sometimes  frequently  always

Please tick:
  a. Depression
  b. Anxiety
  c. OCD/Phobias
  d. Psychosis

11. If you currently practice CBT for Psychosis, have you found it an effective intervention for treating delusions in psychosis?
    Please circle: Always  Sometimes  Rarely  Never  Don't Know

Further comments:

12. If you would like to use CBT for managing psychosis, but are not currently doing so, please list as many factors as possible that you think are hindering you from employing this method of treatment.
13. Please answer the following questions by circling the number that most closely fits your response, using the following scale.

1 = Agree Strongly
2 = Agree
3 = Disagree
4 = Disagree Strongly

1. Schizophrenia is a wholly biological disorder 1 2 3 4
2. Schizophrenia is adequately handled by medication. 1 2 3 4
3. Schizophrenia is not too severe to treat with CBT. 1 2 3 4
4. The content and themes of delusions is meaningless and insignificant. 1 2 3 4
5. There is no qualitative difference between normal experience and psychosis. 1 2 3 4
6. Working with delusions in psychosis is the role of other professionals. 1 2 3 4
Appendix B

Cover letter for survey exploring the clinical application of Cognitive-Behaviour Therapy for psychosis

Dear colleague,

As part of my Psych. D. Clinical Psychology training at the University of Surrey I am required to carry out a small scale service related research study. Jane Street has kindly agreed to supervise this project.

My current research interest is in the application of Cognitive-Behavioural Therapy (CBT) in the treatment of psychosis. I hope to further explore some themes that have emerged from my literature review on this topic. Enclosed is a short questionnaire which will help me to achieve this by exploring current referral patterns and the application of CBT with these clients.

On completion of this survey I will be able to provide you with feedback, including identification of any potential service developments at one of your Adult Mental Health team meetings. All questionnaires will be entirely confidential.

I would greatly appreciate your co-operation in completing this questionnaire as comprehensively as possible and returning it in the stamped addressed envelope provided. If at all possible, I would also welcome it if you could return the completed questionnaires by the 1st December 1997. Thank you for your time and co-operation.

Yours sincerely,

Sophie Browning
Psychologist in Clinical Training.
22 July 1999

To Who it May Concern

Re: Sophie Browning's Research "Survey of the Practice of and Attitude towards CBT by Clinical Psychologists in the Management of Psychotic Delusions"

This is to confirm that as part of the above research Sophie Browning met with the members of the RTR Psychology Department over a number of events and that the last event in January 1997 was devoted to feeding back her results to the Department.

Halina Brunning
Chartered Clinical Psychologist
Head of RTR Psychology Department, currently Head of Richmond in KDCT
Small Scale Research Project

"A pilot study investigating patients' preference for wax, foam and cotton wool earplugs, and their effectiveness as a treatment for persistent auditory hallucinations"

Year II

Aug 1998
Small Scale Research

A pilot study investigating patients' preference for wax, foam and cotton wool earplugs, and their effectiveness as a treatment for persistent auditory hallucinations

1.0 Abstract

Background
Studies on the efficacy of earplug treatments have demonstrated it to be an effective intervention for auditory hallucinations. However, these have largely been single case studies, have used different types of earplugs and have proposed conflicting theories as to the mechanism involved in the treatment.

Objectives
This study was designed to evaluate participants' preference for three types of earplugs (wax, foam and cotton wool), and their effectiveness as a treatment for persistent auditory hallucinations (voices). The main target features were the frequency and volume of the voices and associated distress. The main hypothesis was that all three earplugs would prove effective, but would differ in terms of which were preferred by participants.

Method
This was evaluated in ten clients who experienced persistent voices. The study involved a series of single cases, involving a multiple treatment design. Participants were advised to use each earplug in one ear for four days, then the earplug they preferred in both ears. The effectiveness of each treatment was evaluated on the basis of the participants' reports about its effects, using a semi-structured interview and three items from Haddock's (1994) Auditory Hallucination Rating Scale.
The data was analysed using three multi-variate, repeated measure Analyses of Variance (ANOVA'S) followed by paired t-test post hoc analyses.

Results
The results demonstrated that a foam or wax earplug greatly reduced the frequency, loudness and distress of the voices, whereas, the cotton wool earplug had little effect. The foam earplug was preferred by the most participants, although two expressed a definite preference for the wax. At one month follow up, seven of the eight participants who had completed the trial had continued to use the earplugs and were continuing to find them helpful.

Conclusions
These results provide further evidence that persistent auditory hallucinations in selected patients suffering from chronic schizophrenia, can be mollified by wearing an earplug. The theoretical and clinical implications of the research are discussed, and possible directions for future research are suggested.
2.0 Introduction

Almost half of patients suffering from psychosis with auditory hallucinations continue to experience them despite treatment with anti-psychotic medication (Curson, Patel, Liddle & Barnes, 1988). Many non-pharmacological approaches have been employed in the treatment of auditory hallucinations, one of the simplest of which has been the use of an earplug. Studies on the efficacy of earplugs have demonstrated it to be an effective intervention, but these studies have proposed conflicting theories as to the mechanism underlying the treatment.

2.1 Past Research into the Efficacy of Earplug Treatments

The use of unilateral earplugs to control auditory hallucinations was first suggested by Green (1978). He postulated that due to defective interhemispheric transmission in schizophrenia, verbal activity in the non-dominant hemisphere for language (usually the right in people who are left handed), is perceived in the dominant hemisphere, and misinterpreted as originating from an alien source. Green therefore argued that reducing external auditory input to the right hemisphere by wearing an earplug in the left ear, would reduce the likelihood of conflicting linguistic analysis in the left hemisphere. This was supported by Birchwood (1986) who conducted a single case study and found that an earplug in the left ear was highly effective in terms of reducing the severity, frequency and volume of auditory hallucinations. Green's theory was contradicted by later single case studies which found that wearing an earplug in either ear can lead to equally beneficial results (e.g. James, 1983; Collins, Cull & Sireling, 1989; Done, Frith & Owens, 1986).

In a further single case study, Morley (1987) found that an earplug in the left ear had little effect, but when switched to the right ear, there was an immediate drop in the clarity of the voices. Van der Gaag (1988) found similar results and suggested that earplugs help by a process of external input reduction which improves information processing. Falloon & Talbot (1981), Green & Preston (1980) and McGuffin (1979) also
reported findings of people with schizophrenia spontaneously wearing earplugs and suggested that they do this in order to reduce overwhelming sensory input from their surroundings. This theory stems from the various 'cognitive overload' models that have been proposed (e.g. Frith, 1979; Hemsley, 1987). These models argue that people with schizophrenia are unable to filter out irrelevant incoming information from the senses. This information overload causes cognitive confusion which negatively affects information processing (Perkins & Dilks, 1992).

A larger study was carried out by Nelson, Thrasher & Barnes (1991), who evaluated the acceptability and efficacy of three treatments (earplugs, sub-vocal counting and listening to music through a personal cassette player) in twenty patients with chronic schizophrenia. They found that the personal cassette player was the most popular treatment, and the one for which participants reported the most beneficial effects (93%, compared to 62% reporting beneficial effects from using the earplugs). However, they stressed that the cassette player is likely to restrict social interaction. This is important as previous studies have shown that schizophrenic patients are often helped by seeking out social contacts (e.g. Fallon & Talbot, 1981).

In terms of the earplug treatment, two participants showed a small right ear advantage, but both ears were equally effective in five, and one preferred to block both ears. These researchers suggested that wearing an earplug produces an unusual subjective experience. Control subjects have found this unpleasant and reported greater difficulty in concentrating on other things whilst wearing the earplug (Nelson et al, 1991). Hazell & Jastreboff (1990) suggested that the auditory cortex is like a radio receiver which has the ability to "tune in" to certain auditory signals to the exclusion of others. When there is an unusual distortion of sound, the sensory receptive area of the brain is alerted that there is something to attend to. Nelson et al (1991) suggested that earplugs may work because the distortions to the incoming stimuli cause the brain to turn attention towards these stimuli, and hence away from the internal hallucinatory outputs.
2.2. Distraction and Counter-Stimulation Outcome Studies
In further support of Nelson et al's study, there exists solid evidence that external
distraction and counter-stimulation are effective for reducing auditory hallucinations, by
providing an external signal to attend to, which predominates over the internal
hallucinations.

Slade (1974) found in two single cases that the frequency of reported hallucinations
decreased with increased external stimulation. Margo, Hemsley & Slade (1981) and
Gallagher et al (1994) studied the effects of reading out loud, pop music, listening to a
story, electronic blips or reading a foreign passage on seven schizophrenics and found
that the frequency, clarity and volume of clients' auditory hallucinations reduced. Feder
(1982) also reported a single case study where listening to a radio through headphones
 lead to a complete cessation of his voices. There was no change during the times he
did not wear the headphones. In addition, Mallya & Shen (1983) and Morley (1987)
found immediate positive effects of listening to music through headphones.

2.3 Objectives
The results of studies exploring the use of earplugs as a treatment for auditory
hallucinations seem highly promising. Haddock & Slade (1996) reviewed earplug
therapy in their recent book exploring cognitive-behavioural interventions for psychotic
disorders and concluded that clinically, earplug therapy is simple, inexpensive and has
no known medical or psychological complications. In his book "Reconstructing
Schizophrenia", Bentall (1990) also concluded that earplug therapy has had a dramatic
impact on auditory hallucinations on the few patients with whom it has been tested.

What is now needed is a large, controlled trial with a long follow up. Prior to this
however, there are some basic issues that need addressing. A treatment must be both
effective and acceptable to patients if it is to prove useful in clinical practice. The type
of earplug used in the above studies varied. Therefore, this study attempted to add to
previous research by investigating the comparative effectiveness of three types of
earplugs (wax, foam and cotton wool) and exploring which type of earplug is preferred
by participants in terms of being most acceptable and most readily worn.
The main hypothesis was that foam, wax and cotton wool earplugs would all prove effective in terms of reducing frequency and volume of hallucinations and associated distress, but would differ in terms of which were preferred by participants.

Some clinicians interviewed prior to the start of this study reported that a few patients, on their own initiative, had used earplugs in both of their ears, instead of the recommended one ear, and found this amendment to be preferable. Therefore, an additional phase of the trial was added, to which, after trying all three types of earplug, participants were invited to try wearing their preferred earplug, in both ears.
3.0 Method

3.1 Participants
The study took place within two Mental Health Service Trusts. Ethical approval was sought and obtained from both Local Ethics Committees (see Appendix A).

Participants were recruited by requesting appropriate referrals from Consultant Psychiatrists (see Appendix B for examples of correspondence). A total of thirteen clients were referred for inclusion in the study. These clients all met DSM-IV (APA, 1994) criteria for schizophrenia, their level of auditory hallucinations had proved refractory to neuroleptic medication and they were on stable psychotropic medication. All but one of the participants were right handed.

The author approached the participants once their key-workers had confirmed that they were willing to discuss their possible involvement in the trial (see Appendix C for patient information sheet and consent form). Of the thirteen clients referred, one did not wish to participate following further explanation of the study. One agreed to be involved but was not included due to the severity of her delusions (she informed the researcher she was going to prison for life the following morning and would not therefore be able to make any further appointments). A further client was not included as he had not experienced any voices for some time. Ten participants were therefore included in the trial (five male and five female).

3.2 Research Design
The study comprised a series of single cases involving a within subject, multiple treatment design to assess the individual effects of each of the earplugs.

There were four Independent Variables (wax, cotton wool, and foam earplugs inserted alternately into one ear, and the preferred earplug being worn in both ears simultaneously). There were three main Dependent Variables (frequency and volume of voices and distress caused by the voices).
The ABCDEA design was appropriate for this study, e.g. conditions were A-baseline, B-wax earplug, C- foam earplug, D- cotton wool earplug, E- preferred earplug in both ears, A- base line. The order of presentation of the earplug treatments was varied across participants in order to counter balance carry-over and order effects across conditions.

3.3 Procedures
A pilot trial on a similar patient to those included in the study was conducted to check that the recording sheets were easy to complete correctly, and to confirm that the interview and rating scales would elicit the appropriate information. No modifications were necessary on the basis of comments made during the pilot study.

Participants were seen on eight occasions and the appointments took place in their own homes, which included private housing and Mental Health Hostels. An initial session was held which included the completion of initial assessment measures. After four days, baseline measures of the three variables were repeated. Participants were then advised to use each treatment in one ear during the four days after it's introduction whenever the voices became troublesome. Participants were then requested to try the earplug they preferred in both ears for four days. A final baseline measurement was then taken over a period of four days where the ear plugs were removed.

Following this, participants were invited to continue using whichever earplug they preferred, and provided with a supply of their chosen earplug. At one month follow up, the author assessed whether participants continued to use the earplug and whether it was continuing to prove helpful.
3. 4 Main Outcome Measures

3.4:1 Daily Recording Sheet
Participants were asked to fill out a daily recording sheet (see Appendix D). This included estimating the length of time they used each earplug for, and placing a tick on a chart to indicate whether it had helped or not.

3.4:2 Three Items from the Auditory Hallucinations Rating Scale
The effectiveness of each of the earplugs were evaluated from the participants' reports about the frequency and volume of their hallucinations and associated distress, using items 1, 4 and 9 from Haddock's (1994) Auditory Hallucination Rating Scale (See Appendix E). For example, on this questionnaire, frequency is rated on a four point scale, where 0 = voices not present and 4 = voices occurred continuously. The items were slightly re-phrased in order to ascertain participants' experiences over the previous four days (See Appendix F).

3.4:3 Semi-Structured Interview
The following data was obtained during the interview (see Appendix G):

I. Ratings of how often they used the earplugs. The scale ranged from 0) I never used the earplug to 4) I used the earplug every time the voices became troublesome.

II. Ratings of whether the earplug had helped. The scale ranged from 0) made the voices worse to 4) helped a lot.

III. Whether the earplug had helped with the following: reducing the volume, decreasing the frequency and helping them feel less distressed.

A relative measure of preference was also taken wherein participants were asked to compare the latest earplug with the previous earplug, in terms of whether it was a) better, b) the same or c) worse, and in what way.
4.0 Results
The convention throughout this research is to denote the number of participants by N, standard deviation by SD and degrees freedom by DF.

All ten of the participants used the earplug for at least two of the four days of each trial, most using them for all four days. All of the participants had used the earplugs at least “sometimes” on each day they had used them. Seven participants wore the earplug in their left ear and three in their right.

Two participants dropped out before the post treatment baseline phase, both of whom reported that they were finding it too time consuming to fill in the recording sheets (but requested a supply of earplugs). One of these participants had tried the earplugs in her left ear, and the other her right.

4.1 Effectiveness
The mean ratings obtained for the initial baseline and the three earplug conditions, across all ten participants, are shown graphically in Figs 1a. (frequency), 2a. (loudness) and 3a. (distress) below.

The mean ratings for each treatment phase, across the eight participants who completed the trial, are shown graphically in Figs 1b. (frequency), 2b. (loudness) and 3b. (distress) below.

Individual ratings for the eight participants who completed the trial are illustrated graphically in Appendix H.
Figure 1a. Mean ratings of frequency of hallucinations (N=10)

Figure 1b. Mean ratings of frequency of hallucinations (N=8)

0 = Voices not present
1 = Voices occurred once
2 = Voices occurred at least once a day
3 = Voices occurred at least once an hour
4 = Voices occurred continuously
Figure 2a. Mean ratings of loudness of hallucinations (N=10)

0 = Voices not present
1 = Quieter than own voice
2 = Same as own voice
3 = Louder than own voice
4 = Extremely loud, shouting

Figure 2b. Mean ratings of loudness of hallucinations (N=8)
Figure 3a. Mean ratings of distress of hallucinations (N=10).

Figure 3b. Mean ratings of distress of hallucinations (N=8).

0 = Not distressing
1 = Slightly distressing
2 = Moderately distressing
3 = Very distressing
4 = Extremely distressing
The number of participants who reported subjectively that the earplugs helped reduce the frequency, loudness and distress of their voices, and the number who obtained actual improvements on the Haddock Scales can be seen in tables 1. and 2. respectively.

**Table 1.** Number of participants (N=10) who reported that the earplugs helped with the following features of their hallucinations

<table>
<thead>
<tr>
<th>Feature</th>
<th>Wax</th>
<th>Foam</th>
<th>Cotton Wool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>6</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Loudness</td>
<td>6</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Distress</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
</tbody>
</table>

**Table 2.** Number of participants (N=10) who obtained improvements on the three features of the Haddock Scales

<table>
<thead>
<tr>
<th>Feature</th>
<th>Wax</th>
<th>Foam</th>
<th>Cotton Wool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>10</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Loudness</td>
<td>9</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Distress</td>
<td>8</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

4.2 Statistical Analyses
The data was analysed using three multi-variate, repeated measure Anova’s. The results can be seen in table 3. The obtained values of F for all three dependent variables were significant beyond the .01 per cent level. This indicated that the ratings of frequency, loudness and distress were not the same across all of the conditions.
Table 3. Results of the repeated measures ANOVA's for Frequency, Loudness and Distress

<table>
<thead>
<tr>
<th>Within Subject Variable</th>
<th>F. Ratio</th>
<th>D.F</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>14.57</td>
<td>7,9</td>
<td>p &lt; 0.00</td>
</tr>
<tr>
<td>Loudness</td>
<td>3.08</td>
<td>7,9</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Distress</td>
<td>17.79</td>
<td>7,9</td>
<td>p &lt; 0.001</td>
</tr>
</tbody>
</table>

For each dependent variable, the significance of differences between conditions was then assessed by paired samples two-tailed t-tests. The .05 level of significance was adjusted for the test, based on the number of conditions in the trial. The level of significance required therefore was 0.01. The results of these analyses can be seen in tables 4 (frequency), 5 (loudness) and 6 (distress).

There were no significant differences in the initial and pre-treatment baseline mean scores for any of the three variables implying that these ratings were stable. There were no significant differences in the scores obtained at the pre and post treatment baselines. Therefore, for ease of comparison, only the initial baseline scores were used for the statistical comparisons for all ten participants.

