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Doctor of Clinical Psychology Degree

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of the degree of Doctor of Clinical Psychology**

**THE EFFECT OF CAUSAL ATTRIBUTIONS AND BELIEFS
ON THE ACCEPTABILITY OF INTERVENTIONS
FOR SELF-INJURIOUS BEHAVIOUR**

and RESEARCH PORTFOLIO

PART ONE

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August 1998

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1. SMALL SCALE SERVICE EVALUATION PROJECT

‘Opting-in’ to a more efficient clinical psychology service?

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Written in accordance with guidelines for submission to *Health Bulletin* (Appendix 1)

ABSTRACT

Keeping in line with current NHS policies for service provision, clinical psychology departments are focusing on ways to increase the efficiency of their services. In particular, methods to decrease the length of time spent on psychology waiting lists and to improve client appointment keeping have been suggested. One such way is to require clients to 'opt-in' to the service by directly confirming that they will attend an appointment when offered. The present study examined the effect of an 'opt-in' system on appointment keeping and the length of the waiting list for an adult mental health clinical psychology service. The relationship between waiting list length and attendance at first appointments was also considered. An independent subjects design was used to compare referrals to the service before and after the implementation of the system. Analysis of the data suggested that such a system is effective at increasing attendance at first appointments and decreasing waiting times, although has minimal effect on overall attendance rates or whether clients terminated treatment early. Additionally, the data suggested that clients who have to wait longer for an appointment are more likely to attend their first appointment. These results imply that opting-in to a clinical psychology service may be at least one way of improving certain aspects of service efficiency.

INTRODUCTION

The recent focus on increasing efficiency and effectiveness in the NHS (e.g. The Patients' Charter, 1991), particularly the issue of waiting list lengths, is currently a central contention for clinical psychology services. Taking results from the Division of Clinical Psychology survey of waiting lists for NHS clinical psychology services (1) and the survey of the Joint National Professional Manpower Initiative (2), Startup (3) suggested that around 28,000 people are on clinical psychology waiting lists. Only 15.5 per cent of the DCP survey respondents believed that their service was meeting the demands made. Within this proportion, some commented that they had closed their waiting lists, that referrers had stopped referring knowing that waiting times were lengthening, or that referrals were not accepted due to vacant posts. Reasons given for long waiting lists included low staffing levels, vacant posts and increasing demand for services. In the survey of Greater Glasgow Health Board's Mental Health Unit (4), long waiting times to see a clinical psychologist was most often reported as a sign of a poor service by both clients and GPs.

In addition to the problem of long waiting lists, there are the related problems of clients failing to keep their first appointments without notification ('did not attend' - 'DNA') or dropping out of treatment early ('early terminations'). An overall average termination rate of about one-third appears to be the accepted estimate in British clinical psychology services (5), similar to rates of first appointment DNAs (6, 7). Early terminations are relevant to waiting lists in that, with insufficient treatment, clients are likely to be re-referred (3, 8). DNA rates are also relevant to waiting lists, again because clients who do not attend their first appointment may be re-referred at a later date, and because of the

waste of time involved. Conversely, a long waiting list may reduce the probability that a client will attend their first appointment (9). Failure to keep appointments may also lower the morale of therapists (8).

These problems have been addressed in an attempt to increase service efficiency. A great number of ways of dealing with long waiting lists and poor appointment keeping have been proposed. For example:

- assessment appointments prior to being placed on the waiting list;
- curtailing treatment length through brief and focused intervention, such as the “two-plus-one” model;
- restricting access to the service;
- group work;
- referring on to other professionals;
- categorising clients into urgent and non-urgent cases;
- preparation for psychological treatment, such as providing information before treatment begins;
- opt-in/out systems that require all referred clients to confirm directly that they will attend the appointment (3, 10, 11).

Preliminary evidence suggests that such interventions may be of use in reducing waiting times and improving appointment keeping. Offering two initial assessment appointments prior to being placed on the waiting list was found to lower waiting times slightly, but to have no effect on attendance (12). Clients receiving a pre-appointment questionnaire designed “to encourage the patient to start thinking psychologically” were more likely to attend their initial appointments than those receiving no such questionnaire (13). Studies

have found decreased DNA rates following the provision of information about clinical psychology and opting-in to the service (7, 14). Also, decreased DNA rates were found for providing information alone (3, 16) or opting-in alone (15, 17). Paradoxically, a further study (18) found that opting-in or providing information had no effect on DNA rates, although rates of early terminations decreased.

It appears from this brief overview that different interventions may have different effects on different aspects of client appointment keeping. However, it still remains unclear as to *which* intervention has *what* effects on *which* aspects. Furthermore, information on the success of these different interventions in terms of waiting list reductions is limited (19).

The aims of the present study were to evaluate the effects that an opt-in system had on; (a) first appointment DNAs, (b) early terminations, (c) overall attendance rates and (d) time spent on the waiting list in an adult mental health psychology department and also, to consider (e) the relationship between time spent on the waiting list and first appointment DNAs.

It was hypothesised that time spent on the waiting list, first appointment DNAs and early terminations would decrease after intervention, and that attendance rates would increase. Also, that as the waiting time increased, so would the likelihood of a first appointment DNA.

METHOD

Subjects

Subjects were all outpatients referred to an adult mental health psychology service, within the designated time periods. Referrals were not included if the referring agent withdrew the referral before placement on the waiting list. Also, referrals were excluded if the client failed to confirm the appointment (by not returning a confirmation slip), or if there was insufficient information to determine all the dependent variables. This latter reason applied in very few cases.

Design

An independent subjects design was used to compare referrals within a 6-month period before implementation of the intervention (from March to August, 1993) with a 6-month period after the implementation of intervention (from March to August, 1995). These time periods also were selected to control for any seasonal effects on DNA rates and to give time for any effects on waiting list times to become apparent. Information was obtained from 'patient contact records', which were forms completed on receipt of referral, at the time of first contact and on discharge. The number of whole-time equivalent (WTE) clinical psychologists and the estimated number of face-to-face WTE outpatient sessions within each period were determined and taken into consideration.

Independent Variable - The 'Opt-in' System

The introduction of confirmation letters as an opt-in referral system was implemented in March 1994. Once clients had been referred to the psychology department, they were sent a letter asking whether they wished to have an appointment, and were required to

confirm that they would attend before receiving an appointment and being placed on the waiting list. If they failed to confirm, they were not placed on the waiting list.

In this particular department, a further waiting list initiative scheme, categorising clients into urgent and non-urgent cases had been implemented prior to March 1994. Therefore, there were two waiting lists in effect - the 'normal' and the 'priority' waiting lists. This was taken into consideration when the data were analysed.

Dependent Variables

- First appointment DNAs: percentage of first appointment DNAs within each period.
- Early terminations: percentage of clients who attended one or more appointments, but who dropped out before treatment was completed, within each period.
- Attendance rates: percentage of direct contacts kept, over the first 6 months of treatment, within each period.

Attendance rates over the first 6 months of treatment were considered for each client, and appointments out with this time were excluded from analysis. The majority of clients would ordinarily have completed treatment within this timescale.

- Time spent on waiting list: mean length of time between the date the referral was received and the date of first contact offered across all referrals within each period.

