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**Self and Non-Self Reference
in Autobiographical Memory**

And

Research Portfolio



**UNIVERSITY
of
GLASGOW**

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July 1997

**Submitted in partial fulfilment of the Degree of Doctor of Clinical Psychology
within the Faculty of Medicine, University of Glasgow**

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John P. Bogue

October 1997

Table of Contents

1. Small Scale Service Evaluation	1
Service User Evaluation of a Community Resource Centre	
2. Major Research Project Literature Review	20
Self and Non-Self Reference in Autobiographical Memory	
3. Major Research Project Proposal	33
Self and Non-Self Reference in Autobiographical Memory	
4. Major Research Project paper	43
Self and Non-Self Reference in Autobiographical Memory	
5. Single Case Clinical Research Study	69
Cognitive-Behavioural Therapy for Social Phobia incorporating a Paradoxical Intention Strategy for associated fear of Blushing	
6. Single Case Clinical Research Study	83
Cognitive deficits in a juvenile at-risk for Huntington's Disease	
7. Single Case Clinical Research Study	107
Treatment of Post-Traumatic Stress Disorder Following Sexual Assault	
8. Research Portfolio Appendices	124

SERVICE USER EVALUATION OF A COMMUNITY RESOURCE CENTRE

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Introduction

Community Care and Resource Centres

Local mental health Resource Centres have been identified as a major feature of Greater Glasgow Health Board's (GGHB) strategy for the development of community mental health services throughout Glasgow (Greater Glasgow Joint Community Care Plan, 1994). The development of these services is directed by law, embodied in the NHS and Community Care Act (1990) which was effected in Scotland in April (1993). Local Authorities, Health Boards and Housing Agencies are given joint responsibility for co-ordinating and planning Community Care plans for a given area. In the Greater Glasgow area, the Community and Mental Health Services NHS Trust (C&MHST) is contracted to implement GGHB's strategy for the development of community health services in Glasgow.

GGHB has committed itself to reducing the number of acute psychiatric, acute assessment and continuing care beds by 60% by the year 2000 (GGHB: Mental Health Strategy, 1993-2000). Service resources will continue to include in-patient hospital care for the severely mentally ill. However, non-hospital residential care in the form of supported accommodation and the provision of easily accessed mental health Resource Centres will play an increasingly important role in the Board's strategy.

GGHB's Mental Health Strategy involves the provision of Adult and Elderly mental health services through Resource Centres in defined localities. These centres are intended to serve as the focal point for the provision of a wide range of services, and to provide support to clients outwith normal working hours. The aim of the Resource Centres is to reduce the need for hospital admission by providing a comprehensive range of easily accessed services locally. It is envisaged that there will, ultimately, be up to 29 Resource Centres throughout the Greater Glasgow area to provide services organised around multi-disciplinary teams for those with severe mental health problems. Eighteen of the Centres will be for adults (up to the age of 64) and 11 will be for the elderly.

Goldenhill Resource Centre

Goldenhill Resource centre is located in Clydebank which is situated to the west of Glasgow outside the city boundary. The building has been adapted for the exclusive use of the Centre's multi-disciplinary team and comprises drop-in rooms, group rooms and individual rooms. A separate suite of offices is reserved for team members. The Centre's catchment area covers the whole of Clydebank an area which is served by 32 general practitioners operating from a single large health centre. The Centre caters predominantly for the under 65 adult population. Clydebank has suffered from a decline in local heavy industry and engineering to the extent that it is now characterised by high levels of unemployment and social deprivation.

The following are the main services offered to clients on the Resource Centre case register:

- Community Psychiatric Nurse (CPN) visits
- Individual Psychiatry and Clinical Psychology clinics
- Day care facilities providing a range of recreational and educational facilities
- Crisis intervention
- Health education and promotion
- Drop in facilities to provide social contact for clients
- Group programmes for anxiety management, bereavement etc.

The following comprise the establishment complement at Goldenhill Resource Centre:

- Centre Manager
- Consultant Psychiatrist
- Staff Grade Psychiatrist
- 7 G grade CPNs & 6 E grade CPNs
- 6 B grade Health Care Assistants
- 1 Head Occupational Therapist
- 1 Senior Occupational Therapists
- Sessional input from Clinical Psychologist
- Administration Staff

A client can be referred to Goldenhill Resource Centre by:

- General Practitioners
- Psychiatric or general Hospitals
- Social Work Department
- Voluntary Organisations
- Primary Care Staff
- Housing Associations

Service Evaluation Studies

Evaluation of healthcare provision is now a salient issue within the NHS. The evaluation of care in new settings following hospital closure programmes has stimulated much of the early proliferation of studies with an emphasis predominantly on *comparisons* between hospital and community delivered services on the basis of clinical outcome measures. The publication of the NHS Management Inquiry (Department of Health and Social Services, 1983) and *Working for Patients* White Paper (Department of Health, 1989) has been influential in shifting the focus of research towards evaluating care practices and services *within* the new community-based care settings now characterising the new NHS environment. These reports have pointed to the need for market research techniques to be utilised in order to elicit the views and experiences of service users (Fitzpatrick, 1991a). Central to this approach is the idea that consumer views should be used to monitor performance *and* formulate policy (Stallard, Hudson, & Davis, 1992). Fitzpatrick (1991a) posits three main reasons as to why health professionals should take the views of consumers seriously. Firstly, there is evidence that satisfaction is an important outcome measure. Satisfaction may influence treatment compliance and re-attendance for appropriate treatment. Secondly, satisfaction can provide a measure of assessing consultations and patterns of communication such as the provision of information and the involvement of the client in decisions about care. Thirdly, patient feedback can be used to modify or propose alternative care practices.

Published evaluation studies have more commonly been of the hospital *versus* community sort. Here, studies have typically explored whether outcome in a community setting is as good if not better than outcome in a hospital setting. Bachrach (1982) refers to this methodological approach as being one of *impact* evaluation as opposed to *programme* evaluation. He suggests that the complex internal workings of new settings can be overlooked when studies concentrate on drawing outcome comparisons with traditional care settings. Such prospective studies have generally suggested that patients in receipt of community-based care are less likely to require in-patient psychiatric care at follow-up compared to those who had received hospital based psychiatric care (e.g. Stein & Test, 1980; Hault *et al*, 1984; Merson *et al*, 1993; Dean *et al*, 1993). Studies focusing on consumer views within community-based care settings have identified the readiness of users to express their views. Evaluations conducted by MacDonald *et al* (1990), Stallard, Hudson & Davis (1992) and Tyrer (1984) have revealed high levels of consumer satisfaction and a marked preference for community delivered services. Authors have acknowledged that the receipt of feedback from consumers on aspects of service provision has been useful in subsequently informing practice formulation and revision.

Goldenhill Resource Centre Service Evaluation

The aim of the evaluation was to determine from the perspective of the users, the extent to which the CMHT at Goldenhill Resource Centre was achieving its commitment to providing clients with care services designed to meet their needs.

Key areas to be addressed by the current study are as follows:

- Describing the population attending the Resource Centre
- Survey of clients' needs
- Survey of clients' satisfaction with existing services and service features

Methods

All clients on the Resource Centre case register in June 1994 were invited to participate in the study. Face to face interviews were conducted by CPNs using a semi-structured questionnaire covering the following areas: client characteristics (mental health history, access to service, attendance details), clients' needs and clients' satisfaction with existing services (Appendix 1.1). Interviews took place at the Resource Centre or within clients' homes. Where necessary, supplementary information was obtained from clients' keyworkers. Information was also obtained from the PEAK patient information database system at the C&MHST headquarters. All data was stored and analysed using SPSS Release 6.0 (Norusis, 1993).

Results

Client Characteristics

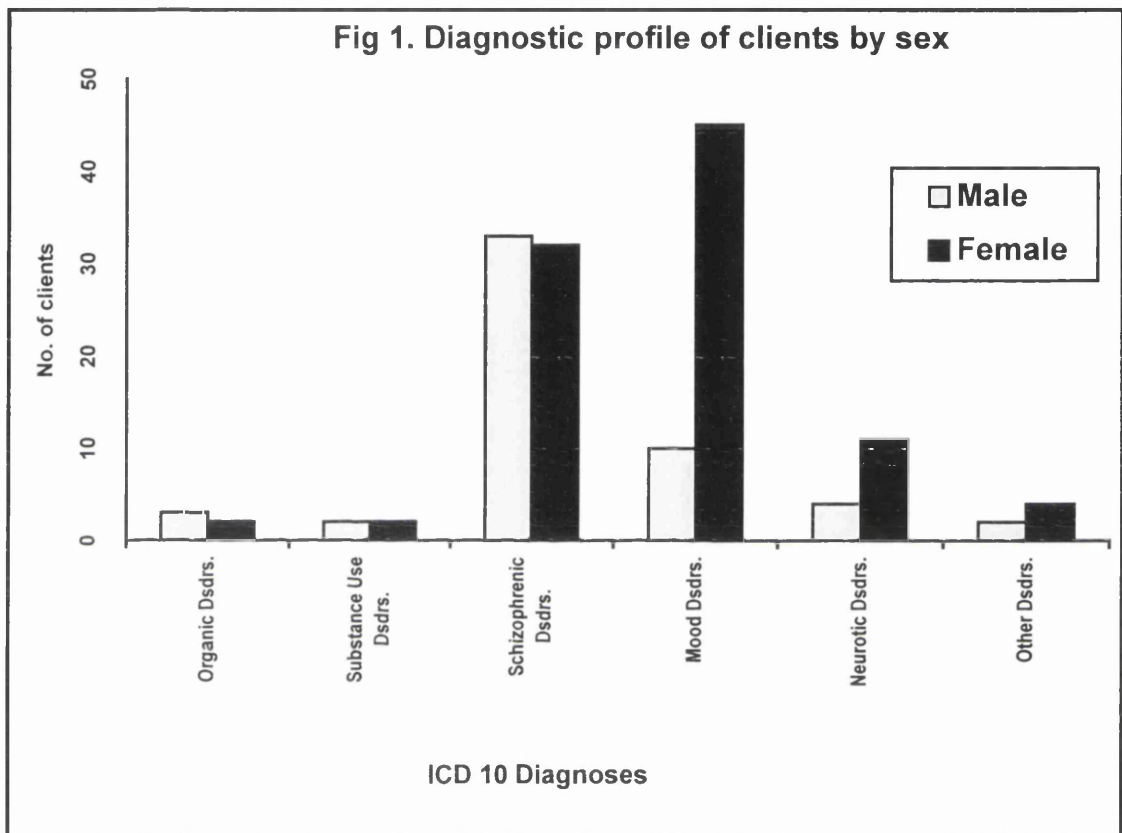
Out of the 153 clients invited to participate in the study, 4 did not complete the interview schedule and only demographic and diagnostic information was recorded for analysis. Therefore, 149 clients formed the main response source although in cases interviewers failed to code responses. As a result, item response totals do not consistently total 149.

The characteristics of clients attending the Resource Centre included in the sample are summarised in Table 1. Nearly two-thirds of the sample were female. The mean age was 44 years with a median of 42 and a modal age of 41. There was no statistically significant association between age groups and gender ($\chi^2=2.8$; d.f. 5, $P > 0.05$). Just over four-fifths of the sample were accorded a primary diagnosis of either a Schizophrenic or a Mood disorder. For this group the mean age was 44 and 45 years respectively (s.d. 14 years for both). The majority of the Mood disorder diagnoses were of the Bipolar Affective or Recurrent Depressive disorder subtypes. Nearly three-quarters of the sample reported having a mental health problem for a period in excess of 4 years. Less than a third of the sample had been receiving help for a mental problem for period less than 2 years. Clients reported a mean of 3.5 hospital admissions (range: 0-33). The mean period of time elapsed since last admission was just over 2 years with a median of 50 weeks.

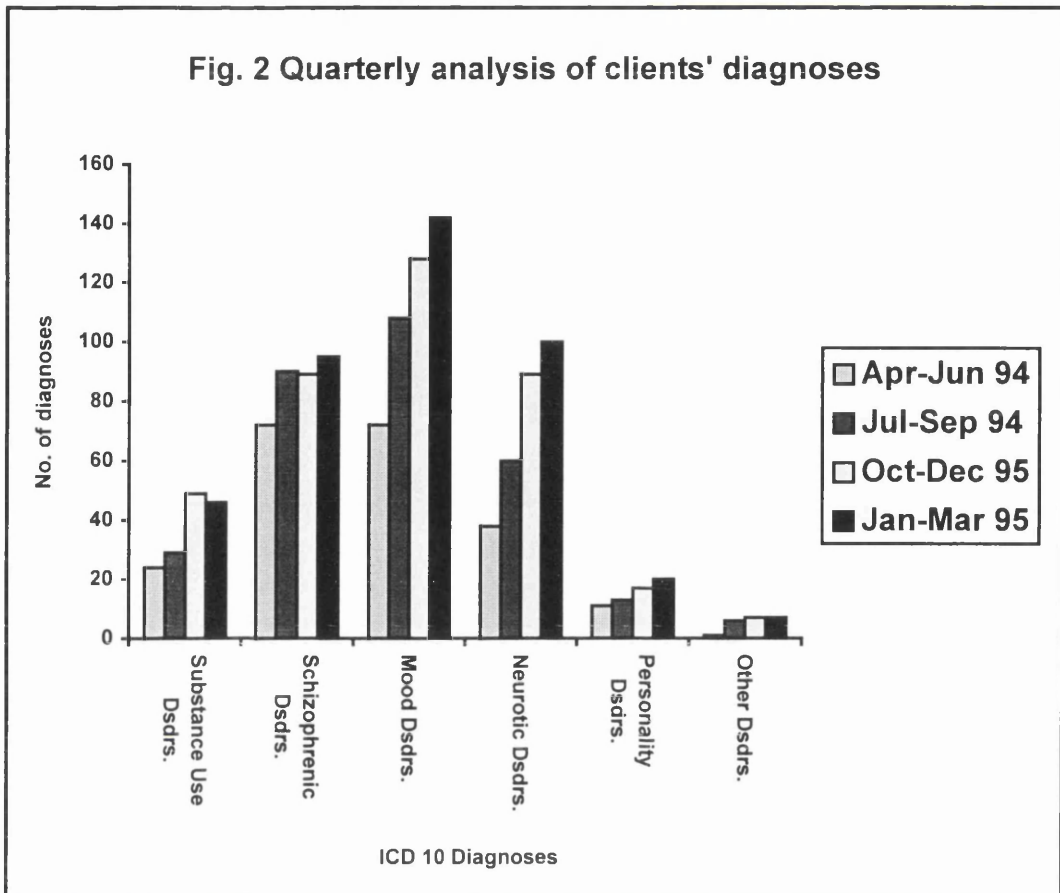
Table 1: Summary Client Characteristics

	<i>N</i>	(%)
Sex		
Male	55	(35.9)
Female	98	(64.1)
Age Group		
18-24	12	(7.9)
25-34	30	(19.9)
35-44	41	(27.2)
45-54	28	(18.5)
55-64	29	(19.2)
65+	11	(7.3)
ICD 10 Primary Diagnosis		
F0 Organic Disorders	5	(3.3)
F1 Substance Use Disorders	4	(2.6)
F2 Schizophrenic Disorders	65	(43.4)
F3 Mood Disorders	55	(36.7)
F4 Neurotic Disorders	15	(10.0)
F5-F7 Other	6	(4.1)
Duration of Mental Health Problem		
Less than 1 month	1	(0.7)
2-6 months	5	(3.4)
6 months-1 year	11	(7.5)
1-2 years	10	(6.8)
2-4 years	14	(9.5)
4-6 years	13	(8.8)
6-10 years	21	(14.3)
Over 10 years	72	(49.0)

