Social Support and Life Stress : Association with Glycaemic Control in Diabetes Mellitus.

and

Research Portfolio

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Contents:

Research Portfolio Appendix

Major Research Project Literature Review

Social Support and Life Stress : Association with Glycaemic Control in Diabetes Mellitus.

Selected Journal	The British Journal of Medical Psychology
	(see Appendix : Section 1. for author's notes)
Title of Paper	Social Support and Life Stress : Association
	with Glycaemic Control in Diabetes Mellitus.

Summary

Diabetes mellitus is a disorder which affects approximately 5 to 10 percent of the population over the age of 40. Figures indicate that Type II (non-insulin dependent) diabetes mellitus comprises 70 to 80 percent of the total diabetic population. The management of diabetes requires continuous self-care strategies so as to minimise the development of degenerative complications associated with chronic hyperglycaemia. One factor known to be linked to blood glucose disruption is stress and some associations have been shown in laboratory studies and examinations of real-life stress. Furthermore, data from recent studies indicate that social support is beneficial in maintaining glycaemic control at times of stress. However, such research has tended to focus on the Type I (insulin dependent) population, with relatively little attention being given to assessing the needs of the Type II group and criticism has been directed at the measures employed to assess social support. This paper examines the findings to date on stress, social support and glycaemic control. Recommendations are made for future research in this area.

Introduction

Diabetes mellitus is a common disorder which affects approximately 1 - 3 percent of the population, rising to 5 - 10 percent of the population over the age of 40 (Jarrett, 1986). Diabetes occurs because of either deficiencies in insulin production or the presence of factors that oppose the action of insulin, the result of which is chronically high blood glucose levels (Tsalikian, 1990; Zimmerman, 1990) and deficits in fat and amino acid metabolism (Felig, Baxter, Broadus and Frohman, 1981).

Although the term diabetes mellitus represents a heterogeneous group of disorders, the largest majority of people with diabetes have primary diabetes which can be divided into two broad types. Type I or insulin dependent diabetes is thought to be related to an auto-immune disease of the insulin producing cells of the pancreas and although it can occur at any age, it is typically diagnosed during childhood and adolescence. Type II diabetes or non-insulin dependent diabetes is due to a reduction of insulin receptors in the peripheral tissues and a deficiency in insulin secretion. Onset tends to occur in or after the fifth decade of life (Jarrett, 1986). Surprisingly, despite the fact that Type II diabetes comprises approximately 75 - 80 percent of the entire diabetic population only a relative minority of studies have specifically focused on this population (Cox and Gonder-Frederick, 1992; Kaplan, Atkins and Reisch, 1984).

Diabetic Management

Individuals with any chronic illness face a wide array of potential life interruptions and psychological changes (Turk, Sobel, Follich and Youkiles, 1983). However, diabetes has been described as one of the most psychologically and behaviourally demanding of the chronic illnesses (Fisher, Delamater and Kirkey, 1983). This is due to the fact that it

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requires a high degree of continuous self-care to behaviourally regulate blood glucose in the absence of the body's normal control mechanisms. This is necessary to minimise the possibility of developing associated degenerative complications such as nephropathy, heart disease, peripheral vascular disease, neuropathy and blindness (Bloom and Ireland, 1980; Felig et al., 1981; Kovar, Harris and Hadden, 1987). A recent review has suggested that as many as 40 percent of people with diabetes suffer from renal failure and about the same level will develop peripheral vascular disease (Raskin and Rosenstock, 1986). Diabetic retinopathy has become the single most common cause of blindness in the United Kingdom (Bron, 1985). The emotional trauma associated with such complications is well documented in the literature (Bently, Jung and Garrison, 1990; Peining, 1984; D'Elia, Peining, Kaldany, Malarick, Unger, Ice, Anderson, Miller and Lundin, 1981; Holmes, 1986). Furthermore, diabetes mellitus has ranked among the ten leading causes of death since 1932 (Kovar, Harris and Hadden, 1987).

Although the exact mechanisms for such complications are not entirely clear, it is generally accepted that they are closely associated with chronically high blood glucose levels (Pohl, Gonder, Frederick and Cox, 1984). In support of this there is growing evidence which seems to indicate that good glycaemic control can prevent, attenuate and in some instances reverse some of the long-term complications of diabetes (Gerich 1986; Reichard, Britz, Cars, Nilsson, Sobocinsky-Olsson and Rosenqvist, 1988). The principal goal of diabetic management is, therefore, to maintain blood glucose levels as near as normal (3.5 - 8.0 mmol/l). Thus, for many people with diabetes the struggle for satisfactory metabolic control becomes a full-time job (Hornquist, Wikby, Andersson and Dufva, 1990).

The diabetic regimen consists of four main components; blood glucose monitoring, medication in the form of insulin or oral hypoglycaemics, dietary restrictions and weight control. As it is essential to monitor the effectiveness of this diabetic regimen accurate feedback on current glucose levels is essential. One method used is self-testing urine glucose, however, this has been found to have several limitations. Urine testing provides information on retrospective rather than current glucose levels and it is unable to detect wide and rapid changes in the blood glucose level (Hayford, Weydert and Thompson, 1983). For this reason, urine testing has been largely replaced by direct blood glucose assessment which can either be carried out using blood glucose strips read by eye or blood glucose meters. Unfortunately, although blood glucose assessment has high patient acceptability it is known to be highly unreliable (Fairclough, Clements, Filer and Bell, 1983). The introduction of the blood test to assess glycosylated haemoglobin has been beneficial as it provides clinical information on general diabetic control that is not dependent on sporadic sampling (Nathan, Singer, Hurxthal and Goodson, 1984). Furthermore, as the proportion of haemoglobin that is glycosylated is a function of the glucose concentration to which the erythrocytes are exposed, the measure correlates with the average blood glucose over time. Since the half-life of erythrocytes is approximately two months, glycosylated haemoglobin represents a biological marker of hyperglycaemia over that period. There are several methods for determining glycated haemoglobin: these determine either the fraction of haemoglobin alone (HbA1c) or total glycated haemoglobin (HbA1). The HbA1 range for non-diabetic patients is 5.5 percent to 8.5 percent (Lustman, Clouse and Carney, 1988).

As has been indicated poor diabetic control has been associated with the development of serious degenerative complications. It is, therefore,

crucial that factors known to influence diabetic control, whether positively or negatively, are fully investigated.

Stress and Diabetes

The belief that stress can influence susceptibility to disease and ability to deal with illness has a long history (Maudsley, 1899). Researchers have generally suggested that stress may exert an effect on illness in two ways. Stress may affect illness directly by its impact on the neuro-endocrine or immune systems (Barglow, Hatcher, Edidin and Sloan-Rossiter, 1984; Feinglos and Surwit, 1988). As bodily responses to stress are governed by the sympathetic nervous system and the hypothalamic pituitary adrenal system, at times of stress the hypothalamus stimulates both pituitary and sympathetic activity. The main response is the elevation of catabolic hormones (which oppose the action of insulin) and the suppression of anabolic hormones (which enhance the action of insulin) and the main symptom, therefore, includes elevated blood glucose (Woods and Porte, 1974). Stress is also thought to have a deleterious effect on health behaviours and compliance to medical regimes (Fisher *et al.*, 1982). Under stress people may forget to take certain medication or follow management guidelines.

Within diabetes research the hypothesis that psychological stress is one factor which can negatively effect diabetic management and can decrease diabetic control has been long-standing (Hinkle, Conger and Wolf, 1950). For example, a review of cases of diabetic acidosis found that the most common precipitating factor was non-administration of insulin and that in half of these cases the omission was attributed to psychological stress (Cohen, Vance, Runyan and Herwitz, 1960). However, in more recent studies self-management behaviours were found to be unrelated to stress,

yet stress predicted blood glucose levels (Cox *et al.*, 1984; Hanson *et al.*, 1984). Investigations into this area have been carried out with animal models, with human subjects under laboratory conditions and with naturally occurring life stress. On the whole, research supports the hypothesis that stress disrupts glycaemic control and causes hyperglycaemia, however, the evidence is not conclusive.

For example, animal studies examining the relationship between stress and diabetes have found evidence for the development of Type I diabetes after prolonged stress and the production of hyperglycaemic response in Type II diabetes (Carter, Herrman, Stokes and Cox, 1987; Surwit, Feinglos, Livingston, Kuhn and McCubbin, 1984). However, when diabetic subjects are compared with non-diabetic subjects, laboratory studies investigating the effects of short-term stressors such as cognitive tasks and unpredictable electric shocks on blood glucose have found mixed results. Findings indicate that blood glucose levels in response to stress can increase (Shamoon, Hendler and Sherwin, 1981), can abnormally decrease (Vandenbergh, Sussman and Titus, 1966), can remain unchanged (Naliboff, Cohen and Sowers, 1985) or can show normal but delayed responses (Wing, Epstein, Blair and Nowalk, 1985).

While it has been argued that methodological flaws (e.g., combining Type I and Type II subjects, not controlling for elapsed time since last insulin injection, not documenting that stress was successfully manipulated, etc.) may have contributed to the inconsistent pattern of results (Goetsch, 1989), other researchers suggest that psychological stress induced in the laboratory is relatively meaningless and that attention should turn to real-life stressors (e.g. Kemmer, Bisping, Steingruber, Baar, Hardtmann, Schlaghecke and Berger, 1986; Naliboff *et al.*, 1985).

Investigations, therefore, have also focused on the effects of real life stressors such as major life events. The basic hypothesis of the life-events research is that the stressful nature of events may act as a precipitating factor in the onset of symptoms within both the physical and mental components of health. The effects of such events (e.g., job change, financial problems) are believed to be additive. This research approach interprets stress in terms of the adaptive behaviour required by events and assumes that this behaviour can be measured to provide an index of the life stress experienced. A number of scales have been developed to measure major life events with the best known scale being developed by Holmes and Rahe (1967). Life event research is of clinical interest as major life events may have enduring negative consequences responsible for the decrease in well-being in some individuals.

Studies focusing on life events and their effects on diabetes have found a significantly higher frequency of life events in the three years prior to diagnosis compared with healthy siblings and matched controls in a sample of newly diagnosed adult patients (Robinson and Fuller, 1985). Furthermore, poorly controlled diabetics have been found to report significantly higher levels of stressful life events than well controlled diabetics (Schwartz, Springer, Flahert and Kiani, 1986). Such associations with life stress and elevated blood glucose have been found in some studies with Type I subjects (Barglow, Hatcher, Edidin and Sloan-Rossiter, 1984; Cox, Taylor, Nowacek, Holley-Wilcox and Guthrow, 1984; Hanson, Henggler and Burghen, 1987), but not with others (Delamater, Kurtz, Bubb, White and Santiago, 1987; Neimcryk, Speers, Travis and Gary, 1990). Other studies examining a combination of Type I and Type II subjects have found an association between life stress and

blood glucose (Griffith, Field and Lustman, 1990). However, such studies employing a combined group of subjects have been criticised because cohort and disease differences are such that results obtained from adolescent or adult samples with Type I may not generally apply to middle-aged or older people with Type II diabetes (Goetsch, 1989). Indeed, the literature has been criticised for the lack of studies examining the effects of stress on blood glucose with a clearly defined Type II group (Cox and Gonder-Frederick, 1992).

Some researchers have suggested that investigations into stress and the effects on blood glucose should also include assessment of factors such as anxiety and depression. There is some evidence that psychological distress and diagnosable psychological disorders (especially depression) are more common in diabetic adults than they are in the general population (Erdahl, Lawson, Donald, Monga, Bird and Letemendia, 1984; Pokin, Callies, Lentz, Colon and Sutherland, 1988; Surridge, Murawski, Chazan, Balodimos and Ryan, 1970; Wilkinson, Borsey, Leslie, Newton, Lind and Ballinger, 19880). However, studies have indicated that these differences disappear when people with diabetes are compared with people who have another chronic Disease (Popkin and Callies, 1987; Skenazy and Bigler, 1985; Trence, Will, Mensing and Lindgren, 1990).

Even if psychological disorders are no more common in people with diabetes than in the population at large, the presence of these disorders may have severe, adverse effects for people with diabetes. Lustman, Griffith and Clouse (1988) have suggested that the symptoms of depression and diabetes may exacerbate one another. For example, hormonal disruption associated with depression may contribute to glycaemic disruption. Psychological disorders may also contribute to the

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disruption of self-care behaviours and to a cycle of deteriorating physical and emotional well-being. Numerous studies have found that psychological distress and poor glycaemic control are associated for adults with diabetes (Karlsson, Holmes and Lang, 1988; Lustman, 1988; Sachs, Spiess, Moser, Kuntz and Schernthaner, 1991). Only one study has found no association between psychological disturbance and glycaemic control (Jacobsen, Adler, Wolfsdorf, Anderson and Derby, 1990). It would, therefore, be advantageous to assess psychological distress when examining glycaemic control.

An alternative approach to examining the effects of stress is to assess factors which affect individual differences in response to stress. The question as to why some individuals respond with elevated blood glucose levels at times of stress while others do not has focused attention on the role played by social support in modifying the stress response.

Social Support and Diabetes

In recent years researchers investigating the effects of life stress on physical and psychological well-being have become increasingly interested in the idiosyncratic nature of the stress response and the potential role played by social support in this relationship. Both seeking and receiving help from other people is a major form of coping activity (Wilcox and Vernberg, 1985). Indeed, many studies in the health psychology literature have demonstrated the protective function of social support as it relates to physical morbidity and mortality (Cohen, 1988; Ganster and Victor, 1988; House, Landis and Umberson, 1988).

As there are different definitions of social support assessment methods can be quite varied (Cohen and Syme, 1985; Donald and Ware, 1984; Donald,

Ware, Brook and Davies-Avery, 1978). One approach to social support measurement has focused on the structure, size and density of existing interpersonal relationships. Structure refers to the existence of fundamental social relationships and the interconnectedness of a person's social network. This type of social support is most frequently measured in terms of the existence of or contact with potentially supportive persons. Although the measures used are often self-report, the conceptualisation of structural social support is generally objective. That is structural social support is defined as the existence (or lack) of fundamental social relationships and ties (Berkman, 1985). Structural measures such as social network indices (Ell, 1984) have, however, been criticised because contact may be due to factors uncorrelated with support, such as need for contact or how busy a person is with other activities (Sherbourne and Stewart, 1991).

In recent years attention has turned to the functional components of social support with the belief that the most essential aspect of social support is the perceived availability of functional support (Broadhead, Gehlbach, DeGuy and Kaplan, 1988; Cohen, Mermelstein, Kamarck and Hoberman, 1985). Measures of functional support identify the qualities of social relationships that are presumed to be related to stress responses (Cohen and Wills, 1985). Functional support is, therefore, the degree to which a person perceives their social relationships as serving particular functions, with the functions most often cited including emotional support, instrumental support, informational support and social companionship (Cohen and Hoberman, 1983; House, 1981; Wills, 1985).

While there is substantial evidence of a possible relationship between social support and health, the exact mechanisms through which social

support affects health outcomes are far from established (Broadhead, Kaplan, Shermann, Wagner, Schoenbach, Grimson, Heyden, Tibblin and Gelhbach, 1983; Cohen and Syme, 1985). Research in this area has generally addressed the issue of whether social support benefits health directly (the main effect model), or instead acts as a buffer to lessen the negative consequences of stressful life events on health (the buffering model). Based on a review of the social support literature, evidence appears to favour the main effect model when support structure is measured, whereas buffering effects are found in studies that employ measures of support function (Cohen and Wills, 1985; Kessler and McLeod, 1985; Thoits, 1985). Structural support, then, provides an individual with more or less constant generalised benefits but a particularly stressful life event elicits the need for functional support related to the stressor. The buffering hypothesis, then would be substantiated in studies that test for the presence or absence of relevant, stressor-specific support resources.

Because the diabetic regimen is long-standing, complex and demanding and a source of burden for many people (Fisher *et al.*, 1982) social support may be of major importance in maintaining good health and decreasing the impact of the disease. Sherbourne, Meredith, Rogers and Ware (1990) found that social support appears to be beneficial regardless of age, however, there is evidence that a lack of social support may have particularly damaging effects for older patients. Sherbourne *et al.*, (1990) found that when older patients with a range of chronic illnesses were followed over a two year period, those with lower levels of social support reported significantly worse physical functioning than those who had reported satisfactory levels of support.

