

**FACIAL EMOTION RECOGNITION DEFICITS IN SCHIZOPHRENIA**

**AND RESEARCH PORTFOLIO**

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**M.A. (Hons.)**

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**of the degree of**

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**within the Faculty of Medicine**

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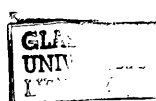
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## **Literature Review**

### **FACIAL EMOTION RECOGNITION DEFICITS IN SCHIZOPHRENIA**

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Target Journal: Schizophrenia Bulletin (notes for contributors: appendix 1.1)

## **Facial Emotion Recognition Deficits in Schizophrenia**

### **Abstract:**

Of the interpersonal deficits demonstrated in schizophrenia, impairment of facial emotion recognition has been one of the most widely reported in the literature. This article reviews research to date investigating facial emotion recognition deficits in schizophrenia. Despite the number of studies purporting to show a deficit, there has been little consistency or agreement as to the specific nature of this deficit. A number of common methodological problems are identified which might account for this inconsistency. The specificity of facial emotion recognition deficits in schizophrenia is discussed with reference to whether the deficit is specific to the condition of schizophrenia, whether it is a specific deficit or part of a more generalized deficit and whether a deficit exists only with particular emotions. Possible etiological mechanisms are identified and reviewed including neurological, cognitive and psycho-social factors. Implications for treatment and possible avenues for future research are discussed.

## **Introduction:**

Impairment of interpersonal social functioning appears to be a characteristic of schizophrenia and comprises part of the diagnostic criteria for both DSM-IV (APA, 1994) and ICD-10 (WHO, 1992). The ability of schizophrenic patients to accurately perceive social cues has been the subject of a fast expanding body of research over the past two decades (eg. Corrigan et al. 1990; Cramer et al. 1992; Morrison and Bellack, 1981; Monti and Fingeret, 1987). In particular, it has been suggested by several researchers that impairment in facial emotion recognition may be one of the most consistent and critical of the interpersonal deficits observed in schizophrenic patients (eg. Feinberg et al. 1986; Morrison et al. 1988). Izard (1971) and other theorists on human emotion consistently acknowledge that facial expression is the principle means of emotional expression and the ability to identify facial expressions of emotion appears to be common to all socio-cultural groups (Izard, 1971; Eckman and Oster, 1979). Delineating the existence and nature of emotion perception deficits may lead not only to a greater understanding of the psychosocial problems encountered in schizophrenia, but may also shed further light on the complex relationship between social skills deficits and the more primary cognitive or information processing deficits identified in schizophrenic patients (eg. Braff, 1993; Neuchterlain and Dawson, 1984; Neuchterlain et al. 1994; Strauss, 1993).

## **Research investigating facial emotion recognition in schizophrenia:**

Of the many studies that have attempted to examine facial emotion recognition in schizophrenia, most have identified some type of deficit in schizophrenic patients relative to controls (eg. Archer et al. 1992; Borod et al. 1993; Dougherty et al. 1974; Feinberg

et al. 1986, Gessler et al. 1989; Walker et al. 1984; Zuroff and Colussy, 1986). Despite this, there has been little agreement as to the specific nature of the deficit observed and considerable inconsistency in the type of deficit observed. The current review will focus on the specificity of the deficits observed, methodological problems associated with this area of research, the nature and validity of the tests used, the etiology of facial emotion recognition deficits in schizophrenia, facial emotion recognition among schizophrenia sub-types and treatment implications.

#### **(a) The specificity of facial emotion recognition deficits in schizophrenia:**

##### **(i) Are facial emotion recognition deficits specific to schizophrenia?:**

A number of early studies in this area appeared to demonstrate a facial emotion recognition deficit in schizophrenic patients relative to normal controls (Spiegel et al. 1962; Dougherty et al. 1974; Muzekari and Bates, 1977). Typically, the methodology involved showing subjects stimulus photographs (depicting various emotional expressions) and then asking them to identify or discriminate between the emotions displayed. For example, Muzekari and Bates (1977) conducted a study comparing schizophrenic in-patients with non-patient college students on face emotion recognition using a series of photographs presented to subjects depicting four emotions. College students were found to be more accurate than schizophrenic patients on both open ended and multiple choice responses. However, as the schizophrenic patients in these earlier studies had long histories of hospitalization, the deficit observed relative to normal controls may have been secondary to institutionalization or social isolation.

Several more recent studies have attempted to overcome this methodological problem by including a psychiatric control group. Cutting (1981) asked schizophrenic patients, depressed controls and personality disordered controls to judge which of two faces presented in photographic form was the friendlier. Both acute and chronic schizophrenic patients differed significantly from the control subjects on this task. However, Cutting (1981) did not provide detailed diagnostic or demographic information in relation to his experimental or control groups.

Zuroff and Colussy (1986) administered Izard's test of emotion recognition (Izard, 1971) to state hospital schizophrenic patients, affective disorder control patients and non-patient controls. The schizophrenic group were less accurate than normal controls on the emotion recognition task, but in contrast to the Cutting study, there was no difference between the schizophrenic and depressed group. The authors concluded that the deficit was more likely to be a general vulnerability factor or the consequence of social withdrawal. However, diagnoses for this study were derived on the basis of chart review and no information was given regarding length of hospitalization and previous admissions.

In a similar vein, other researchers have compared schizophrenic subjects with depressed or affective disorder patients (Feinberg et al. 1986; Walker et al. 1984; Gessler et al. 1989), but little information is given regarding duration of illness or hospitalization and no attempts are made to match or control for these factors. Both Feinberg et al. (1986) and Walker et al. (1984) found a significant difference between schizophrenic patients and affective disorder patients on facial emotion discrimination, but no difference was

observed between patient samples on emotion labelling or facial identity discrimination. Gessler et al. (1989) compared the performance of schizophrenic patients to that of in-patients with depressive illness and remitted schizophrenic subjects on a dichotomous emotion judgement ("happy" or "sad") photograph task and a non-emotion judgement ("old or young") photograph task. The schizophrenic group were found to be impaired on both the emotion judgement and age judgement tasks relative to remitted subjects, but impaired only on the emotion judgement task relative to depressed subjects.

The results of studies comparing schizophrenic and psychiatric patient controls have not been consistent and remain inconclusive. This is probably due, in part, to differing test stimuli and to methodological weaknesses including variations between groups in duration of hospitalization and unclear diagnostic criteria.

(ii) Specific or generalized deficit?:

Another issue concerning the specificity of facial emotion recognition deficits is whether the deficit is a primary one or whether it is secondary to a more generalized deficit. Facial emotion recognition requires information processing abilities including attention to and decoding of visual (facial) stimuli. Impaired performance on a face emotion recognition task could reflect a generalized deficit in attention or a generalized deficit in extracting information from facial features (facial recognition). Very few studies have used appropriate control tasks within a differential deficit design. If schizophrenic patients demonstrate lower scores on tests of facial emotion recognition relative to controls, this may simply reflect the finding that they generally perform worse than normal and psychiatric controls on a wide range of tasks (Chapman and Chapman,

1978). However, if one can demonstrate that a differential deficit exists between facial emotion recognition tasks on the one hand and facial perception (independent of affect) or general perception tasks on the other, then this would suggest a specific deficit. This design requires that tests of facial emotion recognition and the facial perception control task are matched for item difficulty and reliability as without this, any differences observed could simply be due to the fact that one test is more demanding of attention or difficult than the other(s).

Walker et al. (1984) used a differential deficit design in comparing schizophrenic patients with depressed and normal control groups. Subjects completed a facial identity discrimination task (a control task), a facial emotion discrimination task, an emotion labelling task and a multiple choice emotion task. The authors had attempted to match the tests in terms of item difficulty and reliability. The schizophrenic subjects differed significantly from the normal control group on all the emotion recognition tasks, but not on the facial identity discrimination task. This suggests a specific deficit in facial-affect cue processing in the schizophrenia group which is not affected by processing of facial identity. The study is unique in controlling the exposure time for each photograph presentation. However, the study is limited by a number of methodological problems including an age discrepancy between groups and lack of important information relating to the patient samples.

A contrasting result was observed when Novic et al. (1984) attempted to match tests of facial emotion recognition and facial recognition within a differential deficit design. They found that chronic schizophrenic patients tended to perform more poorly than normal

controls on the emotion recognition task, but that this difference was eliminated when facial recognition was entered as a covariate.

Kerr and Neale (1993) recently matched two face emotion perception tasks (face emotion identification and face emotion discrimination) with the Benton Facial Recognition Task (Benton et al. 1983) in comparing a group of chronic schizophrenic patients and a non-patient control group. Unlike previous studies, Kerr and Neale had standardized and cross validated their face emotion perception tasks prior to the study. Significant differences were found between schizophrenic and non-patient control subjects on all three tests prompting the authors to suggest that the tasks reflect a generalized performance deficit rather than a specific emotion recognition deficit. The study did not include a comparable psychiatric control group.

In summary, those studies that have attempted to use a differential deficit design to investigate the specificity of facial emotion recognition deficits in schizophrenia have again yielded inconsistent results. The reasons for this appear to lie in differences in the tests used, differences in medication status and chronicity as well as differences in diagnostic criteria.

(iii) Is the deficit restricted to particular emotions?:

Earlier studies (Dougherty et al. 1974; Muzekari and Bates, 1977; Pilowsky and Bassett, 1980) suggested that schizophrenic patients had particular difficulty in the recognition of negative facial emotions (eg. anger, sadness). However, more recent controlled studies have failed to find a specific deficit with particular emotion categories (Novic et



al. 1984; Zuroff and Colussy, 1986). Ekman and Oster (1979) suggest that certain negative affect states may be more difficult to recognize than positive states and Morrison et al. (1988) point out that deficits in the recognition of negative affect relative to positive affect may therefore simply reflect the differential discriminatory power of the particular tests used. Novic et al. (1984), in selecting test items that were reliable and had good discriminatory power, found that they were left with only those photographs dealing with negative affect. They concluded that previous research suggesting particularly poor performance of schizophrenic patients relative to controls on negative affect items may have been due to test based artifact.

#### **(b) Tests used in the assessment of facial emotion recognition**

Although a large number of different sets of facial emotion display materials have been developed (eg. Izard, 1971; Ekman, 1976; Walker et al. 1984), there are no widely accepted, standardised measures of facial emotion recognition in existence. Because of the lack of established measures, investigators have tended to develop their own stimulus display materials before each study. The result has been a sequence of widely differing measures of facial emotion recognition, often with unknown or unreported psychometric properties (eg. Archer et al., 1992; Dougherty et al. 1974; Feinberg et al. 1986; Zuroff and Colussy, 1986). In the absence of information about psychometric characteristics, it has not been possible to evaluate the reliability and validity of these tests. Three studies have attempted to develop standardized measures (Novic et al. 1984; Walker et al. 1984, Kerr and Neale, 1993). Of these, only the Kerr and Neale study obtained normative data on adequately large samples and cross validated results on separate samples for both facial emotion identification and emotion discrimination tests prior to

administering these to patients.

**(c) The etiology of facial emotion recognition deficits in schizophrenia:**

Evidence from studies on brain damaged patients indicates that damage to the right hemisphere results in greater impairment in facial emotion recognition than damage to the left hemisphere (Benowitz et al. 1983; Cicone et al. 1980; DeKosky et al. 1980; Ross, 1981). This implies some degree of hemispheric specialization. However, other evidence suggests that a more complex interactive inhibition of hemispheres may exist with the right hemisphere responsible for mediating the recognition of negative emotions as well as the balance of overall emotional tone and the left hemisphere mediating the recognition of positive emotions (Silberman and Weingartner, 1986). On balance, most studies point to the dominance of the right hemisphere in facial emotion recognition (Morrison et al. 1988; Borod et al. 1993).

Impairments in the recognition of facial emotion could arise from one or more of several sources. Deficits could be due to dysfunction or lesions in the right hemisphere, could be secondary to more generalized deficits (in attention or processing complex visual stimuli) or could be the result of environmental influences such as limited social interaction and poor social learning histories.

Morrison et al. (1988) reviewed the evidence regarding hemispheric dysfunction in schizophrenia and concluded that there was little evidence of a specific right-hemispheric lesion that would account for facial emotion recognition deficits in general or even a

subset of patients. There is some evidence of a hemispheric preference in the processing of facial stimuli depending on the sub-type of schizophrenia (Magaro and Chamrad, 1983b), but no research effort has been expended in identifying the organic pathology that might underlie these differences or in determining whether this preference is replicated with facial emotion recognition. Recently, Borod et al. (1993) observed that schizophrenic and right brain damaged patients show similar face emotion recognition deficits, but the two groups were also impaired on neutral face recognition and a perceptual control task relative to normal controls.

As noted earlier, facial emotion recognition requires information processing abilities that include attention and the decoding of complex facial or visual stimuli. A number of information processing and neuropsychological deficits have been identified in schizophrenic patients relating to both negative and positive symptoms (recent reviews: Braff, 1993; Strauss, 1993). It is possible that a more primary attentional or information processing dysfunction may be responsible for facial emotion recognition deficits, especially given the methodological shortcomings of those studies that purport to have identified a differential deficit. In recent years, there has been growing interest in early perceptual information processing deficits such as those found with visual backward masking (Green and Walker, 1986) and visual span of apprehension (Asarnow et al. 1991) in schizophrenic patients. Several studies have found that negative symptoms in schizophrenic patients predict the interstimulus interval at which a masked visual target can be detected (eg. Braff, 1989; Green and Walker, 1986). The relationship between these perceptual or information processing deficits and facial emotion recognition deficits has not yet been explored and remains an area for future study.

In addition to demonstrating a number of information processing abnormalities, individuals with schizophrenia also often have a history of poor pre-morbid social functioning and limited social interaction (Morrison and Bellack, 1987; Bellack et al. 1989). Although it remains unclear whether this social withdrawal is part of the prodromal phase of the illness or is itself part of the etiology of the condition, it is possible that there is limited opportunity to learn the meaning of particular social cues and that this may form part of a wider poor social learning history (Morrison and Bellack, 1981; Monti and Fingeret, 1987). To the author's knowledge, no studies have investigated the relationship between pre-morbid social functioning and emotion recognition deficits in schizophrenia. Furthermore, very few studies have attempted to control for length of hospitalization in comparing schizophrenic patients to psychiatric controls which leaves the possibility that facial emotion recognition deficits may be linked, in part, to the effects of institutionalization.

In summary, deficits in facial emotion recognition in schizophrenia could be due to right hemisphere neuropathology (similar to that found in neurological patients), generalized attention and perceptual information processing deficits or faulty learning histories. The evidence to date remains inconclusive and it is clear that further study is required before this issue is resolved. Morrison et al. (1988) suggest that different schizophrenic patients may exhibit similar deficits in facial emotion recognition which are mediated by different etiological factors. This highlights the complex nature of the interaction between social perception, information processing, attention and neuropathology in schizophrenia.

#### **(d) Facial emotion recognition deficits in schizophrenia sub-types:**

In view of the heterogeneity of schizophrenic symptoms, several researchers and clinicians have attempted to organize the complex array of symptoms into a simplified framework. Andreason and Olsen (1982) divide symptoms into positive symptoms (including hallucinations, delusions and thought disorder) that reflect behavioural excesses and negative symptoms (including flattened affect, alogia, avolition and attentional impairment) that tend to reflect behavioural and cognitive deficits. More recently, evidence has emerged to suggest that this dichotomy is an oversimplification and that positive symptoms may divide into two further components comprising thought disorder and hallucinations/delusions (Arndt et al. 1991). Studies of psychopathology in schizophrenia frequently also draw a distinction between those patients with paranoid symptoms and those without.

Very few studies have attempted to investigate facial emotion recognition deficits in the various schizophrenia sub-types or dimensions. Kline et al. (1991) compared paranoid and non-paranoid schizophrenic patients on a facial emotion recognition judgement task and a matched control task comprising geometric figures. Both patient groups differed significantly from normal controls, but the paranoid patients were significantly more accurate than the non-paranoid patients at labelling negative facial affects whereas the non-paranoids were deficient in overall labelling of facial affect. However, the study suffers from a number of the methodological weaknesses identified above including a lack of standardized tests and a failure to specify duration of illness or hospitalization. Given the dearth of studies examining facial emotion recognition in schizophrenia sub-types, this is clearly an area for future study.

### **(e) Treatment Implications:**

Although at present the specificity of facial emotion perception deficits to schizophrenia has not been conclusively supported, the evidence to date is sufficient to suggest that treatment might include efforts to improve facial emotion recognition. A failure to accurately identify social cues, one of which is facial affect, may result in ineffective or inappropriate social responses (Corrigan et al. 1992; Morrison and Bellack, 1987). For this reason, attempts at treatment might best be incorporated into a social skills training programme focusing on both receptive and response based social skills. Morrison et al. (1988) suggests that training in facial emotion perception could begin with repeated practice using photographs and then progress on to participation in modelled social interactions in which emotional cues are salient. Recent social skills training programmes have included modules of this nature designed to address facial emotion recognition deficits alongside other social perception deficits (Corrigan et al. 1992; Brenner et al. 1992).

### **Conclusion:**

Although numerous studies over the past two decades investigating facial emotion recognition in schizophrenia have identified some type of deficit relative to normal controls, there has been considerable inconsistency in terms of identifying the specific nature of the deficit. This is likely due, at least in part, to a number of methodological shortcomings that run through the literature. Primary among these are the failure to use standardized tests, the lack of a face recognition control task, the sparsity of differential deficit design and the absence of comparable control groups. In addition, many studies

suffer from small sample sizes, uncertain diagnostic criteria and inadequate subject descriptions (particularly with regard to duration of hospitalization or illness).

Given this methodological inconsistency, many questions still remain unanswered. There are three areas of uncertainty regarding the specificity of the deficit. Firstly, it remains unclear whether the deficit is specific to the condition of schizophrenia or whether it is also present in other chronic psychiatric populations with similar histories of institutionalization and social isolation. Secondly, it remains to be determined whether schizophrenic patients show a specific deficit in facial emotion recognition or whether this simply reflects a wider generalized deficit. Finally, although some studies have suggested that schizophrenic patients show a particularly marked deficit in negative facial emotion recognition, other studies have not found this differential deficit. Clarification of these issues remains vital if research is to throw further light on the etiology of facial emotion recognition deficits in schizophrenia.

Other avenues for future research include the examination of differences in facial emotion recognition between various sub-types of schizophrenia, the effect of neuroleptic medication on facial emotion recognition abilities and the relationship between facial emotion recognition deficits and other neuropsychological deficits in schizophrenia. It is clear that future studies will need to address some of the methodological weaknesses that have plagued previous studies by improving control, providing more information regarding subject groups and using standardized tests.

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## **Research Project Proposal:**

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### **Title:**

**Specificity of Facial Emotion Recognition Deficits in Schizophrenia**

### **Summary:**

Schizophrenia is associated with a range of impairments in social functioning. The ability of schizophrenic patients to accurately perceive facial emotion has been the subject of a growing body of research in recent years. Although most studies have identified some type of deficit in facial emotion recognition relative to normal controls, methodological problems have resulted in there being little consensus as to the precise nature of the deficit and considerable inconsistency in the type of deficit observed. The proposed research study will attempt to examine facial emotion recognition in a group of 20 schizophrenic patients and 20 affective disorder controls matched in terms of approximate length of institutionalization, education and age group. The aim is to determine whether specific facial emotion recognition impairments occur in schizophrenia or whether these deficits are part of a more generalized deficit, perhaps linked to institutionalization or attentional impairment.

All subjects will be administered standardized tests of face emotion identification, face emotion discrimination and a facial recognition (independent of affect) control task. Patients will be recruited from three mental health facilities in Lanarkshire. Testing will be carried out at the facility from which patients are recruited.

### **Introduction:**

Social skills deficits appear to be characteristic of schizophrenia (Morrison and Bellack, 1987; Corrigan et al. 1992) and deterioration in social relations comprises part of the diagnostic criteria for DSM-IV (APA, 1994). Most studies exploring social skills deficits in schizophrenia have focused on "sending" skills (eg. eye contact or speech latency),



but there has been a growing interest over the past two decades in the ability of schizophrenic patients to accurately perceive social cues.

Several studies have reported that schizophrenic patients appear to show deficits in the ability to recognize facial expressions of emotion relative to normal or psychiatric controls (eg. Cutting, 1981; Dougherty et al. 1974; Feinberg et al. 1986; Walker et al. 1984; Zuroff and Colussy, 1986). However, there has been little consensus about the precise nature of these deficits and this may partly be due to the presence of several key methodological weaknesses. Primary among these is the use of inappropriate control groups with which to compare chronic schizophrenic patients often with long histories of hospitalization. In many of the studies to date, differences observed could easily have been secondary to the effects of institutionalization and associated social isolation.