Statistical Analysis

The data were entered and analysed on SPSS for Windows (Release 6.0). Mean percentage scores for appointment keeping and mean length of waiting time was calculated. For the waiting list data, comparisons were made by using the independent one-tailed t-test for all data and then the normal waiting list alone. Mean waiting time was also calculated for four time periods, each of 3 months, two before intervention (March to May 1993 and June to August 1993) and two after (March to May 1995 and

June to August 1995) to reveal trends. One-way analysis of variance (ANOVA) for independent measures was carried out on these means and the Scheffe test was used to conduct the post-hoc analysis. Correlation between length of waiting list and first appointment DNAs was explored by the point-biserial coefficient.

RESULTS

A total of 484 referrals were considered, 249 before and 235 after the intervention was implemented.

Appointment keeping

The percentage of first appointment DNAs decreased from 20.5 before the intervention to 11.9 after the intervention, and early terminations decreased from 35.3 to 31.9 per cent (Table I). Attendance rates increased only slightly from 59.5 before to 62.0 per cent after intervention. 17.9 per cent of clients did not confirm the request of an appointment.

Table I about here

Time spent on the waiting list

Table II shows that the average time spent on the waiting list decreased from 69.9 days before to 57.9 days after the intervention, although this difference on an independent one-tailed t-test was not significant ($F=3.235$, $df=1$, $p=0.073$). The length of the normal waiting alone was found to decrease from 90.0 to 64.9 days and this decrease was significant ($F=7.160$, $df=1$, $p<0.05$).

Table II about here

The waiting list (both priority and normal) data were re-analysed by one-way ANOVA in the four time periods of 3 months (see Table III for number of referrals and mean length of waiting list during these time periods). A visual inspection of Figure I suggested that before the intervention was implemented, the length of the waiting list was increasing, whereas after the intervention, waiting time was decreasing. However, mean waiting time over these time periods just failed to achieve significance ($F_{(3, 480)} = 2.5410$, $p=0.056$). Once again, the data were considered for the normal waiting list only (see Figure II) and this time a one-way ANOVA showed mean waiting time to differ significantly ($F_{(3, 290)} = 5.9602$, $p<0.05$). The post-hoc Scheffe Test revealed a significant difference between waiting times for the second and fourth, and the second and third time periods.

*Table III and Figures I and II
about here*

Length of waiting list and first appointment DNAs

The point-biserial correlation coefficient revealed a weak, although significant, negative relationship between first appointment DNAs and waiting length ($r = -0.075$, $p<0.05$). This suggested that, as the waiting list length increased, the percentage of first appointment DNAs decreased.

WTE staff and sessions

Table IV shows the number of WTE staff and the estimated number of face-to-face WTE outpatient sessions for each time period. WTE outpatient session number was estimated since not all staff time would be devoted to seeing clients. The numbers in parentheses exclude staff who were about to leave and who would not have seen new patients during that period. These data show a small variation between time periods. For the data in 6-month time periods, there was a slight decrease in number of WTE psychologists and sessions from before to after intervention. For the data in 3-month time periods, the first period had the greatest number of WTE psychologists and sessions available, and the fourth had the fewest.

Table IV about here

DISCUSSION

From this study, it appears that opting-in to treatment may be an effective way of increasing attendance at initial appointments with a clinical psychologist. First appointment DNAs decreased by 8.6 per cent, from 20.5 to 11.9 per cent. This result is consistent with previous findings. For example, Spector (7) investigated an opt-in system in conjunction with the provision of information and reported a greater decrease of 21.4 per cent. However, the initial DNA rate was higher than in the current study, at 33.4 per cent and the rate after intervention was equivalent, having been reduced to 12.0 per cent. Markman and Beeney (18) failed to demonstrate a change in initial attendance rates after implementation of an opt-in system. This could be considered inconsistent with Spector

(7) and the current study's results. However, it has been suggested (3) that the reason for this negative finding was due to moderately low initial DNA rates. Indeed, the DNA rate after intervention was 13 per cent, consistent with previous results. Taking these results together it seems possible that an opt-in system will reduce DNA rates to the region of 12 or 13 per cent, regardless of initial rates, but will not reduce them further. However, Anderson and White (17) recently reported a decrease of 12 per cent in initial appointment DNAs, from 25 to 3 per cent. There are several possible reasons why Anderson and White found such a low DNA rate. For example, there might have been an additional element to their method of opting-in that resulted in such a low DNA rate. Their clients were requested to opt-in when they neared the top of the waiting list having been informed only of the length of the waiting list at the time of referral. So the fact that clients had to confirm close to the actual date of the first appointment may have been a factor that prompted attendance.

To date, the majority of the evidence suggests that opting-in is successful in reducing first appointment DNAs. Furthermore, 17.9 per cent of clients from the present study did not confirm their appointment and therefore were not placed on the waiting list. It is highly likely that the majority of these clients would not have attended their first appointment.

Also from this study, it appears that opting-in to treatment may be an effective way of reducing the time spent on a waiting list to see a clinical psychologist. Although the waiting time decrease of 12 days from the 6-month period before to the 6-month period after intervention for normal and priority lists together was not significant, when the normal waiting list alone was considered, its waiting time decrease of 25 days was significant. A similar pattern of results was found when the four 3-month time periods

were analysed. Taking the 3-month time period immediately before intervention and the three months prior to analysis, there was a non-significant decrease of 21 days for both lists together and a significant decrease of 43 days for the normal waiting list alone. The time periods immediately before and immediately after intervention also showed a significant decrease in normal waiting list of 39 days. The reason for non-significant results for both waiting lists together was probably due to the high variance in the data, which was reduced by considering the normal waiting list in isolation.

The fact that the number of available WTE psychologists and sessions was less after than before the intervention means that the reductions in the waiting list could not be due to an increase in supply of therapists. The slight decrease in the number of referrals could not account for the magnitude of the change in waiting time. As seasonal effects were also controlled for, this could not be the reason for the decrease in waiting list time. Therefore, in controlling for these factors, and from a visual analysis of the data (Figure 1) which suggests that the waiting list was actually increasing before the intervention's implementation, it seems reasonable to conclude that the decrease in waiting time was due to the intervention.

Regarding the relationship between waiting list length and first appointment DNAs, the results from this study were not in the direction predicted, suggesting that clients who spend more time on the waiting list, were less likely to DNA at first appointment. This result is inconsistent with that of Hicks and Hickman (9). It is unclear as to why this relationship was found, as opposed to the predicted relationship.

Although results from this study showed a slight decrease in early terminations (2.9 per cent), Markman and Beeney (18) found a greater decrease of 12 per cent. It is difficult to

interpret why this is so. Markman and Beeney (18) concluded that the reason for their decrease in early terminations was “due to the fact that, by opting in, they [the clients] are making a commitment to continue with therapy”. This did not seem to be the case in this present study. Also, this study showed little evidence of change in overall appointment keeping, regardless of why the client stopped treatment.

It is possible that opting-in only has a positive effect on the length of the waiting list and first appointment DNAs, whereas such a system has little or no effect on other aspects of appointment keeping, such as overall attendance rates. A different type of intervention may yield greater changes with regard to these aspects of attendance and future research may investigate such alternative systems. Finally, there are, of course, other reasons why waiting lists are long (e.g. staff shortages, increasing demand) and clients DNA (e.g. lack of knowledge of what clinical psychology is) which opting-in does not address. Therefore, to obtain greater decreases in waiting times and DNA rates, these may have to be addressed.