In general, it has been found that increased levels of family support are associated with better adherence to treatment and metabolic control (Anderson, 1990; Hanson, Henggler and Burghen, 1987). In the medically ill, aspects of support other than emotional support, such as assistance with illness related tasks and deficits may be equally effective as buffers as illness progresses. In fact, specific help of this sort has been found to more important in predicting the performance of diabetes self-care behaviours than general support (Wilson, Ary, Biglan, Glasgow, Toobert and Campbell, 1986). However, studies which have specifically focused on the interrelationship between stress and social support have employed vague measures, such as a Visual Analogue Measure to assess general satisfaction with support, or narrow measures such as marital status (Griffith *et al.*, 1990; Littlefield, Rodin, Murray and Craven, 1990). Furthermore, such studies have either focused on Type I diabetes or have combined both groups. Little attention has been given to the Type II population and the role of stress and support in this group.

Future Directions

Diabetes is a disorder which affects approximately 5 - 10 percent of the population over the age of 40 (Jarrett, 1986). The diabetic regime poses several complex behavioural and emotional challenges. All of which have to be overcome so as to maintain quality of life and minimise the possibility of developing associated degenerative complications.

One area in the diabetes literature which has received a great deal of attention has been the role of stress in affecting glycaemic control. In general there appears to be evidence of a relationship between the two factors, however, the research has tended to focus on Type I diabetes or on very mixed diabetic populations with the assumption being that results obtained can be generalised to Type II. However, this is surprising given the age discrepancies and the very distinct disease differences between the two groups. It would appear that future research needs to consider more precisely defined patient groups in which type of diabetes is considered separately. Without this the relative lack of knowledge regarding the effects of stress on glycaemic control in the Type II group, a group which comprises approximately 70 - 80 percent of the diabetic population, will continue.

While it is generally agreed that social support can benefit health, very little is understood about the process by which this occurs. If social support does minimise blood glucose disruption at times of stress, a fuller understanding of what is involved in this process is required. Previous studies examining the social needs of individuals with diabetes at times of stress, have tended to rely upon vague or narrow measures of support. While this is helpful in adding to our understanding of whether nor not social support is beneficial, it does not further our knowledge of how best

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to provide intervention at times of need. There, therefore, appears to be a need to investigate more closely the individual characteristics of not only general but also diabetes related social support.

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Major Research Project Proposal

Social Support and Life Stress : Association with Glycaemic Control in Diabetes Mellitus.

PROJECT TITLE	Social Support and Life Stress : Association with Glycaemic Control in Diabetes Mellitus.
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Introduction

Diabetes mellitus affects approximately 5 to 10 percent of the population over the age of 40 (Jarrett, 1986). Although the term diabetes mellitus refers to a range of disorders, the greatest majority of people with diabetes have primary diabetes which can be divided into two broad types. Type I or insulin-dependent diabetes which is typically diagnosed during childhood or adolescence and Type II or non-insulin dependent diabetes, which tends to occur in or after the fifth decade of life. Throughout the literature Type I diabetes appears to have attracted the greatest amount of research attention with the results obtained often generalised to the Type II group. This is surprising given the very distinct differences in disease and the fact that results obtained from adolescent or adult samples with Type I may not generally apply to middle-aged or older people with Type II diabetes. Furthermore, given that Type II diabetes mellitus comprises 75 to 80 percent of the entire diabetic population, relatively little is known about the specific needs of this group (Kaplan, Atkins and Reisch, 1984; Cox and Gonder-Frederick, 1992).

Since 1932, diabetes mellitus has ranked among the ten leading causes of death (Kovar, Harris and Hadden, 1987). Recent estimates suggest that as many as 40 percent of people with diabetes will develop nephropathy or peripheral vascular disease (Raskin and Rosenstock, 1986). Other associated degenerative complications include neuropathy and retinopathy (Kovar *et al.*, 1987). Indeed, diabetic retinopathy is the single most common cause of blindness in the United Kingdom (Bron, 1985).

While the exact mechanisms for such complications are not entirely clear, it is generally accepted that they are closely associated with chronically high blood glucose levels (Pohl, Gonder-Frederick and Cox, 1984). In support of this, there is growing evidence which indicates that good glycaemic control can prevent, attenuate and in some circumstances reverse some complications (Gerich, 1986; Reichard, Britz, Carrs, Nilsson, Sobocinsky-Olsson and Rosenqvist, 1988). It is, therefore, crucial that a clear understanding of factors that can influence diabetic control is sought.

The diabetic management regime is complex and demanding as it requires a high degree of continuous self-care to regulate blood glucose in the absence of the body's normal control mechanisms. The struggle for satisfactory diabetic control, necessary to minimise the possibility of developing complications, has been described as a full-time job (Hornquist, Wikby, Andersson and Dufva, 1990). Indeed, the entire regime has been described as one of the most psychologically and behaviourally demanding of the chronic illnesses (Fisher, Delamater, Bertelson and Kirkley, 1982).

One important factor that has been linked to the disruption of blood glucose has been psychological stress. Researchers have suggested that psychological stress may affect diabetes "directly" through its impact on the neuroendocrine and immune system (Jemmett and Locke, 1984; Krantz, Grunberg and Baum, 1985) or "indirectly" through its negative effect on healthcare behaviours and compliance with medical regimes (Fisher et al., 1982). Investigations into this area have focused on laboratory studies and studies of real life stress. Laboratory studies have produced mixed findings with stress and blood glucose levels

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(Vandenbergh, Sussman and Titus, 1966; Shamoon, Hendler and Sherwin, 1981; Naliboff, Cohen and Sowers, 1985). Critics have argued that such studies have many methodological flaws and that stress produced in laboratory situations may be relatively meaningless to everyday diabetic control (Kemmer, Bisping, Steingruber, Baar, Hardtmann, Schlaghecke and Berger, 1986; Goetsch, 1989). Attention has, therefore, turned to the effects of real-life stress on glycaemic control. In general, the studies conducted appear to indicate support for the negative effects of stress on blood glucose levels (Barglow, Hatcher, Edidin and Sloan-Rossiter, 1984; Cox, Taylor, Nowacek, Holley-Wilcox and Guthrow, 1984). Unfortunately, these studies have tended to concentrate on Type I diabetes or have employed mixed samples. Critics again have argued that the results obtained may not generally apply to people with Type II diabetes (Goetsch, 1989).

It is generally agreed that it is important to increase the level of understanding of factors which can affect health at times of stress. Numerous studies have found links between psychological distress and poor glycaemic control (Karlsson, Holmes and Lang, 1988; Lustman, 1988; Sachs, Speiss, Moser, Kuntz and Shernthaner, 1991). Researchers have, therefore, suggested that investigations into glycaemic control should also include a measure of anxiety and depression. The question, however, as to why some individuals respond with elevated blood glucose at times of stress and others do not has recently focused attention on the role played by social support in modifying the stress response.

Various methods can be used to assess social support. One approach employed is to assess the structure of a person's social network i.e.,

their number of friends, social contacts etc. However, this method has been criticised as contact may be due to factors unrelated to support. Another method is to examine the quality of available social support and the function played by that support at times of stress (Cohen and Wills, 1985). The functions most often cited include emotional support, instrumental support, informational support and social companionship.

While there is evidence of a possible relationship between social support and health, the exact mechanisms through which social support affects health are far from established. Research into the role played by social support has generally addressed the issue of whether social support benefits health directly, or instead acts as a 'buffer' to lessen the negative impact of stressful life events on health. There is general agreement in the psychological literature that social support may protect individuals from the adverse effects of stressful life circumstances by acting as a 'buffer' (Cohen & Wills, 1985). Among the medically ill, other aspects of social support, such as assistance in coping with illness-related tasks and deficits, may be equally effective as buffers as illness progresses (Thoits, 1986). Furthermore, evidence exists to suggest that while social support appears to be beneficial regardless of age, a lack of social support may be particularly damaging for older people with chronic illnesses (Sherbourne, Meredith, Rogers and Ware, 1990).

In general, findings in the diabetes literature indicate that increased levels of social support are associated with better metabolic control (Anderson, 1990). However, studies focusing on social support and metabolic control have tended to employ vague measures such as visual analogue scales to assess satisfaction with support or narrow measures

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such as marital status (Griffith, Field and Lustman, 1990; Littlefield, Rodin, Murray and Craven 1990). Furthermore, such studies have again either tended to focus on Type I diabetes samples or have combined both groups with relatively little attention paid to the individual groups and the differences between them. There, therefore, appears to be a need for research to consider the role of social support in preventing disruption to glycaemic control at times of stress in the Type II population and to investigate potential differences between the groups.

AIMS OF THE PROJECT

The aims of the project are to study the effects of social support and life stress on glycaemic control in persons with Type I and Type II diabetes mellitus and to further the understanding of the specific needs of the Type II population.

HYPOTHESES

If the number of life events is regarded as a stressor, the moderating effect of social support will be most apparent for patients who have experienced the greatest number of events and have reported the greatest level of stress. It is, therefore, hypothesised that patients without adequate support who report most negative life events will report significantly poorer diabetic control than similar patients with adequate levels of support. Furthermore, if this model is applicable to the entire diabetic population, no differences are expected when the groups are examined individually.

METHOD

SUBJECTS

100 subjects with diabetes mellitus (50 with Type I and 50 with Type II) will be assessed. All participants will be recruited randomly during attendance for their annual diabetic review at the Outpatients Clinic (Department of Endocrinology), Monklands District General Hospital, Lanarkshire, Scotland. Participation will be sought from patients who meet the following criteria : (a) are aged between 18 and 65 years, (b) have been diagnosed as diabetic for a minimum of 12 months, and (c) are able to complete written measures.

PROCEDURE

Subjects will be approached and informed of the study on arrival at the clinic. If subjects agree to participate they will be asked to complete a series of self-report questionnaires to be returned at the end of their appointment. Stamped addressed envelopes will be provided for patients unable to complete their questionnaires during this time. It is expected that the completion of questionnaires will take approximately 10 to 15 minutes. When the questionnaires are returned they will be checked by the researcher with particular attention being paid to the Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983). If scores obtained here are within caseness levels the Consultant will be notified to assess the need for referral to Clinical Psychology. This procedure has been agreed with the Clinical Psychology Department. The interviewing doctor will also be asked to provide information on the presence of any diabetic complications, any concomitant medical conditions and glycosylated haemoglobin results.

MEASURES

Both psychosocial and medical information will be sought for each subject. The data obtained will permit assessment of factors such as level of stress (recent life events), level of social support (functional and diabetic specific support), emotional status (anxiety and depression), average blood glucose control (HbA1), the presence of diabetic complications and any other concomitant medical condition.

PSYCHOSOCIAL INFORMATION

Four self-report measures will be completed by each subject to assess the following areas:

1. Level of Stress

The Social Readjustment Rating Scale will be used to measure life stress (Holmes and Rahe, 1967). Subjects will be asked to indicate which of the 42 stressful life events have occurred in the past 6 months and then rate them on a 4-point scale. The values assigned for the individual events will be totalled to give one score for each subject. The higher the score, the higher the level of reported stress.

2. Level of Social Support

I. Functional Support Subjects will be asked to complete the Medical Outcomes Social Support Survey which focuses on the availability of functional support (Sherbourne & Stewart, 1991). This 20-item measure asks respondents to rate the perceived availability of general support. The five-choice response scale for each item ranges from "none of the time" to "all of the time" with support scores extending

from 0 to 100. The higher the score, the higher the level of perceived availability of functional support.

II. Diabetes Specific Support This second measure of support was designed for the purpose of the study and was found to have a high test re-test reliability ($r = 0.85$, $p < 0.01$). This scale aims to assess the degree to which an individual feels that the amount of support received corresponds to the amount of support needed to carry out tasks specific to their diabetic management. Subjects will be asked 9 questions related to their perceived need and 9 questions related to the actual amount of support received. A discrepancy score will be calculated by subtracting the two totals and will be regarded as an indicator of the perceived adequacy of support. (See Appendix : Section 1).

3. Emotional Status

The Hospital Anxiety and Depression Scale will be employed to assess emotional well-being (Zigmond and Snaith, 1983). This scale consists of 14 questions and provides measures of two constructs: anxiety and depression. For each construct a score below 8 is considered to be within the normal range, 8-10 is considered to be 'borderline' and any score above 10 indicates a 'probable' disorder of the relevant mood.

MEDICAL INFORMATION

1. Average Blood Glucose Control

Glycosylated haemoglobin (HbA1) results used to estimate average blood glucose control in the 6 to 8 weeks prior to testing will also be collected for each subject.

2. Diabetic Complications

A Complications Questionnaire designed for the study will be completed for each subject by the interviewing doctor. This questionnaire will record the presence or absence of diabetic complications and any other concomitant medical condition. (See Appendix 1 : Section 1).

ANALYSIS OF RESULTS

All data analysis will be carried out at the University Department of Psychological Medicine using the Statistical Package for Social Scientists. Analyses will be conducted on the following groups:

1. The combined group (Type I and Type II together).
2. The Type I group only.
3. The Type II group only.

Differences between groups will be assessed employing Independent t-tests and Mann Whitney tests as appropriate. To assess whether glucose control is associated with demographic, psychosocial and medical variables correlational analyses will be used. Two-way analysis of variance will be used to examine the interrelationship of levels of stress and social support (functional and diabetic) with blood glucose control.

PROPOSED TIMETABLE

Pilot Study	November/December 1993.
Data Collection	January/August 1994.
Data Analysis	September/December 1994.
Project Write-up	January/July 1995.
Submission Date	August 1995.

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Major Research Project Paper

Social Support and Life Stress : Association with Glycaemic Control in
Diabetes Mellitus.

Selected Journal   Health Psychology

                              (see Appendix : Section 1. for author's notes)

Title of Paper   Social Support and Life Stress : Association

                              with Glycaemic Control in Diabetes Mellitus.

Summary

In the past, studies examining the effects of stress and social support on glycaemic control have tended to focus on Type I diabetes (insulin dependent) or have employed combined samples. As a consequence, the needs of the Type II diabetes (non-insulin dependent) group have not been fully investigated. This paper examined the role of life stress, support (functional and diabetic) and glycaemic control in a sample of Type I and Type II diabetics. No relationships were found between these factors for the combined group (Type I and Type II) or the Type I and Type II groups assessed individually. When the Type II group was analysed, however, depression and anxiety appeared to be related to HbA1. Furthermore, depressed and anxious subjects were also found to have lower levels of functional support which was associated with poorer levels of glycaemic control. No such relationships were found for the Type I group. This paper discusses these findings and the need for future research to focus specifically on the needs of the Type II group.

Introduction

Diabetes mellitus affects approximately 5 to 10 percent of the population over the age of 40 and occurs because of deficiencies in insulin production or the presence of factors which oppose the action of insulin. The result of such insulin deficits is chronically high blood glucose levels believed to be related to the development of long-term degenerative complications (Jarrett, 1986). Associated complications include nephropathy and peripheral vascular disease, neuropathy and retinopathy, which has been estimated to be the single most common cause of blindness in the United Kingdom (Bloom & Ireland, 1980; Bron, 1985; Felig, Baxter, Broadus & Fohman, 1981; Kovar, Harris & Hadden, 1987; Raskin & Rosenstock, 1986). The emotional trauma associated with such complications is well documented in the literature (Bently, Jung & Garrison, 1990; Holmes, 1986). Investigation into factors which influence the level of glycaemic control is, therefore, important.

The belief that psychological stress can disrupt glycaemic control and cause hyperglycaemia has a long history and is supported by data from various animal and laboratory studies (Shamoon, Hendler & Sherwin, 1981; Surwit, Feinglos, Livingston, Kuhn & McCubbin, 1984). However, the evidence is not conclusive and criticism directed at methodological flaws such as combining Type I and Type II groups despite the age and distinct disease differences, has lead to the suggestion that attention should be turned to real-life stressors and to examining the effects of such stressors in clearly defined groups (Cohen & Sowers, 1985; Goetsch, 1989; Naliboff, Vandengurgh, Sussman & Titus, 1966).