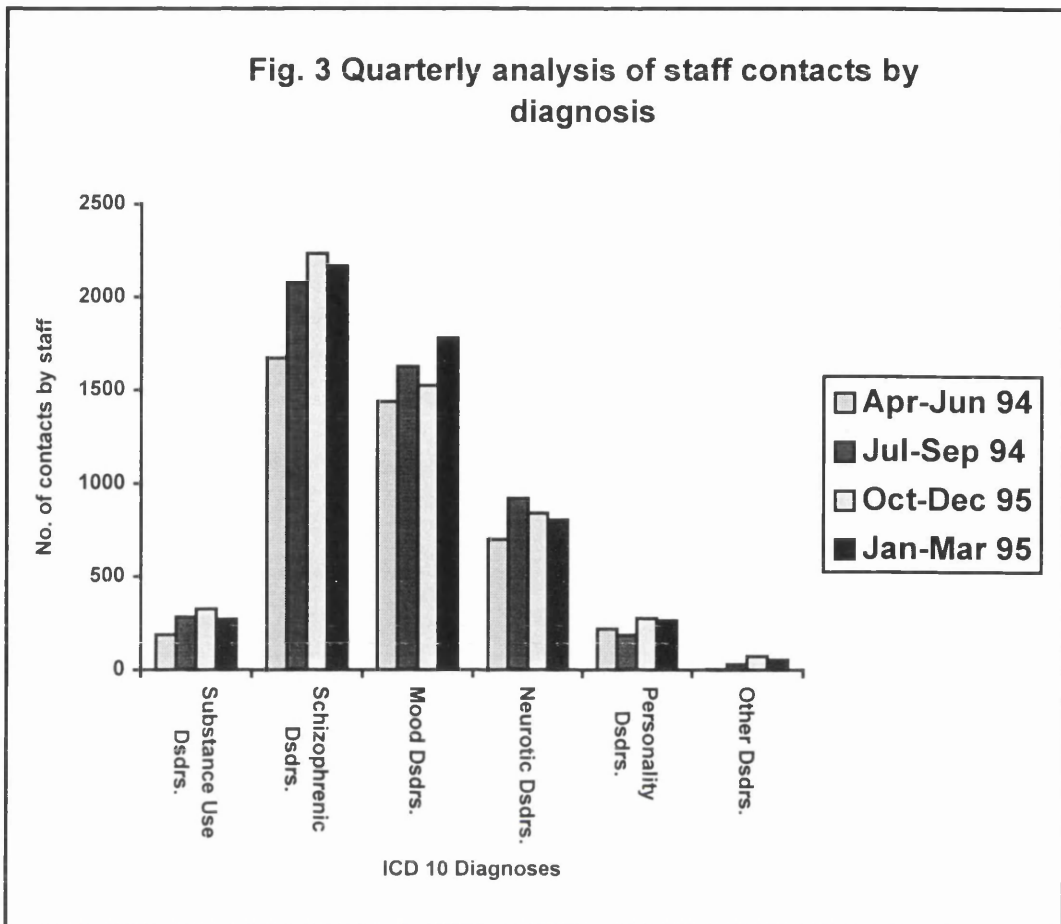
A statistically significant association was found between gender and diagnostic grouping ($\chi^2=15.9$; d.f. 5, $P < 0.01$). Over four times as many women received an F30-39 Mood Disorder diagnosis compared to men in the sample (Fig. 1).



The target group of clients for the Resource Centre is individuals with severe mental health problems. Although not exclusively, such problems would include psychotic, bi-polar and major affective disorders. At an operational level, access is potentially available to all individuals with a mental health problem which causes severe disability. Fig. 2 shows a quarterly analysis of clients on the Resource Centre case register over a period of 1 financial year classified according to diagnosis. There is a trend evident across all diagnostic classifications revealing an increased caseload for the Centre. It is apparent that there has been a differential increase across diagnostic groups. Since the first quarter of the financial year 1994-95 compared to the last quarter, the greatest growth has been seen in the Mood Disorder and Neurotic Disorder diagnostic groups. For this time interval, the Mood Disorder and Neurotic Disorder diagnoses have doubled and trebled respectively.



An analysis of staff contacts across diagnostic groups is represented in Fig. 3. Here, a quarterly analysis reveals a moderate increase in contacts with clients in the Schizophrenic and Mood Disorder groups from the beginning to the end of the financial year 1994-95. The increase in staff contacts and by implication, staff time, for those in the Schizophrenic Disorder group would appear to be occurring in the absence of a reciprocal increase in the number of clients with a Schizophrenic Disorder diagnosis in the Resource Centre case register.



Access to the Resource Centre

A total of 87 clients in the sample (58.8%) attended the Centre, the remainder were seen at home or at a nearby health centre (e.g. for depot neuroleptic preparations). Most attendees indicated that they lived within a 15 minute walk or bus ride of the Centre. Nearly 80% of the sample reported that they were usually seen or visited by members of the team either early or on time. Over three-quarters of clients were seen by Centre staff at least fortnightly, over half indicated that they were seen at least once a week. A slight trend favouring more frequent contact with staff was evidenced. Two clients indicated that they did not want to be seen.

Client needs

Fig. 4 portrays client needs in relation to clinically related problems and issues. Clients rated help with anxiety, low mood/depression, trauma, social skills, relationship issues and

anger as being most helpful. In contrast, help with problems such as gambling, drug use, sexual, alcohol and eating problems was perceived to be less helpful according to clients.

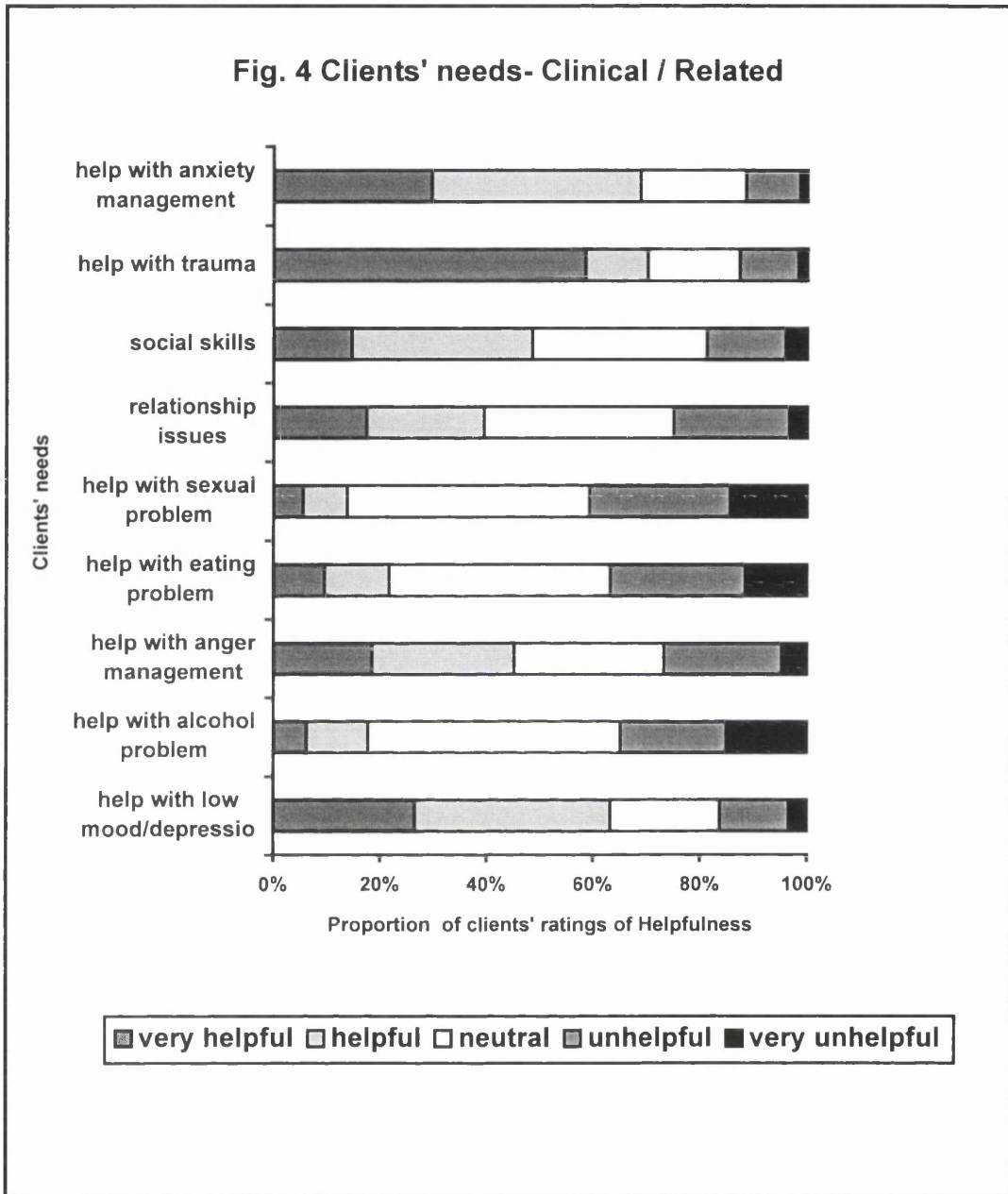
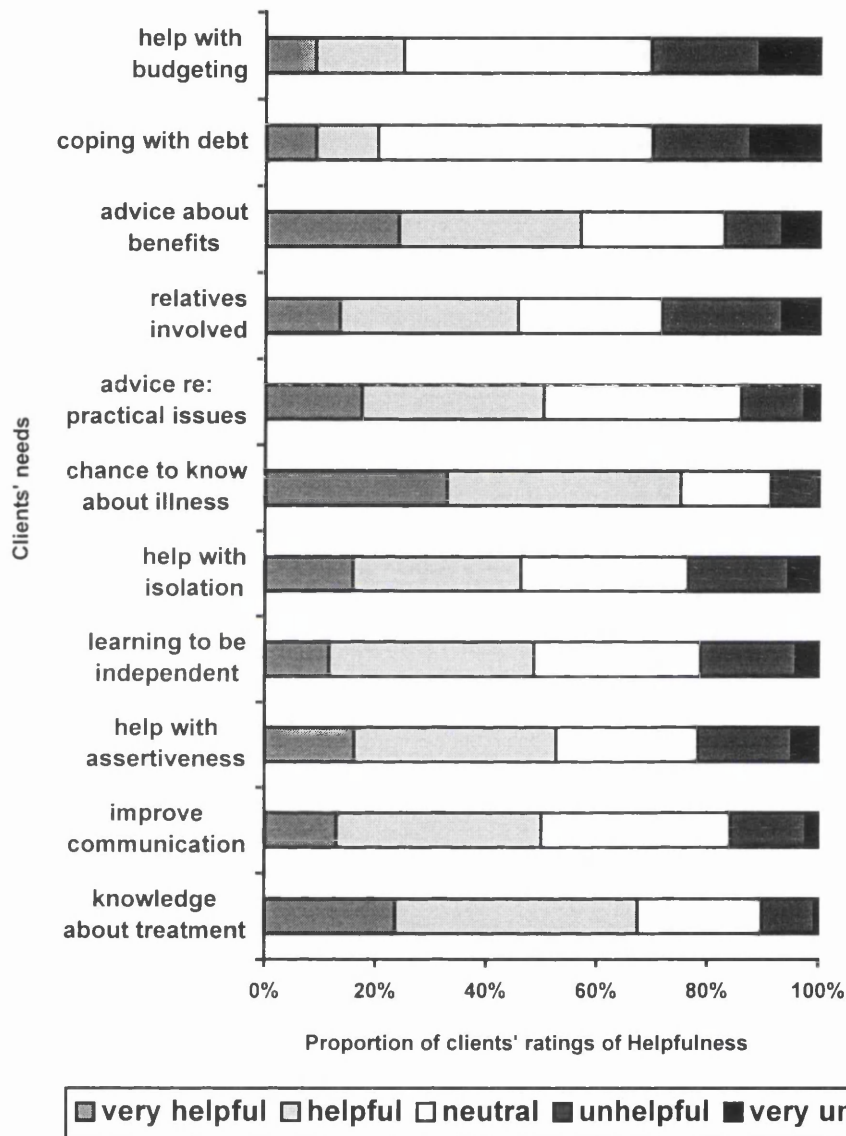


Fig. 5 portrays ratings by clients with regard to practical day to day issues. In general most items were rated as helpful. Items pertaining to communication and information availability were considered to be particularly helpful. Clients rated information concerning mental illness and treatments to be of considerable value. The receipt of information about budgeting and coping with debt was rated to be less useful. However, most clients felt that benefit advice would be helpful.