Table 4. Paired samples t-test results for frequency.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean Difference and (SD)</th>
<th>95% Confidence Interval (Lower, Higher)</th>
<th>T value</th>
<th>DF</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre + Post Baseline</td>
<td>0.00 (.53)</td>
<td>(-.45, .45)</td>
<td>0.00</td>
<td>7</td>
<td>p = 1.00</td>
</tr>
<tr>
<td>Baseline + CW</td>
<td>0.60 (.70)</td>
<td>(.10, 1.10)</td>
<td>2.71</td>
<td>9</td>
<td>p = 0.02</td>
</tr>
<tr>
<td>Baseline + Foam</td>
<td>1.70 (1.06)</td>
<td>(.94, 2.46)</td>
<td>5.07</td>
<td>9</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Baseline + Wax</td>
<td>1.50 (.53)</td>
<td>(1.12, 1.88)</td>
<td>9.00</td>
<td>9</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>CW + Foam</td>
<td>1.10 (.74)</td>
<td>(.57, 1.63)</td>
<td>4.71</td>
<td>9</td>
<td>p = 0.001</td>
</tr>
<tr>
<td>CW + Wax</td>
<td>0.90 (.74)</td>
<td>(.37, 1.43)</td>
<td>3.86</td>
<td>9</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Foam + Wax</td>
<td>-0.20 (.79)</td>
<td>(-.76, .36)</td>
<td>-0.80</td>
<td>9</td>
<td>p = 0.44</td>
</tr>
</tbody>
</table>
Table 5. Paired samples t-test results for loudness

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean Difference and (SD)</th>
<th>95% Confidence Interval (Lower, Higher)</th>
<th>T value</th>
<th>DF</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial + Baseline</td>
<td>0.10 (.32)</td>
<td>(-.13, .33)</td>
<td>1.00</td>
<td>9</td>
<td>p = 0.32</td>
</tr>
<tr>
<td>Pre + Post Baseline</td>
<td>0.12 (.64)</td>
<td>(-.41, .66)</td>
<td>0.55</td>
<td>7</td>
<td>p = 0.60</td>
</tr>
<tr>
<td>Baseline + CW</td>
<td>0.30 (.48)</td>
<td>(-.05, -.65)</td>
<td>1.96</td>
<td>9</td>
<td>p = 0.08</td>
</tr>
<tr>
<td>Baseline + Foam</td>
<td>1.10 (.57)</td>
<td>(.69, 1.51)</td>
<td>6.13</td>
<td>9</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Baseline + Wax</td>
<td>0.70 (.67)</td>
<td>(.22, 1.18)</td>
<td>3.28</td>
<td>9</td>
<td>p = 0.01</td>
</tr>
<tr>
<td>CW + Foam</td>
<td>0.80 (.42)</td>
<td>(.50, 1.10)</td>
<td>6.00</td>
<td>9</td>
<td>p &lt; .001</td>
</tr>
<tr>
<td>CW + Wax</td>
<td>0.40 (.70)</td>
<td>(-.10, .90)</td>
<td>1.81</td>
<td>9</td>
<td>p = 0.10</td>
</tr>
<tr>
<td>Foam + Wax</td>
<td>-0.40 (.52)</td>
<td>(-.77, -.03)</td>
<td>-2.45</td>
<td>9</td>
<td>p = 0.04</td>
</tr>
</tbody>
</table>

Table 6. Paired samples t-test results for distress

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean Difference and (SD)</th>
<th>95% Confidence Interval (Lower, Higher)</th>
<th>T value</th>
<th>DF</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre + Post Baseline</td>
<td>0.13 (.83)</td>
<td>(-.57, .82)</td>
<td>.42</td>
<td>7</td>
<td>p = 0.69</td>
</tr>
<tr>
<td>Baseline + CW</td>
<td>1.00 (.94)</td>
<td>(.33, 1.67)</td>
<td>3.35</td>
<td>9</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Baseline + Foam</td>
<td>2.20 (.63)</td>
<td>(1.75, 2.65)</td>
<td>11.00</td>
<td>9</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Baseline + Wax</td>
<td>1.70 (1.06)</td>
<td>(.94, 2.46)</td>
<td>5.08</td>
<td>9</td>
<td>p = 0.001</td>
</tr>
<tr>
<td>CW + Foam</td>
<td>1.20 (.92)</td>
<td>(.54, 1.86)</td>
<td>4.13</td>
<td>9</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>CW + Wax</td>
<td>0.70 (1.06)</td>
<td>(.06, 1.46)</td>
<td>2.09</td>
<td>9</td>
<td>p = 0.07</td>
</tr>
<tr>
<td>Foam + Wax</td>
<td>-0.50 (.71)</td>
<td>(-1.01, .01)</td>
<td>-2.24</td>
<td>9</td>
<td>p = 0.05</td>
</tr>
</tbody>
</table>
* The standard error of difference between the initial and baseline mean scores for distress and frequency was 0.

4.3 Preference
Eight out of the ten participants reported that they preferred the foam earplug, and the other two preferred the wax. Examples of clients’ comments regarding how each type of earplug had proved helpful can be seen in Appendix I.

The foam earplug was frequently reported to be comfortable (mentioned by 8 out of 10 participants), easy to fit (5/10) and to stay in place well (6/10).

The wax earplug was described as uncomfortable (7/10), too hard (5/10), producing an unpleasant “clogging” sensation (4/10), hard to fit (3/10) and falling out easily (4/10).

The cotton wool earplug was described as comfortable (8/10), but not as effective as the other two types (10/10).

4.3:1 One earplug or two?
The number of participants who subjectively reported that wearing two earplugs simultaneously was “better” than wearing just one, can be seen in table 7.

The participants who thought that two was “better” made comments such as, “wearing two blocked out everything”, “It blocked the voices out almost all together” and “It makes things less distinct than with one”. Those who felt that one earplug was more effective made comments such as “It isn’t as distracting with two”, “It is more muffled with just one in, which is better”.

Table 7. Table showing the number of participants (N=8) who expressed an immediate preference for one earplug or two

<table>
<thead>
<tr>
<th></th>
<th>Two</th>
<th>One</th>
<th>No Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Participants (N=8)</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

The ratings on the frequency, loudness and distress of the voices following wearing two earplugs was compared with the scores obtained following the wax and foam single earplug trials. As can be seen in table 8., the difference in means did not reach the required level of significance.

Table 8. Paired samples t-test results comparing an earplug worn in one ear (1) and two (2).

<table>
<thead>
<tr>
<th>Variables</th>
<th>M (SD)</th>
<th>95% Confidence Interval (Lower, Higher)</th>
<th>T</th>
<th>DF</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency. Foam 1 + Foam 2</td>
<td>0.12 (.99)</td>
<td>(-.70, .95)</td>
<td>.36</td>
<td>7</td>
<td>p = 0.73</td>
</tr>
<tr>
<td>Frequency. Wax 1 + Wax 2</td>
<td>-0.25 (.71)</td>
<td>(-.84, .34)</td>
<td>-1.00</td>
<td>7</td>
<td>p = 0.35</td>
</tr>
<tr>
<td>Loudness. Foam 1 and Foam 2</td>
<td>0.62 (.52)</td>
<td>(.19, 1.06)</td>
<td>3.42</td>
<td>7</td>
<td>p = 0.01</td>
</tr>
<tr>
<td>Loudness. Wax 1 and Wax 2</td>
<td>0.25 (.71)</td>
<td>(-.34, .84)</td>
<td>1.00</td>
<td>7</td>
<td>p = 0.35</td>
</tr>
<tr>
<td>Distress. Foam 1 and Foam 2</td>
<td>0.25 (.89)</td>
<td>(-.49, .99)</td>
<td>.80</td>
<td>7</td>
<td>p = 0.45</td>
</tr>
<tr>
<td>Distress. Wax 1 and Wax 2</td>
<td>-0.37 (.92)</td>
<td>(-1.14, .39)</td>
<td>-1.16</td>
<td>7</td>
<td>p = 0.29</td>
</tr>
</tbody>
</table>

Despite more participants reporting that wearing two earplugs was "better" than one, seven of the eight participants chose to continue using just one earplug. They made comments such as "Two was more helpful but it was too difficult to hear other things going on" and "I couldn't wear both because I wouldn't be able to hear".
4.4 Long Term Use of Treatments
Following the four week follow up period, seven out of the eight participants who reported beneficial effects of the earplugs had continued to use their preferred earplug to alleviate their hallucinations.

All of these participants reported that the earplugs had remained helpful. As can be seen in table 9, no significant differences were found between the participants ratings following use of the foam or wax earplugs during the trial and their follow up (F.U.) scores, i.e. scores had not dropped back to pre-treatment levels.

**Table 9. Paired samples t-test results comparing use of a foam or wax earplug during the trial and at a four week follow up**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean Difference and (SD)</th>
<th>95% Confidence Interval (Lower, Higher)</th>
<th>T value</th>
<th>D</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency, Foam + F.U</td>
<td>-0.37 (.52)</td>
<td>(.81, .06)</td>
<td>-2.05</td>
<td>7</td>
<td>p = 0.08</td>
</tr>
<tr>
<td>Frequency, Wax + F.U</td>
<td>0.00 (.53)</td>
<td>(-.45, .45)</td>
<td>.00</td>
<td>7</td>
<td>p = 1.00</td>
</tr>
<tr>
<td>Loudness, Foam + F.U</td>
<td>-0.75 (1.04)</td>
<td>(-1.62, .12)</td>
<td>-2.05</td>
<td>7</td>
<td>p = 0.08</td>
</tr>
<tr>
<td>Loudness, Wax + F.U</td>
<td>0.38 (1.30)</td>
<td>(-.71, 1.46)</td>
<td>.81</td>
<td>7</td>
<td>p = 0.44</td>
</tr>
<tr>
<td>Distress, Foam + F.U</td>
<td>-0.25 (1.17)</td>
<td>(-1.22, .72)</td>
<td>-.61</td>
<td>7</td>
<td>p = 0.56</td>
</tr>
<tr>
<td>Distress, Wax + F.U</td>
<td>-0.37 (1.30)</td>
<td>(-1.46, .71)</td>
<td>-.81</td>
<td>7</td>
<td>p = 0.44</td>
</tr>
</tbody>
</table>

Six of the eight participants had worn one earplug (four using foam and two using wax) and two had blocked both ears with foam earplugs.

Of the participants who had blocked both ears, one had intended to use only one earplug but had changed his mind. He reported that he had not been using them as frequently as during the treatment phase as his voices had not been "very bad" and he was finding it hard to hear the television with the earplugs in. He had however continued to find them helpful. The second client reported that he was continuing to find them "highly effective".
One of the two clients who had chosen to continue using one wax earplug had found it useful, but reported that she kept forgetting to put it in. The other of these participants had damaged his wax earplugs very early into the follow up period. His follow up assessment was therefore repeated after a further four weeks. At this time he reported that he was wearing an earplug frequently which was proving "very helpful".

Of the four participants who had continued to use a foam earplug in one ear, two were using them less often than during the trial as they tended to forget to put them in. The other two reported that although the earplugs were still helping "a lot" they were helping "a bit less" than they had during the trial.
5.0 Discussion

5.1 Summary and interpretation of the results
These results clearly show that occluding auditory input by wearing an earplug markedly reduced the frequency and volume of, and the distress caused by, participants' voices. The earplugs differed in their level of effectiveness. Foam and wax earplugs led to significantly improved ratings on the frequency, loudness and distress of participants' voices whilst the cotton wool earplug only had a significant effect on the distress. The foam earplugs were significantly more effective than cotton wool on all three variables, and the wax earplugs were significantly more effective than the cotton wool in reducing the frequency. The foam and wax earplugs did not differ significantly from each other in their effects. The improvements obtained on the Haddock scales were largely consistent with the results of the semi-structured interviews with most participants reporting that the cotton wool earplugs led to fewer improvements.

The foam earplug was preferred by the most participants, but two expressed a definite preference for the wax type. No-one preferred the cotton wool earplug. It is difficult to establish whether preference was based on the comfort or effectiveness of the earplugs, or both. Comfort did indeed seem a factor that participants were concerned with. The foam earplugs were consistently described as comfortable and easy to fit. The wax earplugs were frequently criticised for being uncomfortable, too hard, and producing a clogging sensation. The cotton wool earplugs were described as comfortable.

Common themes also emerged regarding the perceived effectiveness of the earplugs. The foam was perceived as helping primarily by distorting sound (particularly by "muffling" it, or "making things sound funny"), making the voices quieter and as "blocking" the voices. They were not however perceived as blocking out as much sound as the wax, which was perceived by most participants as a positive feature of the foam. The wax earplugs were also perceived as distorting sound, being distracting, making the voices quieter and stopping voices by a "blocking" action. The cotton wool earplugs were described as "not as blocking" and not as effective as the other two. Foam and
wax earplugs may therefore be more effective as they block out, and or, distort more sound than the cotton wool earplugs. As they are more blocking, wax earplugs may actually be more effective, but are so uncomfortable that people prefer the foam.

The results suggested no significant difference in effectiveness between wearing one earplug or two. The comments made by the participants who said two were better suggested that this was because they blocked out more sound. Those who said one was better mentioned that one made sound more muffled and was more distracting than two. It was hypothesised that although some participants may have found two more effective they are less preferred due to being so uncomfortable, and the social constraints they impose.

The follow up results were highly promising in terms of the participants continuing to wear the earplugs and finding them helpful. The substantial reduction in the frequency of participants' voices obtained following use of the wax and foam earplugs was maintained at follow up. The fact that some participants reported that the earplugs were helping slightly less at follow up, when this was not reflected in the rating scales, may be due to the fact that they were just not attributing this reduction in frequency to the earplugs. It may also have been the case that their voices were troubling them less anyway, so there was less leeway for noticing a difference.

5.2 Theoretical implications
Some interesting results emerged from this study which may provide clues as to the mechanism underlying how earplugs are effective.

Earplugs inserted into either the left or the right ear lead to beneficial results. This supports the research by James, (1983), Done, Frith & Owens (1986) and Morley (1987), and conflicts with Green's (1978) theory.

The present study may also be consistent with Van der Gaag's (1988) and McGuffin's (1979) theory of input reduction. A number of participants commented that the earplugs "blocked" sound which was helpful.
These results also seem consistent with the research into the use of external distractors and Nelson et al's suggestion that earplugs help by a process of attentional shifting. Participants in the present study reported that the earplugs caused unusual subjective experiences, e.g. "it made things sound funny" or "muffled" and commented that this distortion in sound was distracting. These results may also be explained cognitively in terms of attribution theory. Participants may have attributed any unusual sounds they heard to the earplugs rather than to their voices, thus providing them with an explanation for any strange perceptual experiences. This is likely to provoke far less anxiety and lead to less catastrophic interpretations. This would also be consistent with tinnitus research (e.g. Hazell, 1990) which suggests the sensory receptive area of the brain is alerted by unusual distortions of sound that there is something to attend to. If this sound has emotional significance (e.g. tinnitus sufferers interpret the sound as evidence of a brain tumour), then this has the effect of tuning in, or training the cortex onto that particular signal. Sufferers therefore learn to focus on these internal sounds.

5.3 Implications for Clinical Practice
Most participants were willing to attempt the earplug treatments which suggests it is likely to be acceptable to a substantial proportion of clients.

The results suggests that it is worth encouraging people who suffer from persistent auditory hallucinations to use foam earplugs to provide them with some relief from their symptoms. The participants who chose the wax earplugs were however, the two who experienced the most severe hallucinations. If clients are experiencing severe voices it may therefore be worth trying wax earplugs as well.

Some participants preferred wearing one earplug, and some definitely preferred two. Seven however expressed a preference. This suggests that both options should be offered. Two may be more effective when voices are severe, and this may be worth the trade off with the social constraints imposed.
The results obtained indicate that there was slightly more change on the rating scales taken from the Auditory Hallucination Rating Scale (Haddock, 1994) than was reported subjectively. It may be that like depression, clients tend to improve before they admit / realise they are improving. This suggests that if clients report that the earplugs are not helping, they should be encouraged to continue using them for a while. Alternatively, it may be that the participants were just not attributing the improvements to the earplugs.

The results from the follow up of participants forgetting to use their earplugs also suggest that it is important to have someone to remind and encourage the continued use of the earplug.

If the earplug is effective because attention is directed towards the distorted sounds, then one would predict that constant use of the earplug would lead to a gradual reduction in its effectiveness against hallucinations as the client became adapted to these distortions. This suggests that earplug treatments should not be used prophylactically.

5.4 Limitations of the study
There are a number of limitations to this study which should be carefully considered in interpreting the results. One limitation is that despite being larger than most previous research in this area, this present study still included a small number of participants. However, despite the small sample, the number of significant differences obtained between the baseline phases and the treatment phases greatly exceeded that expected by chance. Participants were also pre-selected and had been prepared to meet with the researcher to discuss the study. Other potential participants were therefore screened out.

Another limitation is that this study did not include a control group of participants who did not receive the earplug treatments. There remains the possibility therefore that the reported changes were due to variables other than the earplug treatments. For example, social reinforcement for co-operation in the study or participants reporting improvements merely to please the researcher. However, further validation of the
participants' improvements came from the members of staff who knew them well. Evidence that participants had indeed worn the earplugs rather than just reporting this to please the researcher emerged from the physical state of the earplugs. On many occasions, participants were also wearing the earplug's when they attended their appointment, and, at the final baseline assessment interview, four participants placed an earplug in their ear as soon as one was handed over.

The possibility that the obtained improvements were purely a placebo effect due to the participants' positive expectations of change, is challenged by the fact that the cotton wool earplug acted almost as a control condition for effectiveness, as, despite being comfortable, they were largely ineffective. If the results were purely due to demand characteristics, then the three earplugs should have been equally effective.

There are also problems inherent in the within subject design, such as the problems of order and practice effects. The order of presentation was however varied across the participants. Pre and post treatment baselines were taken, and the scores were higher at both of these recordings, than following use of the foam or wax earplugs. Also, as mentioned earlier, the cotton wool earplugs almost acted like a control condition, usually being the least effective, in whichever order they were tried.

5.5 Implications for future research
The results presented here, together with those reported by earlier research, are worthy of further study under controlled conditions to establish the generality of this treatment method.

The theory underpinning the procedure remains in doubt and testing these theories needs further controlled investigation. A longer follow up period is also required to reveal whether the benefits are maintained in the longer term, and whether one type of earplug will show more superior long term effects. It may also be useful to look at a more direct measure comparing the acceptability and effectiveness of the different earplugs. Finally, it seems possible that different patients may benefit from different types of earplugs. The individual factors which will predict this need to be explored.
6.0 Conclusions
This study adds further weight to the findings from previous research that earplugs are an effective intervention for persistent auditory hallucinations in selected patients. The foam and wax earplugs were effective on all of the measures, whereas cotton wool earplugs were the least effective, acting almost as a control condition. In this study, the most popular and effective treatment was the foam ear plugs. In most cases, foam earplugs are the ones that clients are likely to prefer, but those with more severe voices may prefer the wax. Clinicians should therefore offer clients both foam and wax earplugs, and if blocking one ear is not effective, then clients should be encouraged to block both ears for short periods of time.