Studies investigating the effects of real-life stress on glycaemic control have found significantly higher levels of life events in poorly controlled

diabetics compared with well-controlled diabetics (Schwartz, Springer, Flaherty & Kiani, 1986). Such associations have been found in several studies with Type I diabetes (Barglow, Hatcher, Edidin & Sloan-Rossiter, 1984; Cox, Taylor, Nowacek, Holley-Wilcox & Guthrow, 1984; Hanson, Henggler & Burghen, 1987), and in studies examining Type I and Type II subjects together (Griffith, Field & Lustman, 1990). The literature, however, has been criticised for the lack of studies examining the effects of life stress on blood glucose with a clearly defined Type II group (Cox & Gonder-Frederick, 1992).

Numerous studies have also found links between psychological distress and poor glycaemic control (Karlsson, Holmes & Lang, 1988; Lustman, 1988; Sachs, Speiss, Moser & Shernthaner, 1991). Researchers have, therefore, suggested that investigations into glycaemic control should also include a measure of anxiety and depression.

The question, however, as to why some individuals respond with elevated blood glucose levels at times of stress while others do not has turned attention to the role played by social support in modifying the stress response. In general, findings in the diabetic literature have found that increased levels of social support are associated with better metabolic control (Anderson, 1990). However, studies have tended to rely on vague measures such as visual analogue scales to assess satisfaction with support or narrow measures such as marital status (Griffith et al., 1990; Littlefield, Rodin, Murray & Craven, 1990). Furthermore, such studies have again tended to focus on Type I subjects or have combined both types. The association, therefore, between life stress, social support and glucose control in Type II diabetes has not been systematically investigated to examine for potential differences between this group and the Type I group.

The present study was undertaken to extend our understanding of these factors.

METHOD

Subjects

Fifty-three Type I (31 male, 22 female) and fifty Type II (29 male and 21 female) diabetic patients were recruited during attendance for their annual diabetic review at the Outpatients Clinic (Department of Endocrinology), Monklands District General Hospital, Lanarkshire, Scotland.

Procedure

Subjects were approached and informed of the study on arrival at the clinic. Participation was sought from patients who met the following criteria: (a) aged between 18 and 65 years, (b) diagnosed as diabetic for a minimum of 12 months, and (c) able to complete written measures. Once subjects had agreed to participate they were asked to complete a series of self-report questionnaires to be returned at the end of their appointment. Stamped addressed envelopes were provided for patients unable to complete their questionnaires during this time. The interviewing doctor was also asked to provide information on glycosylated haemoglobin results, the presence of any diabetic complications and any concomitant medical condition.

Measures

1. Psychosocial Information

Four self-report questionnaires were completed by each subject to assess the following areas:

Level of Stress

The Holmes and Rahe Social Readjustment Scale was used to measure life stress (Holmes & Rahe, 1967). Subjects indicated which of the 42 stressful life events had occurred in the previous 6 months and rated them on a 4-point scale. The values assigned for the individual events were totalled to provide an overall score of life stress for each subject. The higher the score the higher the level of reported stress.

Level of Support

I. Functional Support. Subjects completed the Medical Outcomes Social Support Survey which focuses on the availability of functional support (Sherbourne & Stewart, 1991). This 20-item measure asks respondents to rate the perceived availability, if needed, of: (1) tangible support, involving the provision of material aid or behavioural assistance, (2) affectional support, involving expressions of love and affection, (3) positive social interaction, involving the availability of other persons to do fun things with, and (4) emotional/informational support, involving the expression of positive affect, empathetic understanding and the offering of advice, guidance, or feedback. The five-choice response scale for each item ranged from 'none of the time' to 'all of the time'. Scores range from 0 to 100 with higher scores indicating the perception of greater availability of support. The reliability of the overall measure is high (x = 0.97; see Sherbourne & Stewart, 1991).

II. Diabetes Specific Support. This measure was designed for the purpose of the study to assess the degree to which subjects felt that the amount of support received corresponded to the amount of support needed on 9 items relating to the management of their diabetes. Ratings were made on a 4-point scale for each item. Subjects were asked : (a) "To do things

properly, how much help would you NEED from others (e.g., family, friends, medical staff) to . . . . ? and (b) "How much help do you actually RECEIVE to . . . . ?" The 9 responses to 'need' were summed as were the responses to the 'receive' items. The discrepancy score was calculated by subtracting the two totals and was regarded as an indicator of the perceived adequacy of support received in relation to needs. The test-retest reliability was found to be high ($r = .85$, $p < 0.01$).

Emotional Well-Being

The Hospital Anxiety and Depression Scale was used to assess emotional well-being (Zigmond & Snaith, 1983). This scale consists of 14 questions which provide measures of 2 constructs; anxiety and depression. For each construct a score below 8 is considered to be within the normal range, 8-10 is considered to be 'borderline' and any score above 10 indicates the presence of a 'probable' disorder of the relevant mood.

2. Clinical Information

Average Blood Glucose Control

Glycosylated haemoglobin (HbA$_1$) results for each subject were obtained. As the proportion of haemoglobin that is glycosylated is a function of the glucose concentration to which the erythrocytes are exposed and the half-life of the erythrocytes is approximately two months, HbA$_1$ reflects the average level of glycaemic control during that period.

Diabetic Complications

A Complications Questionnaire designed for the study was completed for each subject by the interviewing doctor. The questionnaire recorded the presence of diabetic complications and any concomitant medical condition.

RESULTS

Descriptive Data

The 103 subjects who agreed to participate in the study represented a 85% response rate overall. Demographic and clinical characteristics of the sample are shown in Table 1. Psychosocial characteristics are shown in Table 2.

Analyses of demographic, psychosocial and clinical variables indicated the following differences between the Type I and Type II groups: the Type I group had had a diabetes diagnosis for longer ($t = 4.63, p < 0.01$) and the Type II group were older ($t = -5.27, p < 0.01$) and had significantly more diabetic complications ($t = -2.13, p < 0.05$). Age was found to correlate with number of complications in the Type II group ($r = 0.39, p < 0.01$).

Although it would have been possible to pursue analysis with the two groups controlled for age and duration of diabetes, this was not considered suitable as these factors are characteristics of the disease types and controlling for them may have produced biased samples.

Table 1. Demographic and Clinical Characteristics of 103 Subjects with Diabetes Mellitus.

Characteristics	Subjects		
	Type I (N=53)	Type II (N=50)	All (N=103)
Age			
Mean	44.74	54.46	49.46
SD	11.79	6.26	10.66
Sex			
N(%) Male	31 (58.5)	29 (58.0)	60 (58.3)
N(%) Female	22 (41.5)	21 (42.0)	43 (41.7)
Marital Status			
N(%) Married	40 (75.5)	43 (86.0)	83 (80.6)
N(%) Single	13 (24.5)	7 (14.0)	20 (19.4)
Duration of Diabetes			
Mean	12.30	5.82	9.16
SD	8.87	4.87	7.88
Complications			
N(%) Yes	17 (32.1)	24 (48.0)	41 (39.8)
N(%) No	36 (67.9)	26 (52.0)	62 (60.2)
Other Medical Condition			
N(%) Yes	9 (17.0)	17 (34.0)	26 (25.2)
N(%) No	44 (83.0)	33 (66.0)	77 (74.8)
Glycosylated Haemoglobin			
Mean	9.43	9.43	9.43
SD	1.60	1.51	1.55

Table 2. Psychosocial Characteristics of 103 Subjects with Diabetes Mellitus.

| | Subjects | | |
Characteristics	Type I (N=53)	Type II (N=50)	All (N=103)
Stress Level			
Mean	11.55	10.90	11.23
SD	12.58	11.24	11.89
Functional Support			
Mean	78.13	76.52	77.35
SD	17.89	18.72	18.23
Diabetic Support			
N(%) Adequate	30 (56.6)	33 (66.0)	63 (61.2)
N(%) Inadequate	23 (43.4)	17 (34.0)	40 (38.8)
Anxiety			
Mean	6.52	6.14	6.34
SD	3.82	3.99	3.89
N(%) Normal	32 (60.4)	33 (66.0)	64 (63.1)
N(%) Caseness	21 (39.6)	17 (44.0)	38 (36.9)
Depression			
Mean	3.96	4.34	4.11
SD	2.68	3.42	3.07
N(%) Normal	48 (90.6)	42 (84.0)	90 (87.4)
N(%) Caseness	5 (9.4)	8 (16.0)	13 (12.6)

Correlational analyses indicated that none of the demographic or clinical variables of the combined or separate Type I or Type II groups were related to HbA1. No relationships were found between HbA1 and level of life event stress or functional support. Furthermore, despite 38.8 percent of the entire sample describing inadequate levels of diabetic support (43.3 percent for Type I and 34.0 for Type II) this factor was also not found to be related to HbA1.

To assess the interrelationship between social support (functional and diabetic), life event stress and glycaemic control, two-way analyses of variance were conducted for the combined group, the Type I group and the Type II group using HbA1 as the dependent variable. Again, no significant relationships were found for any of the groups for level of functional support or level of diabetic support. Finally, level of anxiety or depression did not correlate with HbA1 in the combined or Type I groups.

In the Type II group, however, HbA1 was found to be related to level of depression ($r = 0.29$, $p < 0.05$) with those in the depressed group having significantly higher HbA1 levels ($U = 82.5$, $p < 0.05$). Furthermore, analysis of the anxious group produced results approaching significance which suggested that they also had higher levels of HbA1 ($U = 183.0$, $p < 0.06$). No differences were found in levels of depression or anxiety in relation to adequacy of diabetic support. However, functional support was related to depression ($r = -0.37$, $p < 0.01$) with the depressed group reporting significantly lower levels of functional support ($U = 84.5$, $p < 0.05$). Results also indicated that the anxious group were similarly more likely to report lower levels of functional support ($U = 151.5$, $p < 0.01$). Closer analyses of functional support revealed that it was related to age, with older subjects reporting less support ($r = -0.29$, $p < 0.05$). However,
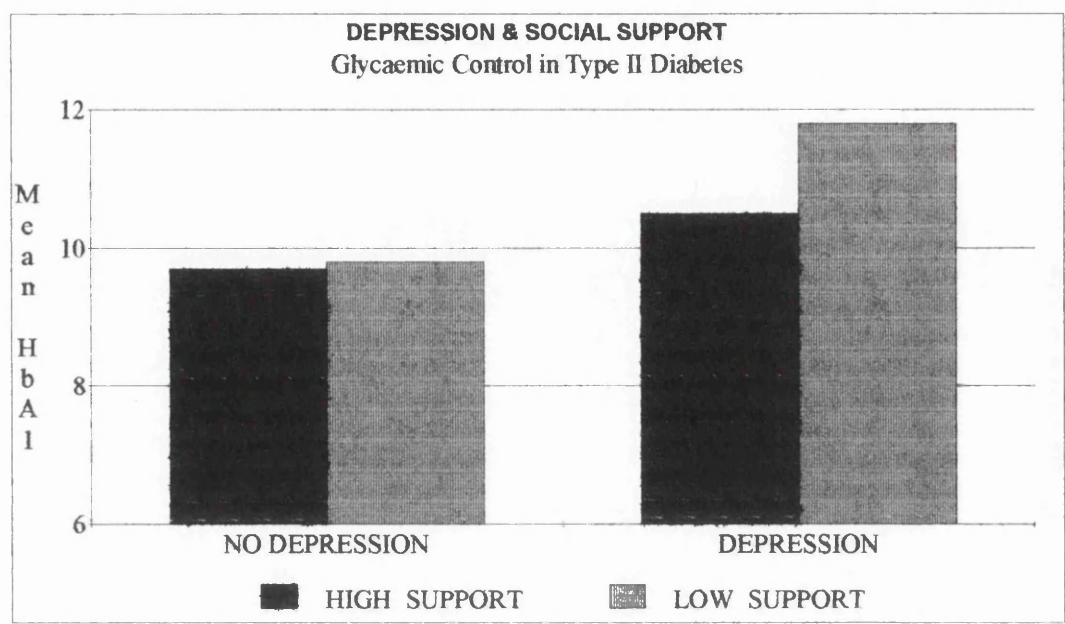
age was not found to be related to depression or anxiety. Results tending towards significance indicated that a higher number of diabetic complications were found when the depressed group were compared with the non-depressed group ($U = 103.5, p < 0.06$).

In order to assess more fully the role of functional support, a median split of the support values was used to divide the group into those with high functional support (> 77) and those with low functional support (< 77). No difference was found between the high and low functional support groups in terms of HbA1 ($U = 292.0, p < 0.89$). Furthermore, when the high support group was further divided into depressed and non-depressed subjects, no difference was found in the HbA1 levels between the groups ($U = 10.5, p < 0.25$). However, in the low functional support group, depressed subjects were found to have higher HbA1 levels than the non-depressed subjects ($U = 28.5, p < 0.05$). See Figure 1.

A similar situation was shown to exist between level of support and anxiety. In the high social support group, no difference was found in HbA1 levels between the anxious and the non-anxious group ($U = 23.5, p < 0.56$), whereas, results approaching significance would appear to suggest that for the low social support group individuals with anxiety have higher HbA1 levels ($U = 48.0, p < 0.06$).

In the Type I group although depression and anxiety were found to be related to functional support ($r = -0.27, p < 0.05$, and $U = -0.29, p < 0.05$), no relationship was found between functional support and HbA1 levels ($U = 0.18, p < 0.19$). Furthermore, when level of functional support was divided into low (< 81) and high groups (>81) no difference was found for either the depressed or anxious groups in terms of their HbA1 levels.

Figure 1. Depression and Functional Support : Association with Glycaemic
Control.

Figure: DEPRESSION & SOCIAL SUPPORT — Glycaemic Control in Type II Diabetes. Bar chart of Mean HbA1 for NO DEPRESSION and DEPRESSION groups, comparing HIGH SUPPORT and LOW SUPPORT.

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Discussion

In this study stressful life events, regardless of the levels of available functional or diabetic support, did not appear to have an influence over diabetic control. Furthermore, when Type I and Type II subjects were investigated as a combined group, there appeared to be no evidence to suggest that stress, in the form of psychological distress, could be playing a role in glycaemic control.

While psychological stress did not appear to be affecting glycaemic control in the Type I group, when the Type II group was examined a relationship was found. In the Type II group depression and anxiety were found to be associated with poorer control. Analysis also indicated that depression and anxiety in this group tended to coincide with lower levels of functional support. While those with depression in the high functional support group did not differ significantly from the non-depressed in terms of HbA1 levels, this was not the finding for low functional support. Here, individuals with depression had poorer levels of HbA1 compared with the normal group. Similar results were also found for the anxious group. These findings would appear to suggest that at times of psychological distress, higher levels of functional support in a Type II group are associated with better glycaemic control, whereas, low levels can be particularly damaging. No such relationships were found in the Type I group.

In a recent study of chronically ill subjects, Sherbourne, Meredith, Rogers & Ware (1990) found that while level of support appeared to be beneficial regardless of age, in older subjects low levels of support were especially harmful. When their sample was followed over a 2 year interval, older subjects with low levels of support experienced significant decrements in physical functioning.

In relation to this finding, given that Type II diabetes tends to occur in the older population and that age is not only associated with more complications but also lower functional social support, it would appear to be particularly important for intervention purposes to target this group. Furthermore, Type II individuals who are depressed or anxious and also have low levels of functional support appear to represent a particularly vulnerable group in terms of their glycaemic control.

Research has indicated that most people with diabetes appear to be remarkably little affected by their illness and do not report significant psychological symptoms. Evidence is mounting, however, that a minority suffer considerable psychological distress which is associated with poorer glycaemic control (Karlsson et al., 1988; Lustman, 1988; Sachs et al., 1991; Wilkinson, Borsey, Leslie, Newton, Lind & Ballinger, 1987). The results of this paper would appear to add evidence to this area. As a consequence, it would appear that at times of poor glycaemic control assessment of emotional well-being and availability of functional support should be considered. Furthermore, it seems that clinical interventions aimed at treating psychological distress and improving support may of benefit to overall glycaemic control. This is an area which future research could address.

While cross-sectional research is limited by the fact cause and effect cannot be identified, it is useful for helping to identify important factors for future research to address. While this paper indicated a relationship between depression, anxiety and glycaemic control in the Type II group, the analyses were based on a relatively small sample. Furthermore, it is recognised that although statistically significant results were found, clinically neither depression nor anxiety could entirely explain the HbA1

levels. While functional support would appear to account for some of the variance, other factors also appear to be exerting an influence on glycaemic control. One such factor may be the level of understanding that a person has for the rationale for the diabetic regime. This may be an area for future research to investigate.