Few studies have used appropriately standardized tests within a differential deficit design. This design was developed in response to the observation that any single deficit detected in a schizophrenic group relative to a normal control group may simply reflect the finding that they generally perform worse than normal and psychiatric controls on a wide range of tasks (Chapman and Chapman, 1978). If it is possible to demonstrate that a differential deficit exists between a facial emotion recognition task and a facial perception (independent of affect) control task, this would be suggestive of a specific deficit. This requires that tests are matched in terms of optimum item difficulty and reliability as without this, any differences observed could simply be due to the fact that one test is more demanding of attention or difficult than the other.

Kerr and Neale (1993) have recently standardized and cross validated two tests of facial emotion perception. These have been matched on item difficulty and reliability with a face recognition control task (the Benton Test of Facial Recognition). The proposed study aims to administer these tests to a group of chronic schizophrenic patients and a group of affective disorder patients matched on approximate length of hospitalization, years of education and age group in an attempt to answer the research questions listed below.

Identifying the existence and nature of emotion perception deficits may lead not only to a greater understanding of the psychosocial problems encountered in schizophrenia, but may also throw further light on the complex relationship between social skills deficits and the more primary cognitive or information processing deficits previously identified in schizophrenic patients (recent review: Braff, 1993).

### **Aims and Research Questions:**

The proposed research study intends to investigate:

**Whether individuals with schizophrenia show specific deficits relative to psychiatric controls on previously standardized measures of facial emotion recognition:**

The study will use standardized and matched measures of facial emotion identification, facial emotion discrimination and facial recognition (independent of affect) to answer the following questions:

**(i) Do schizophrenic patients show a specific deficit in facial emotion recognition or is this simply part of a wider generalized deficit (perhaps in face processing or visual information processing)?**

**(ii) Are face emotion perception deficits specific to schizophrenic patients or are they a characteristic of general psychiatric disorder (perhaps as a result of social isolation or institutionalization)?**

### **Plan of Investigation:**

#### **Design:**

In order to answer these questions, it is necessary first of all to ensure that the control group is comparable in terms of length of institutionalization, education, and age (factors confounding much of the research in schizophrenia). Schizophrenic patients will be matched to a group of affective disorder control patients on these three variables (see Subjects). While matching introduces a selection bias (non-random sampling), it is felt that the benefits far outweigh the costs. Secondly, it is important to ensure that where comparisons are to be made between tests, these tests have been matched for item difficulty and reliability in accordance with the differential deficit design indicated when comparing schizophrenic patients with other populations (Chapman and Chapman, 1978).

### **(i) Subjects**

**20 schizophrenic patients** recruited from three settings (hospital, rehabilitation centre and community) will be matched with **20 affective disorder controls** on WAIS-R age band (Wechsler, 1981), years of education and total length of hospitalization (6 categories ranging from < 6 months to > 20 years). Most schizophrenic patients are likely to be on neuroleptic medication at the time of testing. As this is not possible to control for directly, medication equivalents will be recorded (for correlational purposes). Subjects will be aged between 18 and 65.

Diagnostic criteria: Structured Clinical Interview for DSM-III-R (Spitzer et al. 1990). SCID-P version: Schizophrenia, Major Depression, Bipolar Disorder. Aided by chart review.

Exclusion criteria: Suspected neurological disorder, recent substance abuse, non-native speaking ability in English, hearing or uncorrected visual impairment, those too acutely ill to participate.

Source of patient groups: Hartwood Hospital, Lanarkshire; Hairmyres Hospital, East Kilbride; Airbles Rd Rehabilitation Centre, Motherwell.

Demographics and information relevant to control: Age of onset, gender, number of previous psychotic episodes and medication level.

## **(ii) Tests and Measures:**

**(1) Face Emotion Identification Test** (Kerr and Neale, 1993): A series of 19 photographs depicting a range of six facial emotions are presented to participants. During each presentation, participants are asked to circle one of six emotion categories on a sheet in front of them.

**(2) Face Emotion Discrimination Test** (Kerr and Neale, 1993): Participants are required to decide whether the same or different emotions are depicted in pairs of photographs presented simultaneously. A total of 30 pairs of photographs are presented.

**(3) Test of Facial Recognition, Short Form** (Benton et al. 1983): A test of face perception comprising a series of frontal facial photographs. For each of the 13 trials, a set of six response photographs (including other frontal photographs and profiles) are also displayed and the subject is required to identify the target photograph in either one or three of the response choices.

The order of the above tests will be counterbalanced with two conditions (the two face emotion tests count as one test for the purposes of counterbalancing).

**(4) National Adult Reading Test (Nelson, 1982)**: Subjects are instructed to read out loud a list of words presented to them on a sheet of paper. The test has established validity and reliability as an approximation of pre-morbid intelligence.

### **(iii) Procedure:**

The above tests will be administered to all subjects on one occasion only. Firstly, each subject will be informed as to the nature and purpose of the study using the subject information form (appendix 2.1) and consent will be obtained if they are willing. Following this, demographic and medication details obtained from the patient case notes may be checked with the patient or any missing information completed using a protocol (appendix 2.2). The NART will then be administered. Following this, the tests above (1-3) will be administered in one of two orders (counterbalanced). The procedure for each test is described above (see Tests and Measures). No financial incentive will be offered.

### **(iv) Settings and Equipment:**

Testing will take place in a number of different locations: Consultation rooms will be used in Hartwood Hospital (Ward 23 or Psychology Dept. meeting room), Hairmyres Hospital (Ward 31) and Airbles Road Rehabilitation Centre (meeting room).

No equipment other than the tests (all "paper and pencil") and record forms for each of the above tests will be required.

### **(v) Data Analysis:**

A repeated measures analysis of variance (ANOVA) will be conducted with diagnosis (schizophrenic x affective) and performance on the emotion perception tasks and the control perception task as within subject variables.

Correlational analyses will also be conducted to examine the potential contribution of

medication level and demographic variables (not matched for) to performance on the facial tests.

### **Implications:**

It is hoped that the research will throw further light on several important issues in schizophrenia including:

1. whether schizophrenia is characterized by specific deficits in social perception or whether these reflect more generalized deficits, perhaps in attention, perception or information processing.
2. where the focus of social skill remediation might best be targeted (eg. specific training in emotion recognition vs. training in general perceptual or attentional skills).
3. whether social perceptual impairments observed in schizophrenia are also present to the same degree in other chronic psychiatric populations (i.e. not specific to the disorder).

A failure to accurately identify social cues, one of which is facial affect, may result in ineffective and inappropriate social responses (Morrison and Bellack, 1987). Future research is planned in which the relationship of these "receiving" skills (eg. facial emotion recognition) to "sending" skills (eg. emotional expression) will be investigated in a group of schizophrenic patients.

**Time scale for data collection:** October 1994 to April 1995.

**Ethical approval for the project has been granted by Lanarkshire Health Board**

**Ethics Committee (October, 1994).**

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## **Main Research Article**

### **FACIAL EMOTION RECOGNITION IMPAIRMENT IN SCHIZOPHRENIA: FOCAL OR GENERALIZED DEFICIT ?**

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Target Journal: Journal of Psychiatric Research

(notes for authors: appendix 3.1)

### **Summary:**

Despite a growing body of research, there have been conflicting findings in relation to the question of whether schizophrenic patients show a specific facial emotion recognition deficit. This is possibly due to a number of methodological problems identified in previous studies. The present study aimed to determine whether a specific facial emotion recognition impairment occurs in schizophrenia or whether this deficit is part of a more generalized deficit, perhaps linked to variables such as institutionalization. 17 schizophrenic patients were matched to 17 affective disorder patients in terms of approximate length of institutionalization, education and age group. All subjects were administered recently standardized tests of facial emotion identification, facial emotion discrimination and a facial recognition (independent of affect) control task. The results indicated a generalized deficit (possibly in perception of complex visual stimuli or attention) including both facial emotion perception and facial recognition relative to psychiatric controls of similar educational and institutional background. Implications and methodological considerations are discussed.

## **Introduction:**

It has been suggested by several researchers that impairment in facial emotion recognition may be one of the most consistent and critical of the interpersonal deficits observed in schizophrenic patients (Feinberg et al. 1986; Morrison et al. 1988). Several studies have reported that schizophrenic patients appear to show deficits in the ability to recognize facial expressions of emotion relative to normal or psychiatric controls (eg. Borod et al, 1993; Dougherty et al. 1974; Feinberg et al. 1986; Walker et al. 1984; Zuroff and Colussy, 1986).

Typically, the methodology for facial emotion recognition assessment has been to show subjects stimulus photographs depicting different emotional expressions and then to ask them to identify or discriminate the emotions being displayed. Bell (1995) reviews studies examining facial emotion recognition in schizophrenia and concludes that, while many studies find some type of deficit, there is little consensus about the precise nature of the deficit or its functional significance. Wide variations exist in the type of test used to assess emotion recognition, the diagnostic criteria for patient groups, medication status and the duration of illness or hospitalization. Moreover, several key methodological weaknesses probably contribute to both the inconsistency observed and the lack of conclusive evidence.

Firstly, one common methodological problem seems to have been the use of chronic, long stay schizophrenic inpatients without inclusion of comparable psychiatric control groups. In the majority of studies, any differences observed could easily have been secondary to the effects of institutionalization and associated social isolation. In those

studies that have used a psychiatric control group (eg. Cutting, 1981; Feinberg et al. 1986; Gessler et al. 1989; Walker et al. 1984), the results have been inconsistent making it difficult to draw any firm conclusions (Bell, 1995). In part, this may be due to the fact that in none of these studies was the psychiatric comparison group accurately matched to the schizophrenic group in terms of length of institutionalization, years of education and age.

Secondly, there are no well established standardised measures of emotion perception available. Due to the lack of established measures, investigators have tended to develop new instruments before each study. This has resulted in widely divergent measures of facial emotion recognition, frequently with uncertain or unreported psychometric characteristics. Three studies have attempted to develop standardized measures (Novic et al. 1984; Walker et al. 1984, Kerr and Neale, 1993). Of these, only the Kerr and Neale study has standardized the task on adequately large samples and cross validated results on separate samples prior to administering the tests to schizophrenic patients.

Finally, very few studies have used appropriate control tasks within a differential deficit design. If schizophrenic patients demonstrate lower scores on tests of facial emotion recognition relative to controls, this may simply reflect the finding that they generally perform worse than normal and psychiatric controls on a wide range of tasks (Chapman and Chapman, 1978). However, if one can demonstrate that a differential deficit exists between facial emotion recognition tasks on the one hand and facial perception (independent of affect) or general perception on the other, then this would suggest a specific deficit. This design requires that tests of facial emotion recognition and the

facial perception control task are matched for discriminatory power and reliability as without this, any differences observed could simply be due to the fact that one test is more demanding of attention or difficult than the other(s).

The present study attempts to examine the specificity of the apparent deficits in facial emotion recognition previously observed in schizophrenic patients. As it has been suggested that deficits on facial emotion recognition tasks may result from a problem in understanding the labels used to identify emotions rather than an inability to recognize the emotion (Walker et al. 1984), facial discrimination as well as identification tests were used. A control face perception task previously matched in terms of discriminatory power and reliability with the experimental tasks by Kerr and Neale (1993) was also included. Hence, standardized and matched measures of facial emotion identification, facial emotion discrimination and facial recognition were used to examine the following research questions:

**(i) Do schizophrenic patients show a specific deficit in facial emotion recognition or is this simply part of a wider generalized deficit (perhaps in face processing or visual information processing)?**

**(ii) Are face emotion recognition deficits specific to schizophrenic patients or are they a characteristic of general psychiatric disorder (perhaps as a result of social isolation or institutionalization)?**

Given the inconsistency of results to date, no directional hypotheses were established in

relation to these two research questions.

### **Method:**

#### **Subjects:**

**18 schizophrenic patients** recruited from hospital, rehabilitation centre and community settings in the Lanarkshire area (Hartwood Hospital, Hairmyres Hospital and Airbles Road Rehabilitation Centre) were matched with **18 affective disorder controls** on WAIS-R age band (Wechsler, 1981), years of education and total length of hospitalization (6 categories ranging from < 6 months to > 20 years: see appendix 3.2). Gender was not matched for as this was found to be impractical. Most previous studies that have examined gender in this context have found no significant differences in face emotion perception between the sexes in either population (Archer et al. 1992; Borod et al. 1990; Muzekari and Bates, 1977; Walker et al. 1980).

All schizophrenic patients were on neuroleptic medication at the time of testing. As this was not possible to control for directly, chlorpromazine equivalents were recorded (for correlational purposes). In the affective disorder group, 12 were on tricyclic antidepressants and 4 were on lithium carbonate.

One schizophrenic subject of the 18 was unwilling to complete the emotion perception tasks after commencing. This subject and the matched affective disorder subject were excluded from the data analysis (leaving 17 subjects in each group). Table 1 summarises



subject information concerning mean age, education, medication level, NART IQ, age at onset and gender.

INSERT TABLE 1 HERE (see and of paper)

Diagnosis: Diagnostic assessment was based on data collected by the author using the Structured Clinical Interview for DSM-III-R (Spitzer et al. 1990) SCID-P version for Schizophrenia, Major Depression and Bipolar Disorder. This was aided by chart review for most patients. Eleven of the schizophrenic patients were of the paranoid type and 6 were of the undifferentiated type according to the SCID-P criteria. All had suffered from schizophrenic psychopathology including bizarre or complex delusions, auditory or visual hallucinations and a flattening or inappropriateness of affect over the 12 months prior to testing. The affective group comprised 5 bipolar patients and 12 depressive patients.

Exclusion criteria included suspected neurological disorder, a history of recent substance abuse (past 6 months), non-native speaking ability in English, hearing or uncorrected visual impairment and those too acutely ill to participate.

### Stimuli:

Experimental Tasks: Two tests of facial emotion perception were administered to all subjects. The **Face Emotion Identification Test** (Kerr and Neale, 1993) and the **Face**

**Emotion Discrimination Test** (Kerr and Neale, 1993) were both developed and standardized by Kerr and Neale from a source pool of photographs produced previously by Izard (1971) and Ekman (1976): The Face Emotion Identification Task (appendix 3.3) comprises a series of 19 monochrome photographs (5" x 7") depicting a range of six facial emotions (happiness, sadness, anger, surprise, fear and shame) and requires subjects to identify the correct emotion from a multiple choice. The Face Emotion Discrimination task (appendix 3.4) consists of 30 pairs of monochrome photographs depicting the same range of six emotions and requires the subject to decide whether the same or different emotions are depicted in pairs of photographs presented simultaneously. These tests have been demonstrated to have adequate psychometric properties (alpha reliabilities > .7).

Control Task: The **Test of Facial Recognition, Short Form** (Benton et al. 1983) was administered as a perceptual control task. This comprises a series of monochrome frontal facial photographs. For each of the 13 trials, a set of six response photographs (including other frontal photographs and profiles) are also displayed and the subject is required to identify the target photograph in either one or three of the response choices. The first six trials require selecting one response from six choices and trials 7-13 require three responses each.

All subjects were given the National Adult Reading Test (NART: Nelson, 1982). This requires subjects to read out loud a list of words presented to them on a sheet of paper. The test is frequently used as an estimation of pre-morbid intelligence.

**Procedure:**

Testing was conducted in one session for most subjects (lasting approximately 45 minutes). Informed consent was obtained from all subjects after the procedures were fully explained. The NART was then administered according to the description above (stimuli section). Following this, the facial tests were administered in one of two orders (counterbalanced). Subjects were read the test instructions by the examiner, but these were also contained on the score sheet in front of them.

In the Face Emotion Identification Test, subjects were told that they were to be presented with a series of 19 photographs of individuals expressing an emotion and that each would show one of six emotions. They were asked to look at each picture and select the emotion that best fits the actors facial expression on a multiple choice sheet in front of them. The target pictures were displayed for 10 seconds following which the subject was allowed 15 seconds to circle the appropriate response from an array of six on a sheet in front of them. Three practice trials were provided.

In the Face Emotion Discrimination Task, subjects were told they would see a series of 30 pairs of photographs. They were asked to indicate whether the two people in each pair were displaying the same or different emotions by circling "same" or "different" on an answer sheet in front of them. Again, three practice trials were allowed. In both the emotion tasks, subjects were instructed to take their "best guess" if they were not sure of their answer.

With the Benton Face Recognition Task, subjects were told that they would see a series

of photographs showing faces from the front. For each trial, they were told that an array of six photographs of people's faces (three on the top, three below) would also be displayed and that they would be asked to identify the individual that was shown in the stimulus photograph by pointing or reading the relevant number on the response array. This was demonstrated using a demonstration photo set. For the first six trials, they were asked to select one response from the six photographs and from trial 7 onwards they were asked to select three responses.

Testing took place in a number of different locations: Consultation rooms were used in Hartwood Hospital, Hairmyres Hospital and Airbles Road Rehabilitation Centre.

### **Results:**

Descriptive statistics (mean and SD) for the emotion perception tasks and control tasks are presented in table 2. There were no significant differences across counterbalanced groups ( $t = -1.24$ , ns). There was also no significant difference between the experimental and control group in terms of the NART full scale IQ score ( $t = -1.49$ , n.s.).

Histogram distributions for each group are shown in appendix 3.5. Although data for some test variables were skewed within each group, measures of central tendency (mean and median) were similar in each of these cases. More detailed descriptive statistics (including median, range and skewness) are presented in appendix 3.6. The data did not appear to violate the assumptions of parametric statistics to the degree that merited the use of non-parametric statistics. Parametric statistics were therefore used to analyze the

facial test data. Whilst it is conceded that matching did not take place on all relevant variables (due to the impracticality of this), the two groups were treated as paired for the purposes of the analysis as matching had taken place on what were assumed to be key variables.

INSERT TABLE 2 HERE (see end of paper)

Comparison of psychiatric groups on experimental and control tasks: A repeated measures analysis of variance (ANOVA) was carried out with diagnostic status (Schizophrenic x Affective Disorder) and performance of subjects on the emotion perception and control perception tasks (percentage correct) as within subjects factors. The interaction term was non-significant,  $F < 1$ . However there was a significant difference for diagnostic group with schizophrenic patients performing significantly worse than the affective disorder patients,  $F(1, 16) = 7.34, p = .015$ . There was no significant effect for type of test,  $F(2, 32) = 3.00, ns$ . ANOVA tables are presented in appendix 3.7. Paired t-tests carried out between the two groups on facial test data revealed significant differences on all three facial tests at the .05 level (see appendix 3.8).

Correlational Analyses: These were carried out to examine the potential contribution of demographic variables that were not included in the matching process to performance

on the three tasks. Pearson correlation coefficients were computed between age at onset, NART IQ and medication level (in the schizophrenic group only) and the emotion perception tests. None of the correlation coefficients were significant at the .05 level in either group (see appendix 3.9). In addition, there were no significant correlations between demographic variables used in the matching process (age, years of education, length of hospitalization) and the emotion perception tests (appendix 3.9).

A description of some atypical scoring patterns on the experimental and control tasks is presented in appendix 3.10. A descriptive comparison of scores on the facial tests by gender within each patient group is presented in appendix 3.11.

### **Discussion:**

The present study sought to further clarify the position with respect to the specificity of face emotion perception deficits in schizophrenia. The results indicated that schizophrenic patients performed significantly worse than matched affective disorder patients on tests of face emotion perception. However, schizophrenic patients also performed at a comparably lower level than affective disorder patients on the control facial recognition task indicating a generalized deficit (possibly in perception of complex visual stimuli or attention) rather than a specific deficit. The results do not support the existence of a differential deficit for face emotion perception in schizophrenia.

The findings of the study are consistent with previous research by Novic et al. (1984) and Kerr and Neale (1993). Novic et al. (1984) compared medicated chronic schizophrenic patients to normal controls on a facial affect recognition measure and a

matched face perception task. When scores on the control task were included as a covariate in the analysis of the emotion perception scores, the difference previously observed between the groups disappeared. Kerr and Neale (1993) found no differential deficit in face emotion perception among a group of unmedicated chronic schizophrenic patients when compared with a normal control group. However, in both the Kerr and Neale study and the Novic et al. study, the normal control group was not matched to the patient group. The findings of the present study indicate that schizophrenic patients differ significantly on both face emotion recognition and face recognition tasks from other chronic psychiatric patients of a similar age group with a similar history of hospitalization and education. Hence, the schizophrenic group appear to show a general deficit that is specific to the schizophrenic condition rather than the environmental sequelae characteristic of general psychiatric disorder (eg. social isolation, educational deprivation). Results of previous studies that have found specific deficits may be the product of statistical artifact stemming from differences in the psychometric properties of the tests used.

The results also indicate that the source of the schizophrenic patients' poor performance on the face emotion identification test was not a difficulty with emotion labelling per se. They performed at a similar level on both the face emotion discrimination task and the face emotion identification task.

There were a number of potentially important subject variables that were not feasible to include in the matching process for practical reasons, chief among these being the exact duration of illness, gender, NART IQ, severity of illness and medication level. Although

it cannot be ruled out that the differences observed between the two diagnostic groups arose due to one or a combination of these factors, correlational analyses between age at onset, medication level and NART IQ on the one hand and face emotion perception scores on the other suggest that these three factors at least do not completely account for the difference observed. Braff and Saccuzzo (1982) found that phenothiazines may in fact facilitate visual information processing in a schizophrenic group. Severity of illness is more problematic as this was not directly assessed in the present study and equating severity of illness between diagnostic groups is a difficult task. It is a factor that future studies should try to address however perhaps using established measures of psychopathology that can be applied across more than one diagnosis.