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Table I: Appointment keeping: percentage of first appointment DNAs, attendance rates and early terminations.

| | Number of referrals | First appointment DNAs | Early terminations | Attendance rates |
|---------------------|---------------------|------------------------|--------------------|------------------|
| Before intervention | 249 | 20.5 % | 35.3 % | 59.5 % |
| After intervention | 235 | 11.9 % | 31.9 % | 62.0 % |

Table II: Mean time (with standard deviations in parentheses) spent on the normal and priority waiting lists together, and the normal list alone.

| | | Number of referrals | Mean waiting time (standard deviation) |
|---------------------------------|---------------------|---------------------|--|
| Normal & Priority waiting lists | Before intervention | 249 | 69.9 days (64.2) |
| | After intervention | 235 | 57.9 days (56.0) |
| Normal waiting list | Before intervention | 152 | 90.0 days (71.5) |
| | After intervention | 142 | 64.9 days (62.2) |

Table III: Mean time spent on the waiting list (with standard deviations in parentheses), and total number of referrals for the four time periods, for both the normal and priority waiting lists together, and the normal list alone.

| | Time period | No. of referrals | Mean length of waiting list (standard deviations) |
|---------------------------------|-----------------------|------------------|---|
| Normal & Priority waiting lists | 1. March - May 1993 | 127 | 65.25 (56.06) |
| | 2. June - August 1993 | 122 | 74.79 (71.57) |
| | 3. March - May 1995 | 114 | 62.44 (59.21) |
| | 4. June - August 1995 | 121 | 53.61 (52.76) |
| Normal waiting list | 1. March - May 1993 | 84 | 76.8 (62.2) |
| | 2. June - August 1993 | 68 | 106.2 (79.1) |
| | 3. March - May 1995 | 67 | 67.0 (65.7) |
| | 4. June - August 1995 | 75 | 63.0 (59.2) |

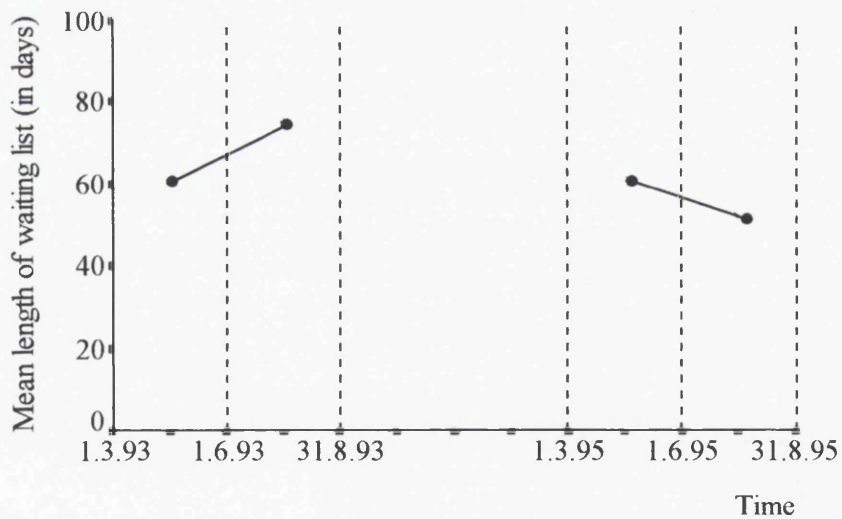


Figure I: Graph showing the mean length of the waiting list over time for normal and priority waiting lists together.

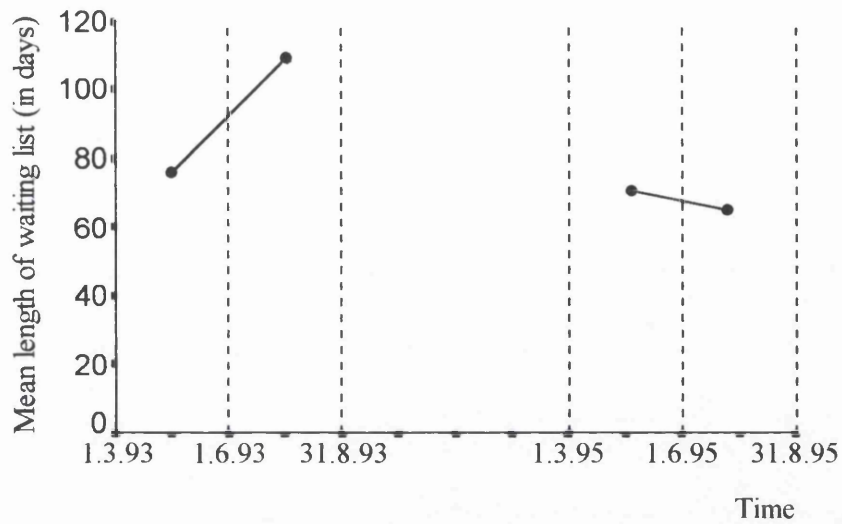


Figure II: Graph showing the mean length of the waiting list over time for normal waiting list only.

Table IV : Number of outpatient staff and estimated number of outpatient sessions (number excluding staff due to leave in parentheses).

| | Time period | Number of outpatient staff | Estimated number of outpatient sessions |
|----------------------|---------------------|----------------------------|---|
| 6 month time periods | March - August 1993 | 2.44 (2.23) | 1.63 (1.48) |
| | March - August 1995 | 2.24 (1.92) | 1.55 (1.35) |
| 3 month time periods | March - May 1993 | 2.55 (2.15) | 1.73 (1.43) |
| | June - August 1993 | 2.32 (2.31) | 1.53 (1.53) |
| | March - May 1995 | 2.47 (2.14) | 1.69 (1.49) |
| | June - August 1995 | 2.00 (1.70) | 1.40 (1.20) |

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2. MAJOR RESEARCH PROJECT LITERATURE REVIEW

Challenging behaviour: Factors affecting staff ratings of treatment acceptability and their beliefs and causal attributions

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Written in accordance with guidelines for submission to *Research in Developmental Disabilities* (Appendix 2)

Challenging behaviour: Factors affecting staff ratings of treatment acceptability and their beliefs and causal attributions

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Running Title: Challenging behaviour: Beliefs, attributions and treatment acceptability

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ABSTRACT

The controversy regarding the use of aversive procedures with people with learning disabilities has resulted in the impetus to examine the acceptability of different interventions aimed at reducing challenging behaviours. With the consideration that treatment acceptability may affect overall treatment effectiveness, one of the main objectives of researchers in this area has been to identify factors that affect acceptability ratings. It has been suggested that staff beliefs and attributions about the causes of challenging behaviour may be one such factor. This article summarises the findings from studies that have examined factors that affect treatment acceptability; reviews the literature on staff beliefs and attributions about the causes of challenging behaviour; and examines the evidence that suggests such beliefs and attributions may affect the acceptability of interventions aimed at reducing these behaviours. Implications from this review for research are discussed.