In summary, life stress, in the form of life events, was not found to affect diabetic control. Furthermore, psychological distress, when examined in a combined Type I and Type II group, also did not appear to influence diabetic control. However, when the Type II group were examined individually, psychological distress and level of functional support were found to be important factors related to glycaemic control. Such findings would appear to emphasise the risks associated with continued combined Type I and Type II research. As stated earlier, Type I and Type II diabetes mellitus are distinctly different diseases and combining the two groups in one sample may be associated with missing out on important type-specific factors. Onset of Type II diabetes tends to occur in later life and as such, it brings with it necessary long-term lifestyle adjustments. While there is no indication in the literature to suggest that Type II diabetes is more or less difficult to adjust to than Type I, given the age differences between these two groups of patients, adjustment to the disease must involve different pressures and processes. It would, therefore, seem prudent for research to continue to assess these groups individually.

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Single Clinical Case Research Study (I)

Cognitive-Behavioural Treatment for Obsessive Compulsive Disorder
in a 14 Year Old Girl.

Selected Journal   Behavioural and Cognitive Psychotherapy
                           (see Appendix Section 2. for author's notes)

Title of paper   Cognitive-Behavioural Treatment for
                           Obsessive Compulsive Disorder in a 14
                           Year Old Girl : A Case Report.

Summary

Cognitive-behavioural procedures have been shown to be effective in the treatment of adult obsessive compulsive disorder. This paper reports on the successful treatment of a 14 year old girl with severe obsessive compulsive disorder using a cognitive-behavioural intervention involving cognitive restructuring with exposure and response prevention. Parental involvement was also regarded as an integral part of treatment. Ritualistic behaviour and obsessional thinking were significantly reduced during treatment and progress was maintained at 6-week follow-up. The paper discusses the potential efficacy of investigating the use of these procedures with children with similar difficulties and the role of involving parents in the treatment of childhood problems.

Introduction

In the past, childhood onset obsessive compulsive disorder (OCD) was considered to be rare (Berman, 1942; Judd, 1965). However, with retrospective reports indicating that 30% to 50% of adults suffering from OCD experienced initial problems in their youth (Kringlen, 1970; Black, 1974; Karno, Golding, Sorenson and Burnam, 1988; Hoogduin, Duivenvoordern, Schaap and Haan, 1989) and a recent epidemiologic study which found a lifetime prevalence within children and adolescents of at least 0.4% (Flament, Whitaker, Rapoport, Berg and Screery, 1988), it is now recognised that childhood OCD is more common than was previously thought.

Ritualistic behaviour and superstitions, such as avoiding pavement cracks, are viewed as normal in children and are believed to function as anxiety reduction strategies (Wolff and Rapoport, 1988). Childhood OCD, however, by definition, disrupts normal functioning, as it is often marked by repetitive thoughts which are highly distressing and accompanied by behaviours designed to make them less so (DSM-III-R, American Psychiatric Association, 1987).

Children and adolescents with OCD may present with both obsessions and compulsions with the most common obsessional behaviours involving continued counting or repeating of words or phrases and the most common compulsive behaviours involving washing, cleaning and avoiding contact with any potentially 'dirty' objects (Flament and Rapoport, 1984). Pure obsessives are rare in children and adolescents but pure ritualisers are not uncommon (Swedo, Rapoport, Leonard, *et al.*, 1989). OCD can start as early as 2 years of age (Swedo *et al.*, 1989) and the content of the obsessive compulsive behaviours has been

shown to change over time and is believed to be related to developmental tasks of the child (Rettew, Swedo, Leonard, Lenane and Rapoport, 1992).

Although behaviourally very similar to the adult disorder, childhood onset OCD occurs predominately in males (Leonard, Lenane, Swedo, Rettew, Gershorn and Rapoport, 1992) whereas, with adults it occurs equally in the sexes (Karno *et al.*, 1988). Furthermore, in contrast to the adult disorder, childhood OCD appears to have intriguing biological links and a strong association with Tourette's Syndrome (Rapoport, 1989; Leonard *et al.*, 1992).

For children with OCD, the disorder can carry significant negative consequences. Investigations of associated diagnoses have found that only 26% of children have OCD as their sole diagnoses; depression was found in 39%, other anxiety disorders in 40%, developmental disabilities in 24% and a higher than average rate for motor tics and suicide (Swedo *et al.*, 1989). Childhood onset OCD has also been shown to follow a chronic and debilitating course in a large percentage of the children who suffer from it (Hollingsworth, Tanguay and Grossman, 1980; Zeitlin, 1986; Berg, Rapoport and Wolff, 1989; Flament, Koby, Rapoport, Berg, Zahn, Denckla and Lenane, 1990). Moreover, the majority of children present with several obsessions and compulsions intensifying the disruptive effect of the disorder (Swedo *et al.*, 1989).

The treatment of OCD is, therefore, especially important given its tendency towards a chronic course and its likely progression into adulthood. Several behavioural and pharmacological interventions have

been used in the treatment of children and adolescents with OCD including response prevention, in vivo exposure, flooding, systematic desensitisation and drug treatment involving the use of chlomipramine (Wolff and Rapoport, 1988). Among these approaches, response prevention, as has been found with adults, is believed to be the treatment of choice, particularly for reducing ritualistic behaviour (Ong and Leng, 1979; Stanley, 1980; Zikis, 1983; Wolff and Rapoport, 1988; Berg et al., 1989; Rapoport, 1989).

Furthermore, given that childhood OCD occurs within the context of a family, treatment approaches have also focused on the involvement of family members. Lenane (1991) has reviewed the role of family therapy and has concluded that one of the major goals is to decrease the parental involvement in the child's rituals, helping the parents to realise that their interventions although well-meaning, may actually worsen the OCD symptomatology. Reports describing the successful involvement of family members in treatment have included parents as observers (Campbell, 1973) or as co-therapists (Zikis, 1983).

However, despite the increasing interest and demonstrated usefulness of cognitive treatment packages for adults with OCD, for the most part, cognitive approaches, with the exception of thought-stopping, have made little impact in the treatment of childhood OCD (Campbell, 1973; Ownby, 1983; Emmelkamp, Visser and Hoekstra, 1988). This is surprising in view of the fact that clinical impressions suggest that children tend to appraise their problem as outwith their control and OCD may be driven in many cases by a strong irrational belief in the protective function of the rituals. One exception to this is the work of Kearney and Silverman (1990), who successfully employed a joint

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cognitive-behavioural approach involving cognitive therapy and response prevention in the treatment of a 14 year old boy with severe OCD. By employing an alternating treatment programme of response prevention and cognitive therapy, Kearney and Silverman (1990) were able to treat successfully severe OCD and concomitant anxiety and depression.

This paper describes the development, application and evaluation of a cognitive-behavioural treatment package designed to meet the needs of an adolescent with severe OCD. The cognitive procedure employed was cognitive restructuring, analogous to that developed for adults with anxiety and depression (e.g., Beck and Emery, 1985), with behaviour therapy following an exposure and response prevention model.

Method
Subject and Case History
Alison, a 14 year old girl, was referred to Clinical Psychology by her General Practitioner because of excessive repeating of certain behaviours. Despite, having a 5 year history of ritualistic behaviour, three months prior to the referral, Alison's parents had become increasingly concerned as more and more of her time was involved in carrying out her rituals.

Alison was the younger of two sisters, her birth and development were normal and her early childhood was described as happy. She was attending secondary school and was about to start her end-of-year examinations. She appeared to be a bright girl, who until recently had

been doing well at school and had many friends and hobbies. There had been a recent marked deterioration in all of these areas.

Pattern of OCD. Alison described a long history of numerous rituals involving counting, repeating actions and ordering of objects. She dated their onset to a time when there had been many arguments between her parents and she could recall lying in bed at night saying to herself that if she counted to 4 the arguments would stop. In most of her current compulsive behaviours 4 had remained her "lucky" number and linked to her rituals was the strong belief that her behaviour carried a protective function and could prevent harm from occurring to her family.

Previous Treatment. This was Alison's first formal contact with Clinical Psychology or Psychiatry services. However, the family had tried independently to treat the problem a year prior to referral. This had involved following Alison around the family home preventing her from carrying out her rituals and making her repeat out loud "once and once only". This approach had proved to be successful for a time and because of this the family decided to go on a holiday with her aunt and uncle. Unfortunately, during the holiday, Alison's aunt died suddenly beside her from a heart attack. For Alison, this event seemed only to confirm the 'protective' function of her rituals and since then they had increased dramatically. Alison's parents had never discussed the event with Alison as they feared it would only serve to distress her.

Following the death, she reported that her rituals now occurred frequently during the day and on a daily basis and that recently, they had been taking up increasingly longer periods of time. For example,

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she was now taking 90 minutes to dress in the morning instead of the 15 minutes which previously had been enough. Furthermore, whereas before her rituals had been confined to home, over the past months, they had become problematic at school and on several occasions she had been reprimanded for taking too long to erase work from her schoolbook, for taking too long to dress herself for gym and for generally taking too long to complete her classwork.

Alison's Attitudes. Despite appearing to recognise the irrationality of her belief in her ability to prevent harm from occurring to her family, Alison reported believing firmly that her aunt's death had been her fault. The fact that her parents had never spoken to her about it appeared only to confirm her view that they also held this belief. She described now being unable to control her thoughts and actions on her own and that the only method she had for doing so was to rely on her parents to terminate her rituals. She described feeling embarrassed and childish because of her level of dependency on them. She found that her peer relationships had been affected as she was no longer being able to invite friends home as she became distressed when they disturbed her records and books. She had also stopped attending her local swimming club as again, she was experiencing difficulties changing for her lessons. Her main aim was to be free of these rituals.

Parental Involvement. Both parents when interviewed appeared highly motivated to comply with treatment. They were worried by the recent increase in the intensity and duration of the rituals following the death of Alison's aunt and felt that the only way they could help her was to comply with her instructions to call on her if she was taking too long, or to carry out especially problematic tasks for her such as, tying her

shoe laces and deciding on which clothes she should wear. Alison's father had also recently started driving her to school as she had been repeatedly late in the morning because of the length of time she took to dress. The family had never discussed the aunt's death with Alison as they felt that it would only serve to increase her distress.

Treatment

Treatment consisted of two procedures, cognitive therapy and response prevention. As Alison's parents had become involved in her rituals four treatment sessions were carried out at the family home.

Cognitive Techniques. Cognitive therapy consisted of teaching Alison methods of identifying examples of irrational obsessional thoughts, (e.g., "My aunt's death was my fault" and "My parents will die if I stand on the red squares on the carpet") and then to record these in a diary format. In order to examine more realistic probabilities and contradictory evidence against the thoughts questions such as "What evidence do I have for this thought?" and "How would someone else view this situation?" were typed onto flashcards for Alison to refer to. Behavioural experiments were then used to assess the probability of various beliefs.

Behavioural Techniques. Alison was asked to list her many rituals, twenty in total, and then rate these in terms of imagined subjective units of discomfort (SUDS) should she be requested to carry them out only once. This list was then arranged into a hierarchy to allow exposure and response prevention tasks to be selected in a graded manner. (See Table 1. for examples of the most problematic rituals.

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Table 1. Examples of the most problematic rituals.

Rituals	Subjective Units of Distress
1. To put socks on in one attempt, not four times.	85
2. To turn book pages once, not four times.	80
3. To pick up a book once, not four times.	70
4. To sit down once, not four times.	70
5. To open doors once, not four times.	60

Parental Involvement. Between sessions Alison's parents were advised only to observe Alison. They were requested to refrain from calling on Alison should she be taking too long and to stop carrying out tasks for her as these were believed to be inadvertently reinforcing their daughter's behaviours. Alison's parents were also encouraged to spend time talking to her about the death of the aunt to reassure her that they were not in fact angry with her because of the death nor did they blame her.

Procedure

Phase 1 : Baseline.

After the screening interview, Alison was assigned the task of constructing a list of all of her current rituals and rating her belief in their protective functions. She was also asked to complete a series of self-report questionnaires. Two weeks were assigned to the collection of the following data:

1. The Children's Depression Inventory (Kovacs, 1981).

2. The Revised Children's Manifest Anxiety Scale (Reynolds and Paget, 1981).

3. The Maudsley Obsessive Compulsive Inventory (Hodgson and Rachman, 1977).

Alison's parents were asked to provide information on the tasks that they helped Alison with.

Phase 2 : Treatment.

The second phase consisted of 10 weeks of the cognitive-behavioural intervention package described above. The first three weeks were conducted in the clinical psychology department and consisted of

teaching Alison the cognitive restructuring techniques and arranging her rituals into a hierarchy. Weeks 4 to 8 then comprised hourly sessions of exposure and response prevention conducted at Alison's home with the therapist, during which she was asked to limit certain rituals and challenge the associated negative thoughts brought about by response prevention.

Between appointments Alison was given homework tasks which related to the previous session. Alison's parents were asked to discuss the aunt's death with her and to withdraw, in agreement with her, specific reinforcing behaviours. For example, they were requested not to drive her to school, and not to tie her laces for her. During treatment the above questionnaires were repeated and Alison was asked to rate her belief in her ability to protect her family through her rituals and list the rituals still occurring.

Phase 3 : Follow-up.

The follow-up interview occurred six weeks after the end of treatment. Again the package of self-report questionnaires was administered and Alison was asked to list her rituals and rate her belief in her ability to protect her family.

Results

During Phase 1. Alison reported a strong belief (100%) in her ability to prevent harm from occurring to her parents. She also provided an extensive list of her rituals. In the self-report measures, the Maudsley Obsessive Compulsive Inventory was the only questionnaire that indicated significant problems related to checking, doubting and

obsessional slowness (Rachman and Hodgson, 1977). This appeared to be consistent with the information gained at interview. (See Table 2).

During treatment there was a substantial reduction in Alison's repetitive rituals and the SUDS attached to them. At the sixth session, she had successfully eliminated 60% of her rituals and there was also a marked decrease in her belief in her ability to prevent harm from occurring to her parents (by that point 5%). By the end of treatment all of her rituals had been successfully eliminated and she no longer appeared to believe in her ability to protect her parents through her rituals.

At follow-up all of these positive changes had been successfully maintained. Alison's parents were no longer carrying out tasks for her and they remarked on the positive change in their daughter. Alison herself was pleased with the improvement. She had recently had a friend over to stay for the first time in years and there had been no further complaints from her school about her work there.

Table 2. Self-Report Measures, SUDS, Number of Rituals and Belief Ratings.

Measures	Phase 1	Phase 2	Phase 3
Maudsley OC Inventory			
Checking	6	2	0
Doubting	6	2	0
Slowness	6	1	0
Children's Depression Inventory	N.S	N.S	N.S
Children's Manifest Anxiety Scale	N.S	N.S	N.S
Number of rituals engaged in	20	0	0
SUDS range per session	30 - 85	0	0
Belief ratings	100%	0%	0%

Discussion

As it is now clear that childhood OCD is more common than was previously thought and recent studies have indicated that it can follow a chronic course, it is important to focus attention on developing effective treatments for what can be a very distressing and disabling disorder (Berg *et al*, 1989).

Given that in children this disorder is quite unique in the manner in which its characteristics mirrors that of adults, it is quite possible that cognitive behavioural techniques developed for adults can be equally effective with children. However, as studies have shown parental reactions to the disorder may serve to inadvertently maintain it, it seems crucial that the parents are actively involved in the treatment process. By becoming an integral part of treatment, parents can be made aware of behaviours which may be reinforcing their child's problem and can be shown strategies for overcoming this pattern.

The cognitive-behavioural intervention package employed in this report combined cognitive therapy with exposure and response prevention. Its findings add to the literature on the usefulness of these therapeutic techniques and appear to reinforce the integral part that parents can play in treating children. The effectiveness of cognitive therapy techniques such as cognitive restructuring may lie in their ability to remove the dysfunctional emotions which may preclude compliance and effective behavioural treatment.

A weakness of this study is the reliance on self-report as the sole means of data collection. Although general subjective reports were obtained from the parents at a regular basis during treatment which

indicated positive changes, ideally it would have been preferable to include objective parental reports.

In sum, the study presents further evidence of the usefulness of cognitive behavioural approaches for the treatment of childhood OCD. Although positive results were obtained, replication is required before definitive statements can be made regarding the application of the techniques to children. It is important to emphasise that this paper reports on the short-term treatment of what can be a long-term disorder. While the approach adopted appeared to be successful, given the chronic nature of obsessive compulsive disorder, future research needs to evaluate the long-term efficacy of such treatment strategies.