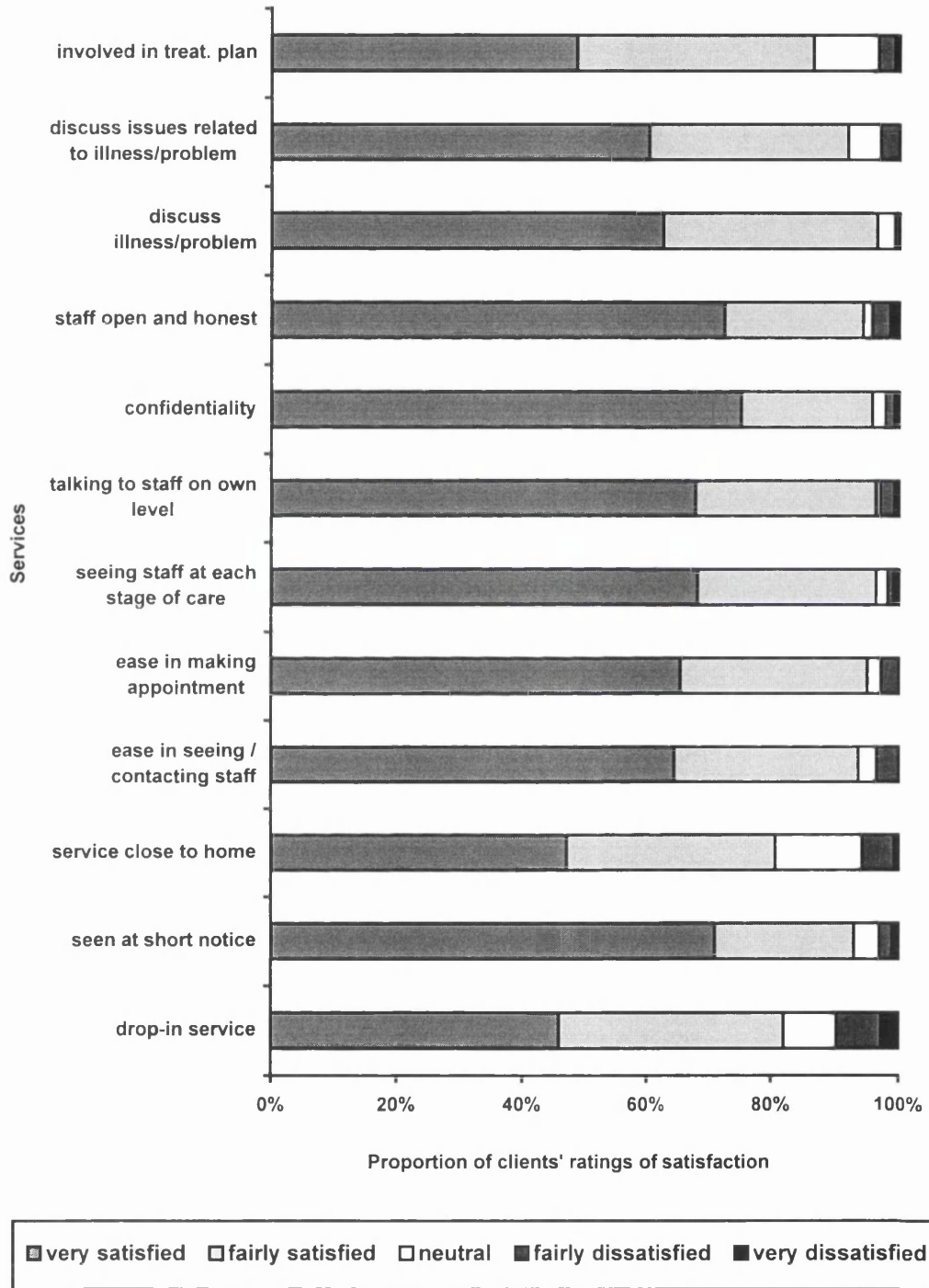
Figure 5. Clients' needs - General



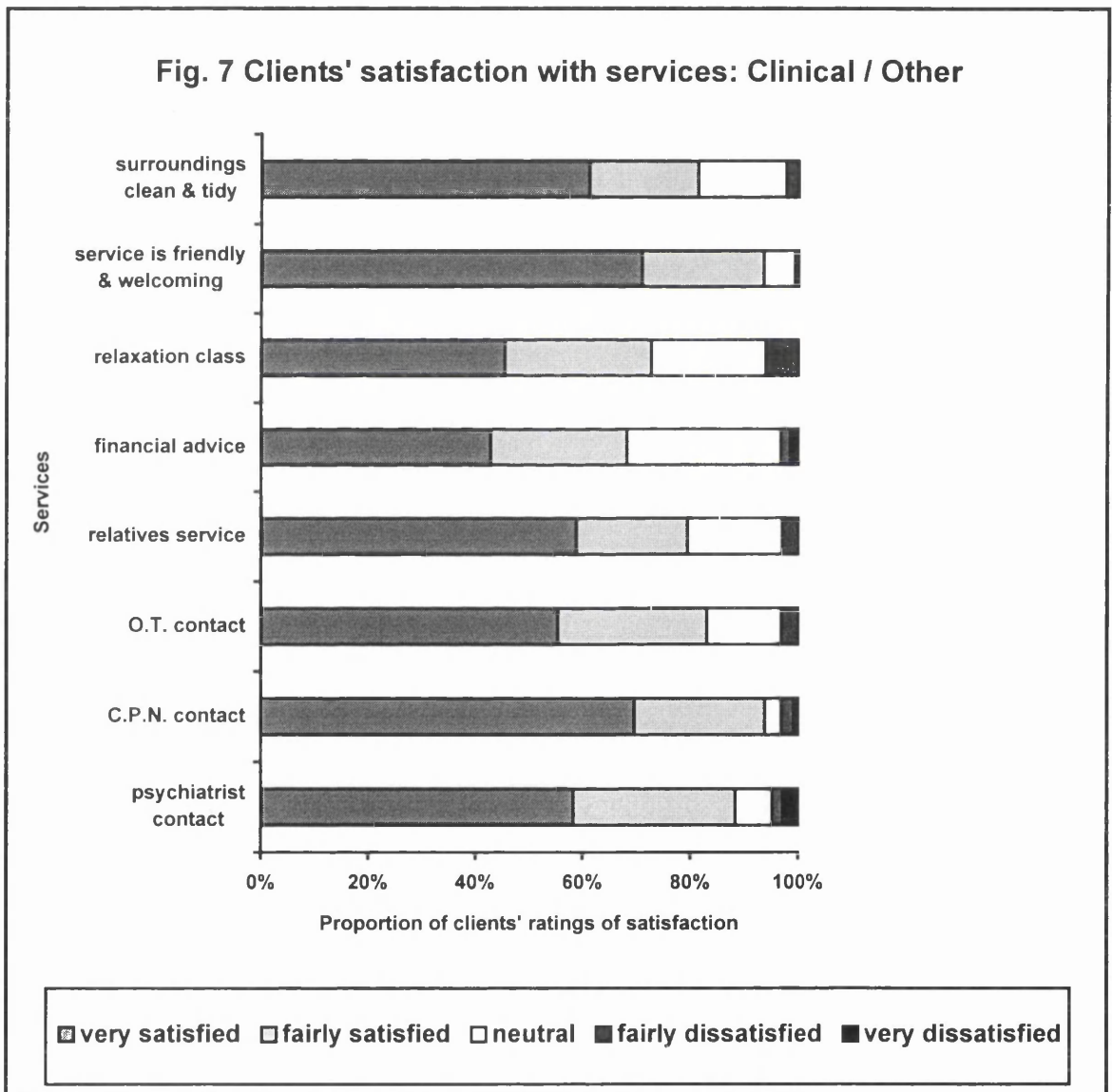
Clients' satisfaction with services

In general, clients expressed consistently high levels of satisfaction with services and aspects of service delivery at the Resource Centre. Uniformly high levels of satisfaction with service aspects relating to access and communication are evident in Fig. 6.

Fig. 6 Clients' satisfaction with services: Access / Communication



Satisfaction with other aspects of the Resource Centre including clinical services is represented in Fig. 7. Again, high levels of satisfaction with services are reported by clients. Not all items from this section of the survey questionnaire are detailed here. Eight satisfaction items have been excluded from this analysis as they were utilised by less than 20% of the sample. They are: users' group, relatives support group, stress management group, cooking class, lunch group, crèche and clinical psychology service. On inspection, satisfaction with these less widely used services appeared equally high.



Discussion

The 'snapshot' of those on the Goldenhill case register in the month of June 1994 has revealed that nearly two-thirds of those registered with the service were female. Most clients were in their 40s with a mental health problem for a period in excess of 6 years. Diagnoses of Schizophrenia and Mood Disorders predominated. A significantly greater proportion of women were accorded a diagnosis of Mood Disorder. Over a period of one year, an apparent increase in the number of clients with a Mood Disorder or a Neurotic Disorder was evidenced. However, over the same period, staff increased contact rates with those in the Schizophrenic Disorder group and to a lesser extent with the Mood Disorder group.

The fact that there has been an increase in Neurotic Disorders does not suggest that the Resource Centre is now orientated towards a group other than those with a severe mental health problem. Staff contact is still predominantly concentrated towards individuals with a Schizophrenic or Mood Disorder. The slower rate of increase in the number of clients with a Schizophrenic Disorder compared with those with a Neurotic Disorder probably reflects the extent to which the severely ill within the catchment area were initially successfully identified and added to the Centre's case register at an early stage. The fact that an increase in the number of clients with Neurotic Disorders has not been reciprocated by an increase in contacts with staff suggests a higher 'turnover' within this less severely ill group. Therefore, although increasing numbers of individuals with less severe mental health problems may now be on the Centre's case register, the 'tidal' nature of this population does not result in staff resources being redirected away from those with more severe mental health problems. However, in the absence of formal referral criteria there remains a risk that a shift of resources away from the chronically mentally ill target group could yet occur. Future close monitoring of any shift in the allocation of staff resources is clearly indicated.

Clients' needs covering a variety of topics were expressed. As might be expected, clients rated the receipt of services perceived to be more relevant to their own mental health problems as being most useful. Therefore, assistance with anxiety management, trauma and coping with low mood were popularly expressed needs. Assistance with somewhat more

specific issues, such as help with sexual, alcohol and eating problems was perceived to be less useful by clients. However, a large proportion of clients expressed a neutral stance on these three topics suggesting that perhaps more information on the nature and general relevance of such help might be warranted. Clients consistently highly rated the value of receiving information about mental illness and treatments. Help with communication and general living skills were also rated as being useful.

Uniformly high levels of satisfaction with services provided at the Resource Centre were reported. Facilities were easily accessed and staff were considered to be readily available. The Centre was not considered to be remote from clients. A majority of the sample regularly attended the Centre, for most this involved a 15 minute walk or bus ride. In this regard, it is apparent that Goldenhill Resource Centre has been successfully located within a site easily accessed by clients within the specified catchment area. Satisfaction with communication and involvement in care was highly rated.

The Centre was perceived to provide a friendly and welcoming service within pleasant surroundings. Satisfaction with O.T., CPN and Psychiatry staff was high. The uniformly high rate of satisfaction is noteworthy as high rates of consumer satisfaction in patient surveys are commonplace and problematic (Fitzpatrick, 1991b; Stallard, Hudson & Davis, 1992). Fitzpatrick (1991b) suggests that high consumer satisfaction can be an artefact of questionnaire design. Open questions and recorded views may give a more accurate representation.

Conclusions

- Over four-fifths of the sample had a primary diagnosis of either F2 Schizophrenic Disorder or F3 Mood Disorder.

- Despite increasing numbers of clients with F4 Neurotic Disorders, there is as yet, no evidence to suggest that the Centre has diverted significant resources away from its target group, the severely mentally ill.

- The Resource Centre is within easy access for clients in the catchment area.

- In terms of client needs the following were perceived to be most helpful:
 1. Help with anxiety and anger management
 2. Help coping with trauma and low mood
 2. Knowledge about mental illness and treatment
 3. Advice on benefits available

- Uniformly high levels of satisfaction were reported with regard to the use of facilities, existing services and aspects of service provision at the Resource Centre.

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Literature Review

Self and Non-Self Reference in Autobiographical Memory

Prepared in accordance with the submission requirements for the

British Journal of Clinical Psychology

(Appendix 2.1)

Self and Non-Self Reference in Autobiographical Memory

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Current developments and directions in autobiographical memory research are described and relevant literature reviewed. There has been a renaissance of interest in autobiographical memory research as an aid to our understanding of cognitive processes believed to be associated with psychological disturbance. This is likely to be related to the present dominance of cognitively orientated psychotherapies and the adoption of methodology more suitable for the experimental psychology paradigm. An historical overview of the development of autobiographical memory research is described and current directions in the literature outlined and reviewed. Evidence from related research areas is reviewed which raises pertinent research questions about the role of reference set in autobiographical memory processes especially in clinical populations. It is suggested that research to examine non-self referential biographical memories in individuals with depression might be of particular interest.

Until recently, autobiographical memory has received relatively scant attention from experimental psychologists studying human memory and cognition. Terminology has been inconsistent and differentiating autobiographical memory from other types of memory, such as episodic memory, has been problematic. Brewer (1986) and Neisser (1986) have contributed greatly towards integrating autobiographical memory within the current models we have of memory structures and cognitive processes. The phenomenological nature of autobiographical memory has historically deterred experimental cognitive psychologists from working in this area. According to Rubin (1986), “Memory research to these critics [journal reviewers], required the presentation of a known stimulus, a delay, and a report of that known stimulus.” (p.4). Autobiographical memory research has also been neglected for the methodological and practical difficulties associated with defining initial stimuli. Such stimuli are experienced by an individual over a lifetime, from a highly individual phenomenological perspective in an ecological setting far divorced from the laboratory. However, in a seminal study, Lloyd and Lishman (1975) used autobiographical memory techniques within an experimental psychology paradigm to investigate recall characteristics in a clinical population. Significantly, Lloyd and Lishman’s study focused on a memory retrieval characteristic which was more amenable to quantitative analysis, namely, recall latency rather than the veracity of the recalled memory. This study effectively heralded an upsurge of interest in this area which can be traced back to studies by Sir Francis Galton (1879a, 1879b). The renaissance of interest in this area is also likely to be linked to the widespread growth and subsequent evolution of information-processing models of clinical phenomena such as depression (e.g. Beck, 1967).

The concept of Autobiographical Memory

Brewer (1986) defines autobiographical memory as the study of memory for information relating to the self. According to Brewer, autobiographical memories are self-referential in that they entail information related to the self. He defines the self as being composed of an experiencing ego, a self-schema, and an associated set of personal memories and autobiographical facts. The ego is described as a conscious experiencing entity and it is memory of the ego’s experience which we can designate by the term autobiographical memory. Conway (1990) describes autobiographical memories as being typically of complex events (e.g. a wedding), will contain high self-reference, will usually feature

sensory, perceptual and reflective information fairly equally, and will be closely related to other memories. Critically, Conway argues that although any of these features taken on their own could apply to many different (i.e. non-autobiographical) classes of memory, the whole set of features would closely apply to autobiographical memories only.

Studies of Autobiographical Memory

Mood congruent memory effects

The experimental techniques employed in autobiographical memory studies have been applied to clinical populations with the aim of enhancing our understanding of those cognitive processes believed to be associated with psychological disturbance. Studies by Lloyd & Lishman (1975) and Williams & Scott (1988) with clinically depressed patients, found that the depressed patients, relative to controls, took longer to recall memories to positive rather than to negative cue words. Riskind *et al.* (1982); Teasdale & Fogarty (1979); Teasdale & Taylor (1981) and Teasdale *et al.* (1980) induced depressed or elated moods in a non-clinical population and found that mood state was related to memory retrieval. The induced depression groups were slower to recall positive memories relative to controls. The random assignment of subjects to differential mood groups in these studies supports the view that mood-memory effects were the result of recall selectivity rather than group differences in the objective incidence of adverse life experiences. Clark & Teasdale (1982) used a within-subjects design to examine recall phenomena in clinical patients with naturally occurring diurnal changes in the severity of their depressive states. They found that positive memories were more likely to be recalled and negative memories less likely to be recalled when patients' depression reduced in severity. This pattern was reversed when patients became more severely depressed. Clark & Teasdale concluded that "mood has two separate effects: It influences the selection of emotional material for entry into consciousness and it also affects how pleasing or upsetting that material will be, once it has entered into consciousness." (p.93)

Qualities of recalled memories

Recent research has produced some evidence that the apparent preferential recall of negative memories observed in depressed and parasuicidal subjects may be an artefact of the methodology of using a broad quantitative variable such as retrieval latency in

autobiographical memory studies (Kuyken & Dalgleish, 1995). Kuyken & Dalgleish point to a number of studies which have not consistently demonstrated a differential retrieval latency (e.g. Clark & Teasdale, 1982; Moore *et al.*, 1988; Williams & Dritschel, 1988). Williams & Broadbent (1986) suggested that the seemingly preferential recall of negative memory events exhibited by depressed or parasuicidal subjects reflects a tendency for them to be less specific and overgeneral in their recall of positive memory events thus requiring further prompting and inevitably increasing retrieval latency scores. More recent studies have concentrated on examining this quality of retrieved memories, namely the specificity of responses to negative and positive cues rather than retrieval latency which earlier studies addressed. Using clinical subjects, these studies have consistently identified an overgeneral mode of retrieval associated with negative mood (e.g. Moore *et al.*, 1988; Williams & Scott, 1988; Puffet *et al.*, 1991; Evans *et al.*, 1992; Brittlebank *et al.*, 1993; Kuyken & Dalgleish, 1995). This mode of retrieval, consistently associated with parasuicidal or depressed subjects in studies, is characterised by a tendency towards recall of a composite memory of a series of events blended together rather than a discrete specific event in time.

In a longitudinal study, Brittlebank *et al.* (1993) found evidence suggesting that overgenerality is an enduring characteristic of depressed individuals which can predict long-term outcome. Autobiographical memory recall in 19 subjects with a diagnosis of major depressive disorder was examined at admission, three months later, and seven months later. No reliable fall in overgeneral memory in response to emotional cue words was determined as depression remitted. Overgeneral responses to positively toned cue words significantly predicted negative outcome at seven months. Additional evidence was obtained by Williams & Dritschel (1988) in a cross-sectional study of two separate cohorts of patients who had taken an overdose three and fourteen months prior. Compared to controls, both cohorts showed a tendency towards overgeneral recall in response to emotional cue words.

There is evidence that overgeneral memory is not associated with all forms of emotional disturbance. Richards & Whittaker (1990) and Burke & Mathews (1992) examined the specificity of autobiographical memory in anxious subjects. Richards & Whittaker used non-clinical high/low anxious subjects whereas the Burke & Mathews study involved clinical subjects diagnosed with generalised anxiety disorder. Both studies failed to find

any evidence of a generality effect although, as might be predicted, anxious subjects were faster retrieving memory events relating to threat-related cues.

Role of referential set

There is some experimental evidence from studies using semantic memory tasks that negative mood states are associated with an underrecall of positive cue words and/or overrecall of negative cue words only when the material presented is referential to the subject (e.g. Derry, P.A. & Kuiper, N.A., 1981; Kuiper & Derry, 1982; Bradley & Mathews, 1983; Kuiper *et al.*, 1985; Clifford & Hemsley, 1987). In these studies, subjects were asked to focus on the stimulus material's applicability to themselves compared with at least one other non-self referential exposure set (e.g. significant or familiar other set). In a review of the literature, Blaney (1986) concludes that mood-congruent memory effects are absent or minimal under sets that are explicitly antithetical to self-referencing. We can draw from these sources some evidence to suggest that mood related memory biases are influenced by reference set.