Motivation is another factor that was not directly assessed in the present study and this is a frequent thorn in the flesh of schizophrenia research as it is very difficult to measure reliably and there is little agreement on how this should be done. Corrigan and Addis (in press) have recently suggested the use of financial incentives for a sub-group of patients to assess the impact on performance on social perception tasks. This was not possible within the ethical constraints of the present study however.

One further limitation of the study is the relatively small sample size in each of the psychiatric groups. This was chiefly the result of difficulty obtaining sufficient patient numbers for the matching process. The possibility remains that significant differences may have been obtained between the face recognition control task and the face emotion perception tasks in the schizophrenic group had there been a larger sample size. Should sufficient patient numbers be obtained, future research might also be directed at the



previously unaddressed question of whether specific deficits in face emotion perception occur in sub-samples of schizophrenic patients (eg. those with predominantly negative or positive symptoms).

The presentation of photographs as test stimuli has also been criticized (Morrison et al. 1988) on the grounds that this may not reflect accurately the fleeting changes in emotion that occur in real life situations. More complex video based tests reflecting these fleeting changes may provide a more ecologically valid test of facial emotion recognition although none have so far been adequately piloted and standardized. A single forced choice procedure across all tests (as with Gessler et al. 1989) may also eliminate the potential confound of differing task demands.

Whilst acknowledging these limitations, the findings of the present study suggest that schizophrenic patients show a general deficit that includes both face emotion recognition and face recognition (independent of affect) when compared to affective disorder patients of similar age with a similar history of hospitalization and education. It is possible that this deficit may occur at an early encoding stage which captures those aspects of the structure of a face that distinguishes it from others (Archer et al. 1992). Previous research suggesting that schizophrenic patients do not utilize gestalt grouping principles in perceptual tasks supports this notion (Frith et al. 1983). Schizophrenic patients have also been shown to demonstrate deficits in early visual processing tasks such as backward masking and span of apprehension (Asarnow, 1991; Green and Walker, 1986). Future research should include perceptual non-facial control tasks to examine whether the deficit extends to other perceptual processes. Alternatively, it is possible that the

generalized impairment observed is the result of an attentional deficit since schizophrenia is associated with lowered performance on tasks with a high processing load (Neuchterlain and Dawson, 1984). Investigating the precise nature and underlying causes of this more generalized impairment may form the basis of future research studies.

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**Table 1:**

**Demographic Characteristics of Patient Samples:**

	Schizophrenic (n=17)	Affective Disorder (n=17)
	<u>Mean</u> <u>(S.D.)</u>	<u>Mean</u> <u>(S.D.)</u>
Age	42.2 (10.32)	45.6 (11.59)
Education	10.9 (1.19)	10.8 (.99)
NART IQ	94.2 (6.46)	97.2 (4.98)
Medication (Chlorpromazine equivalent dose)	386.47 mg/day (155.19)	
Age of onset (years)	26.8 (6.90)	31.2 (6.53)
Total Length of Hospitalization (years)	10.3 (8.02)	9.6 (7.65)
Sex (n)	14 male 3 female	12 male 5 female

**Table 2:**

Mean percentage correct by task and diagnostic group:

	<u>Schizophrenic Group</u>	<u>Affective Disorder</u>
<u>Test</u>	<u>Mean (SD)</u>	<u>Mean (SD)</u>
Face Emotion		
Identification	56.0 (11.3)	67.2 (11.8)
Face Emotion		
Discrimination	55.7 (10.0)	64.5 (12.6)
Test of Facial		
Recognition	59.5 (9.5)	69.9 (12.0)



# **Single Case Research Study 1**

## **The Use of a Dream Re-organization Procedure in the Treatment of Post Traumatic Nightmares**

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Target Journal: Journal of Behaviour Therapy and Experimental Psychiatry

(notes for authors: appendix 4.1)

**Summary:**

The treatment of a 30 year old woman with chronic post traumatic stress disorder (PTSD) is described. The treatment comprised a number of components broadly within a cognitive behavioural framework, but as she suffered from frequent recurring nightmares that were resistant to initial treatment, a dream re-organization approach was attempted. Over a period of 4-6 sessions, this appeared to have a significant impact on not only the frequency of recurring nightmares, but also on the frequency of intrusive images and degree of cognitive avoidance. The limitations of the study, theoretical considerations and implications for future research are also discussed.

## **Introduction:**

Several studies have demonstrated the effectiveness of a combination of imaginal exposure, "in-vivo" exposure and other cognitive-behavioural techniques in dealing with the intrusive imagery and avoidance aspects of Post Traumatic Stress Disorder (eg. Cooper and Clum, 1989; Foa et al. 1991; Keane and Kaloupek, 1982; Keane et al. 1989).

More recently, there has been a growing interest in treatment approaches that attempt to deal with specific PTSD symptoms. Several case studies have documented cognitive treatment approaches for recurrent nightmares that include techniques such as rehearsal of neutral, confrontational or mastery endings (Bishay, 1985; Eichelman, 1985; Kellner et al. 1991; Palace and Johnstone, 1989). Halliday (1987) suggested that cognitive approaches focusing on story-line alteration may require fewer treatment sessions (1-2 sessions) than other treatments and may apply to traumatic as well as non-traumatic nightmares. At present, however, there is a lack of robust case study and small *n* research evidence demonstrating the efficacy of dream alteration techniques with both adults and children.

Pallace and Johnstone (1989) used a dream reorganization approach in treating recurrent nightmares in a 10 year old boy with PTSD following a road traffic accident. The study differed from others in the field in that it presented a theoretical rationale for the mechanisms of treatment and used a cognitive behavioural dream reorganization procedure including two principal treatment components. The first of these, guided rehearsal of mastery endings to dream content, was designed to modify the visual stimuli

associated with recurrent nightmares. The second component, systematic desensitisation with coping self statements, was intended to alter the "emotional episode" associated with traumatic visual imagery by counterconditioning a relaxation response to anxiety-evoking nightmare content. The treatment components were added sequentially following stabilization of the target behaviour in response to the preceding treatment or combination of treatments. The client reported 100% reduction in trauma related nightmares following treatment. The pattern of change during the 16 sessions of therapy suggested that guided rehearsal of dream endings and coping self statements were particularly effective in reducing nightmares.

The present study focuses on the treatment of a client diagnosed with Post Traumatic Stress Disorder who suffered from recurrent and disturbing trauma related nightmares. A dream reorganization approach was employed as part of a wider cognitive behavioural approach in treating the disorder.

### **Method:**

### **Case:**

Mrs C was a 30 year old single mother with two children (aged 13 and 6) from a previous marriage. During the assessment phase, it emerged that she had suffered from disturbed sleep and anxiety for between seven and eight years. These problems dated back to early in her previous marriage in which it soon became clear that she had suffered repeated physical assaults inflicted by her then husband. Her husband started assaulting her soon after they were married and this continued for a further six years

until their separation in 1990.

Mrs. C frequently experienced distressing recollections of several specific incidents of abuse in the form of images or thoughts that came suddenly and were difficult to banish from her mind. Nightmares had been a problem for many years and these were usually a recapitulation of actual events. She described two recurring nightmares that she found particularly disturbing both of which were closely related to her recollection of two specific incidents of physical abuse. Efforts had been made to try to avoid thinking or talking about the abuse and she avoided locations and people she associated with the violence. She had severe difficulty falling or staying asleep and found herself frequently very "bad tempered" with her thirteen year old son.

Mrs C had suffered a period of depression for three months after the birth of her first child, but had responded to anti-depressant medication at the time. There was no other previous psychiatric history.

On the basis of her presenting symptoms and history, Mrs. C was diagnosed as suffering from Post Traumatic Stress Disorder (PTSD). She fulfilled the DSM-III-R criteria for PTSD in terms of re-experiencing specific incidents of abuse, avoidance of trauma related stimuli and heightened arousal. Her scores on the Revised Impact of Events Scale (See table 2: session 1) supported the diagnosis.

Mrs. C did not seem to be significantly depressed on presentation, but she had been low in mood for at least four years and suffered consistently low appetite, amotivation and

low energy indicating secondary Dysthymia rather than Major Depression. Her scores on the Beck Depression Inventory were consistent with this view (see table 2: session 1). At the time of treatment, Mrs. C was on anti-depressant medication prescribed by her General Practitioner.

### **Aims:**

The aim of treatment was to use a cognitive behavioural framework to treat her post traumatic symptoms. Treatment strategies in the initial treatment plan included imaginal exposure, "in vivo" exposure (to feared situations) and cognitive restructuring relating to her perception of the abuse. The treatment strategy was altered following difficulties encountered using imaginal exposure and a dream reorganization approach was adopted to see whether this would have a significant impact in reducing recurrent nightmares.

### **Measures of Assessment:**

Verbal reports were supported by a number of self report measures that were completed during sessions 1, 7 and 12 of therapy. These were (a) the Revised Impact of Events (IOE) questionnaire (Horowitz et al. 1979) and (b) The Beck Depression Inventory (Beck, 1978). The frequency of nightmares and "flashbacks" (intrusive recollections) were also recorded weekly throughout therapy. Baseline recordings for the questionnaire measures are shown in table 2 (session 1 = baseline).

### **Treatment Procedures:**

Therapy sessions took place weekly in the Department of Clinical Psychology, Dykebar Hospital (Paisley, Scotland) and lasted approximately 60 minutes. A summary of the

progression of treatment is shown in table 1.

INSERT TABLE 1 HERE (see end of paper)

During the assessment phase (sessions 1 and 2), Mrs. C. was encouraged to ventilate her feelings in relation to the abuse and a monitoring system in the form of a diary was introduced to record nightmares and sudden intrusive recollections. A hierarchy of both avoided situations (15 items) and intrusive images (13 items) was also constructed by the client with the help of the therapist. Imaginal exposure work did not start with Mrs. C until session 6 as it was felt that establishing a firm rapport and some cognitive restructuring was a necessary precursor to this. Cognitive restructuring focused on re-attributing her feelings of responsibility for the abuse and understanding the symptoms of PTSD.

Imaginal exposure to the hierarchy of intrusive images began in session 6. However, it became clear over the next two sessions that habituation or desensitization using relaxation was going to be very difficult to achieve as she found it very difficult to return to a relaxed state following presentation of imaginal material at the lower end of the hierarchy. She was very resistant to continue with this even with a more elaborate and gradual hierarchy.

During session 8, Mrs. C reported that she had suffered a nightmare during the previous week in which she was being assaulted by her ex-husband whilst lying on her kitchen floor. This was a recurring nightmare, but on this occasion, she said that she had found herself able to fight back for the first time and had been less terrified upon waking. At this juncture, the possibility of using a dream reorganization procedure to work on the content of her nightmares was raised by the therapist and the client seemed positive about this. She produced descriptions of two recurrent nightmares. The content of each of the nightmare descriptions differed from the content of the hierarchy of intrusive recollections. It was agreed that the descriptions could be used to rehearse mastery endings to each nightmare and the client generated new endings for each description. During sessions 8 to 14, the therapist presented each of the modified descriptions to the client for 10-15 minutes. This also included an element of imaginal exposure in that she was to visualize carefully the progress of the nightmare prior to the change in ending. However, the client was far more motivated to concentrate on this technique than on the previous imaginal exposure technique that had associated compliance difficulties.

Dream mastery endings were repeatedly rehearsed for 5 minutes while in her bed at night prior to sleep onset. In the case of the nightmare described above in which she was being assaulted on the kitchen floor, she visualised herself fighting back and with incredible strength pushing her husband out of the house.

In session 9, the therapist and client formed a list of five coping self statements (eg. "it's only a dream" or "he cannot harm me now") based on Kilpatrick et al. (1982) to help her deal with both the dream content during the rehearsal episodes in therapy and upon



wakening after a dream. These were rehearsed at the beginning of each session (10-14) and incorporated into the dream reorganization procedure.

"In-vivo" exposure to avoided situations began in session three after the construction of a fifteen item hierarchy. Exposure tasks (in keeping with the hierarchy) were agreed between client and therapist every 1 or 2 weeks. Progression on the hierarchy was slow, particularly during the first eight sessions, as her avoidance behaviours had become very entrenched.

### **Results:**

Scores on the Revised Impact of Events Scale and Beck Depression Inventory during therapy are presented in table 2. Frequency of nightmare and intrusive recollections during therapy are represented graphically in figures 1 and 2.

INSERT TABLE 2 HERE (see end of paper)

INSERT FIGURES 1 AND 2 HERE (see end of paper)

An examination of figures 1 and 2 shows a gradual reduction in the frequency of intrusive recollections and a fluctuation in nightmare frequency over the first 6 sessions.

There was little change in this pattern over sessions 6-8 following the introduction of imaginal exposure, although this form of treatment often takes longer to have a significant impact.

The frequency of self reported nightmares reduced significantly after the introduction of the dream reorganization approach in session 8. She reported only one trauma related nightmare between sessions eight and twelve of therapy. The introduction of the dream reorganization technique also appeared to have a significant effect on the number of self reported intrusive recollections of the event. This was despite the relative difference in content between the hierarchy of intrusions constructed earlier and the two dream descriptions used in the dream reorganization procedure. After six sessions using guided rehearsal of dream mastery and coping self statements, she reported that intrusive recollections and efforts at cognitive avoidance had reduced and her lower scores on the IOE in session 12 support this view.

Behavioural avoidance was much slower to show improvement following a pattern of steady, but gradual decrease as she progressed through the graded hierarchy. Avoidance of being alone in the house was particularly resistant to exposure, but she was able to do this for periods of up to two hours by session 14 following redecoration of parts of the house.

By session 16 of therapy, she reported that her PTSD symptoms were now very much reduced and that her problems were primarily now in managing her two children on a low income. She had fallen below the caseness cut off points for both the avoidance and

intrusion sub-scales of the Impact of Events Scale.

### **Discussion:**

The results suggest that a dream reorganization procedure can be effective within a cognitive behavioural package for PTSD in alleviating both the frequency of nightmares and in further reducing cognitive avoidance and intrusive recollections. The dream reorganization approach incorporates aspects of imaginal exposure as it requires the vivid visualisation of traumatic dream content, but what is striking in the present case is that the dream content did not share many features of the intrusion hierarchy. This suggests that it was not just the imaginal exposure component of the dream reorganization procedure that was responsible for the more marked fall off in intrusive recollections observed following the introduction of the technique.

There are a number of limitations to the conclusions that can be drawn from the present study however. Firstly, no multiple baseline procedure was used in the study with the result that it is difficult to ascertain with any accuracy which components in therapy were responsible for changes in the indices measured. Despite this, the marked reduction in trauma related nightmares and (to a lesser extent) intrusive recollections following the introduction of the guided rehearsal of mastery dream endings does suggest that this was a very important factor in reducing intrusive phenomena. Secondly, it is not clear whether there would have been a similar reduction in nightmares and intrusive recollections had the therapist persisted with more traditional imaginal exposure and

relaxation methods. However, the client's vehement reluctance to continue with this procedure and difficulties in mastering relaxation procedures casts doubt on this possibility. Thirdly, it is not clear as to the relative contribution of each of the two components of the procedure (guided mastery of dream endings and coping self statements) in the reduction of nightmares. Finally, it is possible that the change in nightmare content reported in session 8 of therapy (prior to commencement of the dream reorganization) reflected a cognitive change in her attitude toward the trauma (perhaps as a result of previous cognitive restructuring). In turn, this may have been responsible for further reductions in nightmare frequency and intrusive recollections rather than the dream reorganization technique. The contiguity of the dream procedure and the pattern of self reported nightmares and intrusive recollections tends not to support this notion however.

Pallace and Johnstone (1989) provide a theoretical framework to explain how the dream reorganization procedure may work in alleviating recurrent traumatic nightmares. The theory is derived from Seligman and Yellen's proposition that dreams comprise (a) visual episodes occurring during REM sleep consisting of periodic, unrelated, and vivid "visual bursts" and (b) a cognitive integration that makes sense of the visual bursts and accompanying affect by synthesizing them into a coherent plot (Seligman and Yellen, 1987). Pallace and Johnstone (1989) propose that recurrent nightmares may occur when particular visual bursts that have strong affective elements set off prior cognitive integrations (stored in memory). They also hypothesize that it is possible to alter the content of the secondary visual imagery that occurs as a result of cognitive integration. Pallace and Johnstone (1989) hypothesize that guided mastery (rehearsal of alternate

dream endings) may work by altering the secondary visual content of the recurrent nightmare. Secondly, the fear and anxiety associated with the primary visual burst may be replaced with emotions of triumph, control or relaxation through both rehearsal of dream endings and the repeated use of coping self statements. While the theory has intuitive appeal, there is no empirical support for it as yet.

Although the present study suggests this approach is promising, single case research is necessarily limited in its ability to interpret causal mechanisms. Further research is required with multiple baseline small  $n$  designs or group control treatments to establish the efficacy of this procedure in reducing recurrent nightmares (and other intrusive phenomena) relative to other procedures (eg. imaginal exposure coupled with relaxation). The relative importance of the two procedures used in the reorganization should also be evaluated in a systematic fashion.

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**Table 1: Overview of therapy**

Sessions 1-2: Assessment. Ventilation of feelings and identification of symptoms connected with the violence. Construct hierarchy of avoided situations and traumatic imagery.

Sessions 3-5: Cognitive restructuring: re-attribution of responsibility. Start of "in-vivo" exposure (continuing throughout therapy). Taught relaxation and breathing exercises.

Sessions 6-8: Introduction of imaginal exposure technique.

Sessions 8-10: Introduction of dream mastery technique following problems with imaginal exposure.

Sessions 10-14: Introduction and rehearsal of coping self statements. Continuation of dream mastery rehearsal.



**Table 2: Measures at baseline, session 7 and session 12 of therapy**

<b><u>Session:</u></b>	<b><u>1</u></b>	<b><u>7</u></b>	<b><u>12</u></b>
Avoidance (IOE)	30	21	12
Intrusions (IOE)	37	20	7
BDI	22	16	14

IOE = Revised Impact of Events scale

BDI = Beck Depression Inventory

Fig.1: Frequency of Intrusions per week

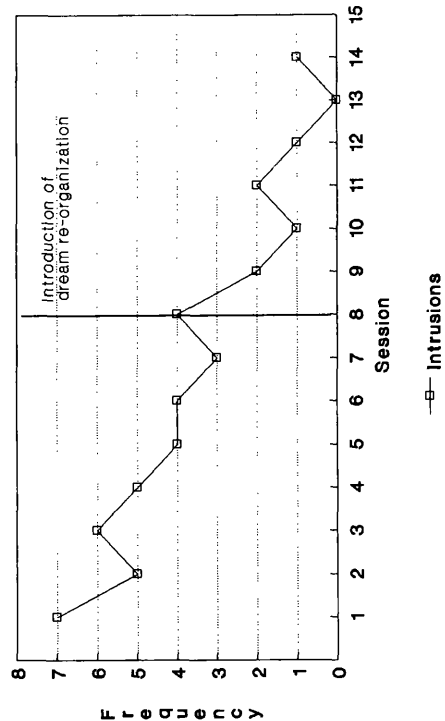
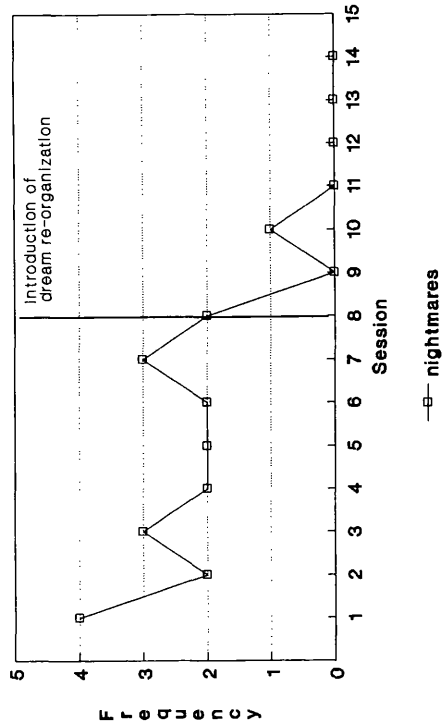


Fig.2: Frequency of Nightmares per week



## **Single Case Research Study 2**

### **Self Directed Exposure and Response Prevention in the Treatment of Obsessional Compulsive Checking**

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Target Journal: Behaviour Research and Therapy

(notes for authors: appendix 5.1)

**Summary:**

The treatment of obsessional compulsive checking presents specific difficulties for therapists attempting exposure and response prevention. In cases where anxiety is linked to responsibility, the presence of a therapist or relative can be counterproductive when carrying out exposure or response prevention treatment. The present study details the treatment of a 23 year old compulsive checker using self-directed exposure and response prevention coupled with self-instructional training. Results suggested that the treatment had a specific impact in reducing checking and associated anxiety as the focus shifted from one checking location to another.