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Cognitive-Behavioural Therapy for Depression and Anxiety Associated with a History of Childhood Sexual Abuse.

Selected Journal   Behavioural and Cognitive Psychotherapy
(see Appendix : Section 2. for author's notes)

Title of Paper   Cognitive-Behavioural Therapy for
Depression and Anxiety Associated with a
History of Childhood Sexual Abuse.

Summary

Childhood sexual abuse has been shown in the literature to be associated with an increased risk of long-term mood disturbance and anxiety difficulties. Victims of childhood sexual abuse frequently describe distorted beliefs about the abuse, in particular feelings of guilt and self-blame, which can continue long into adulthood. Furthermore, reports of anxiety difficulties are common. This paper describes the successful treatment of a 49 year old woman with a history of childhood sexual abuse using an eight-session cognitive-behavioural approach, based on a cognitive restructuring model. During treatment depression, anxiety and distorted beliefs were significantly reduced and changes made were maintained on follow-up. The paper discusses the efficacy of cognitive-behavioural therapy for dealing with difficulties associated with childhood sexual abuse and suggestions for future research are made.

Introduction

In the last decade, recognition of the incidence of childhood sexual abuse has increased dramatically along with the awareness that it carries a risk of long-term psychological problems (Browne and Finkelhor, 1986). As a consequence, it has been necessary for mental health professionals to develop and evaluate effective treatment approaches for this client group.

Childhood sexual abuse can be subdivided into two broad types: extra-familial abuse perpetrated by non-family members and incest which occurs within the family. While many operational definitions of childhood sexual abuse exist, one useful broad definition is that it includes "any exploitative sexual activity, whether or not it involves physical contact, between a child and another person who by virtue of his or her power due to age, strength, position, or relationship uses the child to meet his or her sexual and emotional needs" (Draucker, 1992, p. 3).

Studies investigating the prevalence of childhood sexual abuse in the general population have shown that it is a large social problem. For example, one study examining a nationally representative UK sample reported figures of 0.25 percent for incestuous abuse and 10 percent for all types of sexual abuse (Baker and Duncan, 1985). On the basis of these figures it has been suggested that a possible 4.5 million adults in the UK have experienced childhood sexual abuse and that the average age of onset of abuse is 11 years for girls and 12 years for boys (Baker and Duncan, 1985). Investigations into the duration of abuse have found that a child may be abused on one occasion only, but more frequently it has been shown that the sexual abuse continues for months or even years (Lukianowitz, 1972; Maisch, 1973). It has been

suggested that 75 percent of reported cases of sexual abuse involve fathers and 10 percent involve grandfathers (Forward and Buck, 1981).

While the incidence of childhood sexual abuse in the general population has been shown to be greater than was originally thought, equally alarming figures have been produced for clinical populations. For example, 16 percent of women referred to a psychotherapy unit reported experiencing sexual abuse in their childhood (Sheldon, 1988). Furthermore, studies of psychiatric populations have suggested that between 26 percent and 40 percent of patients have experienced sexual abuse during childhood (Rosenfeld, 1979; Carmen, Rieker and Mills, 1984; Jacobsen, 1989; Jacobsen and Herald, 1990). From these figures it can easily be seen that many mental health professionals will come into contact with clients who have experienced a history of childhood sexual abuse. Furthermore, it has been suggested that such clients are more likely than other victims to have experienced abuse of a severely traumatic nature (Herman, Russell and Trocki, 1986).

With the growing awareness of the incidence of childhood sexual abuse attention has also turned to the associated long-term effects. Although there is not a clear direct causal link between childhood sexual abuse and later psychological problems, what is clear, is that childhood sexual abuse increases the likelihood of long-term consequences for mental health and relationships difficulties in adult life. The experience of childhood sexual abuse has been shown by numerous studies to be a trauma that may continue to have an impact on survivors throughout their adult lives. Indeed, in a random survey of sexual abuse victims, only 22 percent of the sample stated that they felt the abuse had had "no effect at all" on them (Russell, 1986). Studies investigating long-term associated sequelae have identified many difficulties and these

have been categorised into emotional reactions and self-perceptions, relationship problems and problems with sexuality (Cahill, Llewelyn and Pearson, 1991).

Periods of low mood and depression have been found to be common in victims of childhood sexual abuse (Bagley and Ramsay, 1986; Browne and Finkelhor, 1986). Associated with these are feelings of extreme guilt and low self-esteem (Herman, Russell and Trocki, 1986). Indeed, low self-esteem has been one of the most commonly reported characteristics and has been described as "fundamental to many sexual abuse survivors' difficulties" (Hall and Lloyd, 1990). It has been suggested that low self- esteem, guilt and depressive episodes may be related intrinsically to beliefs held by many victims that they were themselves responsible for the sexual abuse (Jehu, 1988). With such beliefs of personal responsibility it is, therefore, not uncommon to find reports of abused women perceiving themselves to be "dirty", "bad", "shameful" and "damaged property" (Herman and Hirschman, 1981). Such descriptions serve only to reinforce and confirm their sense of worthlessness and low self-esteem.

Other difficulties found with victims of sexual abuse include a sense of isolation and a sense of being different from other people (Hall and Lloyd, 1990). For example, when compared with a non-abused group, women who have experienced sexual abuse report significantly more feelings of social isolation and difficulties forming close relationships (Briere, 1984, cited in Browne and Finkelhor, 1986).

Related to this are the many studies which document a high rate of sexual problems in the survivors of childhood sexual abuse. For example, studies have found difficulties with impaired sexual arousal,

difficulties with orgasm, guilt related to sexual issues and a lack of sexual satisfaction and motivation in victims of childhood sexual abuse (Tsai and Wagner, 1979; Becker, Skinner, Abel and Treacey, 1982). Indeed, it is often the occurrence of a sexual problem which leads the person to help (Hall and Lloyd, 1990).

What is clear from the literature is that many mental health professionals will come into contact with clients who have a history of childhood sexual abuse. Furthermore, it is now recognised that those who come forward for treatment are more likely to present with the most severe problems (Courtois, 1979; Herman and Hirschman, 1982). It is crucial, therefore, that mental health professionals are aware of the prevalence of sexual abuse and are able to respond effectively to the complex needs of such clients.

One successful approach to the treatment of associated mood disturbances has been to employ a cognitive approach which aims to addresses the details of the abuse and the related self-beliefs (Jehu, 1988). By so doing, it is suggested that this approach helps to desensitise the victim to their memories of the abuse and helps them to re-appraise their beliefs regarding the events (Jehu, 1988). A cognitive restructuring model whereby the individual is encouraged to challenge and replace these beliefs with more realistic ones would, therefore, seem useful. However, as the experiences and subsequent long-term psychological effects associated with childhood sexual abuse can be diverse it has been suggested that treatment should be tailored to meet the needs of each individual client (Courtois and Watts, 1982; Faria and Belohlavek, 1984). Thus, although intervention packages can have at their foundation a cognitive model, the implementation and

adaptation of the model to the individual client presents a challenge to the therapist.

This report discusses an individually tailored cognitive-behavioural treatment approach with a 49 year old woman presenting with mood disturbance and anxiety problems associated with a history of childhood sexual abuse.

Method

Subject and Case History

Mrs L., a 49 year-old woman, was referred to clinical psychology by her medical consultant as she had been experiencing frequent periods of low mood and sleep disturbance. She had been prescribed Amitryptyline and Lorazepam but these had been largely unsuccessful in treating her symptoms. At the time of the referral, Mrs L. was no longer taking her prescribed medication.

Mrs L., married her first husband at the age of 17, but was divorced at the age of 25. She had three children; a son and a daughter from her first marriage and a second son from her second husband whom she married at the age of 41. She was the oldest of a family of four children and both her parents had died.

Pattern of Difficulties. At the assessment interview Mrs L. disclosed a history of childhood sexual abuse. She reported that her grandfather had sexually abused her over a 4 year period, from the age of 7 until the age of 11 and that the abuse occurred on almost a weekly basis during that time period.

Extreme guilt was the main feeling described in relation to the abuse. She reported that because she had not told anyone about the abuse, it had been her fault that it had continued for so long. She described feeling that the abuse had left her "dirty" and "contaminated" and that because of this several hours each day were spent cleaning her home and washing items of clothing. This pattern of behaviour was reported to have a thirty year history. She indicated that she felt "worthless" and that her self-confidence had always been poor. A range of anxiety symptoms were also outlined and included palpitations, difficulty relaxing and dyspnoea. Her sleep disturbance took the form of difficulties with sleep onset, early morning wakening and occasional nightmares related to the abuse. She also described having always felt uncertain about her safety and that she had never been able to sleep with her bed against the wall or with the bedroom door closed. This she said was due to the fact that her grandfather would tend to lock the bedroom door and that she had always felt trapped against the wall when the abuse occurred.

She described a sense of isolation from people around her and that over the past couple of years she had withdrawn from her friends and previous social activities. She had first attempted to disclose the abuse to her mother when Mrs L. was thirty years of age, however, her reports had been largely dismissed and never again discussed within her family. Mrs L. said that she had requested the referral because she now felt that it was time to come to terms with the abuse.

Treatment

Treatment consisted of two main approaches cognitive restructuring and behaviour therapy.

Cognitive Techniques. Cognitive therapy involved increasing Mrs L's awareness of her beliefs of herself and any associated distortions. When this was successfully achieved treatment focused on encouraging more accurate self-beliefs. The Belief Inventory was employed initially to assess her beliefs regarding the abuse and monitor any changes in these throughout therapy (Jehu, 1988). Once therapy had progressed a self-report diary was employed to compliment the behavioural tasks described below.

Behavioural Techniques. Mrs L. was asked to complete a series of behavioural experiments designed to test her self-beliefs. For example, in the initial stages of treatment she was asked to bring in a photograph of herself at the time of the abuse and questions were directed at her feelings of guilt and self-blame. As treatment progressed, Mrs L. was encouraged to tackle the following tasks in a hierarchical manner: reducing her level of cleaning, sleeping with the door closed and sleeping with her bed against the wall. These latter tasks were selected as a means of addressing her feelings regarding her lack of safety. Finally, Mrs L. was taught applied relaxation training as a means of increasing her level of control over her anxiety symptoms (Ost, 1987).

Procedure

Phase 1 : Baseline

The first two one hour sessions were assigned for the initial assessment interview. During this period Mrs L. was asked to complete the series of self-report questionnaires shown below:

1. The Beck Depression Inventory (Beck and Steer, 1987). This 21-item self-rating scale allowed rapid assessment of overall depressive symptomatology.

2. The Beck Anxiety Inventory (Beck and Steer, 1990). This self-rating scale allowed rapid assessment of overall anxiety symptoms.

3. The Belief Inventory (Jehu, Klassen and Gazan, 1986). This inventory was employed to assess for clinically significant levels of distorted beliefs commonly associated with childhood sexual abuse and to identify particular beliefs as therapeutic targets.

Phase 2: Treatment

The second phase consisted of eight weeks of the cognitive-behavioural intervention package described above. Each treatment session was conducted on an individual basis and lasted approximately one hour. The self-report questionnaires were repeated at treatment session three, six and eight.

Phase 3 : Follow-up

The follow-up interview occurred one month after the end of treatment. At this point the self-report questionnaires were repeated.

Results

The information obtained from the assessment interviews and the self-report measures indicated that Mrs L. was presenting with a depressive disorder characterised by self-blame and low self-efficacy and an anxiety disorder manifested by hypervigilance and compulsive cleaning.

Scores obtained across treatment and on follow-up are shown in Table 1. As can be seen, prior to treatment, Mrs J. appeared to be functioning within the moderate to severe range for depression on the Beck Depression Inventory (Beck and Steer, 1987). At this stage, the pattern of scores appeared to reinforce Mrs L's reports of low mood and guilt. On the Beck Anxiety Inventory Mrs L. scored within the severe range (Beck and Steer, 1990). Finally, the scores on the Belief Inventory indicated clinically significant levels of distorted beliefs and items appeared to support Mrs L's beliefs regarding her responsibility for the abuse and her sense of difference from others around her.

Table 1. Questionnaire scores across treatment and at follow-up.

••

Measures	Baseline	Session 3	Session 6	Session 9	Follow-up

••

Measures	Baseline	Session 3	Session 6	Session 9	Follow-up
BDI	22	22	13	8	7
BAI	42	29	15	6	6
Belief Inventory	39	25	16	10	8

••

During the initial stages of treatment, Mrs L. quickly learned the cognitive techniques taught and appeared well motivated to undertake the behavioural tasks assigned. In the early stages of treatment, attention was directed at the re-attribution of responsibility for the abuse to her grandfather. By session eight, Mrs L. reported that she no longer felt responsible for the abuse and that her beliefs about being "dirty" had also decreased significantly. These positive changes were reinforced by her scores on the self-report measures which indicated that she was now functioning in the normal range for depression and anxiety and that she was no longer experiencing clinically significant levels of distorted beliefs concerning the sexual abuse.

On follow-up, Mrs L. described feeling as though her life had "moved on". She appeared to have maintained her ability to think more objectively and positively about herself and her experiences and the self-report measures indicated that she had continued to function within normal limits. She no longer reported experiencing periods of low mood, extreme guilt, sleep disturbance or anxiety difficulties. Furthermore, the frequency of her cleaning had been significantly reduced.

Discussion

It is now clear from the literature that sexual abuse is more common than was originally thought and that its occurrence can increase the likelihood of long-term associated psychological sequelae. One of the most common sequelae is low mood and associated with this are distorted beliefs about the victims role in the abuse. Such beliefs are seen to play an integral part in the continuation of low mood and as a

consequence, a recent development has been to consider ways of challenging and altering them. Cognitive restructuring is one such approach which has proved to be successful in the past (Jehu, 1988).

This report discusses cognitive-behavioural treatment, based on the cognitive restructuring model, of associated difficulties with childhood sexual abuse. The approach employed appeared to produce rapid and maintained relief from distressing long-term symptoms associated with sexual abuse. While the approach appeared to be beneficial in the short-term it is not yet possible to comment of the long-term effects of the intervention package. Within the sexual abuse literature relatively few reports provide long-term follow-up information and this would appear to be one area for future research to address.

One further recognised limitation of the report is that the intervention package was limited to the treatment of one individual and as such it is difficult to generalise its efficacy to other clients with similar problems. Victims of sexual abuse present with a wide variety of associated difficulties and one of the main challenges for professionals working in this area is to develop effective individualised treatment packages. While such packages may differ in terms of the behavioural methods used to alter dysfunctional beliefs, the underlying cognitive approach may remain largely the same. Cognitive restructuring appears to be a useful strategy to employ as it can alter the principal maintaining factors for associated difficulties and therefore, help the victim of childhood sexual abuse towards a successful recovery.

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Single Clinical Case Research Study (III)

Treatment of Self-Injurious Behaviour in a 20 Year Old Man with Profound Learning Disabilities by Providing Sensory Activities and Social Interaction.

Selected Journal	Behavioural and Cognitive Psychotherapy (see Appendix : Section 2. for author's notes)
Title of Paper	Treatment of Self-Injurious Behaviour in a 20 Year Old Man with Profound Learning Disabilities by Providing Sensory Activities and Social Interaction : A Case Report.

Summary

Self-injurious behaviour (SIB) refers to a broad range of behaviours which may result in physical damage to the individual. This paper discusses the assessment and treatment of two topographies of SIB (headbanging and self-biting) in a 20 year old man with profound learning disabilities. Functional analysis indicated that self-injury was most likely to occur when the subject was unoccupied and social interaction was low. It also appeared that the self-injurious behaviour was being maintained by inconsistent staff interventions which were creating an intermittent schedule of reinforcement. Treatment consisted of increasing the availability of resources for sensory stimulation and encouraging positive interaction between the subject and staff. During follow-up assessment at week 11. the self-injurious behaviours were noted to be significantly reduced. This paper discusses the importance of adequate assessment, in particular the investigation of environmental factors and the role of sensory deprivation in the maintenance of self-injurious behaviours.