INTRODUCTION

There has been considerable debate about the use of aversive procedures to modify challenging behaviour in people with learning disabilities (Repp & Singh, 1990). The 'anti-aversive debate' refers to the position that aversive stimuli should not be employed in treatment for people with learning disabilities. Various groups have taken position statements critical of the use of aversive interventions (Association for Persons with Severe Handicaps, 1986; Association for Retarded Citizens/ United States, 1985; American Association on Mental Retardation, 1986) and numerous authors have written in support of such statements (e.g., Guess, 1988; Guess, Helmstetter, Turnbull & Knowlton, 1987; Laski, 1987; LaVigna & Donnellan, 1986; McGee, Menolascino, Hobbs, & Menousek, 1987; Turnbull et al., 1986). Positions supporting the use of aversive techniques under certain controlled conditions have also been proposed (American Psychological Association Division on Mental Retardation, 1989; Association for Advancement of Behavior Therapy, 1982; Favell et al., 1982; National Institute of Health, 1989). Again, many authors have written endorsing such positions, advocating the philosophy of 'least restrictive yet most effective' (e.g., Matson & Taras, 1989; Meinhold & Mulick, 1990, 1992; Van Houten et al., 1988).

Several issues have been raised and discussed within this debate. These have included: (i) empirical issues, such as treatment effectiveness, maintenance and generalisation of treatment effects and the potential side effects of treatments; (ii) ethical issues, including the intention of the intervention, the relative risks and benefits of the intervention and the issue of informed consent and; (iii) legal issues (see Gerhardt, Holmes, Alessandri & Goodman, 1991).

A concept perhaps central to the aversiveness debate is that of social validity. Social validity refers to the fact that interventions will be judged in terms of the; (i) social significance of their outcomes, (ii) appropriateness of their procedures and, (iii) importance of the effects achieved (Kazdin, 1977; Wolf, 1978). In particular, controversy regarding the use of aversive procedures with people with learning disabilities has resulted in the impetus to examine the acceptability of different interventions (Repp & Singh, 1990; Morgan, 1989). Kazdin (1980, p259) defined acceptability as "judgments about treatment procedures by lay

persons, clients, and other potential consumers". Wolf and Kazdin considered that not only might it be important to determine treatment acceptability for ethical and legal concerns, but also because the acceptability of treatment procedures might relate to implementation of, and adherence to, procedures. They reasoned that it is not enough for a treatment to be effective; the individuals implementing it must also accept the treatment. Identifying factors that affect acceptability may lead to the recommendation of more acceptable, and consequently more effective treatments (Rasnake, 1993; Reimers, Wacker, & Koepl, 1987). Accordingly, this has been one of the main objectives of researchers in this area (Miltenberger, 1990).

A recent focus in the literature on challenging behaviour and people with learning disabilities has been their carers' beliefs and attributions about the causes of such behaviour. The beliefs held by staff members have been considered important for a number of reasons. They have been identified as a source of influence on how staff respond to challenging behaviour (Hastings, Remington, & Hopper, 1995) along with other influences, such as formal and informal aspects of the service culture (Hastings & Remington, 1994; Hastings, 1995). Also, it has been suggested that staff beliefs may affect how staff perceive the appropriateness of different treatment interventions (Emerson, Hastings, & McGill, 1993; Hastings & Remington, 1994) thereby potentially affecting the delivery of such procedures (Bromley & Emerson, 1995). With the development of a functional analytical approach to assessment and intervention, contemporary treatment of challenging behaviour is closely linked to hypotheses about its origins (Emerson, 1992, 1993, 1995; Repp, Felce, & Barton, 1988). If there is a mismatch between staff causal beliefs and the principles underlying the planned intervention, this may be one explanation as to why intervention programmes fail to be implemented effectively. It is also suggestive that staff beliefs and attributions about the causes of challenging behaviour may be a factor that affects treatment acceptability.

The aims of this article are as follows. First, briefly, to define some of the terms used in the relevant literature. Second, to summarise the findings from studies that have examined factors that affect treatment acceptability. Third, to review the literature on staff beliefs and attributions about the causes of challenging behaviour. Fourth, to examine the evidence that

suggests such beliefs and attributions may affect the acceptability of interventions aimed at reducing these behaviours. In conclusion, the implications from this review for future research will be discussed.

DEFINITIONS

The term challenging behaviour has been defined as “behaviour of such an intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit or deny access to and use of ordinary community facilities” (Emerson et al., 1988, p.16). The three major forms of challenging behaviour are self-injurious behaviour (SIB), aggressive/destructive behaviour and stereotyped behaviour. Although there has been some dispute about the definition of what is aversive (see Matson & Taras, 1989), by operational definition, a stimulus is considered aversive when, presented contingent on a behaviour, it reduces the probability that the behaviour is displayed again (Azrin & Holz, 1966). Punishment, therefore, may be defined as a response-contingent aversive stimulus. Similarly, a reinforcer is any stimulus which, when presented contingent on a behaviour, increases the probability of the behaviour re-occurring. A continuum of procedures ranging from least to most restrictive (e.g., environmental change, antecedent control, reinforcement, physical assistance, verbal instruction to extinction, overcorrection, response cost, physical restraint to time out, mechanical restraint, spray mist, noxious chemicals/tastes, electric shock and psychotropic medication) has been suggested (Brazier & MacDonald, 1981; Lennox, Miltenberger, Spenger, & Erfanian, 1988).

FACTORS AFFECTING TREATMENT ACCEPTABILITY

Research into treatment acceptability has been extensive, generating numerous reviews (Cross-Calvert & Johnston, 1990; Elliott, 1988; Gajria & Salend, 1996; Miltenberger, 1990; Morgan, 1989; Rasnake, 1993; Reimers et al., 1987; Witt & Elliott, 1985). In general, the methodology used to evaluate treatment acceptability has been analogue in nature. Typically, raters are asked to read a case description of a client exhibiting a problem behaviour and

descriptions of treatment procedures applied to the problem. The rater then completes a scale to rate the acceptability of the treatments. Numerous scales have been developed over the years to assess acceptability (see Table 1). Descriptions of cases and treatment procedures are varied to evaluate the influence of various factors on acceptability ratings.

Table 1 about here

Although there is growing research on treatment acceptability in areas such as paediatrics (Tarnowski, Kelley, & Mendlowitz, 1987; Tarnowski, Gavaghan, & Wisniewski, 1989a), older adults (Bourland & Lundervold, 1989; Burgio et al., 1995; Burgio, Sinnott, Janosky, & Hohman, 1992; Burgio & Sinnott, 1989, 1990; Lundervold, Lewin, & Bourland, 1990; Lundervold, Young, & Jackson, 1993) and behaviour marital therapy (Bornstein et al., 1983; Wilson & Flammang, 1990), the majority of research to date has been conducted in the field of child behaviour therapy. Findings from studies in this field that have attempted to determine factors that affect ratings of treatment acceptability can be summarised as follows.