Earplugs therefore seem to be effective and acceptable as a treatment. Whatever the theoretical arguments, they are non-invasive, carry no risk of adverse reactions or side effects and involve a very small amount of staff time. Earplugs may therefore constitute a simple, cheap and practical intervention as an adjunct to medication.
References

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* IV. Washington, DC: APA.


Appendix A

Our Ref: JC/jlr/98.15.7


Ms. Sophie Browning
C/o Charlotte Freeman
Clinical Psychology
University of Surrey
Guildford
Surrey GU2 5XH.

Dear Ms Browning,

A pilot study investigating the efficacy of and patients’ preference for wax, foam and cotton wool ear plugs as a treatment for auditory hallucinations - 98.15.7

Thank you for your letter and revised patient information sheet of the 16th March, 1998 which satisfactorily addresses the outstanding issues raised. I am happy to give Chair's approval and have accordingly signed the patient information sheet.

With best wishes,

Yours sincerely,

Dr. Joe Collier
Vice-Chair/Clinical Secretary
Local Research Ethics Committee

Please Note: All research should be conducted in accordance with the guidelines of the Ethical Committee and the Committee should be informed:

(a) when the project is complete.

(b) what stage the project is at one year from today's date.

(c) if any alterations are made to the treatment or protocol which might have affected ethical approval being granted.

(d) all investigators whose projects have been approved by this Committee are required to report at once any adverse experience affecting subjects in the study.
26 March 1998

Sophie Browning
110 Camberwell Road
London
SE5 0EE

Dear Ms Browning

Re: A Pilot Study Investigating The Efficacy Of And Patients' Preference For Wax, Foam And Cotton Wool Ear Plugs As A Treatment For Persistent Auditory Hallucinations

Thank you for your telephone call this morning explaining the nature of the study, the protocol of which you had previously sent through to me.

I have now had an opportunity to discuss the protocol with Dr Chris Jones, Consultant Psychiatrist at Graylingwell Hospital, and having read the protocol I am happy to give you Chairman's action to proceed with your study.

You mention in your letter that you intend to amend the patient information sheet so that it will have the name and contact number of Dr Peggy Easton and I would be grateful if you could let me have a copy of that amended patient information sheet for our records. I will submit your full protocol to the next Chichester Research Ethics Committee meeting at the beginning of May for ratification.

Yours sincerely,

Dr J R Quiney BSc MB BS FRCPath
Chairman - Chichester Research Ethics Committee
Dear Ms Browning,

Many thanks for contacting me about your research protocol. I indeed do find it an area of interest and I anticipate that I will be able to identify a number of patients who might wish to participate. What I am not sure of is whether this overlaps with the study that Ian Petch is currently conducting and I have been referring all suitable patients for his study. Whilst I have not had time to read through the full protocol, I think it would be most appropriate to come along to one of our team meetings on a Monday at 1.30 in order to present your study to the entire team. I would be grateful if you could contact our team administrator Lorraine Lindsay on 0181- 682 6439 or alternatively Jane Street in order to book a time.

Yours sincerely,

Dr. Rob Chaplin
Consultant Psychiatrist
Dear Dr. Jones,

Following our telephone conversation earlier today, I am writing to inquire about the possibility of recruiting a small number of your clients to participate in a research study I am about to embark upon. I enclose a copy of my brief research protocol, the main assessment scales I will be employing and my patient information sheet and consent form.

As I mentioned, I have received full ethical approval for this study from the St. George’s Healthcare Ethics Committee and am awaiting a response from the Chichester Committee. I have inquired about the possibility of gaining "Chairman's Action" to proceed as the study has already been approved by one Ethics Committee. Ideally, I should like to begin the research as soon after April 1st as possible, with a view to completing the study in June. The treatment involved is non-intrusive and clients utilising these treatments in other studies have experienced no side effects or adverse reactions. I am very hopeful that clients will benefit from the treatment offered.

Dr. Peggy Eastern (Consultant Clinical Psychologist) is willing to act as a field supervisor for this project. I am also being supervised by Dr. Jonathan Foulds (Clinical Psychologist and Lecturer at the University of Surrey).

Thank you very much for your time and interest. I look forward to hearing from you.

Yours sincerely,

Sophie Browning
Psychologist in Clinical Training
Title of Study
A Pilot study investigating the efficacy of and patients' preference for wax, foam and cotton wool ear plugs as a treatment for persistent auditory hallucinations.

Introduction. What is this study about?
Thank You for taking the time to read this information sheet which contains brief details of the research project I am carrying out. Some people have found wearing an ear plug in one ear helps with their auditory hallucinations (voices). This research project will further explore whether ear plugs can be helpful, and try to find out which type of ear plugs people like using best. I am interested in finding out whether your experiences can help others who hear voices.

What will happen during the study?
During this study you will be asked to attend 7 extra (outpatient) appointments at Springfield Hospital. The first session will be for assessment, and the following appointments will involve you trying out some ear plug treatments. You will be asked to take home and wear an ear plug in one of your ears for 4 days whenever your voices are troubling you. There will be 3 types of ear plug for you to try, and you will be asked about your voices after trying each one. You will also be asked to attend another appointment one month after the study has finished, to see how you are getting on.
What are the risks/benefits/is the study therapeutic or non-therapeutic?
This is a therapeutic study as you may find that the ear plugs help with your voices. No adverse reactions or side effects are expected to arise from wearing the ear plug.

How long will the study last?
The study will last for approximately 6 weeks, and you will be invited to a follow up appointment one month after the study has finished. The results will only be known once everyone has completed the study.

Refusal to Participate/Withdrawal from Study
Participation in this study is entirely voluntary. The future management of your care will not be affected should you not wish to participate in this study, or chose to withdraw from the study at any time. I will not ask you for reasons why you do not wish to participate.

What about confidentiality?
It will be necessary for me to let your G.P know that you are participating in this study. All personal information will be treated as strictly confidential and will not be made publicly available. When the study is written up, no names will be included.

Who to contact if you have any concerns/problems
If you have any concerns or problems during the study, please feel free to contact me, Sophie Browning, Psychologist in Clinical Training on the phone number below.

Telephone 01483 259441, or Jane Street (Clinical Psychologist, Pathfinder) on 0181 6729911.
The Local Research Ethics Committee has approved the above statement.

Signed by the Chair of that Committee:
Date:

Index number of protocol:
Appendix C

CONSENT FORM

I .................................... have read and understand the patient information sheet which describes the research and I have been given a copy of this to keep. The nature, purpose and possible consequences of taking part in this research project have been explained to me and my queries have been satisfactorily answered. I have had enough time to consider and decide whether I wish to take part. I understand that I am entering this project of my own free will, that I may withdraw from this study at any time without necessarily giving any reasons, and that the future management of my case will not be affected.

Name of volunteer (Block capitals):

Signed:

Date:

Name of witness (Block capitals):

Signed:

Date:
Appendix D
Client Recording Sheet

Day 1

1. Did you use an ear plug today?
   Please circle: Yes No

2. Please guess how long you used the ear plug for (in total) today.
   Hours:
   Minutes:

3. Did the ear plug help?
   Please circle: Yes No Don't Know
Appendix E

AUDITORY HALLUCINATION RATING SCALE

Gillian Haddock
University of Manchester, 1994
GENERAL INSTRUCTIONS

The following structured interview is designed to elicit specific details regarding different dimensions of auditory hallucinations. When asking questions, the interview is designed to rate the patient's experiences over the last week for the majority of items. There are two exceptions to this e.g. when asking about beliefs regarding cause of voices, rate the patient's response based on what they believe at the time of interview. Also loudness of voices should be rated according to the loudness of voices at the time of interview or the last time the patient experienced them.

Name:  ----------------------------------------

Age:  ----------------------------------------

Sex:  M / F

Diagnosis: (If relevant) ----------------------

Length of time experiencing voices (years):  --------------

Hallucination in other modalities: visual/olfactory/gustatory/tactile
### AUDITORY HALLUCINATIONS : SCORE SHEET

<table>
<thead>
<tr>
<th>AUDITORY HALLUCINATIONS</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. FREQUENCY</td>
<td>□</td>
</tr>
<tr>
<td>2. DURATION</td>
<td>□</td>
</tr>
<tr>
<td>3. LOCATION</td>
<td>□</td>
</tr>
<tr>
<td>4. LOUDNESS</td>
<td>□</td>
</tr>
<tr>
<td>5. BELIEFS RE-ORIGIN OF VOICES</td>
<td>□</td>
</tr>
<tr>
<td>6. AMOUNT OF NEGATIVE CONTENT OF VOICES</td>
<td>□</td>
</tr>
<tr>
<td>7. DEGREE OF NEGATIVE CONTENT</td>
<td>□</td>
</tr>
<tr>
<td>8. AMOUNT OF DISTRESS</td>
<td>□</td>
</tr>
<tr>
<td>9. INTENSITY OF DISTRESS</td>
<td>□</td>
</tr>
<tr>
<td>10. DISRUPTION</td>
<td>□</td>
</tr>
<tr>
<td>11. CONTROL</td>
<td>□</td>
</tr>
</tbody>
</table>
3. LOCATION

When you hear your voices where do they sound like they're coming from?
- inside your head and/or outside your head?
- If voices sound like they are outside your head, whereabouts do they sound like they're coming from?

0 No voices present

1 Voices originate inside head, only

2 Voices outside the head, but close to ears or head
   Voices inside the head may also be present

3 Voices originate inside or close to ears and outside head away from ears

4 Voices originate from outside space, away from head only

4. LOUDNESS

How loud are your voices?
Are they louder than your voice, about the same loudness, quieter or just a whisper?

0 Voices not present

1 Quieter than own voice, whispers-

2 About same loudness as own voice

3 Louder than own voice

4 Extremely loud, shouting
5. **BELIEFS RE: ORIGIN OF VOICES**

What do you think has caused your voices?

- Are the voices caused by factors related to yourself or solely due to other people or factors?

If patient expresses an external origin:
- How much do you believe that your voices are caused by ------- (add patient's attribution) on a scale from 0-100 with 100 being that you are totally convinced, have no doubts and 0 being that it is completely untrue?

0  Voices not present

1  Believes voices to be solely internally generated and related to self

2  Holds a less than 50% conviction that voices originate from external causes

3  Holds 50% or more conviction (but less than 100%) that voices originate from external cause

4  Believes voices are solely due to external causes (100% conviction)

6. **AMOUNT OF NEGATIVE CONTENT OF VOICES**

Do your voices say unpleasant or negative things?

- Can you give me some examples of what the voices say? (record these e.g.'s)
- How much of the time do the voices say these type of unpleasant or negative items?

0  No unpleasant content

1  Occasional unpleasant content

2  Minority of voice content is unpleasant or negative (less than 50%)

3  Majority of voice content is unpleasant or negative (more than 50%)

4  All of voice content is unpleasant or negative
7. **DEGREE OF NEGATIVE CONTENT**

[Rate using criteria on scale, asking patient for more detail if necessary]

0 Not unpleasant or negative

1 Some degree of negative content, but not personal comments relating to self or family e.g. swear words or comments not directed to self, e.g. "the milkman's ugly"

2 Personal verbal abuse, comments on behaviour e.g. "shouldn't do that, or say that"

3 Personal verbal abuse relating to self-concept e.g. "you're lazy, ugly, mad, perverted"

4 Personal threats to self e.g. threats to harm to self or family, extreme instructions or commands to harm self or others and personal verbal abuse as in (3)

8. **AMOUNT OF DISTRESS**

Are your voices distressing?
- How much of the time?

0 Voices not distressing at all

1 Voices occasionally distressing, majority not distressing

2 Equal amounts of distressing and non-distressing voices

3 Majority of voices distressing, minority not distressing

4 Voices always distressing
9. **INTENSITY OF DISTRESS**

When voices are distressing, how distressing are they?
- Do they cause you minimal, moderate, severe distress?
- Are they the most distressing they have ever been?

0  Voices not distressing at all

1  Voices slightly distressing

2  Voices are distressing to a moderate degree

3  Voices are very distressing, although subject could feel worse

4  Voices are extremely distressing, feel the worst he/she could possibly feel

10. **DISRUPTION TO LIFE CAUSED BY VOICES**

How much disruption do the voices cause to your life?
- Do the voices stop you from working or other daytime activity?
- Do they interfere with your relationships with friends and/or family?
- Do they prevent you from looking after yourself, e.g. bathing, changing clothes etc?

0  No disruption to life, able to maintain independent living with no problems in daily living skills. Able to maintain social and family relationships (if present)

1  Voices cause minimal amount of disruption to life e.g. interferes with concentration although able to maintain daytime activity and social and family relationships and be able to maintain independent living without support.

2  Voices cause moderate amount of disruption to life causing some disturbance to daytime activity and/or family or social activities. The patient is not in hospital although may live in supported accommodation or receive additional help with daily living skills.

3  Voices cause severe disruption to life so that hospitalisation is usually necessary. The patient is able to maintain some daily activities, self-care and relationships whilst in hospital. The patient may also be in supported accommodation but experiencing severe disruption of life in terms of activities, daily living skills and/or relationships.

4  Voices cause complete disruption of daily life requiring hospitalisation. The patient is unable to maintain any daily activities and social relationships. Self-care is also severely disrupted.
11. **CONTROLLABILITY OF VOICES**

- Do you think you have any control over when your voices happen?
- Can you dismiss or bring on your voices?

0 Subject believes they can have control over their voices and can always bring on or dismiss them at will

1 Subject believes they can have some control over the voices on the majority of occasions

2 Subject believes they can have some control over their voices approximately half of the time

3 Subject believes they can have some control over their voices but only occasionally. The majority of time the subject experiences voices which are uncontrollable

4 Subject has no control over when the voices occur and cannot dismiss or bring them on at all
NUMBER OF VOICES

How many different voices have you heard over the last week?

No. of voices =

FORM OF VOICES

1st person  Yes/No  (n= )
2nd person  Yes/No  (n= )
3rd person  Yes/No  (n= )
Single words or phrases without pronouns  Yes/No  (n= )
Appendix F

BASELINE AND POST TREATMENT ASSESSMENT

FREQUENCY
How often did you experience voices over the last 4 days?
0. Voices were not present.
1. Voices occurred at least once.
2. Voices occurred at least once a day.
3. Voices occurred at least once an hour.
4. Voices occurred continuously or almost continuously i.e. stopped only for a few seconds or minutes.

LOUDNESS
How loud were your voices over the last 4 days?
Were they louder than your voice, about the same loudness, quieter or just a whisper?
0. Voices were not present.
1. Quieter than own voice, a whisper.
2. About same loudness as own voice.
3. Louder than own voice.
4. Extremely loud, shouting.

DISTRESS
Over the last 4 days, when your voices were distressing, how distressing were they?
Did they cause you minimal, moderate or severe distress?
Were they the most distressing they had ever been?
0. Voices were not distressing at all.
1. Voices were slightly distressing.
2. Voices were distressing to a moderate degree.
3. Voices were very distressing, although patient could feel worse.
4. Voices are extremely distressing, feel the worst he/she could possibly feel
Appendix G

Interview

1. Over the last 4 days, how often did you use the ear plug:
   Please circle:
   
   a. Every time the voices became troublesome.
   
   b. On most occasions when the voices became troublesome.
   
   c. On some occasions when the voices became troublesome.
   
   d. Rarely.
   
   e. Never

2. Did the ear plug help?
   Please circle:
   
   a. The ear plug made the voices worse.
   
   b. The ear plug did not help at all.
   
   c. The ear plug helped a bit.
   
   d. The ear plug helped a lot.
3. Was this latest ear plug better, worse or about the same as the one before? Please circle:

a. Better  
b. About the Same  
c. Worse

4. In what way was this latest ear plug better or worse than the one before?

5. In what way did the ear plug help?  
   Did it reduce the volume?  
   Did it improve the content?  
   Did it reduce the number of times you heard voices?  
   Did it help you feel less distressed?

6. Which ear did you use the ear plug in?

7. Are you right or left handed?
Appendix H

Individual Graphs

Frequency

Participant number 1

Participant number 2
Participant number 5

Participant number 7
**Loudness**

**Participant number 1**

![Graph showing loudness ratings for Participant number 1 across different phases.]

**Participant number 2**

![Graph showing loudness ratings for Participant number 2 across different phases.]

(Treatment Phase)
Participant number 8

![Bar Chart]

Participant number 10

![Bar Chart]
Distress

Participant number 1

Participant number 2
Participant number 3

Mean Mean Distress Ratios (0-4)

Initial Foam Cotton Wool Wax Both Post Baseline Follow-Up

Treatment Phase

Participant number 4

Mean Mean Distress Ratios (0-4)

Initial Foam Cotton Wool Wax Both Post Baseline Follow-Up

Treatment Phase
Participant number 5

Participant number 7
Participant number 8

Participant number 10

220
Wax

"It helped a lot by stopping the voices going all the way through. It made things outside sound funny which was helpful".
"It made things sound funny which took my mind off the voices".
"My concentration was better with it in because it distracted me from the voices".
"It was better than my radio and headphones, it blocked the voices more".
"It made the voices quieter".
"Things sounded strange with it in but the voices were better"
"It seemed to block out the noises a bit".
"It helped by blocking out the voices"
"It made the voices worse because I couldn't hear what was going on outside my head".
"All I could hear was the voices, I felt like I couldn't hear properly".

Foam

"It made things sound funny, but you could still hear what was going on around you which was good".
"It helped by muffling the voices. The voices went away quite a bit when I used it".
"It made things sound muffled".
"It helped by blocking out the voices"
"It was a great help. It helped me hear less voices and feel less upset once I put it in".
"It helped by making the voices go out".
"It was better than the wax because it didn't block out all of the other sounds".
"It stops more voices than the other types".
"It was not as distracting as the wax as it didn't block out as much".
"The voices were trying to speak, but they couldn't come through properly because of the ear plugs. I didn't get nearly as many voices with the plugs".
"It blocked out the voices a bit".
"I couldn't hear as much related to myself. It blocked out the voices, the voices didn't happen as much. It helps me block stuff out so I can cope".