Information processing model of depression

These studies have important implications for information processing models of psychological disturbance (e.g. Beck, 1967; Hemsley, 1982). Beck's work has been the most influential and well developed information processing model of depression. The central premise is that individuals in a depressed state see themselves and their world in a distorted manner (Beck *et al.*, 1979). Beck's approach emphasises the manner in which information processing is affected when negative schemata or cognitive structures are activated. Once these negative schemata are activated, the negative perspective of the depressed individual encompasses views of self, world and future. Negative schemata introduce and sustain characteristic information processing biases such as the magnification of negative material, overgeneralisation of aspects and implications of negative events, and minimisation of positive events (Haaga & Beck, 1992). Under these conditions the self can be viewed as defective or inadequate without redeeming positive aspects or achievements. Within depressed individuals, such cognitive biases may result in an attenuation to negative memories and yet may yield a seemingly impoverished repertoire of positive memory experiences in contrast. Under these conditions, a vicious cycle might be considered to operate in which negative memories are primed as a function

of increased levels of depression. Thus, the depressed individual may accumulate evidence which is interpreted to confirm and perpetuate negative views of self.

Doerfler & Richards (1981) have suggested areas where impaired memory specificity in individuals prone to depression may compound deficits in other aspects of cognitive functioning such as problem solving. Evans *et al.* (1992) examined problem solving ability and memory specificity in a group of overdose patients and control surgical patients. Memory specificity was significantly correlated with effective problem solving ability. This research group have suggested that overgeneral memory impairs problem solving, since both the definition of a problem and the generation of response strategies or solutions demands an ability to address adequately the memory 'database'. According to Brittlebank *et al.* (1993) "If depressives with higher levels of overgenerality have greater difficulty overcoming adversity, negative experiences will appear more pervasive and durable. It can be argued that these individuals will be vulnerable to prolonged dysphoric states which may not be alleviated solely by biological treatments" (p.121).

The central role of self-schema in information-processing biases is emphasised by Beck *et al.* (1979). Studies mentioned earlier have found mood congruent memory biases only when a self-referential cognitive set is present (e.g. Derry & Kuiper, 1981; Kuiper & Derry, 1982; Bradley & Mathews, 1983; Kuiper *et al.*, 1985; Clifford & Hemsley, 1987). In a recognition task involving undergraduate students, Conway & Dewhurst (1995) found that self-referential encoding was an important factor in successful recognition. In a study involving depressed and non-depressed controls in which subjects were required to perform a modified Stroop colour-naming task, Segal *et al.* (1995) found evidence to support the hypothesis that negative information about the self is highly interconnected in the cognitive system of depressed patients. Singer & Moffitt (1992) examined autobiographical memory in groups of college undergraduates. Those were groups asked to recall a specific memory which typified or defined them in some way retrieved consistently less specific memories than those groups following the usual non-self defining instruction set. The authors suggest that self-focused memory searches can be inhibited by the activation of other self-related generic information. According to Williams & Scott (1988), negative early experiences may cause individuals to have a range of self-descriptions in a chronically activated state, so that new emotionally valent events will be encoded along with many general trait self-

descriptors. These over-generic encoding-retrieval styles may constitute the cognitive style which can be evidenced in depressed and suicidal patients.

Conclusions

Depressed individuals may hold negatively biased views of themselves and the world from their own phenomenological perspective. Helping patients see beyond their own phenomenological field is an important step in facilitating greater appraisal of objective reality. Biased and distorted thinking styles can be weakened if patients can be encouraged to see beyond their such fields (e.g. Blackburn & Bonham, 1980). Previous studies have found mood-congruent memory biases related to self-referential set conditions (e.g. Derry, P.A. & Kuiper, N.A., 1981; Kuiper & Derry, 1982; Bradley & Mathews, 1983; Kuiper *et al.*, 1985; Clifford & Hemsley, 1987). However, at present no study exists in which the tasks employed in autobiographical memory studies have been extended beyond the self-reference condition in clinically depressed individuals. In the absence of such studies, we are not able to conclude that the tendency to recall overgeneral memories whilst in a negative mood state is specific to material that is self-referential. Given that a central component of Beck's (1987) theory of depression is the tendency for depressed individuals to harbour thinking styles which accommodate persistent negative views of self, autobiographical memory tasks may be of use investigating whether aspects of such styles are observable under conditions which are not directly self-referential. A study to examine whether depressed individuals retrieve overgeneral memories in the autobiographic as well as the non-self referential biographic domain is indicated for this reason. As previous research has indicated that memory deficits are associated with poor problem solving (e.g. Doerfler & Richards, 1981; Evans *et al.*, 1992) and long-term prognosis (e.g. Brittlebank *et al.*, 1993) such research may be of value in strengthening the case for incorporating specific mnestic strategies into psychological treatments for depression.

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MAJOR RESEARCH PROJECT RESEARCH PROPOSAL

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Prepared in accordance with

Greater Glasgow Community & Mental Health Services NHS Trust

Ethical Approval Guidelines for Clinical Research

GREATER GLASGOW COMMUNITY AND MENTAL HEALTH SERVICES NHS TRUST**APPLICATION FORM FOR ETHICAL APPROVAL****1. Name and status of proposer:**

John Bogue BA (Hons) MSc
 Trainee Clinical Psychologist
 Doctoral Programme in Clinical Psychology
 University of Glasgow

Kate M. Davidson PhD (Research Supervisor)
 Consultant Clinical Psychologist
 Research Tutor, University of Glasgow

2. Address for correspondence:

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 Univ. Dept. of Psychological Medicine

 Academic Centre

 Gartnavel Royal Hospital

 1055 Great Western Road

 Glasgow G12 0XH

3. Employing authority:

Greater Glasgow C & MHS NHS Trust

4. In which hospital(s) or other location will the study be undertaken:

Greater Glasgow C & MHS NHS Trust sites

5. Title of project:

SELF AND NON-SELF REFERENCE IN AUTOBIOGRAPHICAL MEMORY

6. Has the proposed research been approved by any other committee on ethics?

No

7. Has the proposed, or similar, research been carried out in any other centre?

No

8. Please give a summary of the project, including the question to be answered, the procedures to be used, the measurements to be made and how the data will be analysed:

Summary

Depressed and parasuicidal subjects have more difficulty recalling specific positive memories than non-depressed control subjects (e.g. Williams & Broadbent, 1986). A consistent finding of an overgeneral mode of recall and of a composite memory of a series of events blended together rather than a specific event in time has been found to be associated with depressed mood (e.g. Brittlebank *et al.*, 1993; Moffitt *et al.*, 1994; Kuyken & Dalgleish, 1995). This suggests that depressed patients have a systematic negative bias in their recall of personal memories which fits Beck's information processing theory of depression (Beck, 1979). Through such cognitive biases, depressed individuals are believed to construct a view of self which confirms and perpetuates a negative perspective.

No study has yet elucidated whether recall characteristics observed in autobiographical memory studies are present in a condition which is antithetical to self-reference. It is proposed that the particular thinking styles thought to be implicated in negative self-evaluation by depressed individuals can be elicited in autobiographical memory tasks only when recall is applied within a self-referential cognitive set. This study aims to address this hypothesis by extending the experimental paradigm of autobiographical memory to depressed and non-depressed subjects outwith the self-referential domain.

Research Aims

The aims of the proposed study are twofold. Firstly, the proposed study aims to replicate existing experimental work in relation to the latency and specificity of autobiographical memory retrieval characteristics in a sample of depressed subjects compared to a group of non-depressed subjects. Secondly, this study aims to test the prediction that the retrieval characteristics of autobiographical memories will differ when a non-self referential condition is applied. The following experimental hypotheses are postulated:

I. The retrieval of non-self referential autobiographical memories for both depressed and non-depressed subjects will be more effortful and therefore increase time latency when compared to latency for self.

II. Depressed subjects may recall autobiographical memories with greater specificity in the non-self compared to the self referential condition for both positive and negative memories.

Procedure

All subjects who have given written consent (Appendix 3.1) to participating after reading the study information sheet (Appendix 3.2) will be interviewed by JB. All subjects will be asked to complete the Beck Depression Inventory (BDI, Beck, 1978) prior to commencing the autobiographical memory test (AMT) proposed by Williams & Broadbent (1986). The BDI is a 21-item self-report measure of depression severity which requires less than 10 minutes to complete.

The study will adopt the AMT administration procedure utilised by Kuyken & Dalgleish (1995). Subjects are presented with printed cue cards (Appendix 3.3) bearing five positive and five negative words (e.g. *lonely, happy, angry*) in random order with positive and negative words alternating. Prior to commencing the trial, subjects will be allowed several practice words (*enjoy, friendly, bold*) to ensure that an understanding of the experimental procedure can be demonstrated. Subjects are asked to retrieve a specific **personal** memory associated with each word which will be recorded by the interviewer on audio tape. The time from cue word presentation to first response will be determined from the audio tape recordings for greater accuracy. Responses will be coded as specific if memories relate to a discrete moment in time in an individual's life.

After this first administration of the AMT, subjects will then be asked to repeat the above procedure but on this occasion they will be instructed to recall specific events known to have been experienced by a **close significant other** (e.g. sibling or spouse) in response to the cue words. In essence, subjects are performing the autobiographical test for a close relative by proxy. Again, subjects will be given several practice cue words to ensure that the task demands are understood prior to commencement of the test proper. After completing the above procedure, subjects will be thanked for their participation and cooperation. Any questions relating to the procedure will be answered. The total time required for the administration of the above procedure is between 35 to 45 minutes.

Measurements

1. *Autobiographical Memory Test (Williams & Broadbent, 1986)* Consists of five positive words (*happy, safe, interested, successful* and *surprised*) and five negative words (*sorry, angry, clumsy, hurt* and *lonely*) printed in isolation on large laminated cards which will be presented to the subjects one at a time in a pseudo-random order. The administration and scoring procedures described by Kuyken & Dalgleish (1995) will be adopted in the proposed study.
2. *Beck Depression Inventory (Beck, 1978)* A 21-item self-report instrument to assess cognitive, emotional, and vegetative symptoms associated with depression.

The study involves an independent two group design consisting of a depressed and a non-depressed group. In this study, the independent variables are reference set and cue word valency. Latency of memory recall and specificity of recalled memories are dependent variables in the study. Dataset analyses will be conducted using SPSS v6.0 statistical software. Independent and related sample *t* tests and χ^2 tests will be used to compare means and categorical data between and within groups under the various experimental conditions.

9. Please state whether there are any expected benefits to patient care and, if so, summarise:

No direct benefits anticipated. Study is relevant to theoretical aspects of cognitive therapy.

10. Please state the likely duration (a) of the project itself and (b) for individual patients:

- (a) A period of six months is envisaged for data collection. Analysis of the dataset and writing up will require approximately two months in total. (b) The total time required for subject participation is approximately 45 minutes.

11. Please state who will have access to the data and what steps will be taken to keep data confidential:

Only JB and KD will have initial access to uncoded study data. Experimental data and basic demographic details will be stored on a password protected database (Microsoft Access) in coded form. The computer will be located in an alarmed and locked room in the Academic Centre, Gartnavel Royal Hospital. Subjects' names or hospital reference numbers will not be entered into the database and completed proformas and audio tapes will be destroyed or erased once electronic storage has been completed. Only grouped statistical tests will be employed to analyse data.

12. Please give details of how consent is to be obtained. A copy of the proposed consent form, along with a separate patient information sheet, written in simple, non-technical language, must be attached to this proposal form.

Consent to participate will be recorded by means of a consent form and all subjects will be provided with a written information sheet (Appendices 3.1 and 3.2). Clinical subjects will be assessed in terms of their suitability to participate by their clinicians.

13. Is the power of the study sufficient to answer the question that is being asked? Please indicate the calculations used for the required sample size, including any assumptions you have made.

For a two-tailed t test at $\alpha = 0.05$ using 20 subjects per sample, power = 0.72, assuming $\gamma = .80$.

$$\delta = \gamma\sqrt{N}/2$$

14. What statistical tests will you apply to your results? Please give details of the proposed methods:

Independent and dependent measures t tests. Chi-squared (χ^2 test) tests of association on categorical data.

15. **Scientific background to study (give a brief account of relevant research in this area with**

references): Lloyd & Lishman (1975) produced evidence which suggested that depressive individuals more readily recall negative rather than positive events compared with non-depressed controls. Using retrieval latency as a measure of autobiographical recall, several authors have demonstrated retarded recall of positive events in subjects with an induced negative mood state (Riskind *et al.*, 1982; Teasdale & Fogarty, 1979; Teasdale & Taylor, 1981; Teasdale *et al.*, 1980). Lloyd & Lishman (1975), Williams & Broadbent (1986) and Williams & Scott (1988) have shown that depressed and parasuicidal subjects demonstrate an increased retrieval latency for positive memories when compared to controls. Williams & Broadbent (1986) suggested that the apparently preferential recall of negative memory events exhibited by depressed or parasuicidal subjects reflects a tendency to be less specific and overgeneral in their recall of positive memory events thus requiring further prompting and inevitably increasing retrieval latency scores.

More recent studies have concentrated on examining a specific quality of retrieved memories, namely the specificity of responses to negative and positive cues rather than retrieval latency which earlier studies addressed. Contemporary studies have consistently identified an overgeneral mode of retrieval associated with negative mood. This is characterised by a tendency towards recall of a composite memory of a series of events blended together rather than a discrete specific event in time (e.g. Moore *et al.*, 1988; Williams & Scott, 1988; Evans *et al.*, 1992; Brittlebank *et al.*, 1993; Moffitt *et al.*, 1994; Kuyken & Dalgleish, 1995). There is some experimental evidence from studies using semantic memory tasks that negative mood states are associated with an underrecall of positive cue words and/or overrecall of negative cue words only when the material presented is referential to the subject (e.g. Bradley & Mathews, 1983; Kuiper & Derry, 1982; Kuiper *et al.*, 1985). In a review of the literature, Blaney (1986) concludes that mood-congruent memory effects are absent or minimal under sets that are explicitly antithetical to self-referencing. At present no study exists in the literature whereby autobiographical memory tasks have gone beyond the self-referential condition in depressed individuals.

-
16. **Does the research involve additional procedures over and above the normal treatment of the patient? If so, are there any hazards associated with the procedure?**

Minor additional procedures not considered hazardous.

-
17. **Please state any other potential hazards to participants arising from the research, their estimated probability (if possible) and the precautions to be taken to meet them:**

No hazards identified.

-
18. **Please describe any procedure which may cause discomfort or distress to participants, the degree of discomfort or distress entailed and their estimated probability:**

Procedure not considered significantly distressing.

-
19. **Who are the proposed participants in the research (and controls if appropriate), and how are they to be selected? Please give details of age, sex, numbers involved and other relevant details:**

Twenty clinical subjects aged between 18 and 65 years meeting ICD 10 (WHO, 1992) criteria for severe depressive episode without psychotic features will be recruited for the proposed study. Only depressed subjects with a current Beck Depression Inventory (BDI: Beck, 1978) score of 14 or more will be included in the study. Both out-patients and in-patients will be eligible for inclusion in the study. Subjects will be excluded from participation if they have a history of manic episodes or any organic condition known to cause specific memory deficits. Clinical subjects will be recruited from a local psychiatric hospital and community mental health centres by contacting clinicians in identified locations. Clinicians will be asked to identify patient's in their care who would be appropriate for an invitation to participate in the study. A similar number of non-depressed comparison subjects will be recruited matched for age, sex and education. These subjects will be drawn from a variety of sources.

-
20. **Give names, strengths, doses and route of administration of investigational drugs to be used**

Not applicable.

21. Are the drugs to be used subject to the terms of:-

A Product Licence:

A Clinical Trial Certificate (CTC) or Certificate Exemption (CTS):

Is an unlicensed Product, but is registered under the DDX Scheme:

Which ever is applicable, please provide documentary evidence.