## **Introduction:**

Evidence accumulating from group control and small  $n$  research studies points to the efficacy of exposure and response prevention in the treatment of Obsessive Compulsive Disorder (eg. Emmelkamp, 1982; Foa and Goldstein, 1978; Harris and Wiebe, 1992; Krone, Himle and Nesse, 1991; Rachman, Cobb, Grey, McDonald and Sartory, 1979).

Compulsive checking presents unique difficulties in terms of treatment as it is frequently linked to personal responsibility in the absence of others. This means that those attempting to prevent the compulsive behaviours (eg. family members or therapist) may act only to remove responsibility and then paradoxically reduce anxiety merely by their presence. This frequently dictates that any exposure and response prevention programme be self-directed i.e. there can be no therapist or relative present to encourage compliance or to ensure that the exercise is carried out. There are very few single case research reports of self directed exposure and response prevention with checking rituals (Baer, 1993; Overholser, 1991).

Overholser (1991) presents 2 case reports in which "in vivo" exposure and response prevention were used in treating compulsive checking behaviour. The author noted that both clients reported a substantial reduction in the urge to check whenever accompanied by another adult. The therapist attempted to overcome the problems that this presented to compliance with exposure and response prevention by using portable electronic communication devices to bridge the gap between therapist assisted and self-controlled exposure sessions. Therapist assisted exposure was gradually faded during therapy. Therapy was successful in reducing the frequency of checking behaviours in both cases.

Salkovskis (1989) reviews the problems encountered in the treatment of obsessional compulsive disorder (OCD) using exposure and response prevention. In particular, there is a high rate of treatment refusal, drop-out and failure with the result that less than 50% of patients suitable for and seeking treatment improve (Salkovskis, 1989). Salkovskis and Warwick (1988) advocate the incorporation of cognitive techniques into existing behavioural treatments in order to improve compliance, challenge obsessional thoughts and prevent treatment drop-out due to the stress of prolonged exposure sessions.

The present study describes the treatment of a patient with ritualistic checking behaviours in an attempt to demonstrate the efficacy of combined self directed behavioural (exposure and response prevention) and cognitive strategies (eg. coping self statements) in treating this condition.

## **Method:**

### **Case:**

Mrs. A was a 23 year old woman who had been married two years and had no children. She was referred by her GP at her own request as she found herself spending more and more time checking appliances in the house as well as locks on doors and windows. On presentation, she described how she would check various parts of the house in a fixed order each morning including taps and shower in the bathroom, cooker and toaster in the kitchen and locks in the hallway and entrance. Each item was checked numerous times and she often spent over one hour engaged in checking behaviour prior to leaving the house in the morning. This left her feeling increasingly anxious, perplexed and lacking in confidence. She had started to avoid cooking as well as the use of other

appliances (including taps) unless others were present or she felt this absolutely necessary. She reported that she did not check when her husband was at home. The reason she gave for this was that she "would not be to blame if something went wrong". Checking also occurred, although to a lesser extent, when she was last to leave her place of work.

Her checking first became a problem three months following the death of her mother from cancer. Prior to her mother's death, she had lived at home with her mother and father. There was evidence of a preoccupation with safety before her mother's death in that she recalled having always to empty ashtrays in the house before leaving and would survey the doors and locks in the house very carefully. She felt she had little in the way of responsibility while she was living with her parents as they took charge for locking up and safety around the house and appear to have been very cautious and safety conscious themselves.

Her mother became ill with cancer having led a previously healthy life when Mrs. A was 21 years of age. Immediately after her mother died, there was no dramatic increase in checking behaviours. She married four months after her mother died and moved out of the parental home to live with her husband. The marriage had been brought forward as she felt this would cheer the family up following the bereavement. When she moved into her new house, checking started to become a problem for her. New checking behaviours emerged with greater intensity and previously limited checking behaviours became exacerbated. These increased steadily and generalized rapidly to aspects of her work place. She began to avoid using taps, the cooker, the kettle and other electrical

appliances at any time she was the last remaining person in the house. Additionally, she began to ask the neighbour (a retired man) for reassurance that he was keeping an eye on the house and that she was locking the door when leaving the house. Occasionally, she would also ask her husband for reassurance if she was last to bed at night.

### **Formulation:**

Pre-existing limited checking behaviours were apparent with Mrs. A, but these did not appear to impact on her life greatly. From an examination of her history, it is possible that these behaviours were, in part, learned from parental models. Her mother, in particular, took responsibility for checking doors were locked and that appliances were off (although this she did not repeat more than once). When her mother died and Mrs. A moved into her new home with her husband, this appeared to leave her with a heavy sense of responsibility. She found herself anxious much of the time and checking seemed to serve as a form of short term anxiety reduction. However, as the problem escalated, this itself became the focus of her anxiety, particularly in the morning in advance of her checking routine when she would frequently become extremely anxious. Although the therapist hypothesized that the checking behaviours were partly acting as an expression of her grief given that she was taking over her mother's role in terms of responsibility for the safety of others, there was not much evidence to support this. She seemed to have begun to come to terms with her mother's death prior to the event (as this was a terminal illness), had talked freely about her feelings with her close relatives and had visited the grave regularly. She experienced periodic feelings of intense longing for her mother, but felt that these were easier for her to deal with as time wore on.



On the basis of the assessment, Mrs. A was diagnosed as suffering from Obsessive Compulsive Disorder (DSM-III-R: 300.30).

### **Design:**

A multiple baseline design across different checking locations was adopted. As checking appeared to occur in a strict routine moving from one room to another at home and occurring also when she was last to leave her workplace, it was agreed with the client that therapy would involve self directed exposure and response prevention concentrating on one location at first, then two locations and so on. This would follow a baseline assessment period in which existing checking parameters would be monitored.

### **Measures:**

Mrs. A kept a detailed record of her checking behaviours in the form of a diary. Specifically, this included a record of the number of checks for each item, the intensity of the anxiety felt while checking (on a scale of 1-10), the location of checking (in addition to the item checked) and the time it took to check each area (eg. kitchen, bathroom, hall, total).

### **Baseline Recordings:**

These were carried out over a period of 14 days with detailed recording each day using the diary. The results of the baseline phase are summarized in table 1:

INSERT TABLE 1 HERE (see end of paper)

There were no apparent differences in overall duration of checking and number of checks in the morning when comparing working days (Monday to Friday), but there was a significant drop in these indices at the weekend as her husband was present at this time. Her husband left at 7 am on weekdays for work. On those days that Mrs. A was last to leave the house, checks were consistent in order (a routine was established) and at a high level lasting over one hour. Her anxiety very much reflected this pattern. It was very evident from recordings that she was anxious before checking (beginning as soon as she awoke in the morning in anticipation of her checking routine).

Thoughts were also recorded before, during and after her checking rituals. These were mostly related to responsibility. For example, when checking the bathroom taps were off, she reported thinking "what if the bathroom floods? this will be my fault and I will get the blame". The most prominent thoughts immediately prior to checking were stereotypical statements that appeared to act as triggers in themselves for further checking. The most frequent of these were "this is definitely the last check" and "just one more time to be sure".

### **Treatment:**

The treatment programme that was agreed with the client involved four components. The treatment was based on Marks (1987) and Salkovskis and Kirk (1989), although self instructional training (Meichenbaum, 1975) was included as an additional element to bolster efforts at response prevention. Treatment focused on one location at a time and was concentrated at first on impacting on her morning checking routine. Locations included different rooms within the house as each represented fairly discrete checking

behaviours and formed part of her routine. Her workplace became the final location for treatment. The four treatment components were as follows:

1. Exposure and self directed response prevention: this involved the setting of targets each week (at first jointly with the therapist, then on her own without the therapist being party to this). Response prevention for each target involved attempting to withhold herself from checking while exposing herself to situations in which she would previously have checked repeatedly. A hierarchy was constructed for each room in the house based on subjective ratings of anxiety while checking each relevant item in the room. The diary was used as a measure of frequency/ duration of checks and anxiety levels throughout her checking routine.

During the first two weeks of exposure and response prevention, there was little change in her checking levels. As a means of helping achieve a first step in reducing checking behaviours, it was agreed that a "checklist" would be used for a limited period as a form of behavioural experiment. She agreed to tick off each item on the checklist as she carried out her routine and then to use the checklist rather than re-checking each item. This was intended to break the cycle of repeated checking and to challenge the belief that catastrophic consequences would befall her if she did not check each item a minimum number of times. The checklist was then gradually withdrawn and replaced with cognitive coping strategies (self-instruction).

2. Coping self statements: as it was not possible to have a third party to assist in response prevention (as this would remove responsibility), a series of coping self

statements were developed to help her prevent herself checking during exposure sessions. These were based on self instructional training (Meichenbaum, 1975). The statements were drawn up jointly with the therapist and were rehearsed during therapy and at home prior to her checking routine.

**3. Exposure to avoided situations:** this was introduced from session 6. A hierarchy of avoided situations was constructed by the client. Examples included leaving the television on whilst at home, moving ashtrays, using the cooker or kettle prior to leaving the house and leaving the cold tap running prior to leaving the house.

**4. Cognitive restructuring:** prior to each weekly exercise, predictions were made as to what may happen if she was not able to check particular items. Cognitive restructuring centred on reviewing these exercises and demonstrating that no harmful consequences come from a reduction or cessation of checking. Activities were scheduled so that the time she saved from a reduction in checking could be used engaging in activities she enjoyed. Cognitive restructuring also focused on dealing with responsibility in her life and in coping with lack of control over aspects of her life.

### **Results and Discussion:**

Figures 1-4 show mean number of checks per day across sessions as the exposure and response prevention treatment is introduced in each location. The results suggest that the treatment package had an impact in reducing compulsive checking behaviours. Particularly rapid reductions in checking were noted when treatment was introduced in the workplace and when the checklist was introduced (session 4). The continued

reduction in checking following the start of exposure to avoided situations might suggest that had this been implemented earlier in treatment, more rapid progress might have occurred. However, the client was very reluctant to engage in any of these exercises earlier in treatment.

INSERT FIGURES 1 TO 4 HERE (see end of paper).

The pattern across locations suggested that the treatment package applied to one location also had an impact on checking in other locations. However, the accelerated reduction in checking evident following the introduction of exposure, response prevention and coping self statements in at least three out of four locations suggests that the treatment package had a positive and specific impact on checking behaviours.

Self rated levels of anxiety whilst checking in each location during therapy are shown in appendix 5.2. Her anxiety levels fluctuate in such a way as to suggest a period of increased anxiety during early response prevention followed by a decrease in anxiety over the ensuing sessions.

The overall efficacy of the treatment package is supported by the history of the client's obsessional checking which suggests that symptoms had been steadily worsening for a period of 2 years prior to treatment. The study is consistent with previous group control and small *n* research supporting the efficacy of exposure and response prevention in

treating OCD (eg. Emmelkamp, 1982; Foa and Goldstein, 1978) and adds to existing case report evidence with compulsive checkers (Overholser, 1991). The current study suggests that, combined with coping self statements, this can be an effective treatment for obsessional checking where response prevention frequently has to be entirely self directed.

The use of a novel technique in the form of a checklist appeared to be effective in allowing her a greater degree of control over her checking behaviours in a short period, but it also carries potential risks. Without careful monitoring, this could have become integrated into her checking routine. If a checklist is to be used, it is apparent that a clear contract needs to be drawn up between client and therapist and that the checklist must be faded rapidly.

There are a number of important considerations that limit the conclusions that can be drawn from the present study and restrict the generalizability of results. Primarily, it is not possible to ascertain which treatment components had a significant impact on checking behaviours and anxiety symptoms. For example, it is possible that coping self statements are extraneous and that exposure and response prevention alone may have produced the same results. Previous research suggests that the combined techniques of exposure and response prevention are significantly more effective in the treatment of OCD than each technique implemented alone (Foa and Goldstein, 1978). Given the design of this study, it is not possible to attribute the observed effect to any single treatment technique. Additional research is required in order to explore the efficacy of the package in comparative outcome studies using a group control design and also to

isolate specific treatment effects using a multiple baseline design.

Secondly, the nature of the instruments used to measure the checking behaviours (a record diary) may not accurately reflect change in checking frequency and duration. There is no third party available with which to confirm that the response prevention has successfully taken place (as is possible with many other forms of OCD). Furthermore, the definition of a "check" may not remain consistent throughout therapy as the client may change the criteria without necessarily being fully aware of this. For example, the client reported in session 8 that she had reduced checking to zero in the bathroom, but that she was still "glancing" at items in the bathroom several times prior to leaving as she did not think of this as checking. This less intense form of check had to be incorporated into the agreed definition of checking behaviour in order for the measure to remain sensitive.

The role of therapist reassurance is also difficult to evaluate in the present study. Although from session 7 onwards the client would frequently generate her own exercises during the therapy session with instruction not to share this with the therapist, it may be that the act of seeing a therapist is in itself enough to reduce responsibility for actions. It is unfortunate that no long term (six month or 1 year) follow up was undertaken in this case as it remains uncertain as to whether the treatment package has long term efficacy. On a more general level, relapse rates have not been adequately investigated in OCD (Salkovskis and Kirk, 1989). Future research of this kind with obsessional checking linked to responsibility may throw further light on this issue.

Although the generalizability of single case research studies is very much restricted, the present case may act as an impetus for further research investigation into methods for overcoming the unique problems presented by obsessional compulsive checking.



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**Table 1:**

Baseline recordings of checking behaviour taken over a two week period:

<u>Location</u>	No. items	Mean no.	Duration	anxiety
	<u>checked</u>	<u>per day</u>	<u>(Mean)</u>	<u>(1-10)</u>
Bathroom:	4	60	33 mins	9
Kitchen:	6	54	25 mins	8
Entrance	5	23	10 mins	9
/Hall:				
Work:	5	16	12 mins	7

Fig1: Mean no. checks / day in bathroom

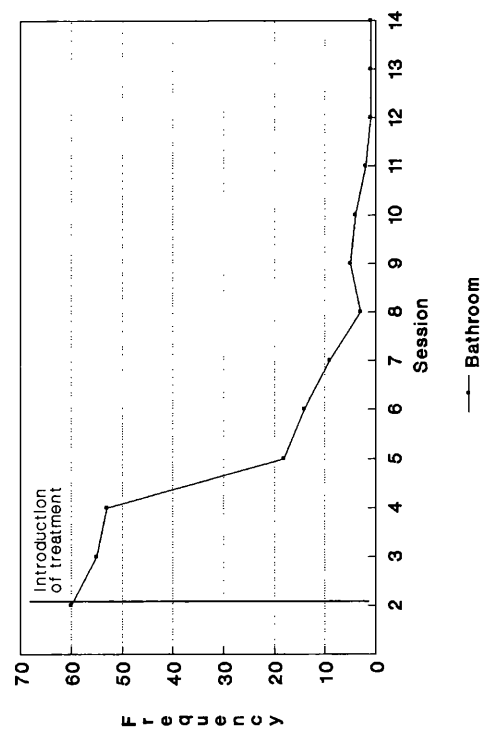


Fig.2: Mean no. checks / day in kitchen

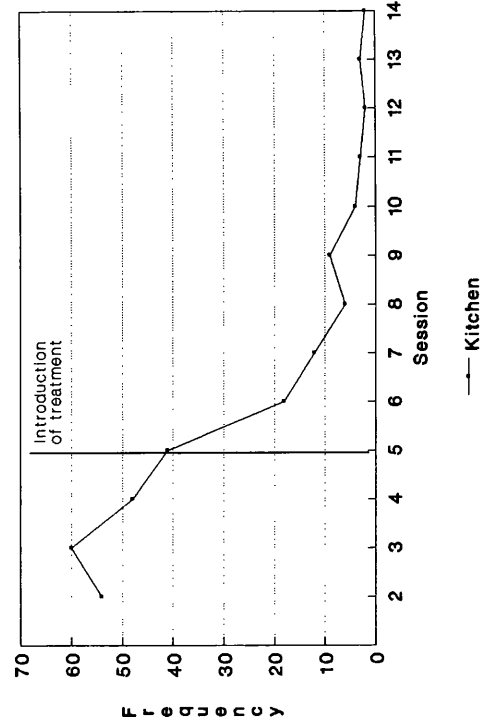


Fig.3: Mean no. checks / day in entrance

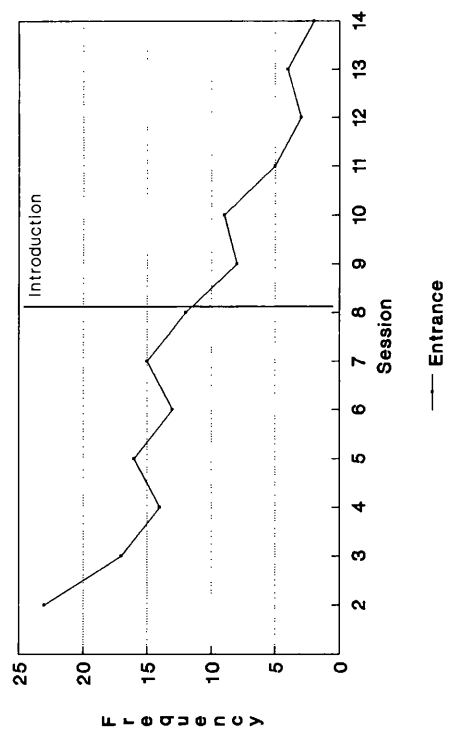
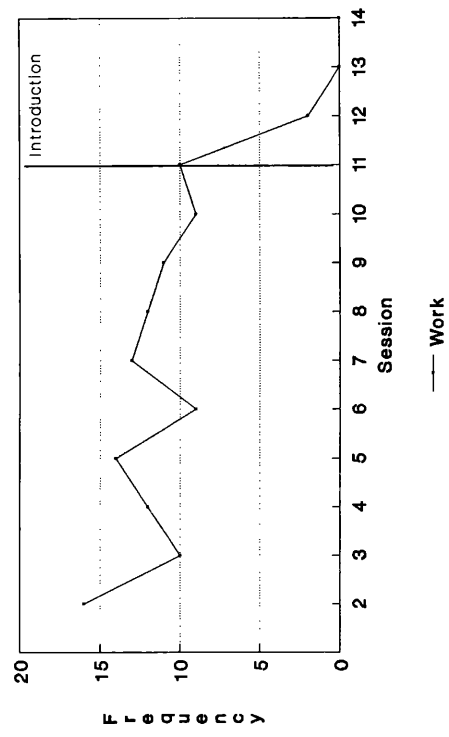


Fig.4: Mean no. checks / day at work



## **Single Case Research Study 3**

### **Treatment of Post Traumatic Stress Disorder Following Childbirth by Caesarean Section**

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**Target Journal: Behaviour Therapy (notes for authors: appendix 6.1)**

**Summary:**

The treatment of a woman with post-traumatic stress disorder following a caesarean operation in which the anaesthetic failed to work is presented. Treatment included imaginal exposure, exposure to avoided situations and cognitive restructuring. The imaginal exposure treatment allowed a multiple baseline design across three traumatic scenes. Results indicated that imaginal exposure had a specific effect in reducing subjective distress associated with each traumatic scene. Both overall intrusion and avoidance symptoms reduced during treatment, but the multi-component nature of treatment make it difficult to identify active treatment components.

## **Introduction:**

Complications during childbirth have been associated in a number of published case reports with post traumatic stress symptoms (Beech and Robinson, 1985; Arizmendi and Alfonso, 1987; Ballard et al. 1995). Failure of adequate anaesthesia during a caesarean operation may leave the mother vulnerable to developing post-traumatic stress disorder (PTSD), particularly as the patient has little control over the pain and the priority for surgeons is often the safety of the infant rather than the immediate modulation of the mother's pain. However, there are few existing case reports available documenting PTSD following caesarian operations of this nature.

Ballard et al (1995) have recently reported on 4 cases in which traumatic complications during childbirth apparently gave rise to PTSD. Among these is the case of a woman who underwent an emergency caesarean section operation under epidural anaesthesia. The epidural was not fully effective and she experienced considerable pain during the operation before she received a general anaesthetic. Within 48 hours of the operation, she began to experience recurrent images of the experience and began to have terrifying nightmares related to the operation. In addition, the authors also noted symptoms of increased arousal, physiological and psychological reactivity to reminders of the event and avoidance of contact with the infant born under caesarian. There was a concurrent diagnosis of major depression despite there being no previous history of psychiatric or emotional disturbance. Lack of control over the situation was reported to be an important factor by both therapist and patient. The authors hypothesized that this in combination with the infant acting as a reminder of the incident (with disruption in mother-infant



attachment) may prolong the disorder.

Other clinicians (Beech and Robinson; 1985, Arizmendi and Alfonso, 1987) have reported the presence of recurrent nightmares in recently delivered mothers, but few details are given as to the particular circumstances of each delivery or whether other symptoms associated with PTSD (eg. heightened arousal and avoidance) were detected or screened for.