"It made the voices quieter".

"My voices were quieter with this ear plug in".

"It reduced the volume of the voices"

**Cotton Wool**

"It helped a bit, but it didn't block out as much".

"It was comfortable, but not as good at stopping the voices as the other types".

"These ones did not block out enough"

"It didn't stop the voices as much".
Large Scale Research Project

“Does smoking a nicotine yielding cigarette provide psychological benefits in non-abstinent smokers?”

Year III

Aug 1999
Large scale research: Does smoking a nicotine yielding cigarette provide psychological benefits in non-abstinent smokers?

1.0 Abstract

Background
There is a widespread belief amongst smokers that cigarette smoking alleviates stress and enhances attentional performance. Research investigating whether nicotine actually improves cognitive performance and mood has, however, revealed conflicting results. A major problem with research in this area is that the majority of studies have involved testing smokers who had abstained from smoking before nicotine was administered. The findings may therefore, simply reflect the ability of nicotine to reverse the mood and performance deficits caused by nicotine deprivation, rather than any primary enhancement. Much of this previous research has also involved methodological limitations such as, a lack of adequate placebo control, which makes it difficult to interpret the findings.

Objectives
This study was designed to investigate the psychological effects of nicotine, absorbed via smoking a cigarette, that may play a role in controlling smoking behaviour. The key focus was on the cognitive performance and mood enhancing effects of nicotine in non nicotine deprived (non-abstinent) smokers. The main hypothesis was that nicotine would enhance mood and cognitive performance in non-abstinent smokers. Understanding what motivates people to smoke and whether nicotine has beneficial psychological effects should increase our understanding of the onset and maintenance of smoking and thus enable us to design more effective smoking cessation interventions.
Design
In a double-blind, controlled study, the effects of two doses of inhaled nicotine (containing similar tar and carbon monoxide yields) were compared in sixty non-abstinent smokers. Nicotine versus de-nicotinised cigarette comparisons were made by independent t-tests, based on between groups variance in post minus pre smoking changes. Linear regression analyses were carried out to adjust the comparisons for all baseline predictors of response.

Method
Cognitive performance was assessed via the computerised Rapid Visual Information Processing (RVIP) test of concentration. A number of subjective measures, including the University of East London brief mood scales, were also administered, both before and after smoking one of the two cigarettes.

Results
Nicotine significantly increased the number of correct hits on the RVIP (an 11.6% improvement attributable to nicotine was obtained), even when other baseline factors were adjusted for. After adjusting for baseline characteristics, there was no evidence for nicotine improving mood.

Conclusions
These results provide further evidence of a primary effect of nicotine in enhancing cognitive performance, not attributable to a reversal of a deficit induced by withdrawal. The theoretical and clinical implications of the research are discussed, and possible directions for future research are suggested.
2.0 Introduction

2.1 Background to Research Project / Theoretical Rationale

2.1:1 The Health Risks of Smoking

Tobacco smoking accounts for approximately 120,000 deaths a year in the UK, and is the single largest cause of premature death and disease in the Western World (Peto, Lopez, Boreham, Thun & Clark, 1992). Specifically, smoking is the major cause of cancer, heart disease and chronic obstructive lung disease (Callum, 1998), and regular smokers more than double their risk of dying before the age of 65 (Report of the Scientific Committee on Tobacco and Health, 1998). Treating illness and disease caused by smoking is estimated to cost the NHS up to 1.7 billion pounds every year (Smoking Kills; Government White Paper on Tobacco, SKGWT, 1998). One third of the cancer deaths in Britain and one sixth of deaths from other causes could possibly be prevented by avoidance of smoking (e.g. US Department of Health and Human Services; USDHHS, 1988).

It has been a consistent finding in large scale surveys that the great majority of adult (USDHHS, 1988) and adolescent (Pierce, Choi & Gilpin, 1996) smokers are aware of the health risks associated with smoking. In addition, 70% of smokers report that they would like to give up smoking if they could (Freeth, 1998). However, the prevalence of cigarette smoking is rising amongst school children and young people and the number of adults who smoke has stopped falling, with nearly 30% of adults in the UK still smoking (SKGWT, 1998). Amongst those who attempt to stop on their own, only around 4% succeed for a year or more (Hughes et al, 1990), and less than 40% of regular smokers succeed in quitting permanently by the age of 65 (Jarvis & Jackson, 1988). Over the past 25 years, a considerable amount of research has investigated the reasons why smokers find it so difficult to stop, despite knowledge of the health consequences and the desire to do so (e.g. USDHHS, 1988).
In 1998, the UK Government responded to the recent rise in smoking prevalence by making tobacco smoking a priority issue for the Health of the Nation (SKGWT, 1998). This White Paper also emphasised the role health professionals have to play in providing smoking cessation advice. The design and evaluation of smoking cessation programs requires an understanding of the psychological and pharmacological factors which promote smoking and which may prevent smoking cessation. The UK Government has also recently invested 60 million pounds in building a comprehensive NHS service to help smokers to quit.

2.1: 2 Why Do People Smoke?

A number of studies have investigated the psychological actions of nicotine and how this may promote the initiation and maintenance of this dependence process. For example, the majority of smokers report that they smoke because it improves their affective state by reducing stress and anxiety (e.g. Russell et al, 1974; Robinson & Pritchard, 1992). In line with this, some research has found an increase in the rate of smoking when people feel anxious or stressed (e.g. Pomerleau & Pomerleau, 1987). Many smokers also perceive positive effects of smoking on their cognitive performance, for example, by helping them to think and concentrate (e.g. Speilberger, 1986; Warburton & Wesnes, 1978). In line with this, surveys have indicated that the majority of smokers (86% in a smoking clinic population, 59% among hospital workers and 86% of students) believed that smoking helped them to concentrate (Russell et al., 1974; Warburton & Wesnes, 1978). The above findings suggest that there may be psychological effects of nicotine that may provide a basis for its use. The fact that people believe that tobacco use has these effects may, therefore, contribute to the initiation, maintenance and relapse of smoking.

2.1: 3 Nicotine Paradox

Nicotine is generally considered to be the primary psychopharmacologically active drug in cigarette smoke (Pritchard, Robinson & Guy, 1992). Numerous studies have found that smokers offer two main reasons for smoking. First, to stimulate them and second
to relax them (e.g. Hughes, Higgins, & Hatsukami, 1990; West, 1993; Spielberger, 1986). As Foulds, Stapleton, Bell, Swettenham, Jarvis & Russell (1997) point out, these motivations appear contradictory. It is unclear how nicotine can have sedative subjective effects when evidence suggests that the primary physiological effects are stimulant (e.g. Cryer, Haymond, Santiago & Shah, 1976; Foulds et al, 1994). This contrast between the reported subjective effects of nicotine and the measured physiological effects has been termed the "nicotine paradox" (Nesbit, 1973).

2.2 Models of Smoking Maintenance

Various models have been proposed to explain the maintenance of smoking. As Heishman (1998) points out, particular controversy remains regarding whether nicotine provides the smoker with true beneficial effects or whether these effects are simply due to the reversal of nicotine withdrawal symptoms. The two main models (Deprivation Reversal and Nicotine Resource) are discussed below.

2.2.1 Deprivation Reversal Model

It has been suggested that any perceived mood or performance enhancements may not be primary improvements, but rather a reversal of deficits resulting from tobacco abstinence (e.g. US DHHS, 1988). When smokers abstain from nicotine for longer than a few hours, they experience an unpleasant withdrawal syndrome. Difficulty concentrating, worsened mood and impaired performance are components of this syndrome (American Psychiatric Association, 1994). The Deprivation Reversal Model focuses upon the negative aspects of abstinence and states that people only smoke to prevent or reverse withdrawal (Schachter, 1978). If the negative effects of acute deprivation are more important than the positive mood effects of smoking, than smokers would often be more stressed than non smokers. In support of this, a number of studies have shown smokers to be worse off psychologically than non smokers (e.g. West, 1993). The aversiveness of nicotine withdrawal is therefore likely to be an important factor underlying the maintenance of smoking and the failure of many attempts at cessation.
2.2: 2 Nicotine Resource Model

In contrast to the Deprivation Reversal Model, the Nicotine Resource Model suggests that nicotine leads to real psychological gains, and that a major motivation for many smokers is, therefore, the use of smoking as a means of obtaining these desired psychological effects, primarily, enhancement of cognitive performance or reduction of negative mood states such as anxiety (Pritchard, Robinson & Guy, 1992). As highlighted by Robinson & Pritchard (1992), this hypothesis is consistent with the smoking motivation literature which suggests that smokers use cigarettes primarily as a "resource" that provides them with psychological benefits which are compatible with everyday tasks and stresses. Mangan & Golding (1984) described the Arousal Modulation Theory in an attempt to explain the nicotine paradox. They proposed that people smoke tobacco to increase arousal when their arousal level is low, or to reduce arousal when they are stressed. This model therefore infers that nicotine intake via cigarette smoking may have relaxing or stimulating effects in different smokers or in the same smokers at different times (Mangan & Golding, 1984). However, there is a shortage of empirical evidence to support this (Gilbert, 1979). In support of the Nicotine Resource Model, many cigarettes appear to be smoked independently of withdrawal effects.

2.2: 3 Sensory Gratification Models

As pointed out by Gilbert & Welser (1989), any stress reducing effects of smoking may also be partly due to non-pharmacological aspects of smoking e.g. the "taste", sensory responses, manipulation of the cigarette and the social aspects of smoking. Russell, Peto & Patel (1974) found that significant number of smokers report that they enjoy smoking because they like handling cigarettes, watching smoke, and the sensory experience in the mouth, throat and lungs. Pritchard, Robinson, Guy, Davis & Stiles (1996) found that sensory factors were as important as nicotine pharmacology in terms of satisfaction and reduction in desire to smoke. Also, Levin, Behm, Carnahan, LeClair, Shipley & Rose (1993) reported that a citric acid aerosol producing a "throat scratch" similar to that of cigarette smoke reduced immediate desire to smoke and, in a study using anesthesia to block airway sensations, smoking was reported to be less
enjoyable (Rose, Tashkin, Ertle, Zinser & Lafer, 1985). Westman, Behm & Rose (1996) examined the subjective effects of nicotine and airway sensations when given separately to six over night deprived smokers. The effects of intravenous (IV) nicotine, IV saline and de-nichotinised (de-nic) cigarettes were compared to a standard 1mg cigarette. Many of the subjective effects from the de-nic cigarette (e.g. craving reduction, increased arousal and relaxation) were comparable to that of the standard cigarette. Craving reduction was higher for all of the cigarette conditions than the IV conditions alone. The smoking conditions also produced higher ratings than the IV conditions on most of the “calming” and “arousing” items. This data supports the hypothesis that “airway sensory replacement” may be useful for smoking cessation.

Nicotine replacement therapy alone for smoking cessation is only partially successful and this may be due to the lack of adequate attention to the sensory and motor components of smoking. However, Hajek, West, Foulds, Nilsson, Burrows & Meadow (in press) carried out a randomised comparative trial of the effectiveness of nicotine gum, transdermal patch, nasal spray and an inhaler in helping people to stop smoking. The products did not differ in their effects on withdrawal symptoms, urges to smoke, or rates of abstinence, despite the differences in their sensory and behavioural aspects and in the speed of nicotine absorption. Hajek et al (in press) suggested that the fact that in a naturalistic setting, the inhaler was no more effective than the other products and that the actions of puffing, as one would on a cigarette shaped product, and the irritation in the throat did not enhance efficacy suggests that efficacy is determined primarily by the extent of nicotine, rather than behavioural substitution.

Each of the above theories on the maintenance of smoking therefore has some supporting data, but there have been many inconsistencies and contradictions. As Parrot (1994) points out, the Nicotine-Resource and Deprivation-Reversal models are difficult to separate empirically as it is hard to establish an individual’s natural level of stress/anxiety had they not become a regular smoker. The mechanisms that mediate the psychological effects of smoking therefore remain to be established. Recent research into the effects of smoking/nicotine on mood and cognitive performance will now be reviewed.
2.3 The Mood Enhancing Effects of Nicotine

Several studies have shown stress to be related to the onset of smoking in early adolescence (e.g. Kaplan, Martin, Johnson & Robbins, 1986), which suggest that subjective stress may be a risk factor for the initiation of smoking. Parrot & Garnham (1998) assessed 15 regular cigarette smokers, 15 overnight deprived smokers and 20 non smokers. Initially, the deprived smokers reported significantly greater feelings of stress, irritability, depression, poor concentration and low pleasure, than both the non deprived smokers and non smokers. After a cigarette/rest period however, the mood states of all three groups became similar. These findings suggest that mood gains after smoking reflects the simple reversal of abstinence effects, which supports the Deprivation Reversal Model.

A number of laboratory based studies have reported mood-enhancing effects of nicotine. For example Perkins, Grobe, Fonte & Breus (1992) showed that smoking decreased subjective stress under conditions of high stress for 'non deprived' (participants smoked an hour and a half prior to the task trial) smokers. Similarly, Pomerleau, Turk & Fertig (1984) investigated the effects of smoking a nicotine cigarette, or a de-nic cigarette, in non deprived (participants smoked half an hour prior to the experiment) smokers attempting unsolvable anagrams. Participants exhibited significantly greater anxiety reduction after smoking a nicotine cigarette, than after smoking a de-nic cigarette. These results support the hypothesis that nicotine from smoking can produce changes in mood that are independent of the state of nicotine withdrawal. Warburton et al (1988) examined the puff by puff mood effects of cigarettes on a set of mood scales (Bond & Lader, 1974). Participants rated themselves as significantly calmer, happier and more tranquil, sociable, contented and relaxed after successive puffs.

Parrott and colleagues recently conducted a series of studies (O'Neil & Parrott, 1992; Parrott, 1993; Parrott & Joyce, 1993; Parrott, 1994) investigating mood and arousal over a day of "normal smoking" of participants own brand cigarettes. Participants completed the same mood questionnaire as used in the present study, both immediately before and immediately after smoking. A diurnal pattern of self-reported
high stress at the start of the day, which then reduced over the rest of the day emerged amongst both smokers (O'Neill & Parrott, 1992; Parrott, 1993, 1994; Parrot & Joyce, 1993) and non-smokers (Parrot & Joyce, 1993). In each study, feelings of anxiety/stress were significantly lower post-smoking than pre-smoking. Similarly, the authors found significantly increased arousal post smoking, indicating that smoking can reduce stress and increase arousal simultaneously. The authors concluded that mood control is central to nicotine addiction.

The above findings of nicotine producing mood changes in both non-deprived smokers and non smokers largely support smokers' self-rated motives for smoking (Russell et al, 1974). However, a number of other laboratory studies have failed to find any positive effects of nicotine on mood. For example, Pomerleau and Pomerleau (1990) found that following a psychological stressor (mental arithmetic), smoking a nicotine cigarette did not reduce anxiety compared with sham smoking (e.g. where participants are given an unlit cigarette and asked to puff on it as if smoking). In addition, Gilbert et al (1992) failed to find any increase in pleasant feelings following participants' smoking either their usual brand or a high nicotine cigarette. In addition, Foulds, Stapleton, Bell, Swettenham, Jarvis & Russell (1997) compared the effect of nicotine injections with saline on subjective measures in 18 never smokers and 18 smokers (24h deprived). Prior to the injections, the mood of the smokers was found to be significantly worse than the mood of the never smokers, which the researchers suggest was as a result of tobacco withdrawal. There was, however, no evidence of nicotine improving mood scores in either group, under either condition. Also in contrast to the predictions of the Nicotine Resource Model, a number of studies have found that when non smokers are administered an acute dose of nicotine, they report a detrimental effect on their mood. For example, Perkins et al (1994) found that nicotine made non smoking participants more jittery and less relaxed and Newhouse, Sunderland, Narang, Mellow, Fertig, Lawlor & Murphy (1990) found that nicotine increased tension and depression.

As Parrot & Garnham (1998) point out, the strongest evidence against the Resource Model comes from smoking cessation studies. If nicotine is a genuine mood resource, then smokers should suffer from adverse moods when they quit. However, the long
term mood effects of cessation appear to be beneficial, with a number of studies documenting mood improvements ten weeks after cessation (e.g. Parrott, 1995; Hughes et al, 1990). As pointed out by Foulds (1994), this could partly be due to self satisfaction for giving up, but may also be a real improvement due to being released from a nicotine dependent state.

There has, as yet, clearly been a lack of consistent findings on the effects of smoking on mood. What is clear, however, is that many studies have failed to find any convincing mood enhancing effects of nicotine.

2.4 The Performance Enhancing Effects of Nicotine

2.4:1 Studies Involving Nicotine Deprived Smokers

The effects of nicotine on the performance of various types of learning (e.g. Colrain et al., 1992), memory tasks (Kerr et al, 1991; Warburton et al, 1986), sensory abilities (e.g. Sherwood, Kerr & Hindmarch, 1992) and fine motor skills (Perkins et al, 1990; Jones et al, 1992) have been investigated in a large number of studies. Many recent studies have also investigated the effects of nicotine and smoking on attentional abilities (Heishman et al, 1994), including focused attention (e.g. Petrie & Deary, 1989); selective attention (e.g. Heishman, Snyder & Henningfield, 1993); divided attention (e.g. Kerr et al, 1991) and sustained attention. It is sustained attention that will be the main focus of this next section.

The computerised Rapid Visual Information Processing (RVIP) task has been widely used in psychopharmacology research and has been shown on numerous occasions to be sensitive to nicotine effects (e.g. Foulds et al, 1996). Nicotine has been shown to facilitate performance on the RVIP in abstinent smokers. For example Wesnes & Warburton (1983) found that smoking improved speed and accuracy on the RVIP task, both relative to pre-smoking baseline levels and to performance after smoking nicotine-free cigarettes or not smoking. Wesnes & Warburton (1984) then investigated the effects of four cigarettes with a range of co-varying nicotine and tar yields on
performance on RVIP in twenty five smokers who had been deprived of nicotine for ten hours. Smoking helped to prevent the decrease in speed and accuracy which occurred over time in the non smoking conditions and improved performance over baseline levels. The greatest improvements were found with the higher nicotine yielding cigarettes which contained 1.5 mg nicotine, in comparison to the low nicotine yield cigarettes (0.9 mg).