This section not applicable.

22. Are the drugs being given in accordance with the Product Licence, with the agreed protocol (in the case of CTX or DDX) or with the CTC? If no, give details:

Not Applicable.

23. Which manufacturer is organising the trial or supplying investigational drugs?

Not applicable.

24. If the trial is being undertaken in general practice and involves the supply of drugs, please state the arrangements for storage, labelling and dispensing.

Not applicable.

25. Are questionnaire to be used? If yes, a copy must be attached to this application form.

Beck Depression Inventory (BDI; Beck, 1978)

26. How is the project to be funded?

Project will be funded by applicant and D. Clin. Psy. programme expenses allowance.

27. Please state any 'interests' i.e. profit, personal or departmental, financial or otherwise, relating to the study. Details of payments per patient recruited, and/or any other remuneration details must be included.

Nil.

28. Will the research have revenue consequences for the NHS? If yes, Please tick the box(es)

applicable below:-

Nursing

Pharmacy

Medical Records

Laboratory service

Other clinical services of the Trust

Other

Which?

.....

If you answer yes to any of these, please give details of the revenue consequences.

Not applicable.

29. Please attach other relevant material: for instance, letters to subjects (which must be in simple non-technical language).

The information supplied above is to the best of my knowledge and belief accurate. I have read the notes to investigators and clearly understand my obligations and rights of the subject, particularly in so far as to obtaining freely given informed consent. I also confirm that I have read and understood "The Declaration of Helsinki"

Date of Submission:

Signature of Principle Investigator:

20th of July 1996

John Bogue

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Main Research Project Paper

Self and Non-Self Reference in Autobiographical Memory

Prepared in accordance with the submission requirements for *Psychological Medicine*

(see Appendix 4.1)

Self and Non-Self Reference in Autobiographical Memory

John Bogue

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Running head: Self and Non-Self Reference in Autobiographical Memory

ABSTRACT

Background. Findings have been inconsistent with regard to the retrieval latency of negative memories compared to positive memories in autobiographical memory studies. A more consistent finding in studies involving depressed and/or parasuicidal studies has been a tendency for such individuals to retrieve over-general memories compared to non-depressed subjects. Previous studies using semantic recognition tasks have found evidence to suggest that mood related memory biases are influenced by the degree to which the stimulus material is self-referential. The present study examined self and non-self referential memory retrieval characteristics in depressed individuals and controls using a modified autobiographical memory test (AMT; Williams & Broadbent, 1986). Aspects of previous studies which have yielded inconsistent results were replicated.

Methods. Twenty subjects with a diagnosis of severe depressive episode and 20 non-depressed comparison subjects participated in the study. Subjects completed the AMT procedure described by Williams & Broadbent (1986) in the conventional manner after which they repeated the procedure to retrieve biographical memories on behalf of a significant other.

Results. Depressed and non-depressed subjects did not show any latency bias in retrieving specific memories in response to positive or negative cue words. Compared to non-depressed subjects, depressed subjects took longer to retrieve specific positive or negative memories. There was a tendency for negative memories to be retrieved with greater specificity for both subject groups. When groups were compared, depressed subjects

retrieved significantly more over-general memories for both cue word valencies. No differential effects for non-self-referential memory retrieval were evidenced.

Conclusions. Depressed subjects take longer to retrieve specific memories compared to controls. Negative memories may be recalled with greater specificity even in non-depressed individuals. Memory retrieval characteristics do not appear to be influenced by referential set.

INTRODUCTION

There is evidence from studies by Lloyd & Lishman (1975) and Williams & Scott (1988) to suggest that clinically depressed patients, relative to non-depressed comparison groups, take longer to recall memories to positive than to negative cue words. Other studies by Riskind *et al.* (1982); Teasdale & Fogarty (1979); Teasdale & Taylor (1981) and Teasdale *et al.* (1980) have correlated mood state to memory retrieval latencies in non-clinical subjects in which negative mood states have been induced. The induced negative mood state groups were slower to recall positive memories relative to controls. Clark & Teasdale (1982) used a within-subjects design to examine recall phenomena in clinical patients with naturally occurring diurnal changes in the severity of their depressive states. They found that positive memories were more likely to be recalled and negative memories less likely to be recalled when depression reduced in severity. This pattern was reversed when patients became more severely depressed.

Recent research has produced some evidence that the apparent preferential recall of negative memories observed in depressed and parasuicidal subjects may be an artefact of the methodology of using a broad quantitative variable such as retrieval latency in autobiographical memory studies (Kuyken & Dalgleish, 1995). Kuyken & Dalgleish point to a number of studies which have not consistently demonstrated a differential retrieval latency (e.g. Clark & Teasdale, 1982; Moore *et al.*, 1988; Williams & Dritschel, 1988). Williams & Broadbent (1986) suggest that the seemingly preferential recall of negative memory events exhibited by depressed or parasuicidal subjects reflects a tendency for them

to be less specific in their recall of positive memory events thus requiring further prompting and inevitably increasing retrieval latency scores. Contemporary studies have examined the specificity of responses to negative and positive cues rather than retrieval latency in isolation. Using depressed and/or parasuicidal clinical groups, studies have consistently identified an overgeneral mode of retrieval associated with negative mood (e.g. Moore *et al.*, 1988; Williams & Scott, 1988; Puffet *et al.*, 1991; Evans *et al.*, 1992; Brittlebank *et al.*, 1993; Kuyken & Dalgleish, 1995). This mode of retrieval is characterised by a tendency towards recall of a composite memory of a series of events blended together rather than a discreet specific event in time. In a longitudinal study, Brittlebank *et al.* (1993) found evidence to suggest that overgenerality is an enduring characteristic of depressed individuals which can predict long-term outcome. In this study, overgeneral responses to positively toned cue words significantly predicted negative outcome at seven months.

Studies employing semantic memory tasks have suggested that negative mood states are associated with an under-recall of positive cue words and/or over-recall of negative cue words only when the material presented is referential to the subject (e.g. Derry, P.A. & Kuiper, N.A., 1981; Kuiper & Derry, 1982; Bradley & Mathews, 1983; Kuiper *et al.*, 1985; Clifford & Hemsley, 1987). In these studies, subjects were asked to focus on the stimulus material's applicability to themselves compared with at least one other non-self referential exposure set (e.g. significant or familiar other set). These studies have found that mood-congruent memory effects are absent or minimal under sets that are explicitly antithetical to self-referencing. We can draw from these studies some evidence to suggest that mood related memory biases are influenced by referential set.

In depression, the central role of self-schema in information-processing biases is emphasised by Beck *et al.* (1979). Studies mentioned above have found mood congruent memory biases only when a self-referential cognitive set is present (e.g. Derry & Kuiper, 1981; Kuiper & Derry, 1982; Bradley & Mathews, 1983; Kuiper *et al.*, 1985; Clifford & Hemsley, 1987). In a study involving depressed and non-depressed controls in which subjects were required to perform a modified Stroop colour-naming task, Segal *et al.* (1995) found evidence to support the hypothesis that negative information about the self is highly interconnected in the cognitive system of depressed patients. Singer & Moffitt

(1992) examined autobiographical memory in groups of college undergraduates. Those groups which were asked to recall a specific memory which typified or defined them in some way retrieved consistently less specific memories than those groups following the usual non-self defining instruction set. The authors suggest that self-focused memory searches can be inhibited by the activation of other self-related generic information. According to Williams & Scott (1988), negative early experiences may cause individuals to have a range of self-descriptions in a chronically activated state, so that new emotionally valent events will be encoded along with many general trait self-descriptors.

We may conclude from the studies mentioned above that mood-congruent memory biases are related to self-referential set conditions. These research findings suggests that depressed patients may have a systematic negative bias in their recall of personal memories which fits with Beck's information processing model of depression (Beck *et al.*, 1979). According to Beck *et al.*, depressed individuals hold negatively biased views of themselves and see the world and others in a distorted manner from their own phenomenological perspective. Through such cognitive biases, depressed individuals are believed to construct a view of self which confirms and perpetuates a negative perspective. However, at present no study has been conducted in which autobiographical memory experimental procedures have been extended beyond the self-reference condition in clinically depressed individuals. In the absence of such studies, we are not able to conclude that the tendency to recall overgeneral memories whilst in a negative mood state is specific to material that is self-referential. Given that a central component of Beck's (1987) theory of depression is the tendency for depressed individuals to harbour thinking styles which accommodate persistent negative views of self, autobiographical memory tasks may be of use investigating whether aspects of such styles are observable under conditions which are

not directly self-referential. The present study aims to examine whether depressed individuals retrieve overgeneral memories in the biographical domain.

METHOD

Subjects

Twenty out-patients (16 females, 4 males; average age = 36 years 6 months, S.D. = 9 years 6 months) participated in the study. All fulfilled ICD 10 (WHO, 1992) criteria for severe depressive episode without psychotic features. Additional criteria for inclusion in the study were: aged between 18 and 65 years; current Beck Depression Inventory (BDI; Beck, 1978) score of 14 or more; and no treatment by ECT in the past six months; and no organic condition known to cause memory deficits. Patients receiving pharmacotherapy were included in the study if their medication had been held stable for a month prior to participation in the study. Patients were seen individually in a community-based mental health centre. Twenty non-clinical subjects were recruited as a comparison group. This group consisted of 14 females and 6 males, average age = 30 years 7 months (S.D. = 4 years). Comparison subjects were excluded if they had any condition known to cause memory impairment or a history of mood disturbance.

Procedure

Beck Depression Inventory (BDI; Beck 1978)

The BDI, a 21 item self-rating scale was administered to clinical subjects to determine the severity of depressive symptomatology at the time of participating in the study.

Autobiographical Memory Test (AMT; Williams & Broadbent, 1986)

The study adopted the AMT administration procedure described by Kuyken & Dalgleish (1995). Subjects were presented with ten large printed cue cards bearing five positive and five negative words (e.g. *lonely, happy, angry*) in random order with positive and negative words alternating (Appendix 3.3). Subjects were asked to read aloud the word printed on each card and retrieve a **personal** memory associated with each word which was recorded by the interviewer on audio tape. The time from reading aloud the cue word to first memory retrieved was determined from the audio tape recordings. If the first response was not a specific memory (i.e. a time and a place when something happened to them) then subjects were prompted to try again. Previous research indicates that specific and general memories can be reliably distinguished with an inter-rater reliability of between 0.87 and 0.93 (Williams & Dritschel, 1988) Sixty seconds were allowed before subjects went on to the next cue. Responses were coded as specific if the retrieved memories related to a discrete moment in time in an individual's life. Prior to commencing the trial, subjects were allowed several practice words (e.g. *enjoy, friendly, bold*) to ensure that an understanding of the experimental procedure could be demonstrated.

After this first administration of the AMT, subjects were then asked to repeat the above procedure but were instructed to recall a specific memory that a **close significant other** (e.g. sibling or spouse) might retrieve in response to the cue words. Essentially, subjects were required to perform the autobiographical test for a significant other by proxy. Subjects were allowed to vary the person for whom they were attempting to retrieve a biographical memory for with each cue word if they wished. Subjects were given several

practice cue words to ensure that the task demands were understood prior to the commencement of the test proper.

Procedure

All subjects were first presented with a study information sheet and consent form to complete (Appendices 3.1 and 3.2). Clinical subjects were asked to complete the BDI before participating in the AMT procedure described above. All sessions were audio-taped on professional quality recording equipment. The total procedure took between 45 minutes and 60 minutes.

Equipment used

A Marantz PMD 101 cassette recorder with a Realistic PZM high-gain microphone was used to record the experimental procedure. Subjects were informed that the audio tapes would be erased after response timing and coding had been completed.

Statistical analysis

The Statistical Package for the Social Sciences (SPSS; Release 6.0; SPSS Inc., 1993) was used to analyse the datasets.

RESULTS

Symptom ratings

Clinical subjects obtained a mean BDI (Beck, 1978) score of 28 (S.D. = 9.17), with the distribution of these scores indicating a range of moderate to severe depression.

Latency

Within groups

Four dependent measures *t* tests were performed to compare the time taken to retrieve specific memories in response to negative and positive cue words within the depressed and the non-depressed groups, in both the self and the non-self reference conditions. No significant differences were found in the latencies to retrieve specific positive or negative memories in both groups and self reference conditions (see Table 1).

(Table 1 here)

Four dependent measures *t* tests were performed to analyse the time taken to retrieve specific memories, in response to positive and negative cue word valencies within the depressed and the non-depressed groups, in both the self and the non-self reference conditions. No significant within-group differences were found in the latencies to retrieve specific positive or negative memories in both the self and the non-self reference conditions (see Table 2). Therefore, regardless of cue word valency, both subject groups did not take significantly longer to retrieve specific memories in either the self or non-self reference condition.

(Table 2 here)

Between groups

Four independent measures *t* tests were performed to analyse the time taken to retrieve a specific memory for each cue word valency between the depressed and the non-depressed group in both reference conditions. There were significant differences in the time taken by depressed subjects to retrieve specific, self-referential positive and

negative memories compared to non-depressed subjects (see Table 3). Similarly, there were significant differences in the time taken by depressed subjects to retrieve specific non-self-referential, positive and negative memories compared to the non-depressed subjects. These analyses revealed that depressed subjects took significantly longer to retrieve specific positive and negative memories in both reference conditions compared to the non-depressed group.

(Table 3 here)

Specificity

Within groups

Within the depressed group, the distribution of all responses (specific, non-specific, no-memory retrieved) did not differ significantly between the self and non-self reference conditions when the cue word was positive ($\chi^2 = 4.94$, d.f. = 2, $P > 0.05$) but differed significantly when the cue word was negative ($\chi^2 = 6.86$, d.f. = 2, $P < 0.05$). When the cue word was negative, depressed subjects retrieved a greater proportion of specific negative memories in both the self and the non-self reference conditions (see Table 4).

(Table 4 here)

Within the non-depressed group, the distribution of responses did not differ significantly between the self and non-self reference conditions when the cue word was positive ($\chi^2 = 3.05$, d.f. = 2, $P > 0.05$) but differed significantly when the cue word was negative ($\chi^2 = 7.12$, d.f. = 2, $P < 0.05$). When the cue word was negative, a greater proportion of specific memories were retrieved in both reference conditions (see Table 5).

(Table 5 here)

Between groups

Between the depressed and the non-depressed groups, the distribution of responses differed significantly in the self reference condition both when the cue word was positive ($\chi^2 = 24.11$, d.f. = 2, $P < 0.01$), and when the cue word was negative ($\chi^2 = 23.81$, d.f. = 2, $P < 0.01$). In the self-reference condition, depressed subjects produced significantly more non-specific memories in response to both positive and negative cue words. The reverse held true for the non-depressed subjects who produced significantly more specific responses in response to both positive and negative cue words in the self-reference condition (see Table 6).

(Table 6 here)

Between the depressed and the non-depressed group, the distribution of responses also differed significantly in the non-self reference condition, both when the cue word was positive ($\chi^2 = 14.79$, d.f. = 2, $P < 0.01$) and when the cue word was negative ($\chi^2 = 13.50$, d.f. = 2, $P < 0.01$). Similar to the between-group findings in the self-reference condition,

depressed subjects produced a significantly greater proportion of non-specific memories while the non-depressed subjects produced significantly more specific memories in the non-self-reference condition for both cue word valencies (see Table 7).

(Table 7 here)

DISCUSSION

The results of this study are in accordance with previous findings by Clark & Teasdale (1982); Moore *et al.* (1988); and Kuyken & Dalglish (1995) with regard to latencies in recalling memories to negative cues over memories to positive cues. This study found no evidence to suggest that there is a differential latency in retrieving negative memories over positive memories in either the depressed or non-depressed groups. Additionally, when referential conditions were varied, no significant differences were found within groups with regard to latencies to retrieve specific memories in response to cue word valency. Therefore, in the present study, the depressed and non-depressed subjects did not exhibit any significant latency bias in retrieving memories in response to negative and positive cue words in both self and non-self referential conditions.