First, procedures are rated as more acceptable when positive/reinforcement-based than reductive/punishment-based (e.g., Kazdin, 1980; Pickering & Morgan, 1985; Witt, Elliott, & Martens, 1984a) and second, when applied to more severe problems (e.g., Kazdin, 1980; Frenz & Kelley, 1986). Third, reductive procedures are generally more acceptable for severe than mild problems as are positive procedures for mild than severe problems (e.g., Witt et al., 1984a). Fourth, the more effective the treatment, the more acceptable the treatment (e.g., Kazdin, 1984; Tingstrom, McPhail, & Bolton, 1989; Von Brock & Elliott, 1987). Fifth, procedures which result in fewer side effects are rated as more acceptable (e.g., Kazdin, 1981). Sixth, studies tend to reveal interaction effects of time taken to implement the intervention with problem severity and intervention type (Witt & Martens, 1983; Witt et al., 1984a; Witt, Martens, & Elliott, 1984b; Elliott, Witt, Galvin, & Peterson, 1984). Seventh, acceptability has been shown to vary as a function of who implements the treatment (e.g., Martens et al., 1985; Witt & Robbins, 1985) and not to vary by mode of case presentation (Martens et al., 1985). Eighth, functionally identical procedures are perceived as differentially acceptable, depending on the way they are described and the

rationale given for their use (Cavell, Frentz, & Kelley, 1986; Witt, Moe, Gutkin, & Andrew, 1984c). Finally, knowledge and experience of the rater affects acceptability (e.g., Witt et al., 1984c; Witt & Robbins, 1985) and acceptability varies across raters (e.g., Kazdin, French, & Sherick, 1981).

In the field of learning disabilities, studies have investigated factors that affect the acceptability of a range of behavioural procedures varying in restrictiveness, as applied to challenging behaviours such as SIB and aggression (see Table 2). As in the child behaviour therapy literature, procedures are rated as more acceptable when less restrictive and intrusive (Foxx, Bremner, Shultz, Valdez, & Johndrow, 1996a; Foxx, McHendry, & Bremner, 1996b; Irvin & Lundervold, 1988; Lindeman, Miltenberger, & Lennox, 1992; Miltenberger, Lennox, & Erfanian, 1989a; Singh, Watson, & Winton, 1987; Spreat, Lipinski, Dickerson, Nass, & Dorsey, 1989a; Spreat & Walsh, 1994; Tarnowski, Rasnake, Mulick, & Kelly, 1989b; Tarnowski, Mulick, & Rasnake, 1990) with few exceptions (Kemp, Miltenberger, & Lumley, 1996; Miltenberger, Suda, Lennox, & Lindeman, 1991). Emphasising the strength of this relationship, the Spreat et al. (1989a) study examined a wide range of client, behavioural and programme descriptors and found procedural restrictiveness to be the largest predictor of treatment acceptability. Although it has been shown that procedures are rated more acceptable when applied to more severe problems (Lindeman et al., 1992; Spreat et al., 1989b; Tarnowski et al., 1989b), there are a greater number of studies that do not show this relationship (Miltenberger et al. 1991; Rasnake, Martin, Tarnowski, & Mulick, 1993; Spreat et al., 1989a; Tarnowski et al., 1990). Spreat and Walsh (1994) found the relationship between acceptability and severity of the problem behaviour for aggression, but not SIB.

Table 2 about here

In general, the more effective the treatment, the more acceptable the treatment (Irvin & Lundervold, 1988; Spreat et al., 1989a; Spreat & Walsh, 1994) with some exceptions (Foxx et al., 1996a; Spreat et al., 1989b). The study by Spreat and Walsh (1994) found the likelihood of treatment success to be the key determinant of acceptability over other client,

behavioural and programme descriptors. Three studies have considered treatment side effects. Spreat et al. (1989a) found side effect information to be the fourth largest predictor of acceptability, following procedural restrictiveness, prognosis and previous use of other procedures, whereas Spreat et al. (1989b) did not find side effect information to be related to acceptability. Spreat and Walsh (1994) demonstrated that procedures were more acceptable if side effects were not anticipated for SIB, although not for aggression. Spreat et al. (1989a,b) also considered the expected duration of treatment and found this not to affect acceptability ratings.

In contrast to the findings from the child behaviour literature, acceptability has been shown to vary by mode of case presentation. Foxx et al. (1996a,b) showed that acceptability ratings for reductive procedures tended to increase after subjects watched a video of client's behaviour problems, and acceptability of positive procedures either decreased or stayed the same. However, the less intrusive treatments were still preferred.

Only one study (Rasnake et al., 1993) examined the effect of knowledge of behavioural principles and experience of the rater on acceptability and, again in contrast to the child behaviour literature, found no relationship. Considering different rater groups, Miltenberger et al. (1989a) demonstrated that, although in general staff from community and institutional settings rated more restrictive procedures as less acceptable, institutional staff rated restrictive procedures as more acceptable than community staff, and a positive procedure as less acceptable. No differences were found between direct-care and supervisory staff. Finally, Kalfus and Burk (1989) found no differences in acceptability ratings whether parents and teachers or a psychologist implemented the intervention.

Studies have also shown that providing information on procedures can increase acceptability ratings of child behaviour therapy techniques (Singh & Katz, 1985; Tingstrom, 1989). Smith and Linscheid (1994) also found that acceptability ratings could be modified. They investigated the effect of varying the stated preference of the mother of a client with severe learning disabilities and SIB on treatment acceptability ratings of the Self-Injurious Behaviour Inhibiting System (SIBIS). Results suggested that parental acceptance or

rejection of SIBIS increased or decreased acceptability ratings, respectively.

From this review, it is apparent that a multitude of factors can affect treatment acceptability and that acceptability is open to modification. The most consistent finding across studies is that less restrictive and more effective procedures are rated as more acceptable.

STAFF BELIEFS AND ATTRIBUTIONS ABOUT THE CAUSES OF CHALLENGING BEHAVIOUR

Social cognition theorists view the interpretations or causal attributions that individuals make about events as having a central role in predicting emotional reactions and behaviour (Fiske & Taylor, 1991; Heider, 1958; Jones & Davis, 1965; Kelley, 1967, 1973; Weiner, 1980, 1985, 1986). From a social cognitive perspective, attributions are formed along certain causal dimensions including locus (internal-external) (Heider, 1958); stability (transient-stable) (Weiner et al., 1971); controllability (controllable-uncontrollable) (Weiner, 1980); intentionality (intentional-unintentional) and globality (global-specific) (Weiner, 1985). Although causal attributions have been studied extensively for decades, it is only recently that social cognitive theories have been applied to clinically related fields. Particular emphasis has been placed on Weiner's (1980, 1986) theory of emotion and help giving. Weiner proposed that attributions formed on the basis of three causal dimensions (locus, controllability and stability) influence affective and behavioural reactions to another's behaviour, as well as expectations for future behaviour. In particular, attributions of controllability and stability are considered the primary determinants of emotional reactions of sympathy and anger which, respectively, promote or reduce the helping behaviour.

In the field of child conduct problems, parents' beliefs about the causes of their children's behaviour have been shown to affect their emotional and behavioural responses to child behaviour (Bugental, Blue, & Cruzcosa, 1989; Cote & Azar, 1997; Dix & Grusec, 1985; Dix, Ruble, Grusec, & Nixon, 1986; Dix, Ruble, & Zambarana, 1989; Geller & Johnston, 1995; Johnston, Patenaude, & Inman, 1992; Johnston & Patenaude, 1994; Larrance &

Twentyman, 1983; Mills & Rubin, 1990; Walker, Garber, & Van Slyke, 1995). In general, these studies have found that the more internal and/or controllable the child's behaviour is seen to be, the more negative the emotional and behavioural reaction, thus giving some support to Weiner's theory. Such a relationship between attributions and emotions has been demonstrated in the literature on expressed emotion of families of people with schizophrenia (e.g., Brewin, MacCarthy, Duba, & Vaughn, 1991).