Introduction

Challenging behaviour is "behaviour of such intensity, frequency and duration, that the physical safety of the person or others is placed in serious jeopardy, or behaviour which is likely to limit, or deny access to and use of ordinary community facilities" (Emerson, Cummings, Barrett, Hughes, McCool and Toogood, 1988, p.16). Several forms of challenging behaviour exist, for example, stereotypy and aggressive/destructive behaviour, however, for a learning disability service perhaps the most perplexing and challenging form of behaviour is that of self-injury. Estimates suggest that between 4 and 10 percent of people with learning disabilities who use services show self-injurious behaviours and that a quarter of these represent a challenge to the service (Murphy, 1985).

The term self-injurious behaviour refers to a wide range of repetitive behaviours which can occur from a few times a month to several hundred times per hour (Favell, McGimsey and Schell, 1982). Forms of self-injury include headbanging, face-slapping, eye poking, self-biting, and eating non-edible substances. Reports suggest that most individuals who self-injure do so in more than one way and that the preponderance of self-injurious behaviours are directed toward the head and face area (Griffin, Williams, Stark, Altmeyer, and Mason, 1986; Romancyzk, 1986; Oliver, Murphy and Corbett, 1987). Self-injury has been shown to be more common in individuals who have communication problems, additional sensory impairments or who are environmentally disadvantaged (Murphy, 1985). Prospective studies of self-injurious behaviours have indicated persistency over time and a resistance to treatment in some cases. For example, one prospective study found that despite aversive behavioural programmes 60 percent of individuals with self-injurious behaviour still

had significant problems up to 7 years later (Griffin, Ricketts and Williams, 1986).

The consequences of self-injury are significant. Not only are individuals who self-injure at risk of serious physical harm and even death, research has indicated that self-injurious behaviours may also carry negative social consequences for the individual. Self-injury carries an increased risk of institutionalisation for the individual and it has been proposed as one of the most common reasons for the exclusion of people from community services (Scheerenberger, 1981; Laken, Hill, Hauber, Bruininks and Heal, 1983). Furthermore, people who engage in self-injurious behaviours have been shown to be at an increased risk of neglect, for example being ignored by staff, or having no programmed day activities (Felce, Saxby, de Kock, Repp, Ager and Blunden, 1987; Oliver et al., 1987). Finally, people who self-injure have also been found to be at an increased risk of abuse (Rusch, Hall and Griffin, 1986).

Research, therefore, suggests that self-injurious behaviour can be a common and indeed a chronic problem which carries potentially serious negative consequences for the individual. It is important, therefore, that attention is focused on investigating the possible mechanisms responsible for the maintenance of this challenging behaviour so that effective treatment programmes can be developed.

Several hypotheses have been proposed to explain the occurrence of self-injurious behaviour with one common explanation being to relate it to a variety of illnesses or medical conditions (Cataldo and Harris, 1982). Conditions such as Lesch Nyhan Syndrome, Cornelia de Lange Syndrome and Otitis Media have been associated with self-injury in some individuals,

however, the biological association has been found not to rule out the role of sensory and social consequences. For example, findings indicate that individuals with Lesch Nyhan Syndrome were amenable to behaviour change following behavioural interventions (Duker, 1979).

Other hypotheses proposed to explain self-injurious behaviour have included the self-stimulation hypothesis, the positive reinforcement hypothesis and the negative reinforcement hypothesis.

The self-stimulation hypothesis states that individuals require an optimal level of sensory stimulation and that should the level of stimulation drop below a certain threshold, behaviours such as self-injury, are engaged in to increase arousal. On this basis, treatment techniques for self-injurious behaviour have focused on providing an environment that contains a normal quantity and variety of stimulation for the individual. Evidence exists to suggest that self-injurious behaviours can be reduced by blocking the sensory consequences of self-injury (Rincover and Devany, 1982), by masking them (Durand, 1982) or by providing sensory activities (Favell *et al* ., 1982).

The positive and negative reinforcement hypotheses state that self-injury is a learned operant response which may occur because of contingent positive reinforcement, such as attention or because the individual has learned to use the self-injurious behaviour as an escape or avoidance response to aversive events. In support of the latter hypothesis, research has indicated that for some individuals self-injurious behaviour is more frequent in situations where demands are made upon them (Carr, Newson and Binkoff, 1980; Iwata, Dorsey, Slifer, Bauman and Richman, 1982).

In relation to both hypotheses, studies have shown that self-injurious behaviours can be reduced if the reinforcing effects of the behaviour are decreased or replaced by alternative ways of gaining the same response (Lovaas and Simmons, 1969; Carr and Durand, 1985; Repp, Felce and Barton, 1988). The behaviours of others in the immediate environment can be argued, therefore, to be influential in possibly maintaining behaviours such as self-injury. Studies have produced evidence that the behaviour of others in the immediate environment, for example, members of staff, may have a powerful influence on the behaviour of individuals with learning disabilities. One investigation found that particular staff responses could influence the frequency of attempts at social interaction made by people with learning disabilities (Mayhew, Enyart and Anderson, 1978). When staff ignored attempts the rate of conversation initiation decreased. Whereas, if attempts were given a response then the frequency increased. It appears important, therefore, to look closely at the behaviour of others in the immediate environment when attempting to explain and treat self-injurious behaviours.

Considering self-injury from these behavioural perspectives has been extremely influential in helping shape assessment and intervention strategies. Behavioural perspectives have, through the use of functional analysis, drawn attention to the importance of closely examining the function of a behaviour in relation to the effects it has for the individual and the responses made by others to that behaviour. This ensures that any intervention chosen is decided upon the basis of data rather than speculative hypotheses (Bailey, 1987; Durand, 1987).

The present study employed a functional analysis approach to investigate the maintaining factors of self-injurious behaviour in a 20 year old man

with profound learning disabilities. Treatment consisted of providing alternative sensory activities, increasing the positive social interaction between the subject and members of staff and increasing the consistency of staff responses.

Method

Subject and Case History

The subject, John was a 20 year old man with a profound learning disability. He was referred to clinical psychology by his Primary Care Nurse for management advice of self-injurious behaviour which involved the following topographies: hitting his head and biting his arms.

John had no expressive language and limited receptive language. Previous attempts to teach him Makaton Sign Language had been unsuccessful. He had full use of his hands and only limited mobility. Given the level of his disability, he was able only to carry out a few basic self-help skills.

John had lived all of his life at home with his mother until 5 years ago when he was admitted to residential nursing care. He now lived in a small house with nine other residents with similar levels of disability. The house was staffed by nurses and nursing assistants.

Pattern of Self-injurious Behaviour and Previous Treatments

Casenotes indicated that John had been self-injuring for approximately 10 years and that its occurrence had been the main precipitant to his admission to hospital care. Throughout that time period, the pattern of John's self-injurious behaviour had remained consistent and had involved

hitting his head and biting his arms. On occasions in the past John had severely bruised his forehead and had broken the skin on his arms.

Reports from nursing staff indicated that he was now frequently self-injuring each day and that it happened most in his house when he was alone and unoccupied. Outside of the house John attended occupational therapy for 3 hours per week and music therapy for 2 hours per week. There were no reports of significant problems with self-injurious behaviour from these departments.

Previous attempts at treating the behaviour had included the following:
1. The use of arm splints after the initial onset of self-injurious behaviour.
2. The prescription of psychotropic medication.
3. A time-out programme.
All of the above appeared to have had only partial or transient effects. At the time of the referral there was no specific policy for the management of John's behaviour and staff indicated that they employed a variety of responses for dealing with his behaviour. For example, they reported occasionally ignoring him, comforting him, providing him with drinks or removing him from the room for an unspecified length of time.

Environmental Factors

During periods when John had no scheduled appointments for occupational or music therapy he spent his time in the day area of the house. There was no programme of planned activities for John during this time and although there was a television and radio within the house, activities available for John to occupy himself were extremely limited. Staff also appeared to spend very little time interacting with John. The house environment, therefore, appeared extremely barren and void of

appropriate activities for sensory stimulation and positive communication between residents and staff.

Treatment

Functional analysis appeared to indicate that John was most likely to begin self-injuring when he was unoccupied and there was low social interaction in the house. However, it also seemed that his behaviour was being maintained by the inconsistent staff interventions which were creating an intermittent schedule of reinforcement. Treatment, therefore, consisted of increasing sensory stimulation and positive social interaction between John and the staff and agreeing a consistent, appropriate staff response to his behaviour.

Sensory Stimulation

Here, the aim was to increase the availability of appropriate resources and activities which John could employ and which staff could use for sensory stimulation. Each member of staff was asked to study the booklet "Ideas for Sensory Stimulation and Social Interaction" and to produce a list of activities which could then be incorporated into a daily activity programme for John (Murray and Fitzpatrick, 1989). Staff were also asked to consider ways in which the physical environment of the house could be adapted to provide more stimulation for John.

Positive Social Interaction and Agreeing a Consistent Response

This consisted of discussing the principles of operant conditioning and the role of appropriate social interaction with staff. Emphasis was placed on the need for staff to act swiftly and consistently when John was self-injuring, not to ignore him as it was felt that this would only lead to the

behaviour increasing in intensity. When John was found to be self-injuring, staff were instructed to redirect him to more appropriate sensory activities and then to provide positive reinforcement for so doing. Staff were also encouraged to interact with John on a regular basis and to ensure that at all times there were resources near to him for appropriate sensory stimulation.

Procedure

Phase 1 : Baseline Assessment During Initial 2 Weeks.

This phase involved an assessment of John's behaviour using the following strategies:

1. Nursing staff, occupational therapists and the music therapist were interviewed for their views on possible explanations for John's behaviour.

2. Nursing staff were asked to monitor and record John's behaviour over this two-week period using a diary which provided information on antecedents to John's behaviour, the behaviour itself and its consequences.

3. John's Primary Nurse was asked to complete the Aberrant Behaviour Checklist which allows inappropriate behaviour to be rated according to 5 subscales; Irritability, Lethargy, Stereotypy, Hyperactivity and Inappropriate Speech (Aman and Singh, 1986) (See Table 1).

4. During the first week informal observations of John's behaviour were conducted in the following settings: at occupational therapy and at music therapy and at his house.

5. Formal observation of John was carried out during the second week and involved five sessions in the house during which John's behaviour was recorded for thirty minute episodes on video. This allowed a closer analysis of factors related to the onset and maintenance of the self-injurious behaviour. During each observation session the following information was recorded: 1) the number of discrete episodes of self-injurious behaviour, 2) the frequency of self-injurious behaviour, and 3) the mean time taken for staff to intervene.

Phase 2 : Treatment

The first two weeks of treatment initially involved general discussions with staff on the need for sensory stimulation, the principles of operant conditioning and the role of their behaviours in possibly maintaining the self-injurious behaviour. A list of appropriate activities was compiled by staff which included resources which John could use himself and activities which staff could incorporate into a daily programme. During this period staff were also encouraged to consider ways of adapting the day area of the house to ensure that there were more resources available for John to employ to occupy himself and for the staff to use during their activity sessions with him. Staff were also encouraged to interact consistently with John on at least a 5 minute basis and to provide positive reinforcement and encouragement when he was observed to be occupying himself appropriately.

The above interventions were allowed to proceed during weeks 3 to 10.

Phase 3 : Follow -up.

The formal follow-up assessment occurred at week 11. At this point the Aberrant Behaviour Checklist was repeated with John's Primary Care

Nurse and John's behaviour was also recorded on video again for five 30 minute periods to allow a repeat analysis (Aman and Singh, 1986).

Results

During the initial phase of intervention, discussions with various members of staff and informal observations appeared to suggest that John's behaviour was most problematic within his house when he was alone and unoccupied. His behaviour did not seem to be problematic when he was at occupational therapy or music therapy where his time was structured with activities.

This finding was reinforced by the staff diary and confirmed by the video analysis of his behaviour. The diary indicated that a possible antecedent to John's behaviour was not having anything to occupy himself and being left alone. Analysis of the video indicated that John could spend long periods of time sitting on his own with no resources for appropriate self-stimulation and very little positive interaction from staff. Furthermore, when observed to be self-injuring this behaviour would appear to build up in intensity and frequency until he was responded to by staff. On occasions it was observed that periods of 10 to 15 minutes could elapse before any intervention from staff and that the interventions ranged from providing comfort to verbally reprimanding him. In sum, the video analysis clearly showed that there was very little interaction between staff and John and that if left unoccupied he would begin to self-injure repeatedly. It also indicated that the inconsistent approach employed by the staff group was serving to create a schedule of intermittent reinforcement, thereby, maintaining his behaviour.

During treatment, when provided with activities and resources the number of self-injurious episodes and the frequency of self-injurious behaviour decreased significantly. Follow-up observations indicated that John had more activities to occupy himself and that his programme of activities was running smoothly. By providing activities John was less likely to engage in episodes of self-injurious behaviour (see Figure 1). Analyses also showed that the actual frequency of self-injurious behaviour had also decreased (see Figure 2) and that staff were now responding more speedily and consistently to John (see Figure 3).

The physical environment in the day area had also changed. Several mobiles were now hanging in the corner area where John would tend to sit, a soft mat had been placed in the corner and attached to it were fibre optic lights, mirrors and small bells.

On the Aberrant Behaviour Checklist John scored highly on the following 3 subscales; Irritability, Lethargy and Stereotypy (Aman and Singh, 1986). When repeated at follow-up the reduction in scores reinforced the change that had been noted in his behaviour (see Table 1.)

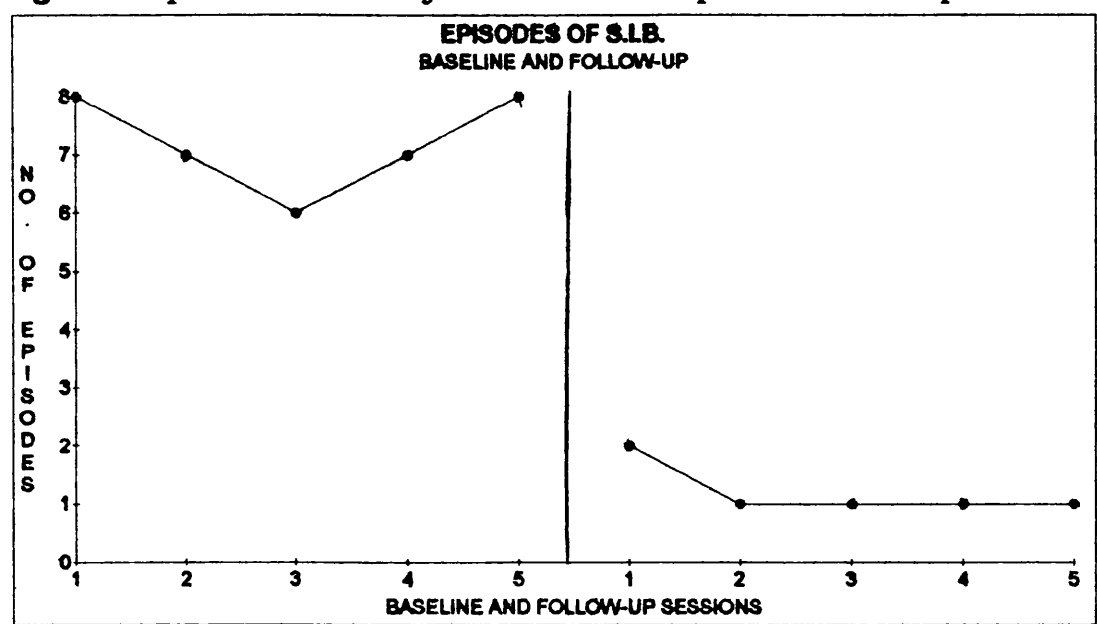Figure 1. Episodes of Self-injurious Behaviour per 30 Minute Episode.

EPISODES OF S.I.B.
BASELINE AND FOLLOW-UP

NO. OF EPISODES

BASELINE AND FOLLOW-UP SESSIONS

Figure 2. Frequency of Self-injurious Behaviour per 30 Minute Episode.