It was found that depressed patients took significantly longer to retrieve specific autobiographical memories compared to the non-depressed group in response to both positive and negative cue words. This finding is in agreement with Kuyken & Dalglish's (1995) study although this effect was eliminated when they excluded trials where no memory was generated. In the present study, compared to the non-depressed subjects, the depressed subjects were far more likely to fail to produce a memory and as a consequence,

incurred high latency scores. This would account for the significant difference in retrieval latencies between the groups. In the non-self-referential condition, depressed subjects took longer than non-depressed subjects to retrieve specific memories in response to both cue word valencies and also failed to produce memories with greater frequency. These findings suggest that relative to the non-depressed controls, depressed subjects take longer to retrieve both autobiographical and biographical memories regardless of emotional valency. The general finding that depressed subjects take longer to retrieve memories compared to controls is not surprising as some degree of functional memory impairment is known to be associated with severe depression.

Depressed and non-depressed subjects were found to retrieve significantly more specific memories in response to negative cue words in both the self and the non-self-reference condition. The finding that depressed subjects retrieved more specific memories in response to negative cue words but not when the cue word was positive is consistent with studies by Moore *et al.* (1988) and Williams & Scott (1988). The finding that non-depressed subjects retrieved a significantly greater proportion of specific memories when the cue word was negative in both reference conditions is noteworthy. When the cue word was positive no significant association was evidenced in either reference condition. This suggests that even in non-depressed individuals, there may be an attenuation to negative material which results in greater specificity of retrieval. This may link with the consistent research finding that there is a tendency for emotional material to be better remembered than more neutral material (Daggleish & Watts, 1990). The *positive* and *negative* stimulus categorisations used in the present study are very broad and are unlikely to be equivalent in terms of emotional significance. It is possible that the negative stimulus words were

associated with greater emotional intensity than the positive stimulus words and therefore primed or attenuated for recall. Research by Segal *et al.* (1995) has suggested that in non-depressed subjects, negative experiences or personal information may have a special degree of encoding and are therefore more easily retrieved. The addition of a neutral word stimulus category in future research may help to clarify this situation further.

Compared to the non-depressed group, depressed subjects were found to produce significantly more non-specific memories in response to positive and negative cue words in both the self and non-self reference conditions. An overgeneral mode of retrieval in the depressed subjects in comparison to the non-depressed subjects has been reported in other studies using similar clinical populations (e.g. Moore *et al.*, 1988; Williams & Scott 1988; Kuyken & Dalglis, 1995). This study found no evidence of a cue word valency effect in determining the specificity of the depressed subjects' responses and is agreement with findings reported by Moore *et al.* (1988) and Kuyken & Dalglis (1995).

This study has served to confirm the general finding of other contemporary autobiographical memory studies identifying a tendency for depressed individuals to have difficulty accessing specific autobiographical memories. Limited evidence of a valency effect was found, depressed and non-depressed subjects tended to retrieve a greater proportion of specific memories in response to negative cue words. When the two group's responses to positive and negative cue words are directly compared, depressed subjects consistently retrieve over-general memories in contrast with the more specific memories retrieved by the non-depressed subjects. In the present study, the non-self-referential memory retrieval procedure has failed to identify a significant differentiation in the manner

in which memories are retrieved in both the clinical and non-clinical subjects. The retrieval biases in depressed subjects would appear to operate under conditions that are not directly self-referential. However, it may be that an alternative experimental paradigm could be employed to further explore reference set in memory studies. Notably, a small number of studies have employed Stroop tasks to explore self-referential memory retrieval biases in non-clinical populations. Further research comparing clinical subjects drawn from different diagnostic populations (e.g. generalised anxiety disorder) using the modified AMT approach may be of value in extending our insight into the cognitive processes believed to underlie various forms of psychological and emotional disturbance.

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Table 1. Mean latencies (in seconds) to retrieve positive and negative specific memories in response to cue word valencies for self and non-self reference conditions within groups.

Condition	Depressed				Non-depressed			
	Positive	Negative	<i>t</i>	<i>p</i>	Positive	Negative	<i>t</i>	<i>p</i>
Self	28.8	30.1	0.49	>0.05	15.9	13.4	1.24	>0.05
Non-self	26.9	32.2	1.98	>0.05	16.5	15.9	0.31	>0.05

Table 2. Within-group mean latencies (in seconds) to retrieve positive and negative specific memories in response to cue word valencies for self and non-self reference conditions.

Group	Positive memories				Negative memories			
	Self	Non-self	<i>t</i>	<i>p</i>	Self	Non-self	<i>t</i>	<i>p</i>
Depressed	28.8	26.9	.81	>0.05	30.1	32.2	.92	>0.05
Non-depressed	15.9	16.5	.35	>0.05	13.4	15.9	1.56	>0.05

Table 3. Between-group mean latencies (in seconds) to retrieve positive and negative specific memories in response to cue word valencies for self and non-self reference conditions.

Condition	Positive				Negative			
	Dep.	Non-dep.	<i>t</i>	<i>p</i>	Dep.	Non-Dep.	<i>t</i>	<i>p</i>
Self	28.8	15.9	4.57	<0.01	30.1	13.4	6.07	<0.01
Non-self	26.9	16.5	4.14	<0.01	32.2	15.9	1.56	<0.01

Table 4. Depressed group responses to cue word valencies for self and non-self reference conditions.

Condition	Positive memories %			Negative memories %		
	No memory	Specific	Non-Specific	No memory	Specific	Non-Specific
Self	5.0	49.0	46.0	3.0	55.0	42.0
Non-self	10.0	58.0	32.0	13.0	51.0	36.0

Table 5. Non-depressed group responses to cue word valencies for self and non-self reference conditions.

Condition	Positive memories %			Negative memories %		
	No memory	Specific	Non-Specific	No memory	Specific	Non-Specific
Self	2.0	82.0	16.0	0.0	86.0	14.0
Non-self	0.0	78.0	22.0	6.0	76.0	18.0

Table 6. Between group responses to cue word valencies for self-reference condition.

Group	Positive memories %			Negative memories %		
	No memory	Specific	Non-Specific	No memory	Specific	Non-Specific
Depressed	71.4	37.4	74.2	100.0	39.0	75.0
Non-depressed	28.6	62.6	25.8	0.0	61.0	25.0

Table 7. Between group responses to cue word valencies for non-self-reference condition.

Group	Positive memories %			Negative memories %		
	No memory	Specific	Non-Specific	No memory	Specific	Non-Specific
Depressed	100.0	42.6	59.3	68.4	40.2	66.7
Non-depressed	0.0	57.4	40.7	31.6	59.8	33.3

Single Case Study 1.

Cognitive-Behavioural Therapy for Social Phobia incorporating a Paradoxical Intention strategy for associated fear of Blushing

Prepared in accordance with the submission requirements of the

British Journal of Medical Psychology

(see Appendix 5.1)

**Brief Report: Cognitive-Behavioural Therapy for Social Phobia
incorporating a Paradoxical Intention strategy for associated fear of
Blushing**

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Cognitive-Behaviour Therapy for Erytrophobia: A Case Study

A case is presented of a 31year old woman with a long established history of social phobia characterised by a pronounced fear of blushing in public settings. Treatment consisted of a cognitive-behavioural approach to effect general anxiety reduction in social situations with a paradoxical intention strategy used to reduce frequency and severity of blushing. Cognitive-behavioural treatment was successfully concluded after 11 sessions with substantially decreased phobic avoidance and reported levels of anxiety in social situations. Paradoxical intention was found to be a highly effective treatment component in reducing the severity and duration of blushing associated with social situations. This case highlights the potential usefulness of incorporating paradoxical intention strategies within a cognitive-behavioural treatment programme for social phobia in which fear of blushing in public predominates.

Social phobia can be a complex disorder and frequently incorporates multiple phobic elements in addition to a pervasive fear of social interactions. According to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; APA, 1994), a social phobic is an individual who fears a variety of social and performance situations because he/she is concerned about being humiliated or embarrassed by performing inadequately or by displaying visible anxiety symptoms. Marks & Gelder (1966) highlight common aspects of social phobia such as fears of eating, drinking, shaking, blushing, writing or vomiting in the presence of other people. Individuals with such complaints, fear exhibiting somatic symptoms not under voluntary control which may

be noticed by others. Social phobia has more obvious cognitive features (e.g. thoughts about being negatively evaluated, criticised, or rejected) compared with other phobias such as agoraphobia where thoughts are more likely to focus on fears about collapsing, or losing control (Butler, 1989). There is a consensus that social phobia is a disorder wherein cognitive change procedures are more likely to play a therapeutic role (e.g. Biran, Augusto, & Wilson, 1981; Emmelkamp, 1982; Marks, 1987). In a review of psychological treatments for social phobia, Hope and Heimberg (1993) conclude that treatment packages incorporating cognitive and exposure components can be considered effective treatments for this type of disorder. A treatment case will be presented involving an individual with a long-standing social phobia associated with a pronounced fear of blushing in public. A cognitive-behavioural approach was successful in reducing anxious arousal in social situations with a paradoxical intention strategy employed concomitantly to manage blushing which had been resistant to more general anxiety reduction strategies.

Case Report

History

Ms. M, a 31 year old single professional woman, was referred by her general practitioner for treatment of a long-standing anxiety disorder with a pronounced fear of blushing in public since childhood. She described her father and younger brother as being shy and uncomfortable in social situations and that both were inclined to blush easily. Ms M first sought help for her problem 7 years ago when she attended a university counselling service but was unable to gain long-term benefit. It was noted that Ms. M had a history of mild symptoms associated with irritable bowel syndrome which were in remission at the time of this referral. No other significant medical or psychiatric history was noted.

Symptoms and Diagnosis

Ms M described a history of anxiety in social situations accompanied by profuse blushing since she was 12 years old. Accompanying symptoms of anxiety such as feeling hot and bothered, tachycardia and raised breathing were noted to be usually present but were considered to be less problematic in that they were more easily concealed from others. Predominantly, Ms M's cognitions centred around being scrutinised and evaluated in social situations particularly in her place of work where large numbers of people were employed. In such situations the onset of symptoms associated with and including blushing were considered to be highly conspicuous and served to escalate and exacerbate symptomatology. Ms M regarded blushing as a sign readily interpreted by others as one of immaturity, inadequacy and guilt.

Ms M reported that her symptoms caused most disruption in her workplace. At meetings she sought to seat herself as much as possible out of the direct line of sight of colleagues and spoke only when absolutely necessary. In this regard she felt that she was undermining her prospects of promotion and career enhancement. Ms M avoided public transport, particularly vehicles with opposing seats such as underground rail.

The duration of Ms M's blushing symptoms varied considerably from several minutes to just over a quarter of an hour. Onset was related to symptom severity and persistence. Sudden onset, e.g. 'bumping into' a work colleague in the street would generally result in minor symptom severity and relatively short duration. Gradual onset involving anticipatory anxiety and negative mental rehearsal was related to more severe and persistent blushing with other accompanying somatic symptoms.

At assessment interview, Ms M showed elevated *Social Phobia* and *Agoraphobia* scores on the Fear Questionnaire (Marks & Mathews, 1979) with no endorsement of *Blood-Injury Phobia* items. On the Beck Anxiety Inventory (BAI; Beck, 1990), Ms M scored in the mild/moderate range and below clinical caseness on the Beck Depression Inventory (BDI; Beck, 1978). Ms M had never abused drugs and rarely consumed alcohol. She fulfilled ICD 10 (WHO 1992) criteria for F40.1 Social Phobia.

Method

Treatment

A cognitive-behavioural approach following treatment guidelines described by Hope & Heimberg (1993) was employed for initial sessions. Anxiety reduction techniques were introduced focusing on somatic symptoms and cognitions experienced by Ms M in anxious situations. The importance of identifying and effectively challenging negative thoughts associated with anxiety provoking situations was emphasised and a diary was provided to record thoughts associated with anxious situations. A graded hierarchy of anxiety provoking social situations was created which formed the basis for assignments in which anxiety reduction skills could be practised.

Later sessions concentrated on, although not exclusively, to utilising paradoxical intention techniques for the specific management of blushing. A cognitive behavioural approach continued to be employed for addressing cognitions and other somatic symptoms accompanying situations where blushing occurred or was anticipated. Paradoxical intention principles and techniques described by Ascher (1980) and Seltzer (1986) were employed.

In practice this involved encouraging Ms M to blush deliberately and exacerbate symptom intensity thereby engaging in a behaviour incompatible with the anxiety-producing responses. By encouraging the occurrence of the feared symptom as a treatment goal the underlying aim was to decrease the performance anxiety associated with symptom management. She was encouraged to permit herself to blush and not aggravate symptom intensity by attending to her blushing. Ms M had felt that efforts to control her blushing resulted in excessive focusing leading to an exacerbation of her blushing. By adopting a more passive role with regard to her blushing she felt liberated from the burden of fighting symptoms and the associated performance anxiety. General anxiety reduction techniques within the initial CBT package were continued for the management of anxious arousal and anticipatory anxiety.

Results

Outcome of Treatment

Ms. M was seen for 10 sessions followed by a review. Ms M. was well motivated throughout and was conscientious in attempting homework assignments and completing diary records. An initial cognitive-behavioural anxiety management component was found to be useful in lowering general anxiety and stress level. Positive imaginal rehearsal and controlled breathing were found to be particularly beneficial. She reported some difficulty in deliberately attempting to blush. However, attempting to exacerbate her blushes proved to be effective in reducing their severity and duration. By adopting this approach excessive self-monitoring and somatic vigilance was reduced substantially.

Results indicating progress on standard measures of assessment (BAI, BDI and Fear Questionnaire) throughout treatment are presented in Table 1. Summary results are presented graphically in Figure 1, reflecting a decrease on all assessment measures from pre-treatment to post-treatment. Agoraphobic avoidance behaviour as measured by the Fear Questionnaire markedly declined over this period. Total phobia ratings fell by nearly a half. Below clinical caseness depression scores as measured by the BDI remained unchanged through treatment. BAI scores dropped from mild/moderate in the pre-treatment/mid-treatment phase to below clinical caseness at post-treatment.

Frequency of blushing was initially high and was an almost daily and severe occurrence. By mid-treatment blushing remained but was reported to be less severe and prolonged compared with pre-treatment episodes. Between mid-treatment and post-treatment weekly blushing episodes were fewer than four with a mean weekly frequency of two. No blushes of a severity or persistence experienced prior to treatment were recorded at the post-treatment stage.

Discussion

Reviews of the research literature suggest that cognitive-behavioural approaches can be effective in the treatment of social phobia (e.g. Heimberg, 1989; Heimberg & Barlow, 1991). The cognitive manifestations of social phobia are significant, research evidence supports the view that individuals with social phobia direct their attention to negative self-evaluation in the midst of social situations, or in anticipation of them (e.g. Beidel, Turner & Dancu, 1985; Rapee & Lim, 1992; Stopa & Clark, 1993; Woody *et al.* 1997). For

individuals with social phobia who have a predominating fear of showing bodily symptoms that are not under voluntary control, such as blushing, intense self-focused attention can lead to a cycle in which symptoms can be exacerbated (Scholing & Emmelkamp, 1993). This characteristic vicious circle can be compared with the process hypothesised for panic disorder (Clark, 1986). In individuals with social phobia in which there is a predominating fear of exhibiting certain somatic symptoms, such as trembling, blushing, and sweating, representing a feared stimulus, their unpredictable occurrence can be problematic in the context of otherwise successful treatment (Mersch *et al.* 1992). In such individuals, attending to bodily sensations can be so distracting as to impair their ability to take full advantage of cognitive coping skills (Hope & Heimberg, 1993) This case illustrates that paradoxical intention techniques can be used effectively as part of a broader-based treatment strategy in individuals with social phobia in which a fear of blushing predominates. It is further suggested that other somatic symptoms associated with social phobia, such as trembling and sweating could be amenable to similar concomitant treatment incorporating paradoxical intention strategies.