2.4: 2 Studies Involving Non-Nicotine Deprived Participants

The above studies involved testing smokers who had abstained from smoking for 8-24 hours before nicotine was administered. Therefore, these findings may simply reflect the ability of nicotine to reverse the performance deficits caused by nicotine deprivation. Absolute enhancement can only be demonstrated when nicotine produces statistically significant facilitation of performance over baseline levels in non smokers or non- abstinent smokers (Heishman et al, 1994).

There is now growing evidence demonstrating that nicotine administered to non-abstinent or non smokers can enhance cognitive performance, suggesting that this effect could be a primary one. In their extensive review of studies, where abstinence was controlled for by using non smokers or non abstinent smokers, Sherwood, Kerr & Hindmarch (1992) concluded that primary effects of nicotine do exist. Also, Warburton & Arnall (1994) found that smoking a cigarette produced similar improvements in rapid information processing whether smokers were abstinent for twelve hours or just one hour. Foulds, Stapleton, Swettenham, Bell, McSorley & Russell (1996) reported more correct hits and faster reaction times on the RVIP after IV nicotine in eighteen, 24-hour abstinent smokers, and faster reaction time on the RVIP in eighteen never smokers. The authors reported a lack of a significant difference in nicotine’s effects in the two groups, suggesting that withdrawal relief was not a major part of the effect. Wesnes & Warburton (1984) found very similar results. These researchers also found a lack of effects on measures largely measuring motor speed, suggesting that nicotine is acting directly on cognitive functions (e.g. information processing speed) rather than simply speeding up motor responses (Wesnes & Warburton, 1984).
Pritchard, Robinson & Guy (1992) reported that smoking enhanced reaction time in a simple continuous performance test. Also, Mumenthaler, Taylor, O'Hara & Yesavage (1998) investigated the effects of nicotine on flight simulator performance in fifteen non-smoking pilots. They found that participants' performance was significantly better after receiving nicotine gum compared with placebo gum. In particular, nicotine improved scores on approach to landing, which requires sustained attention.

Wesnes, Warburton & Matz (1983) found that nicotine tablets produce similar information processing enhancement effects in non-smokers as with smokers. Enhancing effects do not, therefore, appear to be dependent on habitual use. This supports other evidence suggesting that smoking maintenance may be explained by the enhancement effects of nicotine, rather than by withdrawal relief alone, therefore lending support to the Nicotine Resource (Warburton & Wesnes, 1978) model. As Warburton & Wesnes (1978) point out, it seems likely, given the rapid onset of performance enhancements effects, that these effects of nicotine lead smokers to maintain an adaptive smoking routine to provide acute control over arousal and information processing. In light of this data, smokers' self reports and perceptions may be correct that smoking helps them to attend, think and perform.

2.4: 3 Evidence against the Performance Enhancing Effects of Nicotine

Positive findings with non smokers and non abstinent smokers in the studies mentioned above are offset by negative ones in others, and findings regarding the effects of nicotine on the RVIP have been inconsistent. Recently, two extensive literature reviews (Heishman et al, 1994; Sherwood, 1993) found that many published studies have failed to find an enhancing effect of nicotine on cognition. Where sustained attention is specifically concerned, of the 19 experiments that investigated the effects of smoking or nicotine on the RVIP test reviewed by Heishman et al. (1994), 15 either had no effect or impaired performance on some measure. Heishman et al (1994) found that in 8/9 studies with non-abstinent smokers and non smokers (5 of which used the RVIP), performance was not affected by smoking or nicotine (Hasenfratz, Pfiffner, Pellaud, &
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Battig, 1989, experiment 2; Jones et al, 1992; Keenan et al, 1989; Taylor & Blezard, 1979; Wesnes & Revell, 1984, experiments 1 and 2; Wesnes & Warburton, 1984 experiment 2; Wesnes et al, 1983). In addition, Rusted, Mackee, Williams & Willner (1998) in a study involving both deprived and non abstinent smokers, found that performance on the RVIP did not improve for either group following nicotine intake.

2.5 Importance of Current Study

Clinical Psychologists have been at the forefront of trying to understand the psychological elements of nicotine addiction and in applying psychological theory to smoking cessation interventions (e.g. Jarvis, 1996; Hajek & West, 1998; Foulds, 1996; Sutherland, 1996; Sutherland, Stapleton, Russell, Jarvis, Hajek, Belcher & Feyerbrand, 1992; Raw, Jarvis, Feyerabend & Russell, 1980; Schneider, Olmstead, Nilsson, Mody, Franzon & Doan, 1996). Understanding what motivates people to smoke and whether nicotine has beneficial psychological effects should increase our understanding of the onset and maintenance of smoking. A better understanding of the nature of nicotine dependence may also help to pave the way for new approaches to assist smoking cessation in the future. For example, the disregard of the beneficial effects of nicotine may have contributed to the low success rate of many cessation programmes. If, however, smokers do not genuinely benefit psychologically from cigarette smoking, a major aim of interventions should be to dispel such myths (Foulds et al, 1996).

2.5: 1 Methodological Limitations of Previous Research

Further studies are also needed in this area, as interpreting the results from many previous studies is complicated by inconsistent results and methodological weaknesses (Heishman, 1998). The variance in results may be partly due to the fact that the studies have differed in a number of important dimensions. For example, differences in task demands and the wide variation in the methods of nicotine delivery employed, e.g. nicotine tablets (Wesnes & Warburton, 1984); nicotine chewing gum (Sherwood, Kerr & Hindmarch, 1990), nasal nicotine drops (West & Jarvis, 1986); and subcutaneous nicotine injections (Foulds et al, 1996). Also, crucially, several studies did not include an
adequate placebo control. These studies involved participants smoking in one experimental session and not smoking, or sham smoking in other sessions (e.g. Warburton & Arnall, 1994). The use of sham smoking as the control condition does not capture the important sensory cues associated with smoking. Without an effective placebo condition it is also difficult to interpret the results as the data is confounded by participants and experimenter knowing, with certainty, whether or not nicotine was administered. In addition, as highlighted by Heishman (1998), several studies have tested nicotine deprived smokers without reporting pre-deprivation performance levels. True enhancement of performance can be demonstrated most clearly in non-smokers or non-abstinent smokers (Heishman et al, 1994). In addition, the sample size has often been very small and frequently included only one gender.

In his recent extensive review of the literature, Heishman (1998) made the following two suggestions for future experimental research. Firstly, the use of same tar, variable nicotine cigarettes (enabling proper double blind "placebo" controlled designs). Secondly, that more studies are needed which assess the effects on smokers who are not in a withdrawal state (i.e. non-abstinent or non smokers), as studies involving abstinent smokers may only be demonstrating that nicotine and smoking can reverse deprivation-induced performance deficits. These recommendations have been implemented in the present study by administering nicotine, in the form of cigarettes varying in their nicotine yields, but with very similar tar and Carbon Monoxide (CO) yields to non-abstinent smokers in a double-blind, controlled study. Cigarette yields are calculated on a standard "Federal Trade Commission" smoking machine. As described by Jarvis & Bates, (1999), this smoking machine has a mechanical mouth and draws a fixed number of standard puffs over two seconds. This is repeated every minute until the cigarette burns down to a pre-determined butt length. The tar and nicotine residues drawn into the machine are then measured (Jarvis & Bates, 1999). The difference between the nicotine and de-nic cigarettes is primarily in the filter and the way it performs when tested in the smoking machine. The filter retains tar and nicotine as smoke is drawn through the filter and can have ventilation holes that allow air to be drawn in to mix with the smoke. This mixing of air with the smoke reduces its' apparent tar and nicotine content (Jarvis & Bates, 1999).
Unlike in many previous studies (e.g. Foulds et al., 1997), in the present study, the nicotine was provided in a cigarette. Participants therefore received cues from an actual cigarette and had some control over the dose of nicotine absorbed in a naturalistic way (rather than smoking in a controlled way, that would be far removed from the usual way they would chose to smoke). In addition, there have been a lack of studies measuring both mood and performance effects and this present study included a large number of participants, in comparison to the majority of studies in this area.

2.6 Objectives

The aim of this study was to investigate the psychological effects of nicotine, absorbed via smoking a cigarette, that may play a role in controlling smoking behaviour. The key focus was on the cognitive performance (sustained attention) and mood enhancing effects of nicotine in non-abstinent smokers. Any enhancing effect in this group must be interpreted as a primary nicotine effect rather than withdrawal relief.

2.7 Main Hypothesis

Nicotine will enhance mood and cognitive performance in non-abstinent smokers.
3.0 Method

3.1 Participants

Ethical approval was sought and obtained from a Local Ethics Committee (Appendix A). Participants included 60 volunteer cigarette smokers, comprising 29 men and 31 women. Participants were recruited from the student population at the University of Surrey, and from volunteers from the South London area. Participants were approached whilst they were smoking around the University campus or in the Kings College Hospital social club. At the recruitment stage, participants were informed that the study involved investigating the psychological effects of smoking, and were provided with an Information Sheet (Appendix B) to read and keep. They were then given the ARU Smoking Questionnaire (Appendix D) and the Questionnaire of Smoking Motives (Appendix E) and asked to complete them and bring them to their appointments. Participants did not receive remuneration for taking part in the study.

The following inclusion criteria were adhered to: All participants were aged between 18 and 60 years, were able to speak, read and write English and had smoked at least ten cigarettes per day for the past year. The aim was to study regular, dependent smokers, and exclude light/social smokers. The following exclusion criteria were adhered to: People with significant health problems or who were pregnant, people who had consumed alcohol on the day of testing or caffeine during the two hours prior to testing.

The study took place in two separate laboratories, one at the University of Surrey and one at the Institute of Psychiatry. Both laboratories were very similar in terms of size, lighting, temperature and ventilation.

3.2 Research Design

The study comprised two groups of subjects, those who received the de-nicotinised (de-nic) cigarettes and those who received the nicotine cigarettes. The cigarettes were randomised and allocated consecutively in a double blind manner, in an attempt to avoid any experimental and attributional effects that may influence participants'
emotional states and the effects of the nicotine. The randomisation procedure involved a statistician producing a computer generated, randomised list of participant (cigarette) numbers and allocating each a code (group 1 or group 2). The cigarettes were then numbered accordingly, placed in separate envelopes and given to the experimenter who allocated them consecutively. The statistician kept the separate list of which cigarettes were of which nicotine yield. The experimenter was only unblinded as to the nicotine content of the cigarettes after the data was entered onto the computer. Both the participants and the researcher were therefore blind to the type of test cigarette smoked. Since measures were taken both pre and post treatment, the design was a two by two mixed design.

3.3 Materials

The experimental cigarettes were obtained by Dr. Andrew Waters (University of Pittsburgh) from the Phillip Morris Tobacco Company, who produced them specially for research purposes. The Phillip Morris Tobacco Company did not provide any financial assistance and did not have any influence on the procedures or reporting of the study. The Phillip Morris Tobacco Company tested the tar, nicotine and CO yields of the cigarettes using the standard Federal Trade Commission method (as described above), and found them to be as follows:

A. De-nic cigarette (virtually nicotine free):
   - Nicotine yield = 0.08 mg
   - Tar yield = 9.1 mg
   - CO yield = 8.9 mg

B. Nicotine cigarette (containing the equivalent nicotine content of a middle tar brand, e.g. Malboro King Size):
   - Nicotine yield = 1.01 mg
   - Tar yield = 9.5 mg
   - CO yield = 8.6 mg
The cigarettes were therefore designed to deliver differing amounts of nicotine, but very similar amounts of tar and Carbon Monoxide (CO). This is unlike commercially available cigarettes, in which there is a strong correlation between measured tar and nicotine yield. For example, traditional Malboro cigarettes deliver 0.9mg of nicotine, 12.7mg of tar and 12.4mg of CO, whereas, in comparison, Malboro Light cigarettes contain 0.6mg of nicotine, 7.3mg of tar and 8.7mg of CO. The experimental cigarettes therefore allowed the administration of nicotine via cigarette smoking, whilst keeping the delivery of tar constant over conditions. The cigarette with the minimum nicotine yield could be considered a placebo since there were unlikely to be any drug effects with such a low delivery of nicotine. There are no commercially available cigarettes with such a low nicotine yield. This suggests that tobacco manufacturers and the public have found this level of nicotine inadequate in terms of maintaining subjective effects. In line with this, in a study which offered progressive money incentives and health messages designed to motivate smokers to switch to very low tar/nicotine cigarettes, only 6 of 121 participants adopted brands delivering 0.2 mg or less of nicotine (Wonnacott et al., 1990).

However, de-nic cigarettes with a nicotine yield less than 0.1mg have been used effectively as placebo cigarettes in previous studies. For example, studies have reported that de-nic cigarettes suppress acute withdrawal and in the short term are indistinguishable on withdrawal relief (Butschky et al. 1995), and craving ratings (Gross, Lee & Stitzer, 1997) to regular cigarettes. In addition, Rusted, Mackee, Williams & Willner (1998) found that smoking a cigarette following deprivation produced the subjective experience of satisfaction and of perceived cognitive gain, independent of its nicotine content. These findings indicate that participants can obtain cigarette satisfaction and temporary relief from tobacco withdrawal without the delivery of nicotine.

A pilot study was carried out by another researcher using the same batch of cigarettes as used in the present study, in order to check that the nicotine deliveries were consistent with those reported by the manufacturer. In this pilot study, volunteers were instructed to take seven deep puffs from the cigarettes, with blood samples being
drawn immediately before the first and after the last puff. The de-nic cigarettes produced an average increase in blood nicotine concentration of 1.8 nanograms (ng)/ml (range of 1.1 to 2.3 in three volunteers) and the 1.01 nicotine cigarettes produced an average increase of 19 ng/ml (range of 10.1 to 26.7 range in 5 volunteers). This pilot study confirmed that the de-nic cigarettes delivered negligible amounts of nicotine, whereas, the 1.01 mg yield cigarettes delivered a similar quantity of nicotine to commercially available medium strength cigarettes. An average CO boost of 4.3 for the de-nic cigarette and 5.6 for the nicotine cigarette was also obtained, confirming that CO delivery did not vary substantially between the two cigarette types.

3.4 Measures

3.4: 1 Baseline Measures given at Recruitment Stage

1. ARU Smoking Questionnaire (Appendix D)
   This questionnaire elicits demographic details and information regarding the participant’s smoking history including their usual brand, age of onset of smoking, number of cigarettes smoked per day etc.

2. Questionnaire of Smoking Motives (Appendix E). This was a 7 item, 5 point rating scale inventory used in other studies investigating the effects of nicotine (e.g. Hajek, West, Foulds, Nilsson, Burrows & Meadow; in press), which provided a subjective measure of motivation for smoking.

3. 4: 2 Main Outcome Measures

1. Nicotine Withdrawal Symptoms Questionnaire (Appendix F). This questionnaire was adapted from the Addiction Research Unit Smoking Withdrawal Scale (West, Hajek & Belcher, 1989). This type of questionnaire has previously been shown to be sensitive to tobacco withdrawal and has been used in numerous smoking cessation studies (e.g. Foulds et al 1997; West & Russell, 1988). The scale required participants to rate how much they were currently experiencing six common withdrawal symptoms on a six point Likert scale from “not at all” (0) to “extremely”
(5). For cultural reasons, the item “depressed” in the original scale was re-worded as “fed up”. A total score was obtained by summing the six ratings. A question item regarding “Craving for cigarettes” was included, but coded separately, as it is not included as a DSM-IV (APA, 1994) withdrawal symptoms.

2. Subjective feeling states were assessed using questionnaires with demonstrated sensitivity to nicotine. The main measure of mood state was the University of East London (UEL) brief mood scales (Parrott et al, 1996; Appendix G), derived from the Short Adjective Check List (Mackay, Cox, Burrows & Lazzerini, 1978). The UEL Mood Questionnaire covers feelings of Stress, Arousal and Pleasure, reflecting the three primary feeling state dimensions (Mathews et al, 1990). This questionnaire and scoring system has been shown in numerous studies to be sensitive to nicotine effects (e.g. Parrott, 1995). Each mood factor was covered by two bipolar questions. These were: Stress: tense/relaxed; nervous/calm. Arousal: energetic/tired; alert/drowsy. Pleasure: contented/irritated; satisfied/dissatisfied. A side effects scale was added, which included two bipolar questions: dizzy/clearheaded; nauseous/not at all nauseous. Responses were scored on five point bipolar scales: strongly-slightly-neither-slightly-strongly (0-4). An overall stress score was computed by combining the tense-relaxed and nervous-calm scores (0-8; 8 being high stress), an overall arousal score by combining the energetic-tired and alert-drowsy scores (0-8; 8 being high arousal) and an overall pleasure score by combining the contented-irritated and satisfied-dissatisfied scores (0-8; 8 being high pleasure). Finally, an overall side effects score was computed by combining the dizzy-clearheaded and nauseous-not at all nauseous scores (0-8; 8 being high side effects score).

3. Craving for a cigarette was also measured before and after smoking the test cigarettes using a short form of the Questionnaire of Smoking Urges (Tiffany & Drobes, 1991; Appendix H). Each question item asked participants to rate how much they agreed with a statement, e.g. “I have a desire for a cigarette right now” from 0 (strongly disagree) to 6 (strongly agree). This questionnaire was scored by summing the scores from the seven question items.
4. The cognitive measure was performance on a 10 minute version of the computerised Rapid Visual Information Processing (RVIP) task, which measures attention to rapidly changing visual stimuli over a ten minute period (Wesnes & Warburton, 1984). This task has been widely used in psychopharmacology research and has been shown on numerous occasions to be sensitive to nicotine effects (e.g. Foulds et al, 1996). The RVIP requires subjects to respond by pressing the space bar when they detect three consecutive even or odd digits in a series of single digits presented on a computer screen at a rate of 100 digits a minute for ten minutes. There were eight targets per minute and the response window was 1500ms.

The following data was recorded from the RVIP task:
A. Frequency of correct responses (hits).
B. Response time for correct responses (reaction time).
C. Frequency of errors (false hits).

4. Airway Sensory Effects (Appendix I). In a questionnaire similar to that devised by Westman, Behm & Rose (1996), the perceived sensory intensity of the cigarettes in the mouth and throat, windpipe, chest and on the tongue, were each measured for the following sensory qualities: strength, scratchiness, heaviness and warmth. This was assessed via five point rating scales, e.g. from 0 (not strong) to 4 (very strong), 0 (not heavy) to 4 (very heavy).