Studies have reported that staff have divergent views on causes of challenging behaviour in people with learning disabilities (see Table 3). Such views include internal psychological state or mood, past or current environment, self-stimulation, communication, attention requesting, medical/biological, mental illness and social reinforcement (Berryman, Evans, & Kalbag, 1994; Bromley & Emerson, 1995; Hastings, 1995; Hastings et al., 1995). Data from Bromley and Emerson's (1995) study indicated that the beliefs most commonly held by staff concern factors over which they may feel they have little control and the vast majority of staff from Hastings' (1995) study, viewed challenging behaviour as intentional. Authors have begun to apply attribution theory to the understanding of staff beliefs about the causes of challenging behaviour and how such beliefs relate to emotions, behaviour, and of particular relevance to this review, their motivation towards interventions (Dunne, 1994; Fenwick, 1995).

Table 3 about here

BELIEFS, ATTRIBUTIONS AND TREATMENT ACCEPTABILITY

Several lines of evidence suggest that staff beliefs about the causes of challenging behaviour of people with learning disabilities may affect the acceptability of interventions. First, applying attribution theory at the theoretical level, Fenwick (1995) considered it possible that staff who attribute challenging behaviour to causes within the individual's control, may feel the need to punish the person and view non-aversive approaches as inappropriate. In other words, they may view a more aversive procedure as more acceptable than staff

attributing causes outwith the individual's control. Dunne (1994) argued that the 'fundamental attribution error' might help us understand the tendency for staff to view causes of challenging behaviour to within the individual, rather than to the situation. Given such biases, interventions requiring staff to change their own behaviour in order to effect change in the individual are unlikely to be acted on and followed consistently. Hastings (1995) considered that, staff viewing behaviour as intentional may be more likely blame clients for their actions and to deem punishment-based procedures as appropriate.

Second, studies have shown a relationship between attributions and therapeutic outcome. Watson (1986) found that if mothers attributed their child's emotional disturbance internally to the child rather than externally, and held themselves as more responsible for their child's behaviour, therapeutic outcome was significantly less successful. Fathers' attributions did not hold the same predictive value. Similarly, parental attributions of child controllability of nocturnal enuresis have been implicated in the high drop out rate from treatment (Griffiths, Meldrum, & McWilliams, 1982) and greater tolerance for enuresis (Butler, Brewin, & Forsythe, 1986).

Third, self-report studies have considered the relationship between staff beliefs and intervention strategies. Maurice and Trudel (1982) asked staff about their reactions to, and the causes of clients' SIB. Findings indicated that particular hypotheses were associated with particular types of intervention. Through semi-structured interviews, Hastings (1995) asked care staff about their beliefs about the causes of challenging behaviour, how they would normally intervene with episodes and what they viewed as the best way to care for people with challenging behaviour. Although reported staff interventions did not seem to be based on staff hypotheses about causes, staff views on the best way to care for people with challenging behaviour were more consistent with causal beliefs.

Fourth, studies have evaluated the effect that treating people with aversive procedures might have on social perceptions of those people. Bihm and Sigelman (1991) and Bihm, Sigelman, and Westbrook (1997) considered that being punished for a behaviour might imply that the person is responsible for the behaviour and deserves to be punished. Despite identical

outcome information, subjects from Bihm and Sigelman's study viewed the recipient of a positive reinforcement programme as more competent and more capable of learning in the future than a recipient of an aversive procedure. However, data from Bilm et al.'s (1997) study suggested that the type of programme had limited effect on subjects' perceptions regarding the client, affecting only the client's likeability. Bilm et al. (1997) also showed that the outcome of the intervention affects both the impressions of the intervention and client, a successful outcome giving a favourable impression, and the attributions for programme outcome. Both studies found that the type of behaviour programme had no effect on attributions regarding the cause of behavioural problems. However, Bihm et al. (1997) suggested that since subjects judged the recipient of the intervention more personally responsible for success than failure and perceived him more positively in other respects when the programme succeeded, attributions for treatment outcome deserve further study.

Finally, only one study was found that directly examined the relationship between attributions and acceptability. Reimers, Wacker, Derby and Cooper (1995) investigated the relationship between parental causal attributions of children's behaviour problems and the acceptability of behavioural interventions at one-, three- and six-month intervals over treatment. Results indicated that a significant negative correlation existed between physical (internal) attributions and acceptability (i.e. the more internal the attribution, the less acceptable the intervention). A positive, although non-significant correlation was found between environmental (external) attributions and acceptability. Although measures of treatment acceptability were taken as dependent variables in the studies by Bihm and Sigelman (1991) and Bihm et al. (1997), neither reported their relationship to the attribution dependent variables.

CONCLUSIONS

The above review suggests that staff beliefs and attributions regarding the causes of challenging behaviour in people with learning disabilities may be one factor that affects how acceptable they find different interventions to reduce such behaviour. To date, this has not

been investigated empirically and warrants research. This is important to consider, not only because of the implications for implementation of treatment interventions and the consequent effectiveness of interventions, but also because of the potential to modify causal beliefs. As already noted, it has been demonstrated that providing information on interventions may modify acceptability ratings of the interventions (Singh & Katz, 1985; Tingstrom, 1989). If a relationship does exist between causal beliefs and acceptability, it may be necessary for clinicians to explore staff beliefs about the causes of a particular client's behaviour as part of their overall assessment and to address these beliefs before initiating an intervention strategy.

Finally, although the acceptability of a range of behavioural interventions has been investigated, the predominant focus of studies has been on procedures at the more restrictive end of the continuum. Given the development of non-aversive procedures such as 'Functional Communication Training' (e.g., Carr & Durand, 1985; Durand, 1990) and 'Gentle Teaching' (McGee et al., 1987), it is necessary to evaluate their relative acceptability.

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Table 1: Summary of the scales developed to measure treatment acceptability.

| Scale | Author | Raters | Type of intervention/ problem | Description |
|---|---|--------------------------|--|---|
| Treatment Evaluation Inventory (TEI) | Kazdin, (1980) | Undergraduates | Interventions for child behaviour problems | 15-item questionnaire with items rated on a 7-point Likert scale. |
| Intervention Rating Profile (IRP) | Witt & Martens, (1983) | Teachers | Classroom interventions for child behaviour problems | 20-item questionnaire with items rated on a 6-point Likert scale. |
| Short form of the TEI | Kelley, Heffer, Gresham, & Elliott, (1989) | Parents | Behavioural treatments for child behaviour problems | 9-item version of the TEI with items rated on a 5-point Likert scale. |
| Treatment Evaluation Questionnaire | Miltenberger, Parrish, Rickert, & Kohr, (1989b) | Parents and grandparents | Behavioural treatments for child behaviour problems | 12-item version of the TEI with items rated on a 5-point Likert scale. |
| Treatment Acceptability Rating Profile (TARF) | Reimers & Wacker, (1988) | Parents | Behavioural treatments for child behaviour problems | 15-item version of the TEI modified to incorporate additional research findings. |
| Modified version of the TARF | Reimers, Wacker, Cooper, & DeRaad, (1992) | Parents | Interventions for child behaviour problems | 20-item version of the TARF (17 items measure acceptability; 3 items assess problem severity and understanding of treatment). |
| Short form of IRP | Martens, Witt, Elliott & Darveaux, (1985) | Teachers | Classroom interventions for child behaviour problems | 7 items retained from the IRP and 8 new items generated giving a 15-item questionnaire. |
| IRP for children | Witt & Elliott, (1985) | Children | Classroom interventions for child behaviour problems | 7-item version of the IRP, modified for children. |
| Abbreviated Acceptability Rating Profile | Tarnowski & Simonian, (1992) | Mothers | Interventions for child depression | 8-item version of the IRP. |
| Behaviour Intervention Rating Scale | VonBrock & Elliott, (1987) | Teachers | Classroom interventions for child behaviour problems | Modified version of the IRP, with 9 additional items assessing effectiveness giving a 24-item questionnaire. |