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Table 1. Scores on assessment measures through treatment.

	Baseline	Mid-Treatment	Post-Treatment
BAI	17	13	7
BDI	4	2	1
Fear Questionnaire	43	30	24

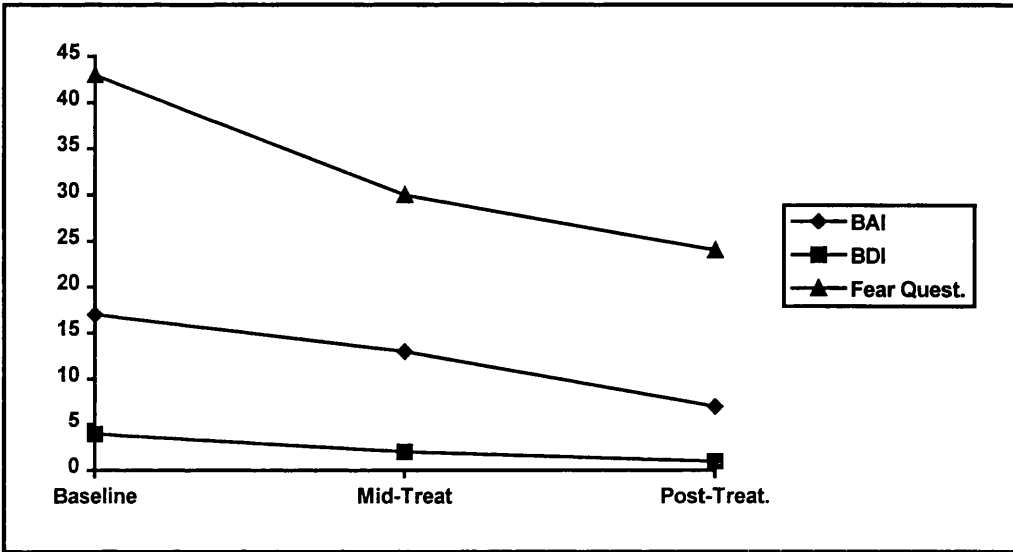


Fig. 1 Treatment progress on assessment measures.

Single Case Study 2.

Cognitive deficits in a juvenile at-risk for Huntington's Disease

Prepared in accordance with the submission requirements for *Cognitive Neuropsychiatry*

(see Appendix 6.1)

Cognitive deficits in a juvenile at-risk for Huntington's Disease

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Short title for running head: Cognitive deficits in Huntington's Disease

Key Words: HUNTINGTON'S-DISEASE, NEUROPSYCHOLOGICAL-ASSESSMENT, ONSET-
DISORDERS, CHILDHOOD, AT-RISK-POPULATIONS

Cognitive deficits in a juvenile at-risk for Huntington's Disease

Abstract

A case is reported of a 16 year old girl at 50% risk for developing Huntington's disease (HD) assessed on a variety of neuropsychological instruments following concerns about behavioural changes and apparent intellectual deterioration. Early neuropsychological impairment is known to occur in the presymptomatic or prodromal phase of HD before clinical signs become evident. Assessment was carried out to identify any possible early cognitive impairment in advance of proposed genetic marker testing for HD. Psychometric and neuropsychological test results revealed a pattern of substantial cognitive impairment with evidence of deterioration from previous assessment. This case suggests that cognitive impairment can precede hard neurological signs associated with HD.

Introduction

Huntington's disease (HD) is a degenerative illness characterised by a choreic movement disorder, cognitive impairment and psychiatric disturbance (Harper, 1991). The disease is autosomal dominant and linked to the short arm of chromosome 4 and results in an irreversible subcortical dementia due to delayed atrophy and gliosis of the caudate nuclei (Mendez, 1994). Presymptomatic testing is possible by typing a DNA restriction-fragment-length polymorphism that is linked to the HD gene. The gene has 100% penetrance, so that all gene carriers eventually develop the disease, assuming they survive to the time of symptom onset. Each offspring of an affected parent has a 50% chance of developing the disease. Before symptoms appear such persons are considered to be at primary risk. Concerns have been raised regarding the psychological implications of determining gene carrier status for such individuals in a condition which promises severe disability and which will ultimately be fatal (Kessler, 1987; Tyler & Harper, 1983). Huntington's disease is equally common in men and women and affects ten per 100,000 people, and an equal number may be at-risk for developing the disease (Mendez, 1994). Usual age of onset is between 35 to 45 years of age, with a progression of symptoms over a 10 to 20 year period. In an estimated 5 to 10 per cent of cases, onset occurs before the age of 20 (Bruyn, 1968). Caviness (1985) has estimated onset before the age of 15 years in 3 percent of cases. Age of onset can be several years earlier when the father is the affected parent (Conneally, 1984).

Previous research has indicated that a HD prodromal phase, characterised by memory dysfunction, depression, irritability and other behavioural changes can occur as early as preadolescence (Kosky, 1981). In a retrospective review, Dewhurst, Oliver, & McKnight

(1970) found that depression, personality changes, or anxiety disorders could precede choreoathetosis by as long as a decade or more. According to Mendez (1994), early personality changes in HD include withdrawal from activities and friends, a decline in personal appearance, decreased spontaneous speech, and a constriction of emotional expression.

Retrospective studies have reported cognitive deficits many years before choreoathetosis (e.g. Dewhurst, Oliver, & McKnight, 1970; Lyle & Uuast, 1976; Lyle & Gottesman, 1977; Wilson & Garron, 1980). These studies have reported a gradual erosion in psychometric test performance in at-risk individuals before clinical signs of HD have become evident. The most vulnerable cognitive processes appear to be recall memory, visuo-motor and visuo-graphic skill, and frontal executive functioning (Strauss & Brandt, 1990). This case examines the evidence for early cognitive changes in a juvenile at 50% risk for HD in which intermittent choreic-type movements have been reported in advance of proposed genetic marker testing

Case Report

History

C.P. was a 16 year old girl at 50% risk of developing Huntington's Disease (HD). She was referred for neuropsychological assessment when concerns were raised by the patient's general practitioner indicating that there had been changes in her behaviour along with some evidence of impairment in general functioning. In addition, her gait was unsteady and some facial and finger twitching had been noted.

CP's father died three years previously from HD in his forties. In her family history, her father, her father's sister, her father's mother and her mother in turn, all had Huntington's Disease. CP has one older brother who, although old enough to be offered genetic linkage analysis for HD, has refused genetic testing and started a family. CP's mother has received attention from psychiatric services for depression and several prescription drug overdoses.

CP left school aged 16 years with poor standard grades and was enrolled in a catering course at a local vocational college. She found it difficult to keep up with the demands of the course particularly written components. She had not been able to complete the year-long course satisfactorily and had been advised to re-enrol.

CP was first seen by a clinical psychologist when she was nearly 11 years old and her father was at that time deteriorating rapidly. She presented with a facial twitch and was reported to exhibit personality and mood changes. Neurological opinion at that time concluded that her facial twitches were more likely to be related to rapid eye blinking movements. She was described by a paediatric clinical psychologist at this time as being a sad, preoccupied, hyperalert, tense and methodical child. Assessment at this time using the Coding, Block Design, Digit Span subtests from the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974) indicated functioning within the average range. It was noted that on Block Design, although quantitatively good, her performance had qualitative weaknesses in that she exhibited some difficulty with diagonal design components. Her performance on the Bender Visual-Motor Test (Bender, 1938) was accurate and unremarkable.

CP was referred to a child psychiatrist when she was 15 years of age for school refusal. At this point she was spending increasing amounts of time in bed and appeared to have lost all interest in attending school. She had begun to spend an increasing amount of time on her own and was becoming argumentative and difficult with her mother. She was not considered to have exhibited any overt signs of clinical depression at this time although her mood was noted to fluctuated frequently. Prior to her father's death, CP had been energetic in helping her father and his death had been particularly traumatic for her, raising questions for her at this time as to whether or not she would subsequently develop HD symptoms. Contact with psychiatric services was discontinued when CP left school to enrol in a training course. At this time it was made aware to her that should she so wish, genetic testing and counselling would be available to her shortly on reaching 16 years of age.

Aims of the Assessment

The aim of the assessment was to determine the evidence, if any, for concerns relating to CP's general cognitive functioning in advance of proposed genetic marker testing for HD. Contemporary assessment was indicated to facilitate comparison with assessments carried out 5 years previously. In addition, further information regarding the patient's behaviour and psychological well-being was sought to clarify the clinical picture further. Consent was sought and obtained to use video-recording equipment to permit later evaluation in consultation with a paediatric neurologist.

Neuropsychological Assessment

The Wechsler Intelligence Scale for Children 3rd Edition-UK (WISC-III^{UK}; Wechsler, 1992) was administered as a measure of general intellectual functioning and to provide a means of comparison with WISC-R assessment five years previously in which selected WISC-R subtests were administered. To obtain a comprehensive assessment of general mnemonic functioning, the Wechsler Memory Scale-Revised (WMS-R; Wechsler, 1987) was administered.

Additional neuropsychological test measures were chosen to assess areas of ability believed to be sensitive to early neurological impairment associated with HD in previous studies (e.g. Josiassen et al 1983, Lyle & Gottesman 1977). The Wisconsin Card Sorting Task (WCST; Berg, 1948) was used to assess frontal-executive functioning particularly in the left dorsolateral area, performance on this task is known to be impaired in patients with subcortical dementing illnesses. The Rey Complex Figure Test (Rey, 1942) and the Bender Visual Motor Test (BVMT; Bender, 1938) were administered to assess visuo-constructional and visuo-perceptual abilities.

Assessment Results

CP's Full Scale IQ (FSIQ), Verbal IQ (VIQ) and Performance IQ (PIQ) scores were 66, 67, and 69 respectively and therefore substantially below normal limits indicating generalised cognitive impairment. Her scaled score profiles for the 12 WISC-III^{UK} subtests administered are presented in Table 1. All subtest scaled scores were below average for her age group. Markedly impaired performance was noted with regard to the Similarities,

Arithmetic, Block Design, Comprehension and Picture Arrangement subtests. Profile analysis did not reveal any differentially adverse performance on timed tasks.

(Table 1 here)

Memory quotients derived from the Wechsler Memory Scale-Revised (WMS-R) along with age specific standard errors of measurement data are presented in Table 2. WMS-R memory quotients have a mean of 100 and a standard deviation of 15 similar to IQ measures. All obtained quotients were between one and two standard deviations below average indicating significant impairment of short and long term memory in both verbal and visual memory domains.

(Table 2 here)

The Attention/Concentration quotient was the least impaired of the five memory indices. There was a statistically significant difference between her General Memory quotient and her Attention/Concentration Quotient in favour of the latter indicating that attentional deficits are unlikely to be contributing significantly to her depressed performance on the memory indices. CP scored below average on 7 of the 13 subtests. Although impaired, marginally better performance on visual memory items was evidenced.

Results obtained on the Wisconsin Card Sorting Task are presented in Table 3. CP's performance on the WCST is indicative of impairment associated with frontal lobe dysfunction. The predominance of perseverative over non-perseverative errors indicates impairment in ability to shift cognitive set.

(Table 3 here)

Performance on the Rey Complex Figure Test and the Bender Visual-Motor Test indicated impairment in visuo-constructional and visuo-perceptual functioning. Both copy and recall of the Rey Complex Figure Test was poor compared to normative data. Figures were drawn in a piecemeal fashion with deficiencies in organisation and integration of elements evident. Her performance on the Bender Visual-Motor Test was substantially below that expected for her age group with errors of distortion and integration prominent. Her error score of four is in contrast to her perfect performance when previously administered the five years previously. Taken together, CP's performance on the Rey Complex Figure Test and the Bender Visual-Motor Test is more suggestive of frontal impairment than right hemisphere involvement as failure with aspects of figural organisation and integration were more pronounced.

Clinical Impressions

CP was co-operative throughout assessment, she appeared unconcerned and her affect was flat. No spontaneous speech was evident although she answered direct questions reasonably comprehensively. She did not seek any elaboration as to the purpose of the two

assessment sessions and did not enquire about her performance at any stage. She was noticed to have a fixed facial grin which gave an impression of bemused detachment. Her posture was rigid and upright with her hands folded in a characteristic manner when not engaged. Jerky upper limb and neck movements were observed along with finger flicking.

CP's mother reported that her daughter had become increasingly irritable and erratic in her behaviour. Her self-care skills had deteriorated and she frequently wore underclothing for several days at a time unless reminded. She continued to socialise with her friends but was inactive otherwise and spent a great deal of time watching television or staying in bed. Her memory seemed to be impaired and she was rarely interested in reading. She noticed her fall on several occasions from a stationary standing position and she exhibited neck movements and throat sounds which she felt were very similar to her deceased husband's presentation early in his illness. She felt her relationship with her daughter had continued to deteriorate and that she herself was finding it very difficult to cope and felt depressed frequently as she was convinced her daughter had inherited her father's condition.

Discussion

This case was presented to investigate whether psychometric and neuropsychological assessments could be used to identify cognitive deficits in a juvenile 50% at-risk for HD prior to genetic marker testing and the appearance of hard neurological signs of choreic movement disorder. Results from the psychometric and neuropsychological assessments detailed above are indicative of significant cognitive impairment with evidence to suggest a marked deterioration in performance over a five year period. Although limited early assessments were carried out there is comparative data available to indicate erosion of cognitive abilities over this period.

Recent assessment using the WISC-III^{UK} suggests that CP has deteriorated to a level of intellectual functioning substantially below her earlier level of ability within the average range. Profile analysis reveals impaired performance on all subtests indicating global cognitive deficits. Relatively few studies have been conducted using the WISC scales to identify presymptomatic cognitive impairment in children although there are numerous studies (e.g. Josiassen *et al.*, 1983; Strauss & Brandt, 1986; Taylor & Hansotia, 1983) reporting a consistent pattern of impairment on the Wechsler Adult Intelligence Scale (WAIS; Wechsler, 1955). Studies in adults at-risk or very recently diagnosed populations have highlighted consistent patterns of impairment on the Arithmetic, Digit Span, Digit Symbol, and Picture Arrangement subtests of the WAIS. Catona *et al.* (1985) found impaired performance on Digit Span and Coding WISC subtests in a group of pre-adolescent and early adolescent children at-risk for HD. Lenti & Bianchini (1993) report the case of globalised intellectual impairment in a 12 year old boy with recently evidenced choreic movements.

On all memory indices CP's performance was poor and impairment in both short term and long term mnemonic abilities in both visual and verbal domains was evidenced. Early visual and verbal memory deficits are associated with the earliest stage of HD (Mendez, 1994). In a review of the research literature relating to memory impairment in HD, Mendez concludes that there are several characteristics of abnormal memory in HD. First, HD patients have faulty encoding strategies leading to faulty storage, a lower performance on unstructured learning, and a decreased ability to learn items in a specific sequence. Second, recall deficits in HD are mostly due to faulty retrieval strategies. Third, remote memory in HD is impaired without a temporal gradient. Fourth, HD patients may have difficulty in all aspects of memory involving mental effort.

Impairment believed to be associated with frontal lobe dysfunction associated with subcortical dementias was evidenced by perseveration on the WCST (Hodges, 1994). Difficulty with maintaining and changing cognitive set; abstraction, judgement and reasoning, sequencing and planning, and mental flexibility are prominent frontal-executive problems associated with HD (Mendez, 1994). On the WCST, in addition to perseveration, difficulty in changing cognitive sets when the sorting strategy has changed is commonly seen in HD patients (Josiassen *et al.*, 1983; Weinberger *et al.*, 1988). In addition, CP's poor integration and organisation on the Rey Complex Figure and Bender Motor-Visual Test would further suggest a degree of frontal and associated parietal involvement. Impairment on these tests is consistent with a subcortical dementia such as Huntington's disease as there are comprehensive anatomical projections between the caudate nucleus and the frontal and parietal lobes (Jason *et al.* 1988).