Treatment outcome research with a range of PTSD patients supports the effectiveness of a combination of imaginal exposure, "in-vivo" exposure and other cognitive-behavioural techniques in dealing with the intrusive imagery and avoidance aspects of PTSD (eg. Cooper and Clum, 1989; Foa et al. 1991; Keane and Kaloupek, 1982; Keane et al. 1989). The limited literature reviewed above suggests that in treating cases of PTSD after traumatic childbirth, it may be important to focus not only on established treatments for PTSD, but also on ways of addressing the lack of control experienced at the time, anger towards medical practitioners as well as disruption in the mother-infant relationship.

The current paper describes the treatment of intrusive symptoms in a woman who underwent a caesarean section with a spinal block, an anaesthetic which subsequently failed to work. The treatment incorporated imaginal exposure, in-vivo exposure to avoided situations and cognitive restructuring.

## **Method:**

### **Case:**

At the time of presentation, Mrs. D was 33 years old and mother of three children, aged 12, 8, and 5 years. She had been married 14 years and had no previous history of psychiatric illness or emotional disturbance. Mrs. D had been a Registered General Nurse prior to taking the decision to give up work in order to bring up her children 12 years previously.

During pregnancy with her youngest son five years prior to presentation, Mrs. D had been discovered to have a low placenta shortly before birth was due. Her pregnancy had been uncomplicated until this time, but she was told that she would have to undergo a caesarean operation. Mrs. D was given a spinal block anaesthetic immediately prior to the operation, but this did not work effectively. As soon as an incision was made, she felt excruciating pain and began to scream for the operation to stop. According to Mrs. D, the surgeon continued with the operation for several minutes whilst she was screaming and writhing in an attempt to fight off the surgeon. At one point, she remembers being held down by nurses. She recalled that the medical staff seemed very frantic at this point and that another doctor was sent for. After what later she discovered to be twelve minutes (from first incision), the anaesthetist administered a gas and she recalls fading away.

Approximately one week after the operation, she began to have very frightening nightmares during which she either felt she was back in the operating theatre about to be operated on and no-one was listening to her as she begged them not to continue or

that a surgeon wearing a mask was sticking a knife into various parts of her body. These were recurrent and she would often try to keep herself from sleeping as a result.

In addition to nightmares, she began to experience repeated intrusive images and feelings connected with the operation. She would often see vivid and sudden images usually of the surgeon with a mask whose gloves were covered in blood or of the green sheet between her and the operating site. She would also experience very sudden tugging sensations in her stomach which she felt were reminiscent of the strong tugging sensations she felt just after the operation began in which she felt "as if they were ripping my insides out".

Both the nightmares and the intrusive recollections occurred almost daily for around five months. She did not seek help for these problems and they gradually began to diminish in frequency over the following two years, although never disappearing completely. In November, 1993 (three years after the birth), her grandmother, to whom she had been very close, died suddenly. Shortly after this, there was a strong surge in both her nightmares and intrusive recollections about the caesarian operation. These were once again happening almost daily and she requested help from her GP prompting referral to Clinical Psychology.

At the time of presentation, in addition to frequent nightmares and intrusive recollections, she was also demonstrating avoidance of hospitals, television programmes depicting medical procedures and newspaper or magazine articles about childbirth or operations. She reported that she was often very irritable, especially towards her three

sons and her husband. She felt that she had a good relationship with her youngest son, but that his presence often reminded her of the operation and this often made her tearful or recall the experience and this she would attempt to hide from him. She described herself as "feeling tense all the time" and that she was ruminating over the full experience of the caesarian in her head repeatedly. Although there was evidence of depressive symptomatology in that she felt persistent low mood and a degree of lethargy, she did not feel that she was depressed and she did not fulfil DSM-III-R criteria for Major Depression. The symptom picture was more in keeping with a secondary diagnosis of Dysthymia (DSM-III-R: 300.40).

In accordance with Mrs. D's presenting symptoms, she was diagnosed as suffering from Post-Traumatic Stress Disorder (DSM-III-R) with secondary Dysthymia (DSM-III-R).

### **Measures:**

The Revised Impact of Events Scale (Horowitz, 1979) was used as a measure of the presence and severity of post traumatic symptoms. The scale was administered in sessions 1 (assessment), 6 and 14. A record of the frequency of both nightmares and intrusive recollections was also kept by the client.

Two hierarchies were constructed as part of the therapeutic intervention (a) a hierarchy of disturbing scenes and feelings depicted in the nightmares and intrusive recollections and (b) a hierarchy of avoided situations and activities. Mrs. D's level of anxiety in relation to the traumatic scenes and feelings was assessed using subjective units of distress (SUDS) in accordance with previous small *n* and single case research reports

with PTSD patients (eg. Fairbank and Keane, 1982; Palace and Johnstone, 1989; Saigh, 1986).

### **Research Design:**

A multiple baseline across traumatic scenes approach was used (based on Fairbank and Keane, 1982; Saigh, 1986) in an attempt to discover whether imaginal exposure had an impact in reducing anxiety associated with traumatic scenes and also whether this coincided with a reduction in intrusive symptoms. Levels of anxiety (SUDS from 0 to 10) were requested verbally from the client during imaginal exposure to traumatic material. These were taken at baseline and during exposure to each of the three traumatic scenes.

### **Overview of therapy:**

Sessions prior to commencement of imaginal exposure comprised two assessment sessions and two sessions in which the therapist allowed her to ventilate her feelings in relation to the operation. The first four sessions were also used to establish a rapport with the client and to explain both the nature of PTSD symptoms as well as options for treatment. Initially, the therapist taught progressive muscular relaxation to the client which was followed by imagery generated by the client involving a relaxing scene. During the following session (session 5), the client reported that the relaxing scene was more effective unaccompanied by muscular exercises, so this imaginal form of relaxation was adopted (in combination with controlled breathing). The client felt that her nightmares, sleep disturbance and "flashbacks" were the most distressing aspects of the condition for her and it was agreed that imaginal exposure with relaxation would be

attempted in an effort to reduce their frequency and intensity. The focus of sessions 6-12 was imaginal exposure treatment with the emphasis shifting towards approaching avoided situations and addressing the anger she felt towards medical professionals from session 12 onwards. There was some degree of overlap between imaginal exposure to traumatic scenes and exposure to avoided situations especially during sessions 10 to 14. Sessions 14-15 focused also on bereavement issues.

#### Baseline assessment:

Baseline for imaginal exposure took place in session 5. In accordance with Fairbank and Keane (1982), the three traumatic scenes were presented by the therapist to the client for 5 minutes duration. Immediately after each presentation, the client rated the scene in terms of subjective units of distress. This was followed by 5-10 minutes of relaxation using the imagery technique.

#### Treatment phase:

Each of sessions 6-12 primarily involved the presentation of one of the traumatic scenes. The sessions began with relaxation involving imagery lasting approximately 10-15 minutes. This was followed by 15 minutes in which the client was asked to imagine the details of the traumatic scene agreed beforehand. The therapist checked periodically that the client was able to visualize or imagine the material. Immediately after the imaginal exposure session, the client rated her distress in terms of SUDS and a period of relaxation followed lasting approximately 10-15 minutes. The client could stop the exposure session at any point if she felt too distressed to continue by raising her hand, although this only occurred once during therapy (session 7) and exposure was

subsequently resumed after a period of 10 minutes relaxation. At the end of each session, the client was asked to rate the three scenes in terms of subjective units of distress.

Using this procedure, the first scene was presented over 3 sessions. Presentation of the second scene took place over 2 sessions as there were more rapid reductions in SUDS levels. The third scene (involving the "tearing" sensations alluded to above) was the most distressing for her and the presentation time for the scene varied from between 10 and 20 minutes across 4 sessions. From session 12 onwards, the main emphasis of therapy focused on avoidance, addressing the meaning of the event to the client, bereavement issues and finding ways of addressing her anger.

### **Results and Discussion:**

Figures 1-3 show Mrs. D's subjective units of distress scores over the sessional period that imaginal exposure treatment was carried out. The introduction of exposure resulted in a reduction in SUDS over 3 sessions for scene 1 and 2 sessions for scene 2. The third scene she found particularly distressing and required more frequent presentation to obtain a significant reduction in SUDS. This scene was practised at home between sessions 11-13, but continued to be distressing for her although at a reduced level relative to baseline.

INSERT FIGURES 1-3 HERE (see end of paper)

The pattern of scores on the Impact of Events Scale during therapy (table 1) tends to suggest that the imaginal exposure treatment had an impact on intrusive symptoms. The intrusion scores (see table 1) showed some change between session 1 and session 6, but there was a far greater reduction from 34 in session 6 to 14 in session 14. Avoidance scores also reduced from 36 in session 6 to 17 in session 14. However, it is difficult to draw conclusions from this data alone as other therapeutic techniques were being implemented during this period including exposure to avoided situations.

INSERT TABLE 1 HERE (see end of paper)

It is unfortunate that no long term follow up was carried out following termination of therapy as it is uncertain as to whether the treatment had a lasting effect. However, follow up at one month indicated that there had been little change in the severity and frequency of symptoms, although scales were not administered to verify this.

The results of this study are in agreement with the results of previous treatment outcome studies using similar techniques with vietnam veterans (Fairbank and Keane, 1982; Keane and Kaloupek, 1982; Keane et al. 1989), rape victims (Foa et al. 1991) and with children (Saigh, 1986).

There are a number of limitations to the study that qualify any conclusions that may be drawn however. It is not possible to partial out the effect of the imaginal exposure



treatment from the effect of the other treatment components. These included "in vivo" exposure to avoided situations, cognitive restructuring and bereavement counselling. Epstein (1990) views trauma as a potent disruptor of basic assumptions about the self or the world and emphasizes that it is essential as part of treatment to examine the meaning of the trauma to each individual. This is not an easy dimension to measure however and does not form part of the present discussion.

As the client was asked to rate her distress **after**, not during, the presentation of the key traumatic scene, it is possible that this did not reflect how she felt at the time of presentation. In addition, the client also rated the other two scenes at the end of each session in terms of subjective units of distress, but these were not presented to her for any length of time (she was asked simply to rate them). Future studies may overcome these problems by using SUDS probes during presentation (as with Saigh, 1986) and presenting other scenes for a 3-5 minute period to obtain more accurate SUDS ratings.

Yule (1991) argues that presentation of distressing scenes aids recovery only if it is vivid and prolonged. Rachman (1979) also emphasizes the need for exposure to be relatively prolonged if effective emotional processing is to take place. Saigh (1986) found that systematic desensitisation failed to have an impact on PTSD symptomatology whereas in vitro flooding was successful in reducing anxiety related to the scenes presented and in reducing behavioural avoidance.

It was noted by the therapist that while imaginal exposure appeared to have a significant impact on the intensity of intrusive images and nightmares, it had little impact on her

anger towards the medical profession and sense of helplessness. Other therapeutic strategies were employed to address these problems including cognitive restructuring, visits to speak with the consultant who was in charge of her caesarian operation and visits to speak with a consultant anaesthetist. Mrs. D. did report towards the end of therapy that she no longer felt that her son was acting as a reminder of the ordeal, but it is by no means certain that this is attributable to the imaginal exposure.

It is not possible to make generalizations from single case research reports that might apply to a larger population. However, the current research does supplement existing research supporting the efficacy of imaginal exposure as part of a treatment package for Post Traumatic Stress Disorder.

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**Table 1:**

**Change in scores on the Impact of Events Scale during therapy:**

	<b><u>Session:</u></b>	<b><u>1</u></b>	<b><u>6</u></b>	<b><u>14</u></b>
Intrusion		46	34	14
Avoidance		42	36	17

Fig.1  
Scene 1 SUDS levels during therapy

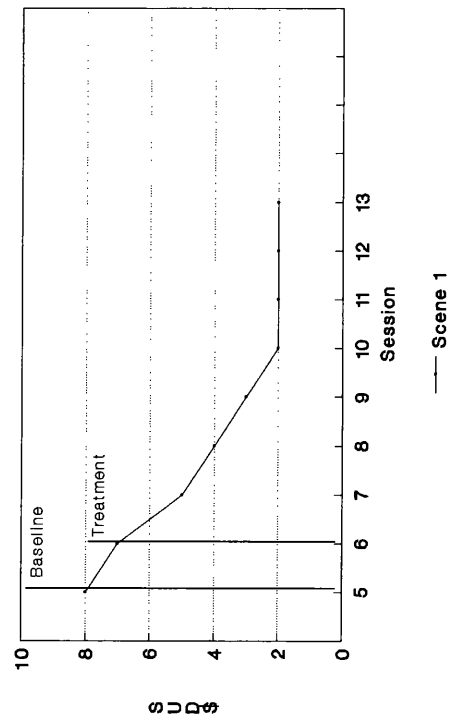


Fig.2  
Scene 2 SUDS levels during therapy

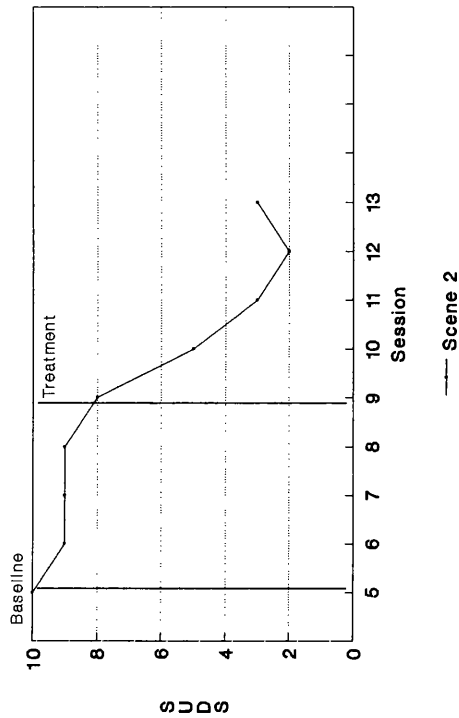
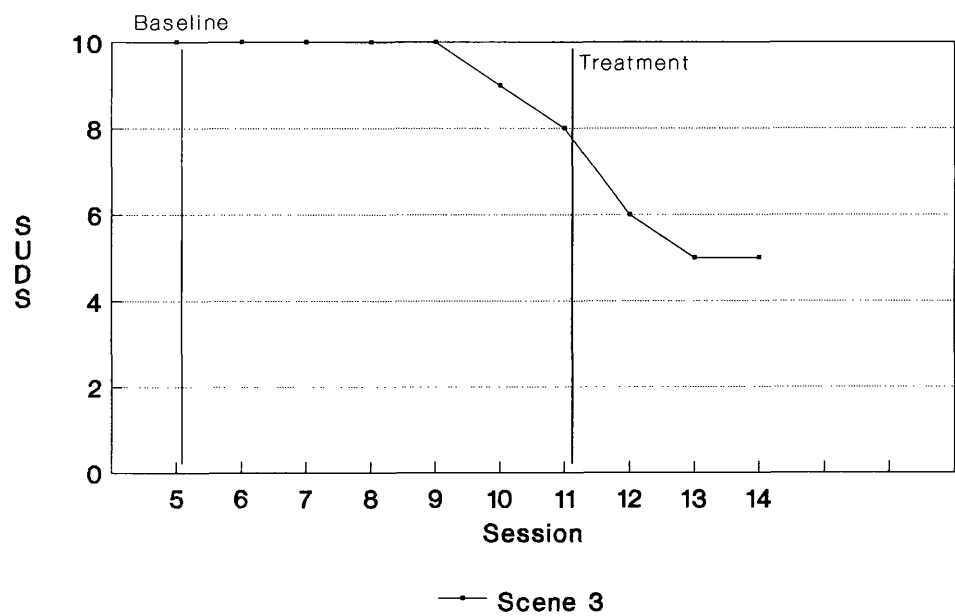


Fig.3  
Scene 3 SUDS levels during therapy



## **Service Related Research Study**

### **General Practitioner Perception of Service Needs for Community Child Clinical Psychology Services: An interview based survey.**

**Nick Bell**

**University of Glasgow      Department of Psychological Medicine**

**Running Head: Child Psychology Service Needs Survey**

**Target Journal: Journal of Mental health**

**(notes for contributors: appendix 7.1)**



**Summary:**

Most previous surveys designed to ascertain referrer views on service related issues have been postal and questionnaire based. This has often resulted in a low response rate. The present survey attempted to employ a semi-structured interview approach to obtain referrer views on a range of issues related to the provision of child clinical psychology services in the north of Glasgow. Twenty GPs within the north of Glasgow were interviewed using a semi-structured interview which covered referral issues, perception of need, satisfaction with the existing service and communication issues. Various areas were identified as problematic including waiting times for treatment and certain specific areas of communication. However, satisfaction with the service exclusive of waiting times was high. The semi-structured interview was perceived generally by GPs as a valuable exercise with some distinct advantages over postal surveys.

## **Introduction:**

In the light of the major changes taking place in the NHS, it is becoming increasingly important for providers of multi-disciplinary services for children to seek the opinions of the primary users of their service. Both the Griffiths Report (DHSS, 1983) and the White Paper "Working for Patients" (DoH, 1989) support the importance of obtaining the views of service users in order that future services may more adequately meet their needs. Most previous studies examining clinical psychology service user views have focused on the direct recipients of the service such as parents or clients (eg. Dagnan and Fish, 1991; Skaife and Spall, 1995). More recently, there has been an increasing emphasis on the need to access the views of those that refer the clients given that they are significant consumers or purchasers of these services on their patients' behalf.

Of those studies that have attempted to gauge the views of referrers, some have sought referrer views on specific areas such as written communication (eg. Duff, 1995) or satisfaction with the service (eg. Stallard and Hudson, 1993) whilst others have endeavoured to seek referrer opinions on a wide spectrum of service issues (eg. Cookson and Fuller, 1995; Griffiths and Cormack, 1993). Most of these surveys have involved sending questionnaires to a sample of General Practitioners (GPs) or other referrers in the district. However, these have often suffered from a low response rate, particularly in view of the increase in administrative work undertaken by GPs in recent years.

Few studies have attempted to use structured or semi-structured interviews with referrers

to determine user views. While this reduces the sample size and is often time consuming for the investigator, the method has unique advantages in obtaining qualitative information, allowing the referrer to ask questions and in allowing the service provider to correct misconceptions or provide information about service development. Lethem and Likierman (1992) provided a description of a semi-structured interview format designed to estimate referrer need for clinical child psychology services. Although unfortunately the results of the survey are not presented, the authors point out that referrers welcomed this approach as it afforded an opportunity for discussion.

The relatively small number of clinical psychologists working in child and adolescent services probably means that it is unlikely, at least in the near future, that all expressed needs can be met. However, as Griffiths and Cormack (1993) point out, it is precisely because of these limitations that it is important to consider the most efficient use of these scarce resources. Seeking referrer views on alternative ways of working, for example increased use of consultation, is vital prior to attempting to implement these strategies if they are to have a significant impact.

### **The present survey:**

The purpose of the present study was to seek the opinions of a sample of GPs within the north Glasgow area on a range of service provision issues. This was coincident with the creation of a community based service for children in the north of Glasgow and was designed to foster improved communication and more efficient targeting of limited resources within the new service. The specific survey aims were as follows:

1. To assess approximate current usage of the service within a sample of referrers and their perceived unmet needs.
2. To assess the nature and range of services that a sample of referrers were seeking from child clinical psychology.
3. To evaluate their level of satisfaction with the previously centralised hospital based service and reasons for dissatisfaction.
4. To evaluate referrer views on factors influencing their decision to refer to clinical psychology.
5. To assess referrer views on indirect ways of working (eg. consultancy).

It was decided to use a semi-structured interview approach to achieve these aims. This decision was based on a previous attempt by the researcher to carry out a questionnaire based survey. The questionnaire (see appendix 7.2) was sent to a random sample of 65 GPs in the north of Glasgow and was designed to assess GP perceptions of need for child clinical psychology over a fixed period. The level of response to the questionnaire was low (17%) and several GPs contacted by telephone indicated that this was due to time restrictions and a perception of overload with regard to paper work among GPs in Glasgow. Discussion with several GPs indicated that seeing GPs briefly on a face to face basis would be more acceptable to them and would potentially yield more valuable

information.

The Department of Clinical Child Psychology based at Yorkhill NHS Trust, Glasgow, has provided a GP direct access service for children on a Glasgow wide basis for 22 years. Prior to 1993, most children referred by GPs were seen within the psychology department at Yorkhill Hospital. Since 1993, a community based service has been established in the south of Glasgow and, more recently, in April, 1995, a community based service has been created in the north of Glasgow with the appointment of a Grade B Clinical Psychologist. The Direct Access service for GPs is one of a range of services provided by the Clinical Child Psychology Department which operates within the Child Health Directorate of the trust.