5. Enjoyment and Satisfaction Questionnaire (Appendix J). A measure of some of the enjoyable aspects of smoking the test cigarettes was assessed with five point rating scales for the following: satisfaction, taste, liking and similarity to usual brand. For example, 0 (didn’t like it at all) to 4 (I liked it a lot), 0 (not satisfying) to 4 (very satisfying).

6. Expired Carbon Monoxide (ECO) was measured pre and post smoking using a Bedfont EC50 Monitor. This provides a digital measure of the concentration of
Carbon Monoxide in a person’s expired breath, which is sensitive to smoking and correlates around +0.95 with blood carboxyhaemoglobin levels (Jarvis, Belcher, Vesey & Hutchison, 1986). This was used as a baseline to check that participants had indeed recently had a cigarette (a minimum ECO measure of 4) and to assess increases in ECO following smoking the test cigarettes, i.e. a relative estimate of the amount of smoke the participants inhaled from the study cigarettes.

3.5 Procedures

Participants were requested to smoke as usual prior to their appointment time, but to ensure that they smoked one of their usual cigarettes forty minutes before attending the testing session. Also, participants were requested not to consume caffeine for two hours before they arrived and not to consume any alcohol on the day of testing.

Each participant was seen only once, and the procedures took approximately forty five minutes. Testing took place between the hours of 3pm and 7pm. At the start of the testing session, participants were given a consent form to sign and keep (Appendix C). Compliance with instructions was verbally checked on arrival. No participant failed these criteria. Participants were given four minutes practice on the RVIP. This was to minimise practice effects and ensure relatively reliable performance.

Participants were then asked to complete the Baseline Nicotine Withdrawal Questionnaire and the Baseline Mood Questionnaire. Next, participants completed the Questionnaire of Smoking Urges. Expired Carbon Monoxide (ECO) level was then measured, and participants then performed the RVIP for ten minutes. Participants were then given one of the two types of cigarette to smoke. They were instructed to smoke normally, but were informed that they would only be given seven minutes to smoke the cigarette. After smoking, participants were once again asked to complete the Nicotine Withdrawal Questionnaire, the Mood Questionnaire and the Questionnaire of Smoking Urges. ECO level was measured once again, and finally, participants performed the RVIP for a further ten minutes. They were then given the Airway Sensory Effects Questionnaire and the Enjoyment & Satisfaction Questionnaire. Finally, participants
were debriefed regarding the nature of the study and were asked to make a guess as to which of the two test cigarettes they had received.

3.6 Statistical Analysis

The response to each condition was measured by examining the pre test-cigarette to post test-cigarette changes (post minus pre scores on all measures). Nicotine versus de-nic cigarette comparisons were made by independent groups t-test, based on between groups variance. Backwards stepwise linear regression analyses were carried out to adjust the comparisons for all baseline predictors of response (variables seen in table 1), in order to control for potential, antecedent confounding variables (i.e. possible baseline differences between the two groups).
4.0 Results

The convention throughout this research is to denote the number of participants by n, standard deviation by S.D., standard error by S.E, degrees freedom by df and 95% confidence interval by C.I. Data from the questionnaires was analysed using SPSS (Norussis, 1993).

The change scores in participants from pre to post smoking on each of the main measures was assessed by t-tests. Both post minus pre smoking comparisons within the nicotine or de-nic groups and post minus pre smoking comparisons between the group differences were made.

The following key will be used in all of the tables:
Post minus pre smoking comparisons within the nicotine or de-nic groups (post minus pre change scores): # P < 0.05, ## P < 0.01.
Comparisons between nicotine and de-nic group differences: * P < 0.05; ** P < 0.01.

As can be seen in Table.1 which gives the full demographic and smoking characteristics of the sixty participants, the sample included 29 men and 31 women. The average age of the participants was 27 and 71.7% were currently in paid employment, the remainder being full time students. On average the participants smoked 14.5 cigarettes a day and had been smoking for an average of 10.4 years.
Table 1. Main baseline characteristics of the two subject groups

<table>
<thead>
<tr>
<th>Demographics</th>
<th>All Participants</th>
<th>De-nic: n = 30 (SD)</th>
<th>Nicotine: n = 30 (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Female</td>
<td>29</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>No. Male</td>
<td>31</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Age in years</td>
<td>Mean 26.95 (4.53)</td>
<td>27.57 (4.36)</td>
<td>26.33 (4.69)</td>
</tr>
<tr>
<td></td>
<td>Range 18 - 35</td>
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<td>19 - 35</td>
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<tr>
<td>Employment Status</td>
<td>Paid 43 *</td>
<td>26</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>17 *</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Smoking Characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of smoking</td>
<td>Mean 10.38 (4.43)</td>
<td>11.23 (4.41)</td>
<td>9.53 (4.36)</td>
</tr>
<tr>
<td></td>
<td>Range 3 - 21</td>
<td>4 - 21</td>
<td>3 - 19</td>
</tr>
<tr>
<td>Current Cigarettes/day</td>
<td>Mean 14.45 (3.01)</td>
<td>15.10 (3.30)</td>
<td>13.80 (2.76)</td>
</tr>
<tr>
<td></td>
<td>Range 10 - 20</td>
<td>10 - 20</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Before 1st coffee</td>
<td>28</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Tar yield of usual cigarettes</td>
<td>Mean 7.00 (2.54)</td>
<td>6.68 (2.60)</td>
<td>7.31 (2.47)</td>
</tr>
<tr>
<td></td>
<td>Range 1.3 - 13.4</td>
<td>1.3 - 13.4</td>
<td>1.3 - 12.7</td>
</tr>
<tr>
<td>Nicotine yield of usual cigarettes</td>
<td>Mean .61 (.17)</td>
<td>.60 (.18)</td>
<td>.61 (.15)</td>
</tr>
<tr>
<td></td>
<td>Range .20 - 1.00</td>
<td>.20 - 1.60</td>
<td>.20 - .90</td>
</tr>
<tr>
<td>CO yield of usual cigarettes</td>
<td>Mean 8.04 (3.11)</td>
<td>7.65 (3.13)</td>
<td>8.42 (3.10)</td>
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<tr>
<td></td>
<td>Range 1.3 - 15.2</td>
<td>1.3 - 15.2</td>
<td>1.3 - 15.1</td>
</tr>
<tr>
<td>How much enjoy smoking</td>
<td>Mean 1.83 (.46)</td>
<td>1.83 (.46)</td>
<td>1.73 (.58)</td>
</tr>
<tr>
<td>How addicted to smoking</td>
<td>Mean 1.93 (.58)</td>
<td>1.80 (.55)</td>
<td>2.7 (.58)</td>
</tr>
<tr>
<td>Use smoking to cope with stress</td>
<td>Mean 3.82 (.81)</td>
<td>3.67 (.80)</td>
<td>3.97 (.81)</td>
</tr>
<tr>
<td>Use smoking to help socialise</td>
<td>Mean 3.13 (1.17)</td>
<td>3.20 (1.19)</td>
<td>3.70 (1.17)</td>
</tr>
<tr>
<td>Use smoking when bored</td>
<td>Mean 3.30 (1.08)</td>
<td>3.17 (1.15)</td>
<td>3.43 (1.01)</td>
</tr>
<tr>
<td>Use smoking to help concentrate</td>
<td>Mean 3.10 (1.27)</td>
<td>2.90 (1.30)</td>
<td>3.30 (1.24)</td>
</tr>
<tr>
<td>Feel uncomfortable if don't smoke</td>
<td>Mean 2.57 (.98)</td>
<td>2.57 (.90)</td>
<td>2.57 (1.07)</td>
</tr>
<tr>
<td>Smoke to keep weight down</td>
<td>Mean 1.92 (1.05)</td>
<td>2.10 (1.08)</td>
<td>1.73 (1.01)</td>
</tr>
</tbody>
</table>
Table 2. Baseline (pre), post and post minus pre mean change in CO levels.

<table>
<thead>
<tr>
<th></th>
<th>De-nic: n = 30</th>
<th>Nicotine: n=30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Range</td>
</tr>
<tr>
<td>Pre CO</td>
<td>13.43 (6.88)</td>
<td>5 - 40</td>
</tr>
<tr>
<td>Post CO</td>
<td>18.40 (6.24)</td>
<td>10 - 37</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>4.97 (3.53)##</td>
<td>-7 - 15</td>
</tr>
</tbody>
</table>

Within group post minus pre change scores: # P < 0.05, ## P < 0.01.

In Table 2, the mean baseline values of expired carbon monoxide (ECO) are presented for each group together with the increments produced by smoking and the mean post minus pre smoking change. An independent-sample t-test revealed that the difference between the two groups in terms of the post minus pre change in ECO was almost significant (t = 1.962; p = 0.055, with df = 58), with those in the de-nic group inhaling more CO.

Table 3. De-nicotinised (De-nic) and nicotine cigarettes: post minus pre smoking changes on the RVIP task

<table>
<thead>
<tr>
<th></th>
<th>De-nic Mean (SD)</th>
<th>Nicotine Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre no. of hits</td>
<td>42.13 (10.81)</td>
<td>42.47 (10.21)</td>
</tr>
<tr>
<td>Post no. of hits</td>
<td>45.67 (12.26)</td>
<td>50.93 (11.46)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>3.53 (7.62)##</td>
<td>8.47 (7.78)##</td>
</tr>
<tr>
<td>Pre no. of false hits</td>
<td>5.03 (5.26)</td>
<td>5.50 (6.69)</td>
</tr>
<tr>
<td>Post no. of false hits</td>
<td>3.50 (4.02)</td>
<td>3.27 (3.43)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>-1.53 (4.70)</td>
<td>-2.23 (5.38)##</td>
</tr>
<tr>
<td>Pre reaction time</td>
<td>520.87 (69.71)</td>
<td>525.47 (56.50)</td>
</tr>
<tr>
<td>Post reaction time</td>
<td>491.42 (58.00)</td>
<td>494.83 (50.46)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>-29.46 (46.00)##</td>
<td>-30.63 (47.72)##</td>
</tr>
</tbody>
</table>

Comparisons between nicotine and de-nic group differences: * P< 0.05; ** P< 0.01
Within group post minus pre change scores: # P < 0.05, ## P < 0.01.
The mean pre, post and post minus pre smoking mean change scores for both groups on the RVIP task are shown in Table 3. The significant increase in the number of hits scored within both groups is not surprising as some improvements due to practice effects were expected. However, an independent-sample t-test revealed a significant difference between the two groups in terms of number of correct hits, with those in the nicotine group making significantly more correct hits.

As demonstrated clearly in Figure 1, both groups started at a very similar baseline points, in terms of number of correct hits scored, but following smoking the test cigarettes, the nicotine group's hit detection rate was far higher. In addition, the pattern of responses in Figure 2 shows the improved vigilance performance amongst those in the nicotine group in the first five minutes, as well as the last five, suggesting that this improved performance was not just an effect which emerged late in the trial.

Table 3 also shows that there were no significant differences between the two groups in terms of the frequency of false hits made. It should, however, be noted that the change in number of false hits was in the direction of fewer false hits following the nicotine cigarettes. Clearly, the improved hit detection was not at the expense of more false hits. There were no significant differences between the two groups in terms of reaction time, as demonstrated clearly in Figure 3. Figure 4 shows the similar minute by minute mean reaction times for both groups both before and after smoking.
Fig 1. Mean number of correct hits made on the RVIP by both groups, before and after smoking

![Graph showing mean number of correct hits](image1)

Fig 2. Mean number of correct hits made per minute by each group on the RVIP

![Graph showing mean number of correct hits per minute](image2)
Fig 3. Mean reaction time on the RVIP before and after smoking

![Graph showing mean reaction time between Pre and Post for Nic and De-Nic groups.]

Fig 4. Mean minute by minute reaction times for each group on the RVIP

![Graph showing minute by minute reaction times between Pre and Post for Nic and De-Nic groups.]

Time (minutes)
Table 4. De-nic and nicotine cigarettes: post minus pre smoking changes on the Mood Scales

<table>
<thead>
<tr>
<th></th>
<th>De-nic: $n=30$ Mean (SD)</th>
<th>Nicotine: $n=30$ Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre stress</td>
<td>2.80 (1.63)</td>
<td>3.37 (1.71)</td>
</tr>
<tr>
<td>Post stress</td>
<td>2.97 (1.47)</td>
<td>2.50 (1.91)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>.17 (2.04)</td>
<td>-.87 (2.16) #</td>
</tr>
<tr>
<td>Pre arousal</td>
<td>3.80 (1.49)</td>
<td>4.23 (1.99)</td>
</tr>
<tr>
<td>Post arousal</td>
<td>3.97 (1.43)</td>
<td>4.40 (2.08)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>.17 (1.91)</td>
<td>.17 (2.83)</td>
</tr>
<tr>
<td>Pre pleasure</td>
<td>5.47 (1.63)</td>
<td>5.03 (1.47)</td>
</tr>
<tr>
<td>Post pleasure</td>
<td>4.93 (1.34)</td>
<td>5.60 (1.71)</td>
</tr>
<tr>
<td>Post - pre smoking change</td>
<td>-.53 (1.80)</td>
<td>.57 (1.91) *</td>
</tr>
</tbody>
</table>

Comparisons between nicotine and de-nic group differences: * $P<0.05$; ** $P<0.01$
Within group post minus pre change scores: # $P<0.05$, ## $P<0.01$.

The mean pre, post and post minus pre smoking mean change scores for both groups on the three mood scales are shown in Table 4. An independent groups t-test revealed a significant difference between the two groups in terms of ratings on the Pleasure mood scale, as can also be seen graphically in figure 5. There were no significant differences between the two groups in terms of the Stress and Arousal mood responses.
Adjusting for Baseline Characteristics

The between group comparisons on the main variables (RVIP and the three mood scales) were then adjusted for all baseline predictors of response (i.e. all of the demographic and smoking characteristic variables seen in Table 1), using backwards stepwise linear regression analyses. This was carried out in order to control for any potential, antecedent confounding variables, i.e. possible important differences between the two groups on certain baseline characteristics, such as employment status, which may have influenced the results. The results of these analyses can be seen in Table 5.
Table 5. Post minus pre smoking changes in RVP performance and mood ratings

<table>
<thead>
<tr>
<th>Mood Ratings</th>
<th>Numbers</th>
<th>Reaction Time</th>
<th>False Hills</th>
<th>RVP</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparisons between nicotine and de-nic group differences: *P < 0.05, **P < 0.01
Table 5 shows that after adjusting the comparisons for all baseline predictors of response, nicotine content of the experimental cigarette continued to have a significant effect on the number of hits scored on the RVIP, suggesting that this effect was not simply due to random variation in antecedent variables. As before the adjustment, there were no significant differences after adjusting for baseline predictors between the two groups in the frequency of false hits made or in reaction time.

However, after adjusting the comparisons for all baseline predictors of response, nicotine content of the experimental cigarette no longer had a significant effect in terms of ratings on the Pleasure mood scale. This was as the following antecedent variables were having a significant effect: age, employment status, how much participants rated that they enjoy smoking and their responses on the "I smoke because I feel uncomfortable if I don't" item. There were no significant differences after adjusting for baseline predictors of response between the two groups in terms of the Stress and Arousal mood responses.

Table 6. Baseline withdrawal, urges and side effects and mean changes after smoking

<table>
<thead>
<tr>
<th></th>
<th>De-nic: n=30 Mean (SD)</th>
<th>Nicotine: n=30 Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre nicotine withdrawal scale</td>
<td>3.73 (3.42)</td>
<td>3.77 (3.09)</td>
</tr>
<tr>
<td>Post nicotine withdrawal scale</td>
<td>3.07 (3.13)</td>
<td>2.70 (2.73)</td>
</tr>
<tr>
<td>Pre - post smoking change</td>
<td>-.67 (3.48)</td>
<td>-1.07 (3.69)</td>
</tr>
<tr>
<td>Pre smoking urges scale</td>
<td>15.9 (10.31)</td>
<td>13.33 (9.57)</td>
</tr>
<tr>
<td>Post smoking urges scale</td>
<td>7.63 (9.05)</td>
<td>4.30 (6.49)</td>
</tr>
<tr>
<td>Pre - post smoking change</td>
<td>-8.27 (8.94)</td>
<td>-9.03 (9.42)</td>
</tr>
<tr>
<td>Pre side effects</td>
<td>2.57 (1.81)</td>
<td>2.30 (1.78)</td>
</tr>
<tr>
<td>Post side effects</td>
<td>3.13 (1.61)</td>
<td>2.97 (2.25)</td>
</tr>
<tr>
<td>Pre - post smoking change</td>
<td>.57 (2.06)</td>
<td>.67 (2.70)</td>
</tr>
</tbody>
</table>

Within group post minus pre change scores: # P < 0.05, ## P < 0.01.
The mean pre, post and post minus pre changes for both groups in nicotine withdrawal symptoms, smoking urges (craving) and reported side effects can be seen in Table 6. Independent groups t-tests revealed that there were no significant differences between the two groups on nicotine withdrawal symptoms (t = .432; p = 0.667, with df = 58), smoking urges (t = .323; p = 0.748, with df = 58) or reported side effects (t = .574; p = 0.568, with df = 58).

Table 7. Mean ratings of airway sensory effects for both groups.