According to Giordani *et al.* (1995), a long-standing question in HD research is whether HD gene carriers manifest cognitive symptoms slowly and progressively over time long before the actual onset of diagnosable disease. If HD symptoms are continuous, then at-risk individuals would be expected to show subtle signs cognitive of deterioration. Jason *et al.* (1988) and Diamond *et al.* (1992) suggest that cognitive deterioration is continuous and can be tracked at a very early stage in advance of hard neurological symptoms. Other workers such as Giordani *et al.* (1995) and Strauss & Brandt (1990) argue against a continuous model of symptom appearance and for a discontinuous one in which discernible cognitive impairment arises at or close to the onset of the disease. The issue remains contentious with positron emission studies yielding equivocal evidence. Young *et al.* (1987) report the finding that striatal hypometabolism of glucose (the primary metabolic change in HD) is unlikely to be abnormal before clinical symptoms of HD are manifested. In contrast, Grafton *et al.* (1992) present evidence to suggest that changes in cerebral metabolism can precede clinical abnormalities in at-risk individuals.

Conclusions

This case presents evidence of early globalised impairment in an adolescent at 50% risk for HD. Early significant impairment in HD is strongly associated with paternal gene transmission. Preliminary neurological opinion confirmed the presence of early choreic-type movements. Psychometric and neuropsychological evidence suggests a substantial deterioration in cognitive functioning which is likely to be related to early-onset HD. However, neurological and clinical genetic evaluation is required to clarify the clinical picture further as gross psychological disturbance has been associated with the imposition

of a severely disabling and ultimately fatal inherited disorder such as HD on the family system (e.g. Folstein *et al.* 1983; Hans & Gilmore, 1968). The importance of accurate predictive testing for HD has been widely acknowledged although it carries significant psychological implications for those so affected (Codori & Brandt, 1994). The participation of any at-risk individual in a predictive testing programme will expose an individual to such implications and the present author emphasises the importance of education about the disease and counselling in advance of genetic status testing.

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Table 1 WISC-III^{UK} subtest standard scores

Verbal Subtest	Standard Score	Performance Subtest	Standard Score
Information	6	Picture Completion	6
Similarities	1	Coding	6
Arithmetic	4	Picture Arrangement	5
Vocabulary	6	Block Design	4
Comprehension	5	Object Assembly	6
Digit Span	7	Symbol Search	7

Table 2 WMS-R Index scores and Standard Errors of Measurement (SE_M)

Index	Index Score	16-17 year Age Group SE_M
General Memory	<50*	7.16
Attention Concentration	85	5.06
Verbal Memory	57	7.74
Visual Memory	69	7.47
Delayed Recall	<50*	8.33

* Indicates exact indices could not be calculated due to lack of normative data pertaining to extremely low subtest raw scores

Table 3 Comparison of obtained WCST scores and normative data

WCST Variables	Scores	Normal Mean (S.D.)
Categories Completed	5	5.4 (1.3)
Total Errors	57	24.9 (19.4)
Perseverative Errors	38	12.6 (10.2)
Non-Perseverative Errors	19	12.4 (11.3)
Perseverative Responses	47	15.6 (11.5)

Single Case Study 3.

Treatment of Post-Traumatic Stress Disorder

Following Sexual Assault

Prepared in accordance with the submission requirements for *Behaviour Therapy*

(Appendix 7.1)

Treatment of Post-Traumatic Stress Disorder
Following Sexual Assault

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Summary:

A case involving the psychological treatment of a woman with post-traumatic stress disorder following a sexual assault is presented. Treatment involved Cognitive Processing Therapy, a cognitive-behavioural approach which has been developed for use with rape trauma victims. Results after ten weeks of treatment indicated that substantial reductions in symptoms associated with the trauma had been achieved. Avoidance behaviour was reduced facilitating a return to her previous level of social and occupational functioning. The value of further research with this treatment approach using controlled follow-up studies is emphasised.

Introduction:

Studies have shown that post-traumatic stress disorder (PTSD) is a very common consequence of rape. In a community sample, Kilpatrick *et al.* (1987) found that 57% of women who had been raped developed PTSD at some point in their life. Longitudinal research by Rothbaum *et al.* (1992) found that 94 % of women met criteria for PTSD approximately two weeks following rape and 50% met criteria for PTSD at three months post-rape. A survey by the National Victim Centre (Kilpatrick *et al.*, 1992) found that 31% of rape victims developed PTSD. The survey team estimated that based on their rape incidence data, 1.3 million American women currently have rape-related PTSD and approximately 211,000 will develop it each year. The stigma attached to rape has served to distort the true incidence of rape in the community, as many as twenty rapes occur for every one reported to the police and is now the fastest-growing violent crime in the United States (Davison & Neale, 1986).

Relatively little controlled treatment research has been conducted with victims of rape compared. Most research in this area has focused on the treatment of traumatised military personnel and victims of accidents or natural disasters (Calhoun & Resick, 1993). Only in the last five years have there been thorough attempts to determine the efficacy of different treatments for PTSD associated with experiences other than war (Brom *et al.*, 1989; Foa *et al.*, 1991). One of the earliest approaches described specifically for use with rape victims is stress inoculation training (SIT; Kilpatrick *et al.*, 1982; Kilpatrick & Amick, 1985). This approach is based on Meichenbaum's (1985) work and is aimed at giving the client a sense of mastery over her fears by teaching a variety of coping skills within a social learning theory framework. Foa *et al.* (1991) compared prolonged exposure with stress inoculation

training with supportive counselling and remaining untreated on a waiting-list. The exposure consisted of 'reliving the rape scene in imagination' over seven sessions. Treatment groups were limited in size to between ten and fourteen participants thus restricting the conclusions that can be drawn. The results showed that stress inoculation treatment produced the clearest immediate improvement on measures of symptoms of PTSD. However, at follow-up, both stress inoculation training and prolonged exposure showed clear benefits compared to the other interventions.

Rothbaum & Foa (1992) describe an approach termed Prolonged Exposure (PE) which is a cognitive-behavioural strategy developed for the treatment of rape-related PTSD. Rothbaum and Foa assert that PTSD results from inadequate processing of the trauma, stimuli, responses, and the meaning associated with them. Treatment involves activation of the fear memory and incorporation of new information incompatible with the existing fear structure, so that new memories may be formed. The technique involves activation of memories through exposure techniques similar to those used with victims of other types of trauma such as combat soldiers. In practice, this treatment involves encouraging recall of the assault in detail and the victim is helped through this process until it is no longer intensely painful. This is combined with *in vivo* exposure to feared although objectively safe stimuli. At 3½ month follow-up, this treatment was found to be more effective than SIT in a study reported by Foa *et al.* (1991).

Ellis, Black & Resick (1992) and Resick (1992) have developed a promising hybrid treatment for victims of sexual assault using a Cognitive Processing Therapy (CPT) model. This is a therapy programme based on an information processing model of PTSD although

it combines the main components of exposure-based therapies along with the cognitive restructuring components found in most cognitively based therapies. The cognitive component of the treatment programme aims to address and challenge the specific cognitions that are most likely to have been disrupted as a result of the trauma. Resick & Schnicke (1992) have reported promising results with CPT in the treatment of rape-traumatised victims. In this study 19 sexual assault victims received CPT and were assessed at pre-treatment, post-treatment, and three and six month follow-up. Compared to 20 waiting list comparison subjects, CPT participants improved significantly on PTSD and depression measures over a 12 week treatment period. CPT participants maintained improvements on all measures at six months follow-up.

A case is presented of a female sexual assault victim fulfilling *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition* (DSM-IV; APA, 1994) criteria for PTSD treated using CPT protocols described by Ellis, Black & Resick (1992) and Resick (1992).

Method:

Case:

At the time of presentation, Mrs. D. was 29 years old and a mother of two children, aged eight and six years. She had been married for nine years and had no previous history of psychiatric or emotional disturbance and had no significant medical history. She worked as a catering assistant and her husband, with whom she enjoyed a good marital relationship, was in full-time employment. She had no history of drug or alcohol abuse.

Mrs. D. was seen at the Department of Clinical Psychology having been referred by a local victim support group. She had been robbed and sexually assaulted 11 months previously whilst returning home from work in the early evening. The attack happened in a dimly lit underpass less than five minutes from her home. She was grabbed from behind and pulled to the ground and held while her handbag was taken and the contents emptied around her. She described feeling petrified and numbed with a sensation that she was watching everything happening to her in a strange and unreal manner. Her attacker took money from her purse and held her on the ground and then proceeded to tear open her clothing and place his hands around her genital area through her torn underclothing. She felt that things were happening in slow-motion and became acutely aware of her attacker's body odour and cold, rough hands. She estimated that this contact must have lasted for less than 15 seconds. She was mute and felt transfixed to the spot, unable to take any defensive or protective action.

The attack was interrupted by the sound of childrens' voices at the far entrance to the underpass. At this point her attacker stopped and ran off and she was brought to her nearby house by people summoned by the children.. Her husband was in the house at the time and called the police who brought her to the local police station. Here she was interviewed and examined by a police surgeon. At this point she became very distressed and was brought home by her husband.

In the weeks after the attack she felt she was coping well and relied upon the support of her family who spent a great deal of time with her. However, she felt it very difficult to talk about the attack especially the sexual aspect to it. She did not want to tell her husband what

had happened because she did not want to upset him and provoke him into attacking her assailant who was known in the area. She felt that her relationship with her husband at this stage became somewhat distant although superficially harmonious.

Approximately three months after her attack she became aware of considerable anxiety whenever she was on her own. When she had to travel on her own she felt nauseous, her heart was racing and she felt sweaty unless on a busy street or crowded shopping precinct. She continued to work periodically but only during daylight hours and relied upon taxis to commute which was proving expensive. She dreaded having to pick her children up from activities in the evening as she had to walk along a covered passage way. Although it required a substantial detour, she avoided the underpass where the attack took place even in daylight.

She was not aware of regular nightmares but her sleep was interrupted about three times every night whereupon she would check that nobody was in the house and her children were safe. As her husband usually worked night-shifts, she began to sleep with the light on in her bedroom. During the day she found herself thinking about the attack, specifically with regard to things she felt she could have done to have avoided the situation. She questioned her passive role and why she failed to cry out and summon assistance earlier. Images and feelings relating to the attack intruded on a daily basis and she found these to be most problematic when she was on her own. Her enjoyment in activities was diminished and she regretted not being able to easily get out of the house on her own and visit friends nearby. Her attacker wore a dark woolly hat which resulted in her feeling intensely anxious when seen on other people. In addition, she found herself scanning her surroundings

constantly in the fear that her attacker would be following her. Mrs. D. fulfilled DSM-IV (APA, 1994) criteria for PTSD.

Measures

The Beck Anxiety Inventory (BAI; Beck, 1990) was administered at pre-, mid-, and post-treatment to monitor the presence of symptoms associated with anxiety. The Revised Impact of Events Scale (Horowitz *et al.*, 1979) was used to assess trauma impact and measure intrusion and avoidance symptoms and was administered at pre- and post-treatment along with the Beck Depression Inventory (BDI; Beck, 1978) which was used to assess the presence of depressive symptomatology. A diary record of thoughts associated with the assault and intrusive imagery was maintained by the client.

Treatment

Treatment took place over ten weeks and involved six treatment sessions each lasting approximately 45 minutes. Initial work involved establishing good rapport and describing the features of PTSD and the relationship between her anxious symptoms and thoughts. Attention was paid to the aetiology of these symptoms and why they have persisted. An overview of the CPT approach was presented to the client with issues such as homework completion and self-monitoring emphasised. Further sessions focused on examining thoughts and beliefs associated with the assault. The identification of cognitions believed to have been disrupted as a result of the trauma became the focus of the early treatment sessions. Foa *et al.* (1989) and Foa & Kozak (1986) have proposed that two conditions are necessary for the reduction of fear: (1) the fear memory must be activated and (2) new information must be provided that is incompatible with the current fear structure.

Activation of the traumatic memory was achieved by using the therapeutic relationship to allow the client to feel secure and safe within the treatment session and by using a graded approach to add detail to the retrieved memory in progressive stages. Once this had been achieved in the treatment session, the client was given the homework assignment of writing an account of the assault in a similar manner. Mrs. D. was encouraged to write in detail about the sensory memories, thoughts, and feelings during the traumatic event. It was emphasised that these assignments should be carried out at a time and a place where she could feel comfortable to express her emotions. She was encouraged to review her written material daily. Her accounts written at home were read aloud, feelings and thoughts highlighted were addressed through a process of cognitive restructuring. Through this process of activating the detailed memory, and then challenging and correcting the misattributions and maladaptive beliefs, a dismantling of the fear structure and negative schemata was achieved.

Homework assignments were set through which avoidance behaviour could be reduced. A graded exposure hierarchy was employed with items from this structure progressively introduced over therapy. Mrs. D. was introduced to thought stopping (Salkovskis & Kirk, 1989) and distraction techniques (Fennel, 1989) to help her cope with anxious feelings. A breathing technique described by Cappo & Holmes (1984) which invokes a reflex for slowing heart rate was suggested for situations where she became conscious of a racing heart rate. Tachycardia had become established as an early trigger symptom for Mrs. D. over which she sought some control.

Results and Discussion

Mrs. D's responded well to the CPT programme and achieved significant symptom reduction. Progress as measured by self-rating questionnaires (BAI, IES and BDI) indicated that she had achieved substantial symptom control and reduction in the intrusiveness of the traumatic event and associated avoidance behaviour (see Table 1). Her BAI scores dropped from the moderate/severe range at pre-treatment to below clinical caseness at post-treatment. Similarly, her BDI scores were in the mild/moderate range at pre-treatment and fell to below clinical caseness at the post-treatment stage. The main benefit of the CPT approach was considered to stem from the fact that memories of the traumatic event that were elicited in the treatment sessions facilitated direct confrontation of conflicts and maladaptive beliefs. In this way CPT is different from the Prolonged Exposure (PE) technique for rape-related PTSD described by Foa *et al.* (1991) and Rothbaum & Foa (1992). In the latter approach (PE), there is activation of memory structures but corrective information regarding misattributions or other maladaptive beliefs is not directly provided. The advantage of the CPT approach would seem to lie in the provision of corrective information for conflicts, faulty attributions, or expectations that interfere with complete processing or cause other symptoms such as depression or low self-esteem (Calhoun & Resick, 1993).

An important aspect of the treatment has been an improvement in Mrs. D.'s ability to relate to her husband aspects of her ordeal and her associated thoughts. At post-treatment she had felt able to bring her husband into the process of dealing with her trauma. She felt that the structured therapeutic approach adopted in the treatment sessions had enabled her to

examine her thoughts and feelings about the attack and to communicate and deal with these more effectively.

(Table 1 here)

Mrs. D. completed the exposure hierarchy by the end of sixth session. She found the thought stopping and controlled breathing techniques to be particularly helpful anxiety management strategies. The breathing technique described by Cappo & Holmes (1984) was felt to be very effective in helping to manage her symptoms of tachycardia.

Mrs. D. is now substantially less fearful about travelling alone. She is still fearful about subways but has almost no difficulty in daytime and especially so when accompanied. This was discussed and accepted as an appropriate level of functioning, it would be unreasonable to consider an unlit underpass at night to be devoid of risk. Therapy has been successful in restoring a realistic level of threat appraisal and this has been beneficial in increasing her mobility and allowing her to resume her previous level of social and occupational functioning.

This case has been presented to illustrate the potential of CPT in rape-related PTSD as a relatively brief and effective means of treatment with this client group. However, it is acknowledged by this author that the conclusions that can be drawn from this single case are limited. Follow-up studies that permit comparisons to be drawn across different treatments and with more severely traumatised victims would seem to be indicated.

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Table 1 Self-rating scores on BAI, IES & BDI through treatment

Self-rating Measure	Session 1	Session 4	Session 6
Beck Anxiety Inventory	20	9	2
Impact of Events Scale	54	-	14
Intrusion	24	-	4
Avoidance	30	-	10
Beck Depression Inventory	18	-	9