### **Method:**

Informal talks with GPs indicated that any semi-structured interview should be designed to last no longer than fifteen minutes. The resulting semi-structured interview covered the following areas: perception of present and expected needs for the service; factors influencing the decision to refer; perception of need for the service over the previous week; satisfaction with the existing service; views on indirect ways of working (eg. consultancy); communication issues. An opportunity was provided for additional comments as to how the service could be improved. The pro-forma for the interview is shown in appendix 7.3.

Twenty GPs based at three major health centres within the north of Glasgow were

interviewed during a one month period. GPs within each of the three health centres were contacted individually by telephone and asked whether they would be willing to be interviewed by the researcher at a time convenient for them. This followed a description of the purpose and nature of the survey. Twenty six GPs were contacted in total, but 6 of these said that they would be on holiday over the period during which interviewing would take place. At least one representative GP from each practice within each of the three health centres was interviewed. In one case, the full practice (comprising three GPs) was interviewed during a half hour session as this had been directly requested. Interviews ranged in length from 7 minutes to 25 minutes depending on the degree of additional comment and information seeking from GPs.

## **Results:**

The results are separated into topic headings for ease of interpretation. However, this does not necessarily represent the order in which questions were asked during the interview.

### **1. Referral issues:**

**(a) Frequency:** GPs were asked approximately how often they had made referrals to the child psychology department over the past year. Most felt that this was not too difficult to estimate as all referrals for children were to one location and in no case did this constitute a large number. 15 of the 20 GPs indicated that they referred more than twice per year, but only 2 GPs said that they referred more than five times per year. The average figure was 3.6 times per year.

17 GPs indicated that they would refer more often given reduced waiting times and greater availability of the service.

(b) Factors influencing referral: Interviewees were asked which of several factors (other than the professional expertise of the service) would influence their decision to refer to clinical child psychology at present. Results are shown in table 1. As can be seen by reference to table 1, the largest factor influencing the decision to refer was "waiting times for treatment" (16) followed by "the family's motivation to seek help" (11) and the accessibility of the service (6). The chronicity of the problem, the family's preference and the presence of physical symptomatology did not appear to greatly influence the decision to refer in the sample interviewed.

INSERT TABLE 1 HERE (see end of paper)

## 2. Perception of need for the service over the previous week:

Respondents were asked if they could recall over the previous seven days whether a situation had arisen (in a clinic or a visit) where they felt the need for some form of access to child clinical psychology services. It was explained that the service required might range from an informal telephone contact to a formal referral.

Six of the GPs could recall such a situation with a family or child over the previous

seven days (all were in a clinic setting). Only one GP recalled more than one such situation. Of the six, five said that they wished to have access to advice from or discussion with a clinical psychologist either by telephone or in person. Only one of the six said that they would welcome a joint session with the psychologist followed by discussion (the remainder feeling that this would be impractical). Two of the GPs wished to make a formal referral. All six of the GPs said that they would have liked to have had access to information leaflets or booklets to give to the family. Of the four who did not wish to make a formal referral, three said that they would have done so given shorter waiting times. In four of the cases, the GP had involved the Health Visitor and in one case, a referral was made to a local voluntarily run agency for children.

For each of the seven cases described by the six GPs concerned, the respondents were asked about the nature of the problem encountered and the characteristics of the child. Five of the cases involved child behaviour problems (eg. tantrums, aggression), one was perceived to be a post traumatic stress reaction and one was an encopretic problem. All seven were between five and ten years of age (according to the GPs recollection). The duration of the problem ranged from two months to over one year.

### 3. Satisfaction with the existing service:

Although initially it was planned to ask an overall rating of satisfaction with the service, it was found more informative during interviewing to ask GPs to rate satisfaction with the service including waiting times and satisfaction with the service received when patients were seen, exclusive of waiting times. The mean satisfaction rating on a scale



of 1 to 5 ("not at all" to "very") was 2.2 for overall satisfaction (including waiting times) and 3.8 excluding waiting times as a factor (one GP of the 20 declined to give this as he felt this was not possible to partial out).

The primary reason for dissatisfaction with the service was, unsurprisingly, waiting times for treatment (18 GPs). The waiting list at the time of the survey (July, 1995) stood at approximately eight months. Many GPs felt that this resulted in either the problem becoming entrenched or the family losing motivation to deal with the problem. The second most prevalent reason for GP dissatisfaction was perceived deficiencies in communication (9 GPs), particularly during the waiting period and to some extent during treatment (this is discussed in more detail in section 4). Seven GPs felt that patients were often unwilling to travel several miles to the hospital in order to be seen and this was perceived as a major reason for patients failing to attend appointments (both first and subsequent appointments).

#### 4. Communication issues:

(a) Provision of information to GPs: Eight of the GPs felt that they had sufficient information about clinical child psychology. The remaining 12 said that they would like further information in the form of an explanatory leaflet or booklet about clinical psychology (this is currently in the process of preparation by staff and will be sent to all GPs in the north of Glasgow). Many (11) were sometimes unsure of the boundaries between Clinical Child Psychology and Child and Family Psychiatry (one GP was not aware that the services were separate). Clarification on criteria for referral to the

appropriate service was requested by 9 of the GPs.

(b) Replies to referrals: GPs were asked about their views on existing replies to referral letters and about their preferences in terms of improving the service in this respect. 16 of the 20 said that they were happy with the nature of replies from the service with the remaining four stating that these were too infrequent. Most GPs (18) felt that the letters were appropriate in length and gave all the information that they required. Most GPs favoured leaving the format of letters to the individual clinician (16) rather than having a distinct format segregated into subheadings (4). However, most (17) also favoured the idea of a short summary of the case attached to the referral reply.

(c) Desired frequency of contact: Most GPs (16) were content to receive letters at the beginning and end of treatment as long as they were notified of significant changes in treatment strategy. Four said that they would like more frequent updates of progress, particularly in cases where treatment lasts in excess of six months. Seven of the GPs felt it would be beneficial to receive a standard letter informing them that their patient had arrived for their first appointment and that a more detailed letter would follow. The remainder (13) felt that this would create unnecessary paper work. The majority of GPs (16) favoured increased telephone contact with the psychologist seeing their patients.

(d) Areas for improvement: The most frequently cited complaint regarding written communication was lack of information in the long interim period between referral and their patient's first contact with the psychologist. Eight GPs felt that they were left with

insufficient information as to how long their patient would have to wait and several GPs (5) felt that they were left with no guidelines as to what to do with the family in the meantime. These 5 GPs requested direction to possible local sources of support for the families during the waiting period. Some GPs felt that they should be informed periodically of where their patient was on the waiting list as they frequently lost track of this.

Secondly, some GPs (3) had found the department difficult to contact by telephone (due to switchboard problems) and were unaware of the direct line to the department (this was given to all participants along with the name of the Top Grade Psychologist responsible for starting community services in the north of the city).

#### 5. Views on indirect ways of working:

Most GPs (17) were in favour of increased access to advice or discussion with psychologists either by telephone or in person. The majority (16) also welcomed access to information leaflets or booklets for parents (describing common presenting problems) that were concise and readable. Few (3) felt the need for joint sessions with the psychologist followed by discussion as they felt this would not be practical. There was a consensus (19) in favour of the psychologists involvement in parent groups (eg. support for isolated parents) and most (16) felt that there was a role for the psychologist in training other professional groups, especially health visitors.

## **Discussion:**

Although the sample size was small, the survey yielded information that would have been difficult to obtain with a postal survey. Several GPs commented on the benefit of such contact between the two professions as this also allowed them to ask questions and clarify the reasons behind problems identified (eg. long waiting lists).

In accordance with a recent survey by Burton and Ramsden (1994), waiting period was found to be the most common factor influencing the decision to refer (other than diagnostic category and the expertise of the service). However, in contrast to Burton and Ramsden's finding that risk factors were also a common factor influencing referral, this was not found to be the case in the present sample.

Although the estimated number of referrals to the department was relatively small for each GP interviewed, the size of the service catchment area (until recently Glasgow wide) and staff shortages in the past has meant that this has resulted in a long waiting list (approximately 8 months at the time of the survey). Since the survey was completed (July, 1995), the waiting list has reduced significantly. A number of GPs mentioned that the client group (children and families) was not a vocal one (perhaps due to the stigma attached to approaching their GP with parenting problems) and that unmet need was likely much greater than that presenting to GPs.

Comparatively few GPs recalled a situation where they felt the need for some kind of psychology input over the preceding seven days. This may have been too short a window

period given the relatively small number of referrals over the space of one year from each GP. It is possible that this question would be better asked prospectively by asking GPs to record these situations as they occur over a fixed period, but this proved impractical in a previous postal survey. Of those that did identify situations over the previous 7 days, most welcomed advice and discussion about cases of concern to them suggesting that this type of consultancy may help the GP manage the case more effectively and direct referrals appropriately.

Satisfaction with the service appeared to be higher than in recent previous GP surveys (eg. Griffiths and Cormack, 1993) when removing the influence of the waiting list. However, the length of the waiting list appeared to be the source of much GP frustration with the service.

Communication was felt to be a problem in certain areas and this may form an area where change could be implemented more rapidly. Particular areas for improvement might include the provision of more information about the service and improved communication during the waiting period.

The survey results indicate that consultancy and other indirect ways of working may be beneficial in both improving relations with GPs and in reducing waiting times.

Several methodological problems may limit the conclusions that can be drawn from the survey. The sample size is small and may not be representative of all GPs in the north

of Glasgow particularly as the survey focused on only three locations. Future surveys of this kind, where time allows, might also interview GP fundholders and a wider cross section of GPs. It is also possible that the presence of the interviewer may have biased the satisfaction ratings in a more positive direction, but it appeared that most GPs were willing to be frank in expressing criticism of the service.

A number of recommendations based on the above findings have been fed back to the Grade B psychologist appointed in the north of Glasgow and will be used in developing a more effective community based service. Information leaflets are also being prepared by staff at the department for circulation to GPs describing the nature of the service and offering referral advice. As a result of the survey, one of the GP practices involved has approached the department with the idea of planning a workshop for health professionals in the local area discussing new ways of tackling common problems faced by low income isolated families. The survey highlights the utility of brief informal interviews as a way of seeking consumer views. Although this may be time consuming, the method pays considerable dividends in terms of obtaining qualitative information, establishing communication links with referrers and allowing referrers to clarify matters of concern to them directly with providers.

**Acknowledgements:** I should like to thank the twenty General Practitioners who took part in the survey. I am also grateful to Sally Butler, Grade B Clinical Psychologist, for her invaluable advice and guidance at every stage of the present research study.

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**Table 1: Factors influencing GP referral to Clinical Child Psychology:**

(N = number of GPs who rated this as a factor influencing their decision to refer)

<b><u>Factor:</u></b>	<b><u>N</u></b>
Risk Factors (eg.parental discord):	5
Waiting Times for treatment:	16
Chronicity of the problem:	2
The family's motivation to seek help:	11
The family's preference:	4
The presence of physical symptomatology:	0
Accessibility (eg. distance to travel):	6

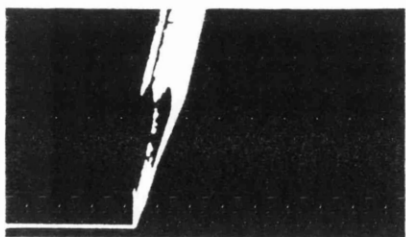
## **APPENDIX**

**APPENDIX 1: LITERATURE REVIEW**

**Appendix 1.1:**

Notes for Contributors: Schizophrenia Bulletin

# Instructions to Authors



Submissions to the *Schizophrenia Bulletin* should be sent to:

**David Shore, M.D.**

Editor-in-Chief  
*Schizophrenia Bulletin*  
National Institute of Mental Health  
5600 Fishers Lane, Rm. 18C-06  
Rockville, MD 20857

The editors will consider critical reviews of the literature, articles reporting original observations in laboratory or clinical research, short reports of preliminary or negative research results, first person accounts by patients or family members, and letters to the editor. News items describing research and training programs or reporting professional activities in schizophrenia are also welcome. Photographs of art done by current or former mental hospital patients may be submitted for possible reproduction on the cover of the *Bulletin*; the artist must be willing to grant permission for publication of his or her work, but his or her anonymity will be preserved if he or she so wishes.

All materials published in the *Schizophrenia Bulletin* are in the public domain unless otherwise noted.

## Preparation of Manuscript

A detailed set of instructions for manuscript preparation is available from the Research Projects and Publications Branch (see address above).

**Text and Tables:** Type the manuscript (double space) on one side of the page, and submit in quadruplicate—one copy an original and the other three photocopies. Present each table on a separate

sheet. Note the table number in the text immediately after the paragraph in which it is described.

**Abstract:** Provide a brief abstract of the manuscript. The abstract should not exceed 175 words in length.

**Illustrations:** Submit one copy of each chart, graph, or other illustration in reproducible form (either original drawings in black india ink or glossy prints). Refer to all illustrative materials as text figures. Type the figure number and legend for each on a separate sheet.

**References:** Include a list of all articles and books cited in the text. Arrange alphabetically by major author. When referring to these sources in the text, place the authors' names and the date of publication in parentheses immediately after the idea referenced. If more than one source is cited, list in chronological order by date of publication. (If authors' names are used in the same sentence, place only the date of publication in parentheses.) Provide page numbers for all quotes. Spell out all journal titles. Bibliographic style should follow that used in articles in this issue.

**Footnotes:** Use footnotes to clarify textual material, and indicate them by superior figures in the text. Insert footnotes as separate paragraphs immediately following the paragraphs in which they are mentioned.

**Author Identification:** Include your own and each author's official title and academic degrees. Specify the address to which reprints should be sent.

**APPENDIX 2: RESEARCH PROJECT PROPOSAL**

**Appendix 2.1:**

**Subject Information Form**

**Research Study: Face Emotion Recognition in Schizophrenia**

**Description of Research:**

This research study will be looking at whether people with a schizophrenic illness differ from people with a depressive illness in the way they recognize everyday facial emotions. This will involve completion of several tasks using pencil and paper. The whole set of tests will take approximately 40 minutes to complete.

**Each person that agrees to taking part in the study will receive the following tests:**

- (1) a test of the ability to recognise common emotions in photographs showing various faces. You will be asked to choose from a list of emotions to label each face.
- (2) a test of the ability to tell two emotions apart. Pairs of photographs showing faces will be presented and you will be asked to say whether the pair show the same or different emotions.
- (3) a test of the ability to recognise faces. A photograph of a person's face will be presented and you will be asked to point the same person out in a group of six other photographs showing various faces.
- (4) You will also be asked to read a brief list of words out loud.

Information may also be requested concerning your date of birth, number of years of education, number of previous periods in psychiatric hospital as well as medication details. This information (as with individual test results) will be treated as strictly confidential. You may decline to give this information if you wish. After the study is finished, the overall findings of the study can be fed back to participants if they so wish.

Although your participation in this trial may not be of direct benefit to you, it could be of benefit to future patients through developing greater understanding of the illness. You are under no obligation to participate and if you do give consent, you may withdraw from the study at any time.



**Appendix 2.2**

**Protocol for the collection of patient data**

**Subject Information:    Group:**

Name (abbrev.)

Age:

Type: Hospital / Out-patient / Rehab

Based at:

Gender:

Current Diagnosis:

Chronicity:

Education:

Number of previous episodes:

Number of hospitalizations:

Length (total):

Current in-patient length of stay (if applic):

Current stay on outpatient programme:

Medication and dosage:

**Exclusion:**

Neurological disorder:

Recent substance abuse (past 6 months):

Non-native speaking ability in English:

Hearing impairment:

Uncorrected visual impairment:

Severity of symptoms:

**APPENDIX 3: MAIN RESEARCH PAPER**

**Appendix 3.1:**

Notes for Authors: Journal of Psychiatric Research

# JOURNAL OF PSYCHIATRIC RESEARCH

## *Information for Contributors*

1. Papers submitted for publication from the **United States, Canada or Mexico** should be sent to **Dr. John F. Greden, Department of Psychiatry, Box 0704, University of Michigan, 1500 E. Med. Center Dr., Ann Arbor, MI 48109-0704, U.S.A.**

Papers from **other countries** should be sent to **Professor Florian Holsboer, Max Planck Institute of Psychiatry, Kraepelinstrasse 10, D-80804 Munich, Germany.**

Papers should be written in the English language.

2. Submission of a paper to the *Journal of Psychiatric Research* is understood to imply that it is an original paper which has not previously been published (except in the form of an abstract or preliminary report), and that it is not being considered for publication elsewhere.
3. Each paper should begin with a summary briefly recapitulating its essential contents.
4. Reprints in multiples of 50 can be ordered when page proofs are returned. A reprint order form will accompany the corresponding author's proofs. Reprints may also be obtained after publication of the paper at a 50% higher cost. All authors will receive 25 free reprints of their article after publication.
5. Papers should be typed double-spaced on one side of the paper with a wide left margin. Three clear copies of each paper including photocopies of all tables and figures should be submitted. In addition, at least one glossy photograph of each figure should be provided.
6. Tables should be so constructed as to be intelligible without reference to the text, every table and column being provided with a heading. Units of measurement must always be clearly indicated. The same information should not be reproduced in both tables and figures.
7. Please note that all manuscripts should contain references in the following style. References should be cited in the text following the author/date style and in alphabetical order. References to works with three or more authors should abbreviate the citation in the text to "the first author et al. followed by the year of publication" in the first and all subsequent instances. If the first author has several papers of the same year cited, then the papers should have "a" or "b" attached to the year so that they may be distinguished. Single authors or papers with two authors should have the author(s) listed. References to journals should include authors' names and initials, date of publication (in parentheses), the full title of the article, the full title of the journal (underlined), the volume number and inclusive page numbers. References to books should include authors' names and initials, editors' names and initials, year of publication (in parentheses), title of book (underlined), city and publisher.

### **Appendix 3.2:**

Breakdown of categories used in the matching process for experimental and control groups:

#### **(a) Age:**

Patients were matched according to their age band in the Wechsler Adult Intelligence Scale (Revised) Manual. Attempts were made to match as closely as possible within the relevant age band. Numbers in each age band were as follows:

<u>Age Group</u>	<u>N</u>
20-24 years	4
35-44 years	18
45-54 years	10
55-64 years	<u>2</u>
Total cases	34

#### **(b) Length of Hospitalization:**

Patients were matched according to six categories of hospitalization length:

<u>Category</u>	<u>N</u>
Less than 6 months	2
6 mths to 1 year 11 mths	8
2 to 4 years 11 mths	2
5 to 9 years 11 mths	4
10 to 19 years 11 mths	12
20 to 30 years	<u>6</u>
Total cases	34

**Appendix 3.2 continued**

(c) Years of Education:

	<u>N</u>
10 years	8
11 years	20
12 years	6

Diagnosis:

	<u>N</u>
Schizophrenic	17
Depressive	12
Bipolar	5



### **Appendix 3.3**

#### **Face Emotion Identification Test** (Kerr and Neale, 1993):

	<u>Page</u>
<u>(a) Record and Instruction Sheet</u>	151
<u>(b) Sample item</u>	153

## FACIAL EMOTION IDENTIFICATION TASK

Subject No:

Administration 1 or 2 (circle)

**INSTRUCTIONS:** You are going to see a series of 19 photographs of individuals expressing an emotion on their face. Each person will show one of the following six emotional expressions: happiness, anger, fear, sadness, surprise or shame.

Please look at each picture and select the emotion that best fits the actor's facial expression.

*PLEASE DO NOT LEAVE ANY ITEMS BLANK. IF YOU ARE NOT SURE OF YOUR ANSWER, PLEASE TAKE YOUR BEST GUESS.*

- |    |       |       |        |     |           |         |
|----|-------|-------|--------|-----|-----------|---------|
| 1. | happy | angry | afraid | sad | surprised | ashamed |
| 2. | happy | angry | afraid | sad | surprised | ashamed |
| 3. | happy | angry | afraid | sad | surprised | ashamed |
| 4. | happy | angry | afraid | sad | surprised | ashamed |
| 5. | happy | angry | afraid | sad | surprised | ashamed |
| 6. | happy | angry | afraid | sad | surprised | ashamed |
| 7. | happy | angry | afraid | sad | surprised | ashamed |
| 8. | happy | angry | afraid | sad | surprised | ashamed |
| 9. | happy | angry | afraid | sad | surprised | ashamed |

10.	happy	angry	afraid	sad	surprised	ashamed
11.	happy	angry	afraid	sad	surprised	ashamed
12.	happy	angry	afraid	sad	surprised	ashamed
13.	happy	angry	afraid	sad	surprised	ashamed
14.	happy	angry	afraid	sad	surprised	ashamed
15.	happy	angry	afraid	sad	surprised	ashamed
16.	happy	angry	afraid	sad	surprised	ashamed
17.	happy	angry	afraid	sad	surprised	ashamed
18.	happy	angry	afraid	sad	surprised	ashamed
19.	happy	angry	afraid	sad	surprised	ashamed



## **Appendix 3.4**

### **Face Emotion Discrimination Test** (Kerr and Neale, 1993):

	<u>Page</u>
<u>(a) Record and Instruction Sheet:</u>	155
<u>(b) Sample item:</u>	156

FACE EMOTION DISCRIMINATION TASK

Subject No. \_\_\_\_\_ Administration 1 or 2 (circle one)

**INSTRUCTIONS:** You will be seeing a series of photographs showing 30 pairs of faces and your task is to determine whether the two people in each pair are displaying the SAME or DIFFERENT emotions on their faces. Please indicate your choice by circling "SAME" or "DIFFERENT" on the answer sheet.