FREQUENCY OF S.I.B.
BASELINE AND FOLLOW-UP
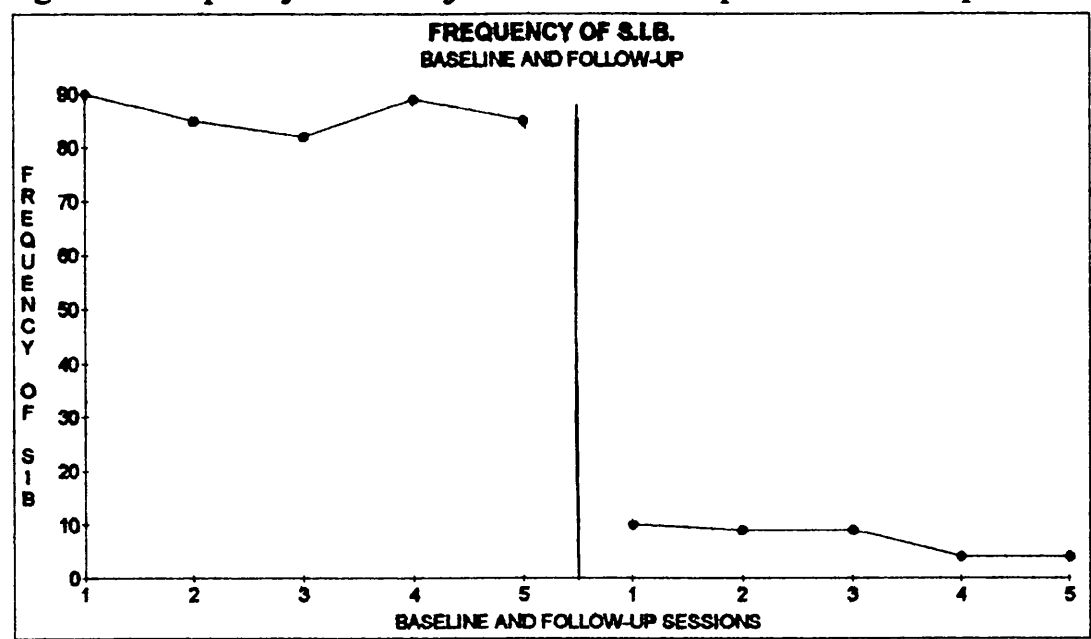
Figure 3. Staff Intervention Time per 30 Minute Episode

MEAN INTERVENTION TIME
BASELINE AND FOLLOW-UP
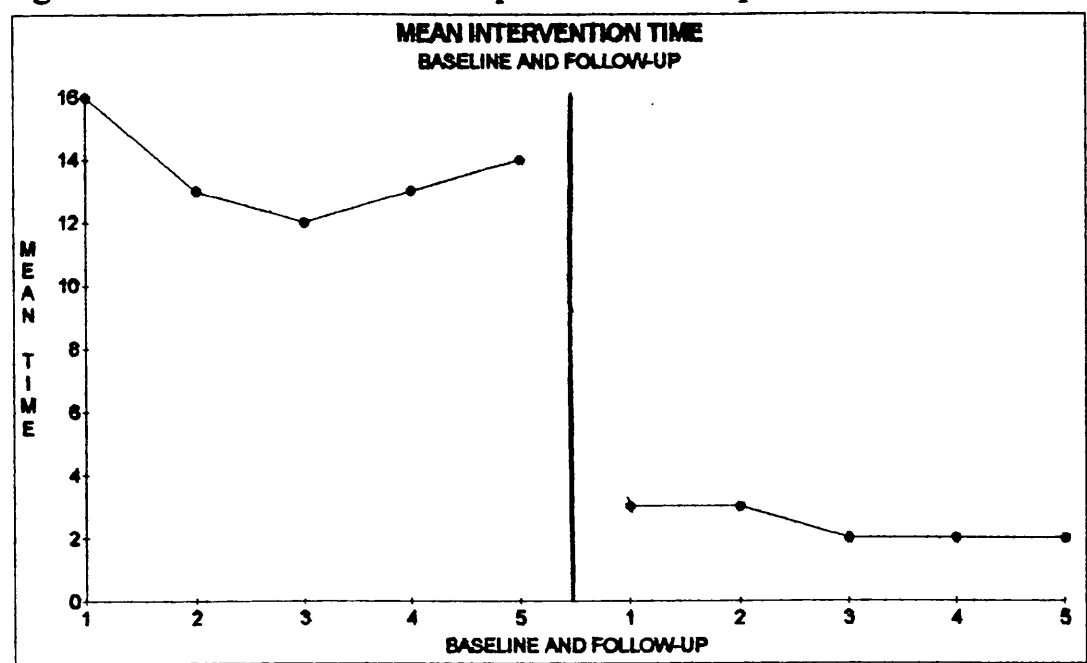
Table 1. The Aberrant Behaviour Checklist (% of possible scores)

Subscale	Baseline	Follow-up
Stereotypy	75%	38%
Irritability	57%	22%
Lethargy	20%	12%
Hyperactivity	4%	4%
Inappropriate Speech	0%	0%

Discussion

Self-injury is an extremely dangerous and debilitating behaviour pattern. It is perhaps one of the most challenging forms of behaviour as it's assessment may call into question the role of external environmental factors and its treatment necessitates a change not only in significant others but also aspects of the physical environment. For these reasons self-injurious behaviours pose a challenge for the provision of services for individuals with learning disabilities.

From a clinical perspective it is obviously important to understand the motivation for a behaviour so that effective interventions can be developed. Recent research has moved toward an emphasis on identifying specific environmental conditions and consequences associated with self-injurious behaviour (Iwata *et al*., 1982). The use of functional analysis is crucial in achieving this aim as it allows examination of not only factors which may lead to the behaviour, but also the consequences of the behaviour.

The present study employed a functional assessment of self-injurious behaviours in a profoundly disabled man. Resulting data showed that different factors were related to the onset and maintainence of the behaviour. Onset was believed to be related to sensory deprivation and the lack of positive social interaction while the principal maintaining factor appeared to be the inconsistent responses by staff. By providing alternative activities, increased positive social interaction and a consistent, faster staff response to the behaviour, results indicated that the number of episodes and the frequency of self-injurious behaviour were significantly reduced and that the improvement was maintained on follow-up. Treatment

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appeared to have been successful in eliminating not only the cause of the behaviour but also what was considered to be the maintaining factor.

One criticism of the design of study could be that it is not possible to state which intervention had the greatest effect or whether one intervention would have been sufficient at successfully altering the behaviour. Based on the functional analysis conducted the author's own clinical judgement was that the change would not have been successfully achieved if any of these factors had not been excluded from the intervention package.

While the self-stimulatory hypothesis has often been cited as one of the primary factors in the development of self-injurious behaviour (Favell *et al.*, 1982; Rincover and Devany, 1982) recent reports have focused attention on the behaviours of staff and its implications for people with challenging behaviours (Hastings and Remington, 1994). This paper provides support for the importance of not only providing appropriate sensory activities and but also involving and altering staff behaviour when managing self-injurious behaviour. Self-injurious behaviour and other forms of challenging behaviours do not occur in a vacuum. It is crucial for future research to pay attention to and attempt to deal with the various factors which might influence the maintenance of self-injurious behaviour.

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Small Scale Service Related Project

An Investigation into Factors Influencing Initial Attendance at Adult Mental Health Clinical Psychology Outpatient Clinics.

Selected Journal

The British Journal of Medical Psychology
(see Appendix : Section 3. for author's notes)

Title of Paper

An investigation into Factors Influencing
Attendance at Adult Mental Health Clinical
Psychology Outpatient Clinics.

Summary

Adult Mental Health outpatient clinics account for much of the work of Adult Clinical Psychology Services. Non-attendance, may mean, therefore, that patients miss out on valuable treatment and that difficulties are presented for the efficient running of the service. This is particularly the case with new patients where an hour may be set aside for the initial assessment interview. The present study was conducted at a Clinical Psychology Department in Glasgow to assess the annual rate and pattern of initial non-attendance at Adult Mental Health outpatient clinics and to investigate the role of patient and service factors. Results indicated an annual rate of initial non-attendance of 21% with great variability between months (14% - 36%) and between outpatient locations (12% - 45%). Chi square analyses of 52 non-attenders with 52 attenders for first appointments indicated no significant differences with respect to gender, referral source, reason for referral, preparation time for appointment or day of appointment. Non-attenders were, however, found to be significantly younger ($t=-3.42$, $p<.05$), to have had longer waiting times for their appointments ($t=2.93$, $p<.05$) and to be more likely to have had previous mental health problems ($chi=6.805$, $p<.05$). Results indicate that non-attendance is a multifactorial problem not solely related to patient or service factors. Implications of these results are discussed with regard to the improvement of patient services.

Introduction

Failed initial appointments with mental health professionals have long been recognised as a major and costly problem (Rosenthal & Frank, 1958). The literature suggests that after referral between 20% to 50% of patients in mental health settings do not attend for their initial appointments (Carpenter, Morrow, Del Gaudio & Ritzler, 1981; Krulee & Hales, 1988; Swenson & Pekarik, 1988). Studies focusing specifically on Clinical Psychology outpatient appointments report rates of initial non-attendance of up to 30% (Balfour, 1986; Madden & Hinks, 1987; Spector, 1988). These rates have been found to be comparable with non-attendance in psychotherapy and other medical settings (Hoffman, 1985; Weighill, Hodge & Peck, 1983).

Outpatient clinics account for the largest proportion of work performed by Adult Clinical Psychology Departments; non-attendance, can, therefore, have significant negative repercussions for the patients and also for the service. Reports suggest that non-attendance may carry a threat to the patient's health and well-being as missing out on potentially important advice may lead to illness, relapse or exacerbation of the presenting problem (Laken & Philips, 1988). Failure to keep initial appointments also leads to inefficient use of professional time and resources, thereby, reducing the availability of services for others in need (Barron, 1980; Kourany, Garber & Tornusciolo, 1990). Furthermore, non-attendance disrupts the scheduling of appointments resulting in larger waiting lists and longer waiting times (Barron, 1980; Starkenburg, Rosener & Crowley, 1988). Finally, for the professionals involved, non-attendance has been shown to be related to lower job satisfaction (Gleeson, Chant, Cusick, Dickson & Hodgers, 1991).

Investigations into factors which may influence non-attendance have produced findings which can be divided broadly into two main areas; patient factors and service factors.

Patient Factors

Studies examining demographic characteristics of non-attenders have produced conflicting results. Haynes, Taylor & Sackett (1979) reported no relationship between age and attendance. However, later studies suggest that on the whole younger patients are less likely than older patients to attend for initial appointments (Carpenter, *et al.*, 1981; Lloyd, Bradford & Webb, 1982; Verbov, 1992).

In relation to gender, again there appears to be contradictory findings. Some studies have failed to find a relationship between gender and attendance (Jellinek, 1978; Starkenburg *et al.*, 1988), however, others have found that non-attenders are more likely to be males (Blouin, Perez & Minoletti, 1985; Wilder, Plutchnik & Conte, 1977; Dickey & Morrow, 1991).

Investigations have found a relationship between marital status and the likelihood to attend for appointments with married patients being found to be more likely to comply with outpatient appointments (Krulee & Hales, 1988; Matas, Stanley & Griffin, 1992) Hershorn (1983) in his study of non-attenders at a community mental health centre found that attendance was related to a series of variables which indicated stability and reliability in a person's life. He suggested being married was one such variable.

A number of studies have focused on rates of attendance in relation to particular psychological problems. Substance abuse problems and

personality disorders have been shown repeatedly to carry a higher risk of non-attendance (Del Gaudio, Carpenter, Stein & Morrow, 1977; Dubrinsky, 1986; Matas *et al.*, 1992; Sparr, Moffitt & Ward, 1993). In contrast, several studies have indicated that fewer cases of affective disorders appear in samples of non-attenders (Blouin *et al.*, 1985; Jellinek, 1978; Matas *et al.*, 1992; Wilder *et al.*, 1977).

It has been suggested that previous contact with the service in question may influence the patient's likelihood of attendance. Research into the importance of this factor has, however, produced contradictory findings. For example, Rogawski and Edmundson (1971) reported that a history of psychiatric treatment increased the likelihood that patients would keep their initial outpatient appointments. Carpenter *et al.'s* (1981) results were consistent with this finding as they found that non-attenders at an American psychiatric clinic were less likely to have had previous contact with psychiatric services. Trepka (1986), however, found that non-attenders at a British clinical psychology outpatient clinic were significantly more likely to have had previous contact with local psychiatric services. It was suggested that ignorance of the services and unsatisfactory past experiences with them might discourage patients from attending or that the relationship between non-attendance and previous psychiatric contact could be influenced by differences in culture.

Service Factors

While it is important for the service to be aware of the potential effects of such patient variables, findings carry few practicable implications for reducing non-attendance rates. Of interest to service providers is the investigation of what aspects of their practice influence the probability of a patient attending their first appointment.

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Such variables as the time of the day, the day of the week, or the month of the year have been investigated and have been shown not to affect initial attendance rate (Errera, Davenport & Decker, 1965; Gould, Paulson, & Daniel-Epps, 1970).

Prolonged waiting times for initial appointments, however, have been repeatedly linked to failure to attend at outpatient clinics (Raynes & Warren, 1971; Rock, 1982; Leese, Wilson & Murray, 1986; McGlade, Bradley, Murphy & Lundy, 1988; Dickey & Morrow, 1991). Proposed explanations for this have been that patients who have to wait long periods for appointments may have had time to recover from the problem which prompted the referral in the first place or that they may simply have forgotten the appointment. One further aspect of the appointment making process which has been shown to be related to non-attendance is the amount of notice given for the appointment. Frankel, Farrow and West, (1989) found that non-attendance at outpatient departments of a general hospital was significantly related to length of notice given for the appointment, with patients receiving less notice being significantly less likely to attend.

Source of referral has also been shown to have an effect. Studies have shown that patients referred by a general practitioner, family member or friend had a significantly higher attendance rate than those self-referred (Carpenter et al., 1981). It was proposed that the support of significant others enables the patient to seek help.

The Fate of Non-attenders

Studies investigating patients' reasons for not attending have identified a number of factors. One study found that patients did not attend because

of anxiety about what might happen and that this is a common factor for non-attendance at medical screening clinics ((Noonan, 1973; Kee, Telford, Donaghy and O'Doherty, 1992). A number of patients have also reported that their problems had resolved prior to the appointment (Noonan, 1973). However, one study investigating the fate of a sample psychiatric patients who had failed to attend for their initial appointments found that at one year more than 75% of the patients had gone on to receive some type of professional help (Noonan, 1973). It was suggested that this indicated the continued need for services for a large number of individuals.

Non-attendance, therefore, may have negative consequences for the patients and for the smooth running of the service. In order to ensure maximum service efficiency and patient care an understanding of the factors related to this problem is needed. The following study was carried out in a Clinical Psychology Department in Glasgow to establish the following:

1.The annual rate and pattern of initial non-attendance at the department's adult mental health outpatient clinics.

2.Patient and service factors associated with non-attendance.

Method

Data routinely collected on rates of attendance for outpatient, inpatient and day patient appointments were analysed for the period October 1993 to September 1994. This provided an overall figure for non-attendance and rates for each type of patient contact.

Subjects

A random sample of 52 non-attenders and 52 attenders for initial outpatient appointments was then selected to allow a comparison of both patient and service factors. Non-attenders were defined as patients who failed to attend their initial appointment and failed to make contact with the department. Attenders were defined as patients who did attend their initial outpatient appointment.

Procedure

Patient information was recorded by the author from the referral letter and casenotes. The details obtained included the following: the age and sex of the patient, the date of referral, the referral source and the rated degree of urgency for the appointment (urgent, soon or routine).

The presenting problem was coded using broad disorder categories from DSM-IV, American Psychiatric Association (1994). The reliability of the coding system was confirmed by clinical psychologists working in the department coding a sample of referral letters and comparing the codes allocated. The test-retest reliability was estimated to be 0.85. (See Appendix : Section 3).

Patient casenotes provided information on the following: the waiting time i.e., the time between the referral date and the date of the appointment, the appointment notice, i.e., the time interval between the appointment letter being sent and the date of the appointment, the outpatient clinic allocated, the day of the appointment, any previous experience of mental health treatment i.e., previous contact with Clinical Psychology or Psychiatry and whether the patient attended or not.

Results

1. Departmental Records

During the period October 1993 to September 1994, a total of 7,653 appointments were arranged by the Clinical Psychology department. This included both new and repeat appointments.

General Practitioners were responsible for 70% of these referrals, Psychiatrists for 25% and the remaining 5% of referrals came from other sources, for example, Community Psychiatric Nurses, Social Workers etc.