Table 2: Summary of the studies in the field of learning disabilities that have investigated factors that affect treatment acceptability ratings.

| Subjects | Dependent variable(s) | Independent variable(s) | Major Findings |
|---|--------------------------|--|---|
| Fox, Bremer, Shultz, Valdez, & Johndrow, (1996a) Undergraduate psychology students | TEI | <ul style="list-style-type: none"> Type of intervention (DRO, DRI, PR, ES) Mode of vignette presentation (written, video) Effectiveness of treatment | <ul style="list-style-type: none"> DRO/DRI rated as more acceptable than PR/ES; Acceptability ratings for PR and ES increased after video; No relationship between acceptability and stated effectiveness. |
| Fox, McHenry, & Bremer, (1996b) Adults involved in programs for individuals with developmental disabilities | TEI | <ul style="list-style-type: none"> Type of intervention (DRO, DRI, PR, ES) Mode of vignette presentation (written, video) | <ul style="list-style-type: none"> DRO/DRI rated as more acceptable than PR/ES; Acceptability ratings for PR and ES increased and DRO and DRI decreased after video. |
| Irvin & Lundervold, (1988) Special educators of severely learning disabled students | Score on 100 point scale | <ul style="list-style-type: none"> Type of intervention (18 behavioural) Response dimensions (efficacy, acceptability, intrusiveness, restrictiveness) | <ul style="list-style-type: none"> Procedures rated as more acceptable were generally rated as less intrusive, restrictive and more efficacious; Procedures rated as highly intrusive were also rated as highly restrictive; No relationship found between efficacy and restrictiveness or intrusiveness. |
| Kalfus & Burk, (1989) Graduate education and undergraduate psychology students | TEI | <ul style="list-style-type: none"> Type of intervention (Contingent removal; Differential attention; Positive reinforcement; TO) Past procedures used (information, no information) Rater group Interventionist (parents and teachers; psychologist) | <ul style="list-style-type: none"> Type of interventionist did not effect acceptability Psychology students' ratings were more positive when no effectiveness information was included than when it was; opposite effect found for education students. Information about prior ineffective treatment attempts, rater group and intervention type interacted significantly. |

Table 2 (continued)

| | | | |
|--|--|---|--|
| Kemp, Miltenberger, & Lumley, (1996) Direct care staff at a large residential facility | TEI-SF | <ul style="list-style-type: none"> • Content of instructions (standard, "fake good", "prompted honesty") • Type of intervention (DRO, RC, TO, PR, ES) | <ul style="list-style-type: none"> • No differences across instructional conditions; • TO and DRO rated as most (and equally) acceptable; significantly more acceptable than ES; and did not differ from PR and RC; • Acceptability of PR, RC and ES did not differ. |
| Lindeman, Miltenberger, & Lennox, (1992) Superintendents of public residential facilities | TEI (modified for people with learning disabilities) | <ul style="list-style-type: none"> • Type of intervention (DRO, TO, Med., OC, ES) • Problem severity (mild, severe) | <ul style="list-style-type: none"> • Acceptability was inversely related to restrictiveness • All 4 restrictive treatments were more acceptable for severe than mild problem, whereas DRO was more acceptable for mild than severe problems. |
| Miltenberger, Lennox, & Erfanian, (1989a) Direct-care & supervisory staff :community- & institutional-based facilities | TEI (modified for people with learning disabilities) | <ul style="list-style-type: none"> • Type of intervention (DRO, TO, OC, ES) • Problem severity (mild, severe) • Staff (community, institutional) | <ul style="list-style-type: none"> • Community & institutional staff's acceptability ratings were inversely related to level of treatment restrictiveness; • For all staff, DRO was significantly more acceptable for mild than severe problems; • Institutional staff rated all 3 restrictive procedures as more acceptable than community staff, but rated DRO as less acceptable; • For institutional staff, ES was more acceptable for severe than mild problem behaviours; • No differences between direct-care & supervisory staff. |
| Miltenberger, Suda, Lennox, & Lindeman, (1991) People with learning disabilities living in community residential or institutional settings | TAS (simplified rating scale) | <ul style="list-style-type: none"> • Type of intervention (DRO, TO) • Problem severity (mild, severe) | <ul style="list-style-type: none"> • All subjects' acceptability ratings did not vary as a function of type of intervention or problem severity; • Community Ss rated DRO more acceptable than TO for mild problem (no difference for severe problem); • Institutional Ss rated TO more acceptable than DRO for severe problem (no difference for mild problem). |

Table 2 (continued)

| | | | | |
|--|--|--|---|--|
| Rasnake, Martin, Tarnowski, & Mulick, (1993) | | | | |
| Direct care staff from an intermediate care facility | IRP | • Type of intervention (DRO, DRI, SC, OC, PR, ES) | • Only SC judged to be acceptable; | |
| Knowledge of behavioural principles questionnaire | | • Problem severity (mild, moderate, severe) | • Acceptability and knowledge of behavioural principles or amount of experience were not related; | |
| | | | • Staff age and educational attainment were significantly related to knowledge scores. | |
| Singh, Watson, & Winton, (1987) | | | | |
| Mothers of children with learning disabilities | TEI | • Type of intervention (DRI, OC, TO, Med.) | • DRI was rated the most acceptable treatment, followed by OC. | |
| | Semantic Differential | | • TO and Med. Did not differ significantly. | |
| Smith & Linscheid (1994) | | | | |
| Under graduate and graduate students | TEI | • Parent preference (accepting, rejecting, undecided) | • Acceptability ratings for the 'accepting' and 'rejecting' groups were consistent with the parents' stated opinions. | |
| | Reason for Change Index | | • The issue of rights was judged most important as the reason for change across all groups. | |
| Spreat, Lipinski, Dickerson, Nass, & Dorsey, (1989a) | | | | |
| Adults involved in care and treatment of people with learning disabilities | Likert scales of restrictiveness and acceptability | • Client descriptors (sex, age, level of learning disability, residence) | • Ratings of restrictiveness resulted in a series of overlapping classifications; | |
| | | • Behavioural descriptors (problem type, severity and frequency) | • Procedural restrictiveness was the largest predictor of acceptability, followed by prognosis, use of other procedures and likelihood of side effects. | |
| | | • Program descriptors (past procedures used, side effects, type of intervention, prognosis and duration) | | |
| Spreat, Lipinski, Dickerson, Nass, & Dorsey, (1989b) | | | | |
| Adults involved in care and treatment of people with learning disabilities | Likert scales of acceptability | • Client descriptors (sex, age, level of learning disability, residence) | • Higher acceptability ratings when ES applied to serious behaviours that have been unresponsive to other forms of treatment. | |
| | | • Behavioural descriptors (problem type, severity and frequency) | | |
| | | • Program descriptors (past procedures used, side effects, prognosis and duration) | | |