*PLEASE DO NOT LEAVE ANY ITEMS BLANK. IF YOU ARE NOT SURE OF YOUR ANSWER, PLEASE TAKE YOUR BEST GUESS.*

- |     |      |           |     |      |           |
|-----|------|-----------|-----|------|-----------|
| 1.  | SAME | DIFFERENT | 16. | SAME | DIFFERENT |
| 2.  | SAME | DIFFERENT | 17. | SAME | DIFFERENT |
| 3.  | SAME | DIFFERENT | 18. | SAME | DIFFERENT |
| 4.  | SAME | DIFFERENT | 19. | SAME | DIFFERENT |
| 5.  | SAME | DIFFERENT | 20. | SAME | DIFFERENT |
| 6.  | SAME | DIFFERENT | 21. | SAME | DIFFERENT |
| 7.  | SAME | DIFFERENT | 22. | SAME | DIFFERENT |
| 8.  | SAME | DIFFERENT | 23. | SAME | DIFFERENT |
| 9.  | SAME | DIFFERENT | 24. | SAME | DIFFERENT |
| 10. | SAME | DIFFERENT | 25. | SAME | DIFFERENT |
| 11. | SAME | DIFFERENT | 26. | SAME | DIFFERENT |
| 12. | SAME | DIFFERENT | 27. | SAME | DIFFERENT |
| 13. | SAME | DIFFERENT | 28. | SAME | DIFFERENT |
| 14. | SAME | DIFFERENT | 29. | SAME | DIFFERENT |
| 15. | SAME | DIFFERENT | 30. | SAME | DIFFERENT |



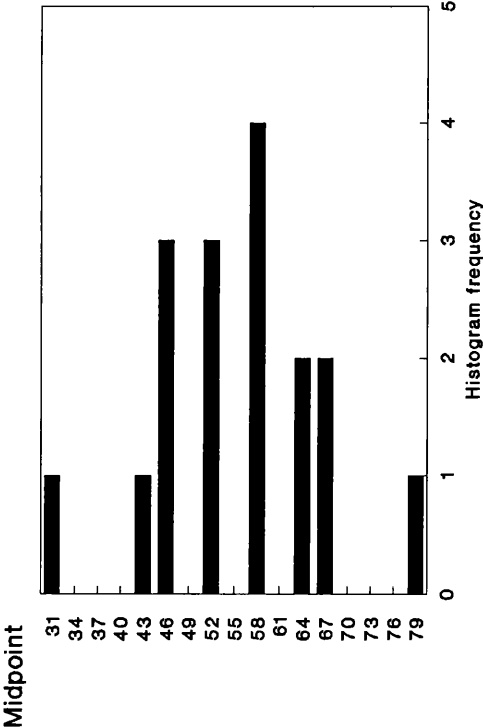
**Appendix 3.5**

Histogram distributions of data from the experimental and control tasks within each subject group.

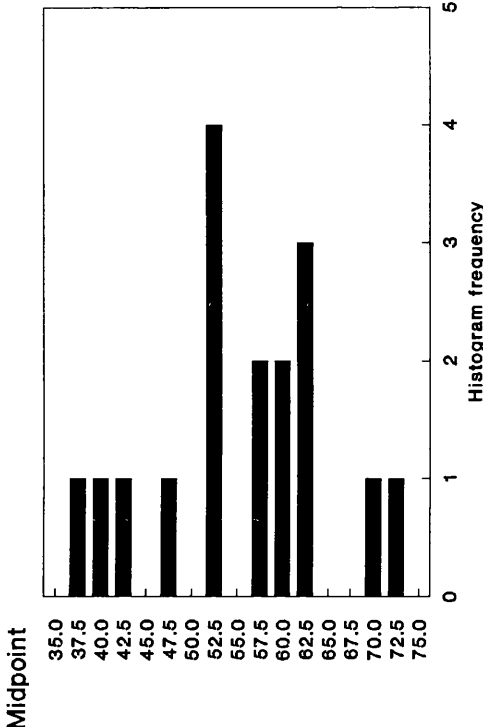
	Page
<u>Schizophrenic Group:</u>	
Face Emotion ID Test	158
Face Emotion Discrimination Test	158
Facial Recognition Test	159
 <u>Affective Disorder Group:</u>	
Face Emotion ID Test	159
Face Emotion Discrimination Test	160
Facial Recognition Test	160



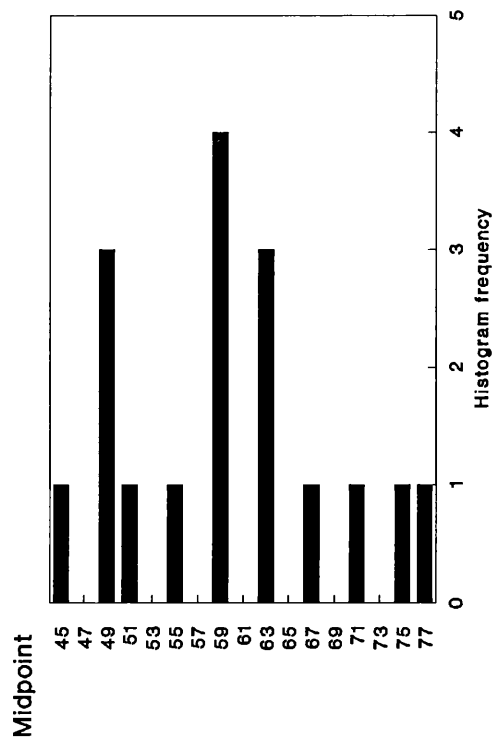
Schizophrenic Group  
Face Emotion ID Test: % correct



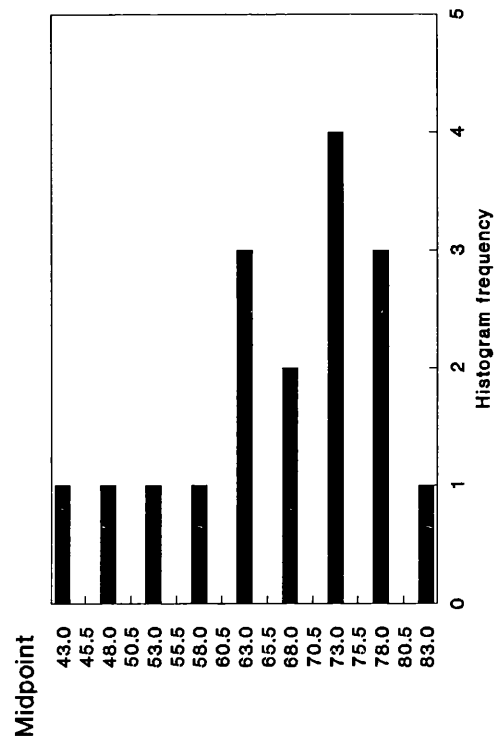
Schizophrenic Group  
Face Emotion Discrim. Test: % correct



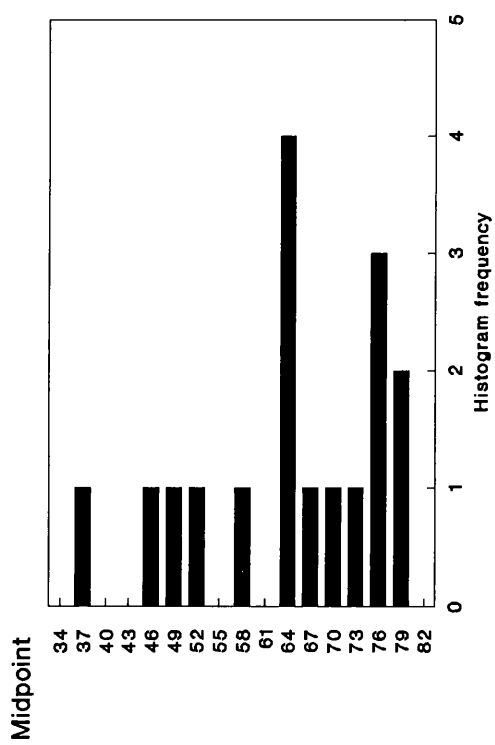
**Schizophrenic Group**  
Face Recognition Test: % correct



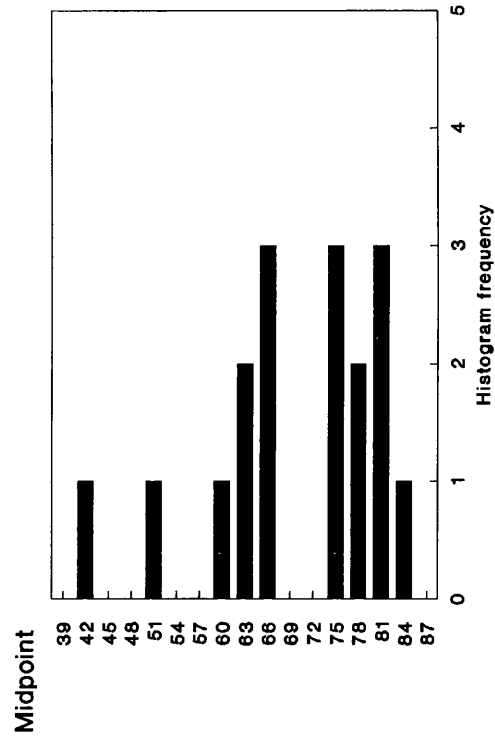
**Affective Disorder Group**  
Face Emotion ID Test: % correct



Affective Disorder Group  
Face Emotion Discrim. Test: % correct



Affective Disorder Group  
Face Recognition Test: % correct



**Appendix 3.6**

Descriptive statistics of facial test data in the experimental and control group:

**Schizophrenic Group:**

**Face Emotion ID Test:**

Mean	56.0	Std Error	2.7	Range	47.4
Median	57.8	Std Dev.	11.3	Skewness	-.12
5% Trim	56.1	Min	31.6	SE skew	.55
		Max	78.9		

**Face Emotion Discrimination Test:**

Mean	55.7	Std Error	2.4	Range	36.7
Median	56.6	Std Dev.	10.0	Skewness	-.24
5% Trim	55.8	Min	36.7	SE skew	.55
		Max	73.3		

**Face Recognition Test:**

Mean	59.5	Std Error	2.3	Range	33.3
Median	59.2	Std Dev.	9.5	Skewness	.23
5% Trim	59.3	Min	44.4	SE skew	.55
		Max	77.7		

**Appendix 3.6 continued.**

**Affective Disorder Group:**

**Face Emotion ID Test:**

Mean	67.2	Std Error	2.9	Range	42.1
Median	68.4	Std Dev.	11.8	Skewness	-.71
5% Trim	67.6	Min	42.1	SE skew	.55
		Max	84.2		

**Face Emotion Discrimination Test:**

Mean	64.5	Std Error	3.1	Range	43.3
Median	63.3	Std Dev.	12.6	Skewness	-.66
5% Trim	65.2	Min	36.7	SE skew	.55
		Max	80.0		

**Face Recognition Test:**

Mean	69.9	Std Error	2.9	Range	44.5
Median	74.0	Std Dev.	12.0	Skewness	-.91
5% Trim	70.7	Min	40.7	SE skew	.55
		Max	85.2		

**Appendix 3.7**

Repeated measures ANOVA performed on data from the facial tests in the schizophrenic and affective disorder groups:

	SS	DF	MS	F	Sig of F
WITHIN CELLS	5717.3	16	357.33		
GROUP	2622.87	1	2622.87	7.34	.015

	SS	DF	MS	F	Sig of F
WITHIN CELLS	2003.86	32	62.62		
TEST	375.14	2	187.57	3.00	.064

	SS	DF	MS	F	Sig of F
WITHIN CELLS	2195.65	32	68.61		
TEST BY GROUP	24.17	2	12.08	.18	.839

**Appendix 3.8**

Paired t-tests between experimental and control groups on facial test performance:

Face emotion Identification Test:

<u>Variable</u>	<u>Number of</u>					
	Cases	Mean	SD	SE		
Schizophrenic	17	56.04	11.31	2.74		
Affective	17	67.18	11.85	2.87		
Mean Diff.	SD	SE	t value	DF	2-tail prob.	
-11.15	20.46	4.96	-2.25	16	.039	

Face Emotion Discrimination Test:

<u>Variable</u>	<u>Number of</u>					
	Cases	Mean	SD	SE		
Schizophrenic	17	55.68	9.98	2.42		
Affective	17	64.51	12.58	3.05		
Mean Diff.	SD	SE	t value	DF	2-tail prob.	
-8.82	16.54	4.01	-2.20	16	.043	

**Appendix 3.8 continued**

Test of Facial Recognition:

<u>Variable</u>	Number of				
	Cases	Mean	SD	SE	
Schizophrenic	17	59.47	9.49	2.30	
Affective	17	69.93	11.99	2.91	
Mean Diff.	SD	SE	t value	DF	2-tail prob.
-10.46	17.24	4.18	-2.50	16	.024



**Appendix 3.9**

**Pearson Correlation Coefficients between demographic variables and the facial test data:**

**SCHIZOPHRENIC GROUP:**

	AGE	YEARS EDUC	AGE ONSET	MEDIC	NART	LEN HOSP
EMOTION	-.21	.46	-.25	-.34	.13	.18
IDENTIF.	P=.4	P=.07	P=.3	P=.1	P=.6	P=.2
EMOTION	-.15	.13	-.15	-.21	.17	.23
DISCRIM.	P=.6	P=.6	P=.6	P=.4	P=.5	P=.5
FACIAL	-.40	.37	-.23	-.37	.25	.11
RECOGN.	P=.1	P=.1	P=.4	P=.2	P=.3	P=.2

**Key**

LEN HOSP = Length of hospitalization

NART = Full scale NART IQ score

YEARS EDUC = Years of Education

MEDIC = Medication level.

Appendix 3.9 continued.

AFFECTIVE GROUP:

	AGE	YEARS EDUC	AGE ONSET	NART	LEN HOSP
EMOTION	-.04	.29	-.11	.02	.24
IDENTIF.	P= .9	P= .2	P= .7	P= .9	P= .3
EMOTION	-.40	.26	-.01	.16	.12
DISCRIM.	P= .1	P= .3	P= .9	P= .6	P= .1
FACIAL	-.29	.33	-.36	.15	.13
RECOGN.	P= .3	P= .2	P= .2	P= .6	P= .2

Key

LEN HOSP = Length of hospitalization

NART = Full scale NART IQ score

YEARS EDUC = Years of Education

**Appendix 3.10:**

Data inspection of individual subjects with atypical scores:

Within both patient groups, several subjects appeared to show a marked deficit in one or more of the three facial tests. The pattern of these deficits varied greatly. Examples are presented below:

Schizophrenic group:

	Emotion	Emotion	Face	
<u>Subject</u>	ID test	Discrim.	Recogn.	Age
S7	31.58	56.67	55.56	51
S9	63.16	40.00	48.15	52

S7 appeared to have particular difficulty in identifying emotions, but not in either discriminating between facial emotions or in recognizing individual faces exclusive of affect. S9 appeared to show the reverse pattern with better performance on the face emotion identification test than on the emotion discrimination test and the facial recognition test. Although the two were of similar age, S7 had a total length of hospitalization of 12 years whereas S9 had a 21 year history of hospitalization. Both were inpatients in a psychiatric hospital with long histories of intermittent paranoid psychosis.

**Appendix 3.10 continued**

Affective Group:

	Emotion	Emotion	Face	
<u>Subject</u>	ID test	Discrim.	Recogn.	Age
S18	57.89	50.00	74.07	24

This subject in the affective disorder group appeared to perform at a much lower level on the two facial emotion tests relative to the facial recognition test. This was a male inpatient with a diagnosis of major depression. He had been in hospital for a total length of 1 year and 9 months.

**Appendix 3.11**

Comparison of scores on the experimental and control tasks by gender:

Given the small number of females in each patient group relative to males, a statistical test of gender differences was not carried out. However, descriptive statistics for the male and female subjects in each group were as follows:

Schizophrenic Group:

	<b>Emotion</b>	<b>Emotion</b>	<b>Facial</b>
	<b>ID test</b>	<b>Discrim.</b>	<b>Recogn.</b>
	(mean)	(mean)	(mean)
Male (n=14)	55.6	55.0	58.7
Female (n=3)	57.9	58.9	62.9

Affective Group:

	<b>Emotion</b>	<b>Emotion</b>	<b>Facial</b>
	<b>ID test</b>	<b>Discrim.</b>	<b>Recogn.</b>
	(mean)	(mean)	(mean)
Male (n=12)	68.4	64.2	70.7
Female (n=5)	64.2	65.3	68.2

Overall, there did not appear to be any marked sex differences. The females within the schizophrenic group appeared to score marginally better than the males on the emotion

### **Appendix 3.11 continued**

discrimination test and facial recognition test. The females in the affective disorder group appeared to perform at a slightly lower level on the emotion identification task than the males. However, given the restricted number of female subjects, it is difficult to draw any firm conclusions from this.

**APPENDIX 4: SINGLE CASE RESEARCH STUDY 1**

## **Appendix 4.1**

Notes for Contributors:

Journal of Behaviour Therapy and Experimental Psychiatry



## Aims and Scope

The *Journal of Behavior Therapy and Experimental Psychiatry* is one of the leading international journals in behavior therapy. It is the only journal that has a special concern for the practice of behavior therapy in clinical psychiatry. In addition to original papers, the Journal publishes material intended to provide training in behavior therapy for psychiatrists. It publishes case reports, and from time to time transcriptions of interviews to illustrate how target behaviors are identified and methods selected, how difficulties are handled and progress evaluated. Thus it includes descriptions of therapeutic methods, with technical details sometimes not found in textbooks.

The research articles include descriptions of new procedures, analyses of theory of behavior disorders and of behavior change in general, and accounts of experimental studies relating to change in neurotic, psychotic and psychopathic behavior.

Because of the didactic emphasis of the Journal, articles will sometimes be followed by reviewers' comments.

As the official organ of the *Behavior Therapy and Research Society* the Journal will publish announcements of the Society's meetings as well as the *Roster of Clinical Fellows* in the Society.

## Information for Contributors

The *Journal of Behavior Therapy and Experimental Psychiatry* is published quarterly. Neither the editors nor the publishers accept responsibility for the views or statements expressed by authors.

**Manuscripts.** All manuscripts submitted for publication and all scientific correspondence should be sent to the Editor: Prof. Joseph Wolpe, Department of Psychology, Pepperdine University, Graduate School of Education and Psychology, 400 Corporate Pointe, Culver City, CA 90230.

Manuscripts should be typewritten on one side of paper measuring 8½" x 11", double spaced and in triplicate. Each copy of the manuscript should include a cover sheet which contains the title of the manuscript, the name of the author or authors, and the author's institutional affiliation. In accordance with the policy of blind reviewing, the first page of the manuscript *should not contain the author's name or institutional affiliation* but only the title of the manuscript. Footnotes containing information pertaining to the identity of the author or his institutional affiliation should be on the cover sheet. Every effort should be made by authors to see that the manuscript itself contains no clues to their identity. Manuscripts must be carefully checked. Correction to proofs should be restricted to printer's errors only. The cost of very substantial alterations may be charged to the author.

The articles submitted must contain original material which has not been published and which is not being considered for publication elsewhere. The authors should briefly indicate their awareness of other relevant literature. The high publication cost, plus limitation of space, makes it essential that authors present as brief a manuscript as possible. In no instances will a manuscript exceeding 15 typewritten pages of text be considered.

A case report, to be acceptable, must embody one of the following: (1) a new and original method — target behavior or population; (2) an apparently advantageous variation of a previous method; (3) an observation of considerable interest; (4) an unusually clear account of the use of an accepted method. Wherever possible, quantitative data for baseline and follow-up should be presented. Follow-up data should be of at least six months' duration (twelve months for addictive and certain other behavior). In relevant contexts, there should be evidence of generalization of change from the clinic to the home or other natural environments.

For operant studies, use of ABAB designs are favored. Instances in which this design is not employed may be acceptable if (a) the particular circumstances did not allow or make feasible the ABAB design, and/or (b) there are innovative or unusual features worthy of attention. Furthermore, studies that document generalization effects are preferred.

Manuscripts reporting the use of aversive or punishment procedures will generally not be accepted if nonaversive procedures have previously been shown to be effective for the target behaviors and/or clinical populations concerned. Such manuscripts will be considered only if the aversive procedure has overwhelming advantages and if free of undesirable side-effects.

Papers accepted by the Journal may not be published elsewhere in any language without the consent of the editors and the publishers. The title of the paper, the author's name and full postal address to which proofs should be sent and the name and address of the institute, hospital, etc. where the work was carried out, should be indicated on the cover sheet of the paper.