Source of Appointments

Of these appointments, 310 (4%) were arranged with in-patients, 1705 (22.3%) were arranged with day-patients attending local day hospitals and 5638 (73.7%) were outpatient appointments. Of the outpatient appointments 1111 (19.7%) were new appointments for newly referred patients and 4527(80.3%) were repeat appointments, i.e., patients already seen who were returning for appointments. As can be seen from Figure 1. outpatient appointments, therefore, account for the largest proportion of work.

Figure 1. Source of Appointments (October 1993 - September 1994)

Source of Appointments
October 1993 - September 1994

Day-patient (22.3%)

In-patient (4.0%)
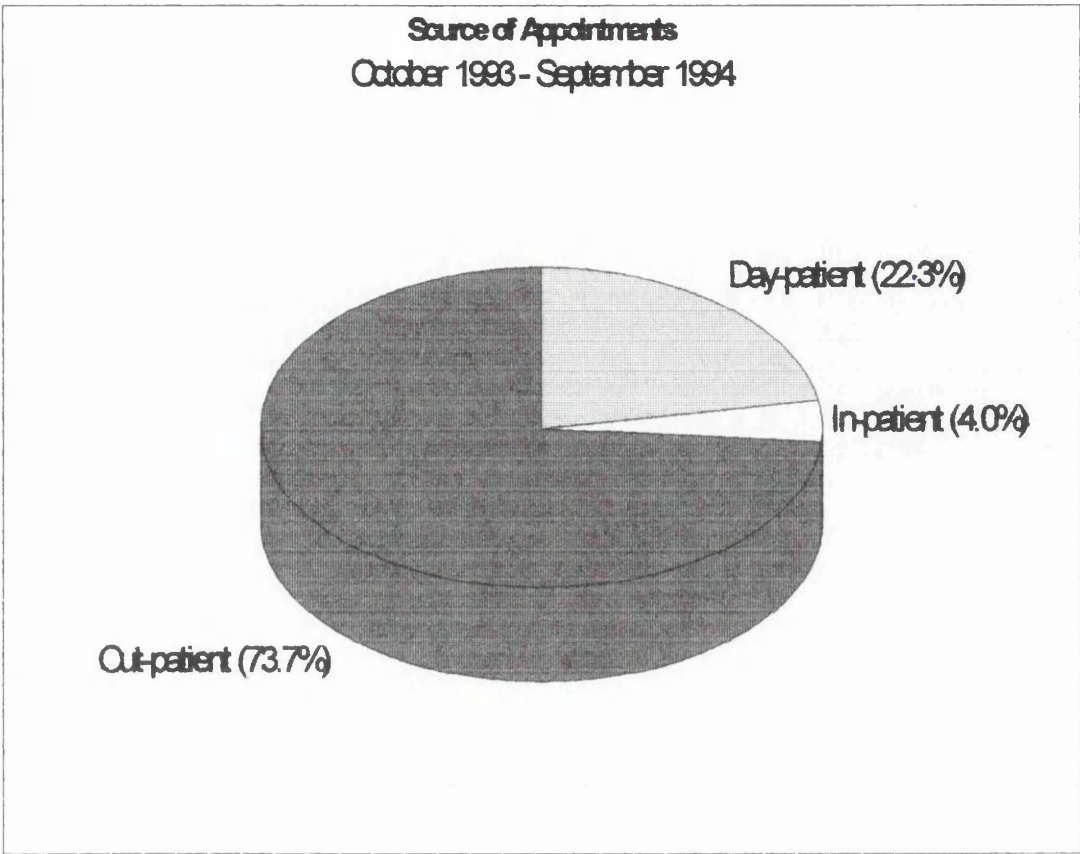
Out-patient (73.7%)

Overall Rates of Non-Attendance

The overall annual rates of non-attendance were as follows: 0.3% for in-patients, 2.2% for day-patients and 10.3% for outpatient appointments. The annual non-attendance figure for repeat outpatient appointments was found to be 8%, however, for initial appointments the rate was found to be 21%. For initial non-attendance there was a great deal of variability found from clinic to clinic (12% to 45%) and from month to month (14% to 36%) as shown in Figure 2.

Figure 2. Monthly Non-Attendance

MONTHLY INITIAL NON-ATTENDANCE
Oct. 1993 - Sept. 1994

%INITIAL DNA
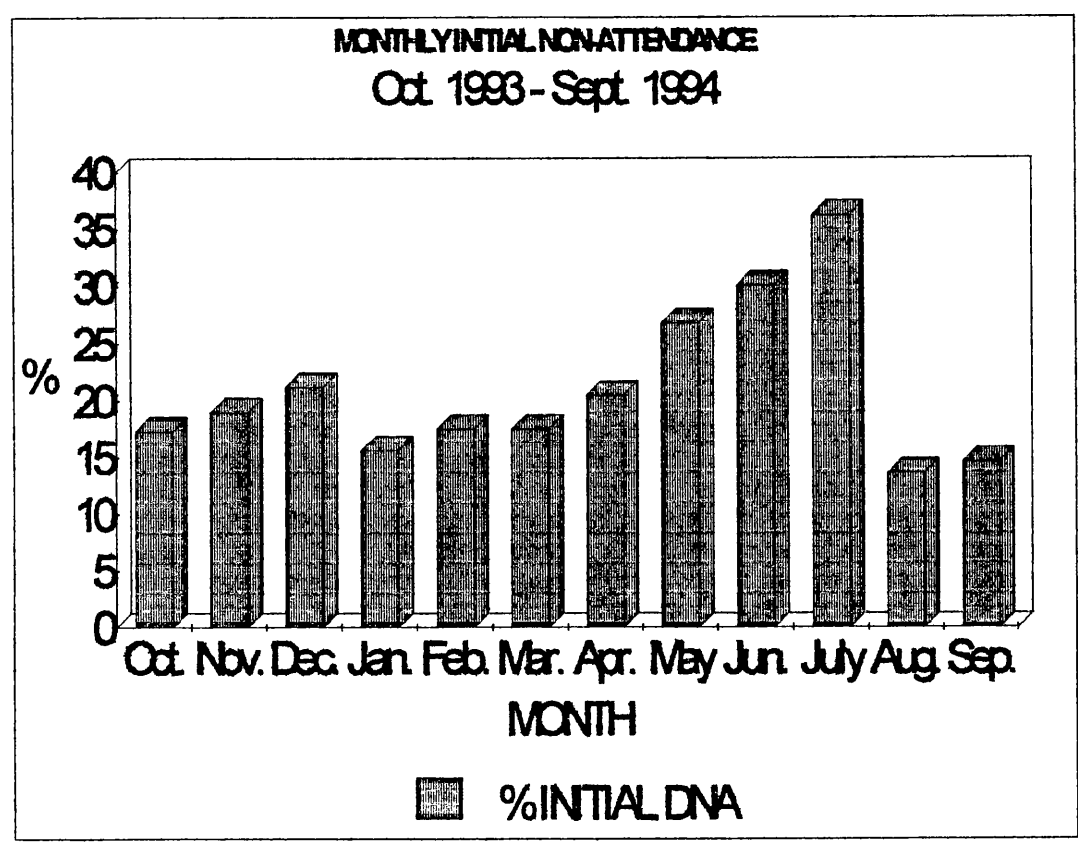
2. Patient and Service Related Factors

Patient Factors

The characteristics of non-attenders and attenders for initial appointments are presented in Table 1. Chi-square analyses revealed no significant differences between the groups with regard to gender, referral source or reason for referral. Examination of patient records showed a great deal of unclassified data for the following factors: marital status, occupation and referral urgency. It was, therefore, not possible to examine the effects of these variables. However, analysis with a t-test for independent samples revealed that non-attenders were significantly younger than attenders ($t=-3.42$, $p<.001$). Non-attenders had a mean age of 30.2 years, whereas attenders had a mean age of 36.7 years. Previous contact with the mental health service was also found to be significantly related to non-attendance (chi-square $= 6.805$, $p<.05$). Patients who had contact with the service in the past were found to be less likely to attend for their appointment. Previous contact in the non-attenders was rated at 46.2% in contrast to the 23.1% in the attenders. On a closer examination of previous contact, there were no significant differences found in relation to age, gender, reason for referral, number of problems, referral source, waiting time or preparation time.

Table 1. Characteristics of non-attenders versus attenders.

Variable N(%)	Non-attenders(%) (N = 52)	Attenders(%) (N = 52)	Significance

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Gender

Variable	Non-attenders(%)	Attenders(%)	Significance
Male	22 (42.3)	18 (34.6)	
Female	30 (57.7)	34 (65.4)	N.S. (chi-square)

Age

Mean (SD)	30.2 (8.6)	36.7 (10.7)	p<.001 (t-test)

Marital Status

Single	16 (30.8)	9 (17.3)	
Married	7 (13.5)	14 (26.9)	
Div/Sep/Wid	5 (9.5)	6 (11.6)	
Unclassified	24 (46.2)	23 (44.2)	*

Work Status

Employed	12 (23.1)	17 (32.7)	
Unemployed	14 (26.9)	17 (13.5)	
Absent/ill-health	0	1 (1.9)	
Student	1 (1.9)	0	
Unclassified	25 (48.1)	51.9 (27)	*

Previous Contact

Yes	24 (46.2)	21 (23.1)	
No	28 (53.8)	40 (76.9)	p<.05 (chi-square)

Referral Source

G.P.	46 (88.5)	42 (80.8)	
Psychiatry	5 (9.6)	7 (13.5)	
Other	0	5.8 (3)	N.S. (chi-square)

Table 1. Characteristics of non-attenders versus attenders (Continued)

Variable N(%)	Non-attenders(%) (N = 52)	Attenders(%) (N = 52)	Significance
Referral Urgency			
Urgent	1 (1.9)	5 (9.6)	
Soon	6 (11.5)	5 (9.6)	
Routine	5 (9.6)	3 (5.8)	
Unclassified	40 (76.9)	39 (75)	*
Main Disorder			
Anxiety Dis.	22 (42.3)	23 (41.2)	
Depression	6 (11.5)	9 (17.3)	
Adjustment Dis.	6 (11.5)	7 (15.4)	
Eating Dis.	4 (7.7)	2 (3.8)	
Substance Abuse	4 (7.7)	0	
Somatoform	2 (3.8)	3 (5.8)	
Relationship Prob.	2 (3.8)	3 (5.8)	
Impulse Control	2 (3.8)	0	
Bereavement	2 (3.8)	1 (1.9)	
Cognitive	2 (3.8)	0	
Sexual Dis.	0	1 (1.9)	
Abuse/Neglect	0	2 (3.8)	N.S. (chi-square)

(* Analysis not possible due to unclassified data)

Service Factors

Chi square analyses of factors such as day and time of appointment and the clinic assigned produced no significant results. As there was a large amount of unclassified information in relation to urgency of referral no analysis was possible. Although the mean preparation time for the appointment for non-attenders was 14.9 days compared to 18.1 days for the attenders, when analysed with a t-test for independent samples this proved to be insignificant. In contrast, however, analysis of waiting times by means of a t-test for independent samples indicated that non-attenders were significantly more likely to wait longer periods of time then the attenders (t=2.93, p <.05). The mean waiting time for the non-attenders was 83.7 days whereas, for attenders it was 64.9 days. Figure 3. shows a comparison of the waiting times for appointments for non-attenders and attenders.

Figure 3. Waiting periods for non-attenders versus attenders

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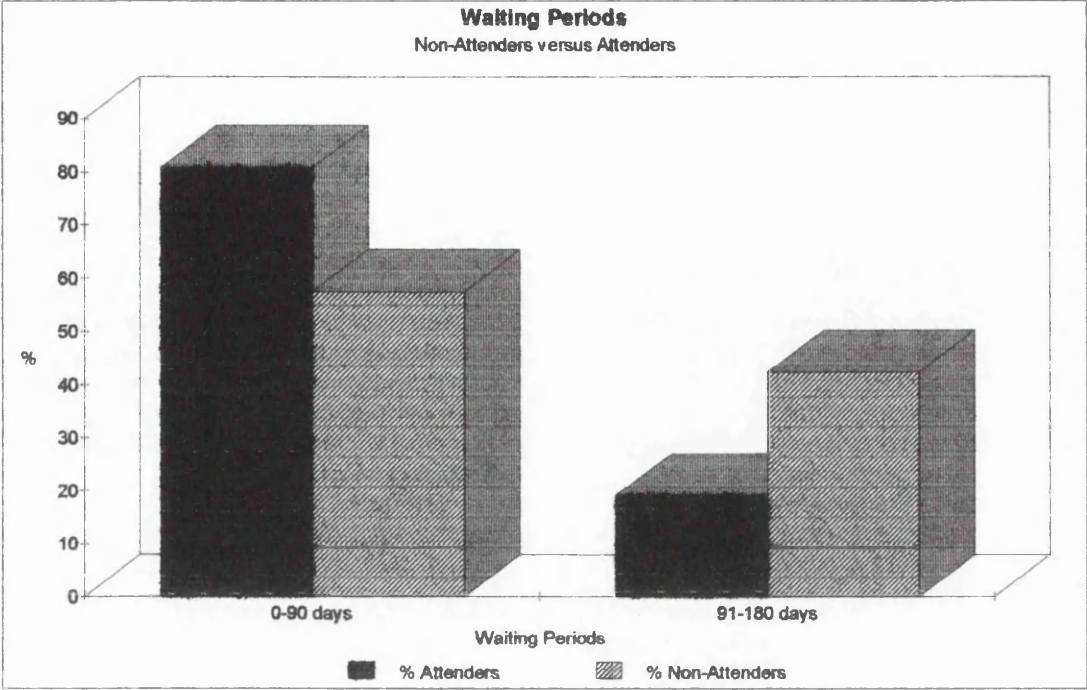
Discussion

The present investigation has provided information on the rate and pattern of initial non-attendance at a Clinical Psychology Department in Glasgow and has identified important patient and service related factors.

The results confirm that the annual rate of 21% for initial non-attendance is comparable with that found by other psychologists (Weighill *et al.*, 1983). Initial non-attendance may pose considerable problems for the provision of clinical psychology services. There was a great deal of variability between months with fluctuations possibly being explained by the influence of local and summer holidays. There was also a great deal of variability between clinics and it was noted that the clinic with the highest level of initial non-attendance was situated in an area with a high level socio-economic deprivation and the referrals from this area were of a more complex pattern. Such variability obviously presents problems for the smooth running of the service.

The variables which did not appear to be significantly related to the likelihood to attend were the following: gender, referral source, reason for referral, day of appointment, appointment notice and out-patient clinic. Unfortunately, with the large amount of unclassified information in relation to marital and employment status and urgency of referral it was not possible to carry out analyses on these factors. Given that referral letters are the most common method for receiving relevant information from the referring source, it is concerning that a large amount of important demographic and patient information is missed, especially in relation to the referring agents rated urgency of the case. Without this important information the possibility of needing to respond swiftly to a case may be missed.

Significant differences were found with respect to age, previous experience of mental health treatment and waiting time for appointment. Non-attenders were more likely to be younger than attenders; a finding consistent with other studies (Carpenter *et al.*, 1981; Lloyd *et al.*, 1982; Verbov, 1992). Non-attenders were also more likely to have waited longer periods of time for their appointments and again, this is consistent with other studies (Raynes and Warren, 1971; Rock, 1982; Leese *et al.*, 1986; McGlade *et al.*, 1988; Dickey and Morrow, 1991). Finally, non-attenders were also more likely to have had a previous experience of mental health treatment. Trepka (1986) also found this relationship in his study of non-attendance at clinical psychology out-patient clinics and suggested that it may be due to negative past experiences or negative expectations.

The results of the study appear to suggests that the responsibility for decreasing non-attendance rates may rest as much with those providing the service as it does with the patients. Investigations into methods for facilitating appointment keeping behaviour are, therefore, crucial for the service. One strategy which may increase the likelihood of patients attending their first appointments would appear to be the provision of prompt appointments. Furthermore, the development of an opt-in procedure for initial appointments, whereby patients confirm their attendance, may also assist in reducing the overall non-attendance rate. However, the finding that younger patients and patients with previous experience of mental health contact are more likely to fail to attend for their initial appointments is concerning and cannot be adequately answered in an investigation of this type. A closer examination of the experiences of patients' during the referral process, the amount of information they receive

and their expectations of clinical psychology may provide useful information for the service.

A second prospective study investigating these factors is currently underway.

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