<table>
<thead>
<tr>
<th>Sensory Rating</th>
<th>De-nic Mean (SD)</th>
<th>Nicotine Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest Heaviness</td>
<td>1.07 (.98)</td>
<td>1.70 (1.02) *</td>
</tr>
<tr>
<td>Chest Scratch</td>
<td>0.87 (.82)</td>
<td>1.57 (1.10) **</td>
</tr>
<tr>
<td>Chest Strength</td>
<td>1.23 (1.01)</td>
<td>2.03 (1.16) **</td>
</tr>
<tr>
<td>Chest Warmth</td>
<td>1.30 (.92)</td>
<td>1.27 (.83)</td>
</tr>
<tr>
<td>Mouth &amp; Throat Heaviness</td>
<td>1.17 (.95)</td>
<td>2.03 (1.00) **</td>
</tr>
<tr>
<td>Mouth &amp; Throat Scratch</td>
<td>1.13 (1.04)</td>
<td>2.23 (1.07) **</td>
</tr>
<tr>
<td>Mouth &amp; Throat Strength</td>
<td>1.47 (1.11)</td>
<td>2.20 (1.03)</td>
</tr>
<tr>
<td>Mouth &amp; Throat Warmth</td>
<td>1.53 (.94)</td>
<td>1.73 (1.01)</td>
</tr>
<tr>
<td>Tongue Heaviness</td>
<td>1.37 (1.00)</td>
<td>1.50 (1.14)</td>
</tr>
<tr>
<td>Tongue Scratch</td>
<td>1.33 (.88)</td>
<td>1.23 (.94)</td>
</tr>
<tr>
<td>Tongue Strength</td>
<td>1.47 (.97)</td>
<td>1.60 (.81)</td>
</tr>
<tr>
<td>Tongue Warmth</td>
<td>1.77 (1.07)</td>
<td>1.37 (.96)</td>
</tr>
<tr>
<td>Windpipe Heaviness</td>
<td>1.23 (.77)</td>
<td>1.73 (.91) *</td>
</tr>
<tr>
<td>Windpipe Scratch</td>
<td>1.23 (1.17)</td>
<td>1.83 (1.15) *</td>
</tr>
<tr>
<td>Windpipe Strength</td>
<td>1.17 (1.15)</td>
<td>2.40 (1.00) *</td>
</tr>
<tr>
<td>Windpipe Warmth</td>
<td>1.23 (1.01)</td>
<td>1.40 (.77)</td>
</tr>
</tbody>
</table>

Comparisons between nicotine and de-nic group differences: * P< 0.05; ** P< 0.01

The mean ratings of airway sensory effects perceived from the test cigarettes are shown in Table 7. Independent-sample t-tests revealed there were significant differences between the two groups in terms of ratings of chest scratch (t = -2.788; p = 0.007, with df = 58); chest heaviness (t = -2.449; p = 0.017, with df = 58); chest strength (t = -2.855; p = 0.006, with df = 58); mouth & throat heaviness (t = -3.443; p = 0.001, with df = 58); mouth & throat scratch (t = -4.030; p = 0.000, with df = 58); windpipe heaviness (t = -2.297; p = 0.025, with df = 58); windpipe scratch (t = -2.010; p = 0.049, with df = 58) and windpipe strength (t = -2.626; p = 0.011, with df = 58). Independent-sample t-tests revealed no significant differences between the two groups.
in terms of the other ratings of airway sensations. Clearly, the nicotine content of the cigarettes had a noticeable effect on the sensory characteristics.

**Table 8.** Mean ratings of enjoyment and satisfaction of the cigarettes for both groups.

<table>
<thead>
<tr>
<th>Enjoymen and Satisfaction</th>
<th>De-nic: n=30</th>
<th>Nicotine: n=30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>1.03 (.81)</td>
<td>1.87 (.94)**</td>
</tr>
<tr>
<td>Liking</td>
<td>.90 (.76)</td>
<td>1.37 (.85)*</td>
</tr>
<tr>
<td>Similarity to own brand</td>
<td>.77 (.77)</td>
<td>1.17 (.95)</td>
</tr>
<tr>
<td>Taste</td>
<td>1.23 (.98)</td>
<td>1.37 (1.07)</td>
</tr>
</tbody>
</table>

Comparisons between nicotine and de-nic group differences: * P< 0.05; ** P< 0.01

The mean ratings of enjoyment and satisfaction of the test cigarettes are shown in Table 8. Independent-sample t-tests revealed that there were significant differences between the two groups in terms of how satisfying they found the cigarettes (t = -3.69; p = 0.001, with df = 58) and how much they liked the cigarettes (t = -2.243; p = 0.029, with df = 58), with participants liking the nicotine cigarettes more and finding them more satisfying. Independent-sample t-tests revealed that there were no significant differences between the two groups on ratings of similarity to own brand and the taste of the cigarettes.

**Table 9.** Participants’ guesses regarding whether they had received nicotine

<table>
<thead>
<tr>
<th>Nicotine Content</th>
<th>Guessed Correctly</th>
<th>Guessed Incorrectly</th>
</tr>
</thead>
<tbody>
<tr>
<td>De-nic</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Nicotine</td>
<td>21</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 9 shows the numbers of participants in each group who, post de-briefing, guessed correctly whether or not they had received nicotine. A binomial test indicated that 39 out of 60 participants guessing correctly was significantly greater than would be expected by chance, if participants were guessing completely at random (df, 59; P = 0.028).
5.0 Discussion

5.1 Summary and interpretation of the results

Expired Carbon Monoxide
Nicotine is primarily absorbed via inhalation (Wesnes & Warburton, 1984), and so it can be inferred that the amount of nicotine delivered would follow the same relative order as the machine smoked nicotine yields (as demonstrated in the aforementioned pilot study). In the present study, participants achieved slightly higher boosts in CO after smoking the de-nic cigarettes than after the nicotine cigarettes. Similar results were found by Westman et al (1996). It is a well documented finding that smoking machines do not emulate actual smoking behaviour (Jarvis & Bates, 1999). It has been found that smokers adjust their smoking behaviour to compensate for perceived changes in the nicotine yield of cigarettes (e.g. Gust & Pickens, 1982; Wonacott, Russell & Stolerman, 1990). This can be done by taking more or deeper puffs, or by blocking ventilation holes in the filter with fingers, saliva or lips, thus rendering the nicotine yield an inaccurate estimation of nicotine delivered. The increase in inhalation may therefore have been due to participants' attempts to increase nicotine intake from the de-nic cigarettes. If the CO boosts obtained are compared with the pilot data, the relative nicotine absorption in the present study can be roughly estimated. In the present study, the average CO boosts obtained were 15.6% higher than those obtained during the pilot study for the de-nic cigarettes and 37% lower than the pilot study for the nicotine cigarettes, giving an estimated average increase in blood nicotine concentration from the de-nic cigarettes of 2.1 ng/ml (compared to 1.8 ng/ml in the pilot study) and 11.97 ng/ml from the nicotine cigarettes (compared to 19 ng/ml). This would suggest that participants in the present study obtained slightly more nicotine from the de-nic cigarettes than obtained in the pilot study, and slightly less nicotine from the 1.01 nicotine cigarettes than in the pilot study. It is important to note however, that after adjusting the comparisons for all baseline predictors of response, the post minus pre change in ECO was less significant than before adjustment (p = 0.105). This was as participants responses to 'How enjoyable is smoking' and 'I smoke for something to do when bored' were having a significant effect.
RVIP Performance

There was strong evidence of an effect of nicotine content on the number of correct hits made on the RVIP. Nicotine increased the number of correct hits on the RVIP, even when other baseline factors were adjusted for. The de-nic group improved by 8.3% after smoking which is likely to have been due mainly to practice effects. The nicotine group however improved by 19.9%, suggesting that there was an 11.6% improvement attributable to nicotine. These results are consistent with other studies finding smoking induced enhancements in cognitive performance in non abstinent smokers (e.g. Pritchard et al, 1992; Warburton & Arnall, 1994) and provides experimental support for several questionnaire studies of smoking motives (e.g. Russell et al., 1974; Warburton & Wesnes, 1978). Unlike some previous studies (e.g. Wesnes & Warburton, 1983), this study did not find effects of nicotine in non-abstinent smokers on reaction time.

In an attempt to explain the primary effects of nicotine on attention, Foulds, (1999) summarised the recent findings concerning the neuropharmacology of tobacco use. He reported that the primary reinforcing effects of smoking are commonly believed to be mediated by the effects of nicotine on the neurotransmitters systems in the brain (Foulds & Ghodse, 1995). These neurotransmitter systems act at nicotine cholinergic receptors, which are widely distributed in the brain and help to modulate the release of certain neurotransmitters, including the catecholamines and 5-hydroxytryptamine (Foulds, 1999). Foulds (1999) suggested that increased alertness is thought to result from cholinergic stimulation of the cortex resulting in the release of acetylcholine. This produces cortical desynchronisation; a state of cortical arousal which is found people are processing information efficiently. There is also considerable evidence that nicotine enhances the release of dopamine and serotonin (e.g. Court et al, 1998; Fowler et al., 1996).

Effect on Mood

There was some initial evidence for an effect of nicotine content on ratings of Pleasure in the current study. This was not, however, a reliable result, as any significant effects
were lost after adjusting for baseline characteristics of the participants. This apparent initial effect was, therefore, partly due to differences between the groups at baseline. For example, the nicotine group comprised more students than the de-nic group who were primarily in paid employment. No statistically significant differences in Stress, Arousal and Pleasure mood ratings were therefore found between the two groups after adjusting for baseline characteristics. This finding is consistent with numerous other laboratory studies which failed to find evidence for acute mood enhancement due to nicotine (e.g. Foulds et al., 1997; Pomerleau & Pomerleau, 1990; Gilbert et al, 1992), and contrasts with smokers' self rated motives for smoking (e.g. Russell et al, 1974) and studies reporting primary mood enhancements (e.g. Parrott, 1995).

It is particularly interesting to note that Parrott (1995) obtained clear mood effects of nicotine, using the same mood scales to measure stress, as were employed in the present study. In the present study, when the within group data is analysed separately (see Table 4 for mean change scores and significance levels), there is no significant effect in the de-nic group (p = 0.657; with their mean stress scores actually rising slightly post smoking). In the nicotine group however, feelings of stress were significantly lower post smoking than pre smoking (p < 0.05), which is in line with Parrott’s findings. However, as shown in Table 5, the change in stress scores obtained under each condition did not differ significantly between the groups. The difference between Parrott’s findings and those in the current study is, therefore, in the magnitude of the effect obtained, with there being less variance in ratings of stress due to nicotine in the current study.

Parrott concluded that it was nicotine that was causing the effect of a decrease in feelings of stress. A general criticism of the Parrott studies is, however, that they did not incorporate either blind or controlled conditions. It therefore remains possible that the participants’ responses were due to demand characteristics (participants reporting what they believed they should be reporting) or expectancy effects (due to participants expectations of puffing on a cigarette reducing stress), rather than real effects on mood. In addition, Foulds et al. (1997) suggested that one reason why acute mood enhancements from nicotine may be difficult to detect in laboratory based studies is
that mood effects might occur only through smoking in response to situation-specific mood fluctuations. The mood enhancing effects of smoking reported previously have also frequently been transient, with anxiety reduction being limited to a brief period following smoking (e.g. Perkins et al, 1992), suggesting that any mood enhancing effects of nicotine are subtle and situation specific. However, in the present study the time lapse between smoking and completing the mood questionnaires was only approximately two minutes.

**Effect on Withdrawal, Craving and Side Effects**

The lack of an effect on withdrawal or craving was unsurprising as the participants were non-abstinent, so were unlikely to have been in a state of withdrawal or craving, prior to smoking the test cigarettes. Similarly, as concerns a lack of effect on side effects, the study was carried out in the afternoons or evenings when participants had been smoking “normally”. The first cigarette of the day tends to have a clear stimulant effect, resulting in increases in heart rate, EEG frequencies, dizziness etc. However, acute tolerance to these effects develops rapidly (Foulds et al, 1994; Russell, Jarvis, Jones & Feyerabend, 1990). Participants were, therefore, likely to have been in a state of tolerance to the side effects (e.g. dizziness), of smoking having already smoked a number of cigarettes that day.

**Sensory Effects and Enjoyment and Satisfaction Ratings**

Although the cigarettes used in this study were similar in their constituents, apart from nicotine content, they produced a number of sensory differences, as can be seen from Tables 7 and 8 and the results of the statistical analyses. It is clear therefore that nicotine is responsible for many of the sensory effects of smoking.

5.2 Limitations of the Study and Validity of the Results

Gottlieb, Killen, Marlatt & Taylor (1987) and Sutton (1991), suggested that the type of experimental instructions provided in this study can create a “guessing set”, where participants search for clues (which the sensory effects may have provided), in an
attempt to identify which group they are in. If participants guess correctly, the internal validity of the design is threatened. If this occurred in the present study, then improvements in performance may partly reflect participants' beliefs that they received nicotine, and that nicotine improves performance. In the Participant Information Sheet, full information was provided regarding the procedures involved in the study. Participants were not, however, informed of the two options in terms of the nicotine yields of the cigarettes. It is, therefore, unlikely that participants had a guessing set regarding the nicotine content of the cigarettes prior to the study. Participants were only asked to guess which cigarette they had received after unblinding at the end of the experimental session, where they were told the purpose of the study. Participants in the current study appeared generally well blinded to the drug administration as only 65% guessed correctly which test cigarette they had smoked. Although this was significantly greater than would be expected by chance, many participants volunteered that they had no idea which they had received and had to be persuaded to make a choice. It was, therefore, the subjective experience of a number of participants that they were making a complete guess. It is also important to note that adjusting for whether participants guessed correctly made negligible difference to the result in terms of number of hits on the RVIP. In addition, there was no significant difference between the two groups in terms of ratings of similarity of the test cigarette to their own brand. This suggests that the results are valid and that the improvement in attention was due to the nicotine in the cigarettes and not to expectancy effects due to participants guessing correctly whether or not they received nicotine. Future studies intending to use similar cigarettes should, however, be aware that they may taste different to participants.

One particular limitation which should be carefully considered in interpreting the results is the fact that the use of cigarettes varying in nicotine yield does not guarantee effective dose manipulation, and measuring CO ingested during smoking only provides indirect evidence of nicotine delivered. The pilot study suggested that the amount of nicotine delivered followed the same relative order as the machine smoked nicotine yields. However, as pointed out by Heishman (1988), direct evidence of actual nicotine intake requires the measurement of biochemical indices of exposure to nicotine itself,
e.g. nicotine plasma concentrations. Blood taking procedures may however have negatively effected the mood of participants and interfered with the results.

5.3 Implications for Future Research and Clinical Practice

Health professionals, including Clinical Psychologists must continue to search for new and better ways of reducing the health consequences of smoking. More effective interventions to reduce tobacco smoking must address all of the major influences that encourage its' continued use, including psychological, pharmacological and social factors.

The results presented here, together with those reported by earlier research, are worthy of further study under controlled conditions, to establish the psychological effects of nicotine. In particular, as highlighted by Heishman (1998), more ecologically valid studies of nicotine's effects, which reflect the type of processing encountered in every day tasks, must be employed in future studies in order to establish whether laboratory tests generalise to performance in the real world. Methodologies are already available for carrying out psychopharmacological trials in applied settings (e.g. Parrott, 1987). The effects of nicotine should also be studied uniformly across the behavioural and cognitive spectrum, spanning the range of human abilities (Heishman, 1998).

If such further research supports the finding in this study of a lack of any enhancing effect on mood, one aim of smoking cessation programs should be to dispel peoples' beliefs that nicotine improves mood. Specifically, the evidence presented here may help in devising cognitive behavioural interventions which could involve questioning peoples' beliefs about what disastrous things will happen if they stop smoking, challenging beliefs such as "I can't cope without smoking" etc. People attending smokers' clinics should be informed that contrary to their existing beliefs, it seems that cigarettes improve mood only due to a reversal of withdrawal and that when people quit smoking their mood deteriorates initially, but that their mood will soon return to normal and that the long term mood effects of cessation appear to be beneficial (Hughes et al, 1990). In addition, if future ecologically valid studies of nicotine's effects support the
present findings, then people should be informed that evidence does suggest that nicotine can improve concentration. As pointed out by Foulds et al. (1996), people who smoke partly in order to improve their concentration should be informed that given the health consequences of tobacco smoking, when they have a particular need to remain alert (such as when revising for examinations), they could probably obtain similar effects, with far less risk to their health, by using nicotine gum or having a caffeinated drink (Jarvis, 1993).

Shiffman (1993) also points out that a broad literature suggests that smoking occurs in response to conditioned cues which function as discriminative stimuli, signalling contexts in which smoking will be most reinforcing. An understanding of these cues would therefore seem integral to treatment. Cognitive-behavioural cue exposure therapy, which aims to identify and extinguish these links, is thought to hold promise for a variety of addictive behaviours (Niaura, Rohsenow, Binkoff, Monti, Pedaza, & Abrams, 1988). Assessment of smoking motives and behavioural patterns also raises the promise of patient-treatment matching (Shiffman, 1993). Outcome studies would be important in determining the effectiveness of new smoking cessation interventions which address psychological factors encouraging the continued use of tobacco.

5.4 Nicotine as a Therapeutic Agent

This study has added to existing evidence that nicotine provides a primary enhancing effect on attention. In line with this, recent studies have indicated that nicotine may have protective effects against certain psychological and neurological disorders and could therefore be used as a therapeutic agent (e.g. Le Houzec, 1998). Specifically, a loss of nicotinic receptors have been found in people with Alzheimer's disease suggesting that these receptors have a role in normal cognitive functioning (Jones et al., 1992), and nicotine has also been demonstrated to improve some of the attentional and cognitive deficits associated with Alzheimer's disease (e.g. Jones et al., 1992). As Le Houzec (1998) points out, epidemiological surveys have recently shown an inverse relationship between the risk of Parkinson's Disease and smoking and that nicotine can ameliorate the symptoms of Parkinson's Disease. Nicotine has also been shown to relieve symptoms of Attention Deficit Hyperactivity Disorder (ADHD; Levin, Conners,
Sparrow, Hinton, Meck, Rose, Emhardt & March, 1996). It has also been suggested (e.g. by Le Houzec, 1998) that the fact that smoking is very prevalent among people with schizophrenia (Chong & Choo, 1996), may represent an attempt by patients to self medicate for their negative symptoms. The psycho-stimulant effects of nicotine might help these people to compensate for their cognitive deficits, particularly attentional processes. In clinical settings, people suffering from Alzheimer's Disease, ADHD and other attention deficit disorders may therefore benefit from receiving nicotine, in the form of gum or nicotine patches, on a regular basis.

Long term controlled clinical trials in certain neurological and psychiatric disorders will be important in establishing any therapeutic uses of nicotine and for furthering our understanding of nicotine's actions within the brain.