The manuscript and diagrams will be discarded one month after publication unless the publishers are requested to return original material to the author.

**Summaries.** Each of the three copies of the manuscript should include a summary not exceeding 100 words in length. The summary, which should specify the procedure or methods employed, will be presented at the beginning of the article.

**References** should be prepared carefully using the *Publication Manual of the American Psychological Association* for style. References should be placed on a separate sheet at the end of the paper, double-spaced, and in alphabetical order. References should be quoted in the text by giving the author's name, followed by the year of publication in parentheses, e.g., (Hersen & Barlow, 1976).

Sample Journal Reference: Singh, N. N. (1980). The effects of facial screening on infant self-injury. *Journal of Behavior Therapy and Experimental Psychiatry*, 11, 131-134.

Sample Book Reference: Hersen, M., & Barlow, D. H. (1976). *Single case experimental designs: Strategies for studying behavior change*. New York: Pergamon Press.

**Personal Computers.** Authors with access to an Apple IIc/e/GS, IBM-PC or compatible personal computer are encouraged to use *Manuscript Manager/APA Style*, a software program available from Elsevier Science Inc., that automatically formats manuscripts according to APA requirements.

**APPENDIX 5: SINGLE CASE RESEARCH STUDY 2**

## **Appendix 5.1**

Notes for Authors: Behaviour Research and Therapy

## BEHAVIOUR RESEARCH AND THERAPY

### incorporating BEHAVIORAL ASSESSMENT

#### Information for Contributors - continued

References to journals should include the author's name followed by initials, year, paper title, journal title, volume number and page numbers, e.g.  
Singh, N. N. (1980). The effects of facial screening on infant self-injury. *Journal of Experimental Therapy and Experimental Psychiatry*, 11, 131-134.

or

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-565.

References to books should include the author's name followed by initials, year, paper title, editors, book title, volume and page numbers, place of publication, publisher, e.g.

Brownell, K. D. (1984). Behavioural medicine. In Franks, C. M., Wilson, G. T., Kendall, P. C. & Brownell, K. D. (Eds). *Annual review of behavior therapy* (Vol. 10, pp. 11-20). New York: Guilford Press.

*Footnotes*, as distinct from literature references, should be indicated by the following symbols: \*, †, ‡, §, ¶, \*\*, communicating anew on each page.

*Illustrations and diagrams* should be kept to a minimum: they should be numbered and marked on the back with the author's name. Captions accompanying illustrations should be typewritten on separate sheets. Diagrams and graphs must be drawn with Indian ink on stout paper or tracing linen.

Photographs and photomicrographs should be submitted unmounted and on glossy paper.

The following standard symbols should be used in line drawings since they are easily available to the printers:

△ ▽ ▲ ▼ ○ ● □ ■ ⊕ ⊗ ⊙ ⊖

Tables and figures should be constructed so as to be intelligible without reference to the text, each table and column being provided with a heading.

*Tables*. Captions should be typewritten together on a separate sheet. The same information should not be reproduced in both tables and figures.

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## BEHAVIOUR RESEARCH AND THERAPY

### incorporating BEHAVIORAL ASSESSMENT

#### Information for Contributors

*Behaviour Research and Therapy* incorporating *Behavioral Assessment* will be published 8 issues annum. Neither the Editors nor the publisher accept responsibility for the views or statements expressed by authors.

In order to expedite the selection and prompt publication of papers, we have decided to discontinue the practice of supplying copies of referee's reports. Correspondence regarding decisions reached by the editorial committee is not encouraged.

This journal should be cited in lists of references as *Behaviour Research and Therapy*.

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All manuscripts submitted for publication for the regular section of the journal and all scientific correspondence should be sent to the Editor: Dr S. RAJAN, Department of Psychology, University of British Columbia, Vancouver, British Columbia, Canada V6T 1Z4. Manuscripts for the *Behavioral Assessment* section should be sent to Dr S. TAYLOR, Department of Psychiatry, 2255 Westbank Mall, Vancouver, British Columbia, Canada V6T 2A1.

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Manuscripts must be carefully checked and proof alterations except printer's errors should be minimal.

#### Disks

Authors are encouraged to submit a computer disk (5.25" or 3.5" HD DD disk) containing the final version of the paper along with the final manuscript to the editorial office. Please observe the following criteria:

1. Send only hard copy when first submitting your paper.
2. When your paper has been refereed, revised if necessary and accepted, send a disk containing the final version with the final hard copy. Make sure that the disk and the hard copy match exactly.
3. Specify what software was used, including which release: e.g. WordPerfect 5.1.
4. Specify what computer was used (either IBM-compatible PC or Apple Macintosh).
5. Include the text file and separate table and illustration files, if available.
6. The file should follow the general instructions on style arrangement and, in particular, the reference style of this journal as given below.
7. The file should be single-spaced and should use the wrap-around end-of-line feature, i.e. no returns at the end of each line. All textual elements should begin flush left; no paragraph indents. Place two returns after every element such as title, headings, paragraphs, figures and table call-outs.
8. Keep a back-up disk for reference and safety.

The articles submitted must contain original material which has not been published and which is not being considered for publication elsewhere. Papers accepted by *Behaviour Research and Therapy* may not be published elsewhere in any language without the consent of the Editor.

The title of the paper, the author's name and surname and the name and address of the institute, hospital etc. where the work was carried out, should be indicated at the top of the paper. Where possible, the full number of the corresponding author should be supplied with the manuscript, for use by the publisher.

*Summaries*. A summary, not exceeding 200 words, should be submitted on a separate sheet in duplicate. The summary will appear at the beginning of the article.

*References* should be prepared carefully using the *Publication Manual of the American Psychological Association* for style. They should be placed on a separate sheet at the end of the paper, double-spaced, and in alphabetical order.

References should be quoted in the text by giving the author's name, followed by the year, e.g. (Hersen & Barlow, 1976) or (Hersen and Barlow (1976)).

For more than two authors, all names are given when first cited, but when subsequently referred to, the name of the first author is given followed by the words 'et al.' as for example: First citation: Nan, Caputo and Borkovec (1974) but subsequently: Nan et al. (1974).

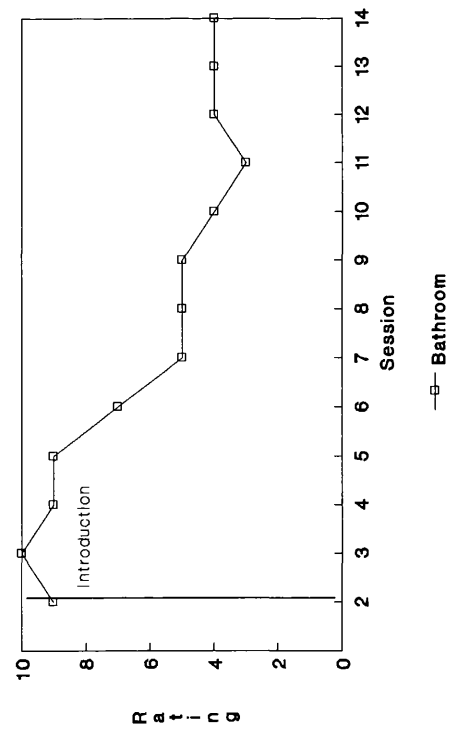
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**Appendix 5.2**

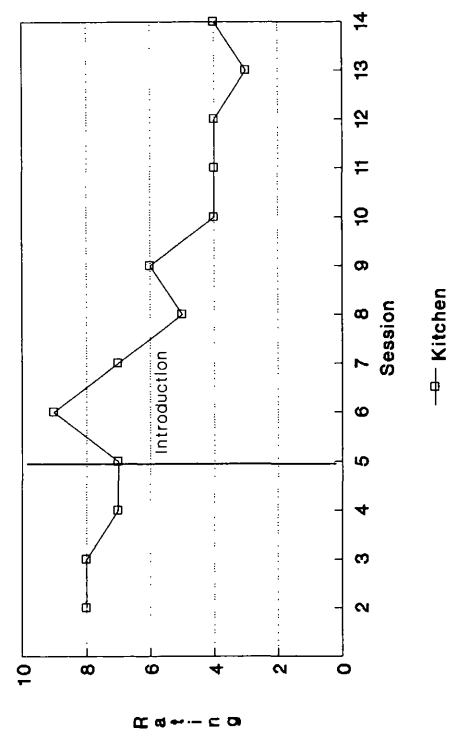
Graphs showing mean self rated anxiety level (scale 0-10) across different checking locations during therapy

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<b>Figure 1: Bathroom</b>	179
<b>Figure 2: Kitchen</b>	179
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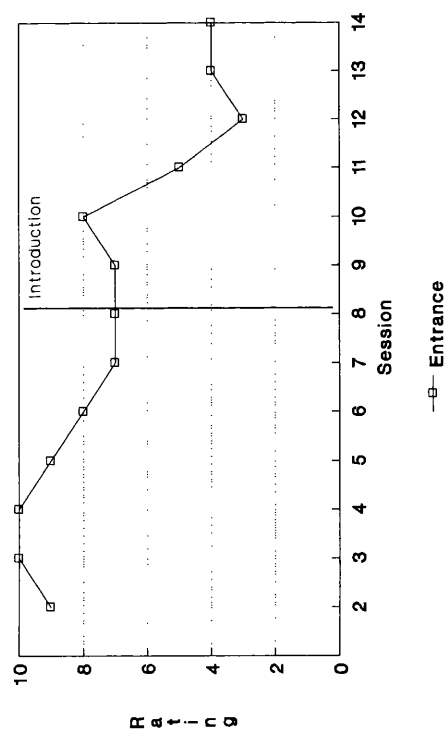
**Fig.1**  
Mean daily anxiety rating: Bathroom



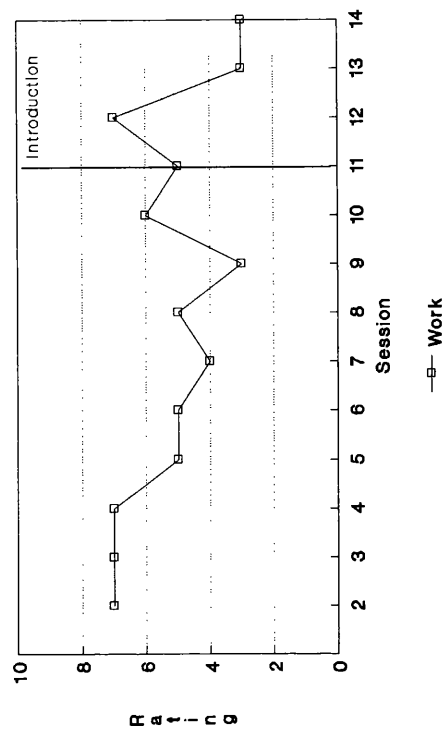
**Fig.2**  
Mean daily anxiety rating: Kitchen



**Fig.3**  
Mean daily anxiety rating: Entrance



**Fig.4**  
Mean daily anxiety rating: Work



## **APPENDIX 6: SINGLE CASE RESEARCH STUDY 3**



## **Appendix 6.1**

### **Notes for Contributors: Behaviour Therapy**

## INFORMATION FOR AUTHORS

*Behavior Therapy* is an international journal devoted to the application of behavioral and cognitive sciences to clinical problems. It primarily publishes original research of an experimental/clinical nature which contributes to the theories, practices, and evaluations of behavior therapy, broadly defined [see Editorial, *Behavior Therapy*, 1990, 21, (1)]. Although the major emphasis is placed upon empirical research, methodological and theoretical papers as well as evaluative reviews of the literature will also be published. Case studies, where the interventions have not been evaluated experimentally, and clinical replication series will be published [see Announcement, *Behavior Therapy*, 14 (2), (3), or (4)]. The format for publication includes articles, brief reports, invited book reviews, case studies, the clinical replication series, and letters to the Editor concerning issues raised in manuscripts previously published in *Behavior Therapy*.

Manuscripts may be submitted to the Editor, W. Edward Craighead, Ph.D., Box 3270, Duke University Medical Center, Durham, NC 27710.

All manuscripts should be prepared in conformity with the format described in the *Publication Manual of the American Psychological Association*, Third Edition (1983) and it is the responsibility of the author that manuscripts adhere to the format and other requirements of *Behavior Therapy*. The activities described in manuscripts published in the journal should be consistent with the generally accepted standards of ethical practice.

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**APPENDIX 7: SERVICE RELATED RESEARCH STUDY**

## **Appendix 7.1**

Notes for Contributors: Journal of Mental Health

## Notes for Contributors

The *Journal of Mental Health* welcomes original communications and articles which have relevance to the field of mental health. Papers are accepted on the understanding that they are subject to editorial revision and that their contents have not been published elsewhere.

**Manuscripts** should be sent to the Executive Editor, Ian Hughes, Department of Clinical Psychology, Whitchurch Hospital, Cardiff, CF4 7XB, United Kingdom.

To expedite assessment, 3 complete copies of each manuscript should be submitted. They should be typed on one side of the paper, double spaced, with ample margins of at least 25mm. The first sheet should include the full title of the paper, a short title not exceeding 45 characters (for a running title at the head of each page), names of authors and the address where the work was carried out. All pages should be numbered. Each article should be accompanied by a summary of not more than 150 words, typed on a separate sheet. The full postal address of the author who will check proofs and receive correspondence and offprints should also be included. Footnotes should be avoided where possible.

In order to improve accuracy and cut down the publishing lag authors are requested, if possible, to also submit their manuscripts on disc. Preferably this should be in Microsoft Word for an Apple Macintosh (3.5" disc). Alternatively, the following IBM compatible packages can be accepted: Microsoft Word; Displaywrite; Multimate; Samna Word; Wang PC; Word Perfect; Word Star; Word Star 2000; Volkswriter.

**References** should be submitted in the Harvard system. References should be indicated in the typescript by giving the author's name, with the year of publication in parenthesis, eg Smith (1989); or - if there are more than 3 authors - Smith et al (1989). If several papers from the same author/s and from the same year are cited, (a), (b), (c), etc should be put after the year of publication.

The references should be listed in full at the end of the paper, on a separate sheet. They will take the following standard forms:

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Powell, T.J. & Enright, S.J. (1990). *Anxiety and Stress Management*. London, Routledge.

Rachman, S., Cobb, J., Grey, S.J., McDonald, B., Mawson, D., Sartory, G. & Stern, R. (1979). The behavioural treatment of obsessive-compulsive disorders, with and without clomipramine. *Behaviour Research and Therapy*, 17, 467-478.

Title of journal should not be abbreviated. Unnecessary references should be avoided.

Clear, graphical and tabular presentation is strongly encouraged.

**Illustrations** should not be inserted in the text. Each should be provided separately, and numbered on the back with Figure numbers, title of paper, and name of author/s. Illustrations should be prepared about twice their final size. Three copies of all figures must be submitted. All photographs, graphs and diagrams should be referred to as Figures and should be numbered consecutively in the text in arabic numerals (eg Fig 3). The approximate position of each illustration should be indicated in the text. A list of captions for the Figures should be submitted on a separate sheet and should make possible interpretation - without reference to the text. Captions should include keys to symbols.

**Tables** should be typed on separate sheets and their approximate position in the text should be indicated. Units should appear in parenthesis in the column heading but not in the body of the table. Words and numerals should be repeated on successive lines; 'ditto' or 'do' should not be used.

**Proofs** are supplied for checking and making essential corrections, not for general revision or alteration. Proofs should be corrected and returned to the publisher within 3 days of receipt.

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**Appendix 7.2**

**Questionnaire based health professional survey (postal)**

**Health Professional Survey - Record Forms**

It would be very helpful to us if you could fill in one of these forms each time (over a period of 7 days) a situation arises in a clinic (or visit) where you feel the need for some form of access to child clinical psychology services. The service required might range from just a simple query to a formal referral for psychological help.

**Your profession:**

**Where are you based? (eg. name of health centre/ surgery):**

**Patient Information:**

Age of child (please tick):      0-2 yrs      3-5 yrs      6-8 yrs      9-12 yrs      > 12 yrs

Postcode of area in which family lives (please specify):

**What sort of service are you looking for in relation to this child?** (Please tick one or more of the following):

1. "I would like to have access to advice from or discussion with a clinical psychologist either by telephone or in person"
2. "I would like the psychologist to talk with a group of professionals"
3. "I would like the psychologist to observe the family in a joint session with me after which we could discuss the case"
4. "I would like to have access to information leaflets or booklets to give to the family"
5. "I would like to make a formal referral to Psychology"
6. Other (please specify):

**Nature of the problem** (please tick as many as apply):

Behaviour problem (eg. tantrums, aggression, eating or sleeping problem)

Anxiety or phobia (eg. separation anxiety, overanxious, avoidant)

Problems of Adjustment (eg. grief, post traumatic stress)

Other (eg. depression, intellectual problem)

**Duration of the problem** (if known):      0-3 mths      3-6 mths      6-12 mths      > 1 yr

**Are you considering referral to any other agencies?** (please specify)

**Any other comments you may wish to add that might help us to improve our service:**



## **Appendix 7.3**

### **Pro-forma for GP interviews**

**General Practitioner Interview:**

**Name:**

**Date:**

**Location(s):**

Roughly how often do you make referrals to child clinical psychology?

less than once a year

more than twice a year

more than five times per year

approximate figure?

Which of the following best describes your expected needs for child clinical psychology services?

Almost no need

occasional need

regular but infrequent contact

regular and frequent contact

We need to clarify the criteria for referral to the Clinical Child Psychology service for GPs. As you know, the decision on where you refer patients with psychological problems is often a complex and difficult one. We are interested to know what factors you would take into account when referring to Clinical Child Psychology.

Which of the following factors (other than the professional expertise of the service) would influence your decision to refer?

- (1) Risk Factors (eg. parental discord)
- (2) Waiting times for treatment
- (3) Chronicity of the problem
- (4) The family's motivation to seek help
- (5) The family's preference
- (6) Presence of physical symptomatology
- (7) Accessibility (eg. distance the family will have to travel)
- (8) Other:

Given greater availability and reduced waiting times, would you refer more to Clinical Child Psychology?

**Can you recall over the past seven days whether a situation has arisen in a clinic or a visit where you felt the need for some form of access to child clinical psychology services? The service required might range from just a simple query to a formal referral.**

If so, approximately how many times?

**Which of the following services were you looking for in relation to the child?  
(if more than one child, use attached sheets)**

1. "I would like to have access to advice from or discussion with a clinical psychologist either by telephone or in person"
2. "I would like the psychologist to talk with a group of professionals"
3. "I would like the psychologist to observe the family in a joint session with me after which we could discuss the case"
4. "I would like to have access to information leaflets or booklets to give to the family"
5. "I would like to make a formal referral to psychology"
6. Other

**What was the nature of the problem?**

Behaviour problem (eg. tantrums, aggression, eating or sleeping problem)

Anxiety or phobia (eg. separation anxiety, overanxious, avoidant)

Problems of adjustment (eg. bereavement, post traumatic stress)

Other (eg. depression, intellectual problem)

**Can you recall the approximate duration of the problem?:**

0 - 3 months      3 - 6 months      6 months to 1 year      Over 1 year

**Approximate age of child?**

Under 5 years      5-10 years      Over 10 years

**Satisfaction**

1. How satisfied are you with child clinical psychology services at present?

1	2	3	4	5
Not at all				Very

If not, what in particular needs to be addressed?

**Information about Child Psychology Services:**

2. Do you feel that you have enough information about clinical child psychology?
3. Would you like further information in the form of an explanatory leaflet or booklet about clinical psychology?
4. Would you favour occasional talks by a psychologist to groups of professionals?

## **Communication:**

### **Format of reply to referral:**

One of the most often cited requirements of GP's is the need to improve communication. One aspect of this is the nature and frequency of replies to referral letters.

When we are replying to a referral:

- (a) Are you currently happy with the nature of replies?
- (b) Would you favour a distinct format for replies or leaving this to the discretion of the individual clinician?
- (c) If you favour a distinct format, would you find it helpful for letters to be segregated into distinct subheadings? Which of the following subheadings would help you?

Family history    Developmental History    Presenting Problem

Psychological formulation                      Proposed intervention                      Other

- (d) Would you favour a short summary of the case attached to the referral reply?

### **Desired Frequency of Contact:**

- (a) Would you like to be informed within a day of attendance with a brief letter informing that your patient has been seen for the first time and that a detailed letter will follow?
- (b) Are you generally happy with receiving a letter at the beginning and end of treatment, or would you prefer more frequent communication?
- (c) Would you want to be kept abreast of emerging salient information or changes in intervention strategy?
- (d) Would you favour increased telephone contact with the psychologists seeing your patients?
- (e) How easy do you find it to get in touch with the service?

## **Ways of working:**

Which of the following ways of working would you welcome?

1. Parent groups (eg for parents troubled by sleep child problems). Psychologist alone or with other professional?
2. Child groups (eg. social skills, phobias, post traumatic stress)
3. Staff training (eg. workshops). If yes, any specific topics?
5. Staff support (eg. staff groups)

**Any other comments:**