6.0 Conclusions

The main hypothesis in this study was that nicotine would enhance mood and cognitive performance in non-abstinent smokers. This hypothesis was only partially supported as no reliable evidence was found for nicotine improving mood in non abstinent smokers. However, taken together with previous results found with non abstinent and never smokers, the obtained results strengthen the evidence for their being a primary effect of nicotine in enhancing cognitive performance, not attributable to a reversal of a deficit induced by withdrawal. This, supports the Nicotine Resource Model which argues that people smoke cigarettes not only because they are physically dependent on nicotine, but because they achieve some psychological benefits from smoking, e.g. enhanced sustained attention. Nicotine's addictiveness therefore appears to have both physiological and psychological components which are likely to contribute to the initiation, maintenance and relapse of smoking. Such conclusions have been reached for other dependent drugs, such as heroin and alcohol (USDHHS, 1988). There is clearly a role for Clinical Psychologists in applying their knowledge of the psychological effects of nicotine and of interventions for smoking cessation within the structure of the NHS.
References


ETRICAL COMMITTEE (RESEARCH)

26 November, 1998

Mr J Stapleton
Tobacco Research Section
4 Windsor Walk

Dear Mr Stapleton

Re: An investigation into the psychological effects of smoking an ultra-low and a medium nicotine yielding cigarette in nicotine deprived and non-nicotine deprived smokers (217/98)

The Ethical Committee (Research) considered and approved the above study at its meeting on 20 November 1998.

Initial approval is given for one year. This will be extended automatically only on completion of annual progress reports on the study when requested by the EC(R). Please note that as Principal Investigator you are responsible for ensuring these reports are sent to us.

Please note that projects which have not commenced within two years of original approval must be re-submitted to the EC(R).

Please let me know if you would like to nominate a specific contact person for future correspondence about this study.

Any serious adverse events which occur in connection with this study should be reported to the Committee using the attached form.

Please quote Study No. 217/98 in all future correspondence.

Yours sincerely,

Margaret M Chambers
Research Ethics Coordinator
Title of Study
An investigation into the psychological effects of smoking.

Introduction: What is this study about?
Participants are invited to take part in a study investigating the psychological effects of smoking on mood and concentration.

Thank you for taking the time to read this information sheet which contains brief details of this research project. We are interested in finding out how smoking affects mood and concentration as this will give us some idea of why people become addicted to smoking.

What will happen during the study?
During this study you will be asked to come to the laboratory having smoked one of your usual cigarettes forty minutes before you arrive. No other restrictions on your smoking will be requested.

You will be asked to answer some questions about your mood and to perform a short test of mental concentration (using a standard computer based task), both before and after you smoke a special type of cigarette. These test cigarettes have been produced especially for the purposes of this type of experiment and have been used many times before. There are two types of cigarette which vary in their basic constituents. You will
be asked to smoke one of these cigarettes, but you will not be told which one you are given. This will be decided by chance.

What are the risks/benefits of the study?
Participation in this study will not be of any direct benefit to you, but may prove of benefit in the future by way of helping us to understand why people smoke. There are however no obvious risks in this study. Smoking these cigarettes is no more damaging to health than smoking a commercially available cigarette. We would however like to remind you that cigarette smoking is damaging to health. By inviting you to participate in this study we are in no way advocating smoking. We would in fact like to encourage you to stop smoking as soon as possible and will be happy to put you in touch with a smokers clinic if you would like help in doing so.

How long will the study last?
You will only be asked to come to the laboratory once. The experiment will last for about fifty minutes. The results will only be known once everyone has completed the study.

Voluntary participation and withdrawal from the study
Participation in this study is entirely voluntary. You do not have to participate in this study if you do not want to, and can withdraw from the study at any time. You will not be required to give a reason for why you do not wish to participate.

What about confidentiality?
All personal information will be treated as strictly confidential and secure and will not be made publicly available. When the study is written up, no names will be included.
Who to contact if you have any concerns/problems
If you have any concerns or problems during the study, please feel free to contact me, Sophie Browning, Psychologist in Clinical Training on 01483 259441, or Gay Sutherland, Clinical Psychologist at the Institute of Psychiatry on 0171 319 3440.

All proposals for research using people as subjects are reviewed by a local ethics committee before they can proceed. This study was reviewed by the Institute of Psychiatry Ethical Committee.

Please ask if you do not understand any of the above, or would like more information.

Signed

Date:
APPENDIX C
AN INVESTIGATION INTO THE PSYCHOLOGICAL EFFECTS OF SMOKING IN NON-NICOTINE-DEPRIVED SMOKERS

SUBJECT CONSENT FORM

I, the undersigned, voluntarily agree to take part in the study on the psychological effects of smoking. I have read and understood the information sheet which describes the research and I have been given a copy of this to keep. The nature, purpose and possible consequences of taking part in this research project have been explained to me and my questions have been satisfactorily answered. I have also been given a full explanation of the location and likely duration of the study. I have had enough time to consider and decide whether I wish to take part.

I understand that all documentation held on a volunteer is in the strictest confidence and complies with the Data Protection Act (1984). I agree that I will not seek to restrict the use of the results of the study on the understanding that my anonymity is preserved. I understand that I am entering this project of my own free will, that I may withdraw from this study at any time without having to give any reasons and without prejudice. I confirm that I have read and understood the above and have been given adequate time to consider my participation. On these terms I agree to take part in this study and to comply with the instructions and restrictions of the study.

Name of volunteer  
(Block capitals):  

Signed:  

Date:

Name of witness  
(Block capitals):  

Signed:  

Date:

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Appendix D

ARU Smoking Questionnaire

Please answer all questions - circle one answer for each question.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth:</td>
<td>Day / month / year</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
</tr>
<tr>
<td>Sex:</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>1. Are you</td>
<td>Single</td>
</tr>
<tr>
<td></td>
<td>Married and living with spouse</td>
</tr>
<tr>
<td></td>
<td>Separated or divorced</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>2. Are you...</td>
<td>In paid employment</td>
</tr>
<tr>
<td>Please tick one only</td>
<td>A housewife</td>
</tr>
<tr>
<td></td>
<td>A full-time student</td>
</tr>
<tr>
<td></td>
<td>Retired</td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
</tr>
<tr>
<td></td>
<td>Permanently sick or disabled</td>
</tr>
<tr>
<td>3. Which on of these descriptions best applies to your job, or applies</td>
<td>Unskilled or semi-skilled worker</td>
</tr>
<tr>
<td>to your last job if you are not working now?</td>
<td>Skilled worker or craftsman</td>
</tr>
<tr>
<td>Please tick one only</td>
<td>Foreman, supervisor</td>
</tr>
<tr>
<td>Please explain what you do in your work.</td>
<td>Clerical, secretarial</td>
</tr>
<tr>
<td></td>
<td>Professional, managerial, administrative</td>
</tr>
<tr>
<td></td>
<td>Have never been in paid employment</td>
</tr>
</tbody>
</table>

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4) If you are (or have been) married, which one of these descriptions best applies to your husband or wife's present job, or last job if not working now?
Please tick one only

Please explain what he/she does in their work

<table>
<thead>
<tr>
<th>Are you allowed to smoke at work</th>
<th>Unskilled or semi-skilled worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, whenever I want to</td>
<td>Skilled worker or craftsman</td>
</tr>
<tr>
<td>Yes, but only during breaks</td>
<td>Foreman, supervisor</td>
</tr>
<tr>
<td>No, not at all</td>
<td>Clerical, secretarial</td>
</tr>
<tr>
<td></td>
<td>Professional, managerial, administrative</td>
</tr>
<tr>
<td></td>
<td>Have never been in paid employment.</td>
</tr>
</tbody>
</table>

How old were you when you started to smoke regularly (give age in years)

Over the past year, how many cigarettes a day have you usually smoked

How much does this vary from day to day.

What type of cigarettes do you normally smoke

Filter tipped
Plain
Hand-rolled

If you smoke hand rolled cigarettes about how many ounces of tobacco do you use per day?

What is the full name of your usual cigarette brand
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it? Low tar</td>
<td>Low to middle tar</td>
</tr>
<tr>
<td>Low to middle tar</td>
<td>Middle tar</td>
</tr>
<tr>
<td>Middle tar</td>
<td>Middle to high tar</td>
</tr>
<tr>
<td>Middle to high tar</td>
<td>High tar</td>
</tr>
<tr>
<td>High tar</td>
<td>Don't know</td>
</tr>
<tr>
<td>Is it? King size</td>
<td>Regular size</td>
</tr>
<tr>
<td>Regular size</td>
<td>Small size</td>
</tr>
<tr>
<td>When you smoke do you inhale?</td>
<td>A lot</td>
</tr>
<tr>
<td></td>
<td>A fair amount</td>
</tr>
<tr>
<td></td>
<td>Just a little</td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>Do you smoke If so how much per week</td>
<td>A pipe</td>
</tr>
<tr>
<td></td>
<td>Cigars</td>
</tr>
<tr>
<td></td>
<td>Pipe oz per week</td>
</tr>
<tr>
<td></td>
<td>Cigars per week</td>
</tr>
<tr>
<td>How enjoyable is smoking for you</td>
<td>Extremely enjoyable</td>
</tr>
<tr>
<td></td>
<td>Fairly enjoyable</td>
</tr>
<tr>
<td></td>
<td>Slightly enjoyable</td>
</tr>
<tr>
<td></td>
<td>Not at all enjoyable</td>
</tr>
<tr>
<td>How unpleasant do you find it if you cant smoke for an hour or two?</td>
<td>Extremely unpleasant</td>
</tr>
<tr>
<td></td>
<td>Fairly unpleasant</td>
</tr>
<tr>
<td></td>
<td>Slightly unpleasant</td>
</tr>
<tr>
<td></td>
<td>Not at all unpleasant</td>
</tr>
<tr>
<td>Question</td>
<td>Response Options</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Do you think you are addicted to smoking?</td>
<td>Extremely, Fairly, Slightly, Not at all, Don't know</td>
</tr>
<tr>
<td>If you wanted to stop smoking altogether, how difficult would you find it?</td>
<td>Very easy, Fairly easy, Fairly difficult, Very difficult</td>
</tr>
<tr>
<td>When you wake up do you usually smoke before your first cup of tea or coffee?</td>
<td>Yes, No</td>
</tr>
<tr>
<td>On occasions when you can't smoke or you haven't got any cigarettes (tobacco) on you do you feel a craving for one? Please tick one only</td>
<td>Never, Hardly ever, Occasionally, Frequently, Always</td>
</tr>
<tr>
<td>Is the person who is most important to you a smoker?</td>
<td>Yes, No</td>
</tr>
<tr>
<td>What does this person feel about you smoking?</td>
<td>Objects strongly, Prefers if I don't, Doesn't mind, Encourages me to smoke</td>
</tr>
<tr>
<td>About how many times have you tried seriously to stop smoking over the past 5 years</td>
<td>Never, Once, 2-4 times, 5 or more times</td>
</tr>
<tr>
<td>Question</td>
<td>Choices</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Not counting when you are ill or in hospital, what is the longest time you have gone without smoking over the past five years.</td>
<td>Less than one day 1-6 days 1-4 weeks 1-3 months 4-6 months 7-11 months 1-3 years more than three years</td>
</tr>
<tr>
<td>Do you have any health problems which you think are related to your smoking?</td>
<td>Yes No</td>
</tr>
<tr>
<td>If the answer is yes, are the problems mainly to do with...</td>
<td>Your heart Your chest Something else</td>
</tr>
<tr>
<td>What is your weight</td>
<td></td>
</tr>
<tr>
<td>What is your height</td>
<td></td>
</tr>
</tbody>
</table>
Appendix E
Questionnaire of Smoking Motives

<table>
<thead>
<tr>
<th>Background Information (To be filled in by smoker)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please answer all seven questions (Circle one number for each question)</td>
</tr>
<tr>
<td><strong>S1. Do you use smoking to help you cope with stress?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S2. Do you use smoking to help you socialise</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S3. Do you use smoking to give you something to do when you are bored?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S4. Do you use smoking to help you to concentrate and to stay alert?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S5. Do you smoke because you feel uncomfortable if you don't?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S6. Do you use smoking to help you keep your weight down?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td><strong>S7. Do you enjoy smoking?</strong></td>
</tr>
<tr>
<td>Yes very much</td>
</tr>
<tr>
<td>Yes quite a bit</td>
</tr>
<tr>
<td>Yes a little</td>
</tr>
<tr>
<td>Not really</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
</tbody>
</table>
Please place a tick against each of the items below to show to what extent you are currently having these feelings or experiences.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Very Much</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craving for Cigarettes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hungry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fed up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty Concentrating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restless</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix G

**Confidential**

Please circle the most appropriate word that describes how you are feeling right now in the following areas:

<table>
<thead>
<tr>
<th></th>
<th>TENSE</th>
<th>NERVOUS</th>
<th>ENERGETIC</th>
<th>ALERT</th>
<th>CONTENTED</th>
<th>SATISFIED</th>
<th>DIZZY</th>
<th>NAUSEAUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>RELAXED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>CALM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>TIRED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>DROWSY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>IRRITATED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>DISSATISFIED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>CLEARHEADED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Strongly</td>
<td>Slightly</td>
<td>Neither</td>
<td>Slightly</td>
<td>Strongly</td>
<td>NOT AT ALL NAUSEAUS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H

Short Form of the Questionnaire of Smoking Urges

Please place a tick along the line between strongly agree and strongly disagree to indicate how much you agree with each of the items below.

<table>
<thead>
<tr>
<th>Craving</th>
<th>Confidential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have a desire for a cigarette right now.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>2. Nothing would be better than smoking a cigarette right now.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>3. If it were possible, I probably would smoke now.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>4. I could control things better if I could smoke.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>5. All I want now is a cigarette</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>6. I have an urge for a cigarette</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>7. A cigarette would taste good now.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>8. I would do almost anything for a cigarette now.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>9. Smoking would make me less depressed.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
<tr>
<td>10. I am going to smoke as soon as possible.</td>
<td>STRONGLY DISAGREE : STRONGLY AGREE</td>
</tr>
</tbody>
</table>
Appendix I

Airway Sensory Effects Questionnaire

Please circle the number between 0 and 4 which best indicates what you thought about the test cigarette.

<table>
<thead>
<tr>
<th>Perceived sensory intensity in the chest</th>
<th>Confidential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td><strong>Confidential</strong></td>
</tr>
<tr>
<td>How strong did the test cigarette feel in the chest?</td>
<td></td>
</tr>
<tr>
<td>0 1 2 3 4</td>
<td>Not strong</td>
</tr>
<tr>
<td></td>
<td>Quite strong</td>
</tr>
<tr>
<td></td>
<td>Very strong</td>
</tr>
<tr>
<td><strong>Scratchiness</strong></td>
<td></td>
</tr>
<tr>
<td>How much of a ‘scratch’ did the test cigarette give in the chest?</td>
<td></td>
</tr>
<tr>
<td>0 1 2 3 4</td>
<td>A little</td>
</tr>
<tr>
<td></td>
<td>Quite a bit</td>
</tr>
<tr>
<td></td>
<td>A lot</td>
</tr>
<tr>
<td><strong>Heaviness</strong></td>
<td></td>
</tr>
<tr>
<td>How heavy did the test cigarette feel in the chest?</td>
<td></td>
</tr>
<tr>
<td>0 1 2 3 4</td>
<td>Not heavy</td>
</tr>
<tr>
<td></td>
<td>Quite heavy</td>
</tr>
<tr>
<td></td>
<td>Very heavy</td>
</tr>
<tr>
<td><strong>Warmth</strong></td>
<td></td>
</tr>
<tr>
<td>How warm did the test cigarette feel in the chest</td>
<td></td>
</tr>
<tr>
<td>0 1 2 3 4</td>
<td>Not warm</td>
</tr>
<tr>
<td></td>
<td>Quite warm</td>
</tr>
<tr>
<td></td>
<td>Very warm</td>
</tr>
</tbody>
</table>
## Perceived sensory intensity on back of the mouth and throat

<table>
<thead>
<tr>
<th></th>
<th>Confidential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td></td>
</tr>
<tr>
<td>How strong did the test cigarette feel on the back of the mouth and throat?</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not strong</td>
<td>Quite strong</td>
</tr>
</tbody>
</table>

| **Scratchiness** | |
| How much of a 'scratch' did the test cigarette give on the back of the mouth and throat? |
| 0                | 1            | 2            | 3            | 4            |
| A little         | Quite a bit  | A lot        |

| **Heaviness**    | |
| How heavy did the test cigarette feel on the back of the mouth and throat? |
| 0                | 1            | 2            | 3            | 4            |
| Not heavy        | Quite heavy  | Very heavy   |

| **Warmth**       | |
| How warm did the test cigarette feel on the back of the mouth and throat? |
| 0                | 1            | 2            | 3            | 4            |
| Not warm         | Quite warm   | Very warm    |

## Perceived sensory intensity on the tongue

<table>
<thead>
<tr>
<th></th>
<th>Confidential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strength</strong></td>
<td></td>
</tr>
<tr>
<td>How strong did the test cigarette feel on the tongue?</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Not strong</td>
<td>Quite strong</td>
</tr>
</tbody>
</table>

| **Scratchiness** | |
| How much of a 'scratch' did the test cigarette give on the tongue? |
| 0                | 1            | 2            | 3            | 4            |
| A little         | Quite a bit  | A lot        |

293
<table>
<thead>
<tr>
<th>Perceived sensory intensity in the windpipe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heaviness</strong></td>
</tr>
<tr>
<td>How heavy did the test cigarette feel on the back of the tongue?</td>
</tr>
<tr>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Not heavy</td>
</tr>
<tr>
<td><strong>Warmth</strong></td>
</tr>
<tr>
<td>How warm did the test cigarette feel on the back of the tongue?</td>
</tr>
<tr>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Not warm</td>
</tr>
</tbody>
</table>

**Confidential**

**Strength**

How strong did the test cigarette feel in the windpipe?

| 0 1 2 3 4 |
| Not strong | Quite strong | Very strong |

**Scratchiness**

How much of a 'scratch' did the test cigarette give in the windpipe?

| 0 1 2 3 4 |
| A little | Quite a bit | A lot |

**Heaviness**

How heavy did the test cigarette feel in the windpipe?

| 0 1 2 3 4 |
| Not heavy | Quite heavy | Very heavy |

**Warmth**

How warm did the test cigarette feel in the windpipe?

| 0 1 2 3 4 |
| Not warm | Quite warm  | Very warm  |
### Appendix J

### Enjoyment & Satisfaction Questionnaire

<table>
<thead>
<tr>
<th>Enjoyment and perception of test cigarettes</th>
<th>Confidential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Satisfaction**

How satisfying did you find the test cigarette?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not satisfying</td>
<td>Quite satisfying</td>
<td>Very satisfying</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Liking**

How much did you like the test cigarette?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't like it at all</td>
<td>Quite liked it</td>
<td>Liked it a lot</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Similarity to usual brand**

How similar to your usual brand was the test cigarette?

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not similar</td>
<td>Quite similar</td>
<td>Very similar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>