Table 2 (continued)

| | | | |
|--|---------------|--|---|
| <p>Spreat & Walsh, (1994) Members of the American Association on Mental Retardation</p> | <p>TEI-SF</p> | <ul style="list-style-type: none"> • Client descriptors (sex, age, level of learning disability; residence) • Behavioural descriptors (problem type, severity and frequency) • Program descriptors (past procedures used, side effects, type of intervention) | <ul style="list-style-type: none"> • Key determinant of treatment acceptability was the likelihood of treatment success; • For both aggression and SIB, procedures were more acceptable when less restrictive and if other programs had been tried previously; • For aggression, procedures were more acceptable if proposed for more serious behaviours; • For SIB, procedures were more acceptable if side effects were not anticipated and for individuals with greater degrees of cognitive impairment. |
| <p>Tarnowski, Mulick, & Rasnake, (1990) Direct care staff in community residential facility</p> | <p>IRP</p> | <ul style="list-style-type: none"> • Type of intervention (DRO, DRI, SC, OC, PR, ES) • Problem severity (mild, moderate, severe) | <ul style="list-style-type: none"> • Accelerative more acceptable than reductive interventions; • Acceptability ratings did not vary as function of SIB severity. |
| <p>Tarnowski, Rasnake, Mulick, & Kelly, (1989b) Direct care staff in intermediate care facility</p> | <p>IRP</p> | <ul style="list-style-type: none"> • Type of intervention (DRO, DRI, SC, OC, PR, ES) • Client status (adult, child) • Nature of work setting (child, adult) • Problem severity (mild, moderate, severe) | <ul style="list-style-type: none"> • Accelerative more acceptable than reductive interventions; • Acceptability ratings varied as function of SIB severity; • Client status and type of work setting had no effect on acceptability. |

Abbreviations for treatment acceptability scales: IRP = Intervention Rating Profile; TEI = Treatment Acceptance Scale; TEI-SF = Treatment Evaluation Inventory; TEI-SF = Treatment Evaluation Inventory – Short Form.

Intervention abbreviations: DRO = Differential reinforcement of other behaviours; DRI = Differential reinforcement of incompatible behaviours; RC = Response Cost; OC = Overcorrection; SC = Stimulus control; TO = Time out; Med. = Medication; PR = Physical restraint; ES = Electric shock.

Table 3: Summary of the studies that have considered staff beliefs about the causes of challenging behaviour in people with learning disabilities

| Subjects | Main Points on Methodology | Beliefs cited (%) |
|--|--|--|
| Berryman, Evans, & Kalbag, (1994) | <ul style="list-style-type: none"> • Vignettes describing challenging behaviour exhibited by a client; • Open-ended response format. | <ul style="list-style-type: none"> social reinforcement (84) emotions (67) task/environment (51) communication (37) |
| Bromley & Emerson, (1995) | <ul style="list-style-type: none"> • Open-ended response format. | <ul style="list-style-type: none"> internal psychological state/mood (41) past environment (26) current environment (26) self-stimulation (24) communication or control (23) attention seeking (17) |
| Hastings, (1995) | <ul style="list-style-type: none"> • Systematic semi-structured interview. | <ul style="list-style-type: none"> social reinforcement (79) communication (68) physical environment (58) emotional (58) |
| Hastings, Remington, & Hopper, (1995) | <ul style="list-style-type: none"> • Vignettes describing challenging behaviour exhibited by a client; • 25-item questionnaire with each item rated on a 7-point Likert scale, | <ul style="list-style-type: none"> Experienced: <ul style="list-style-type: none"> client needs stimulation personal/environmental social biological environmental elicitation natural Inexperienced: <ul style="list-style-type: none"> environmental elicitation stimulation attention requesting frustration abnormal stress communication/biology mood |

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3. MAJOR RESEARCH PROJECT PROPOSAL

The effect of causal attributions and beliefs on the acceptability of interventions for self-injurious behaviour

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Research proposal prepared in accordance with guidelines in the D. Clin. Psy. Handbook. Guidelines based on the application for a mini-project grant in Health Services Research (Appendix 3).

SUMMARY

Carers' beliefs and attributions about the causes of challenging behaviour in people with learning disabilities may influence their perceived acceptability of treatment interventions for such behaviours, and consequently affect intervention implementation. To date, how staff beliefs affect treatment acceptability has not been investigated empirically. Furthermore, there has been no systematic investigation of the dimensions of causality with respect to staff attributions about the causes of challenging behaviours, or how these dimensions relate to treatment acceptability.

In the present study, beliefs and attributions about the causes of one topography of challenging behaviour (self-injury) will be elicited from institutional staff who have experience in working with individuals who self-injure. The study aims to indicate how such beliefs and attributions affect treatment acceptability, using a questionnaire measure.

Data collection will take place at Lennox Castle Hospital, Lennoxtown, and data collation and analysis at the Department of Psychological Medicine, Gartnavel Royal Hospital, Glasgow.

INTRODUCTION

A recent focus in the literature on challenging behaviour (CB) and people with learning disabilities has been their carers' beliefs and attributions about the causes of such behaviours. Studies have reported that staff have divergent views on causes, including factors such as, internal psychological state or mood, past or current environment, self-stimulation, communication, attention requesting, medical/biological, mental illness and social reinforcement (Berryman et al., 1994; Bromley & Emerson, 1995; Hastings, 1995; Hastings et al., 1995). Such beliefs are important for a number of reasons.

The beliefs held by staff members have been identified as a source of influence on how staff respond to CB (e.g. Hastings et al., 1995) along with other influences, such as formal and informal aspects of the service culture (e.g. Hastings & Remington, 1994).

It has also been suggested that staff beliefs may affect how they perceive the appropriateness of different treatment interventions (Emerson et al., 1994; Hastings & Remington, 1994). Social validity refers to the fact that interventions will be judged in terms of the; (i) social significance of their outcomes, (ii) appropriateness of their procedures, and (iii) importance of the effects achieved (Wolf, 1978; Kazdin, 1980). From this early conceptualisation, it was considered that the acceptability of treatment procedures may relate to implementation and adherence to procedures, and thereby relate to effectiveness. Consequently, if staff beliefs affect perceived appropriateness of procedures, this in turn may affect the delivery of such procedures (Bromley & Emerson, 1995). Contemporary treatment of CB is closely linked to hypotheses about its origins (Emerson, 1995; Repp et al., 1988). If there is a mismatch between staff beliefs and the principles underlying the planned intervention, this may be one explanation as to why intervention programmes fail to be implemented effectively. Bromley and Emerson (1995) considered that, for example, an intervention based on the notion of "positive programming" (LaVigna & Donnellan, 1986), may not be implemented effectively if the client's CB is believed by staff to be a manifestation of an underlying medical disorder.

Research into treatment acceptability is relatively new in the field of learning disabilities, and has been driven by the controversy surrounding the use of aversive procedures with people with learning disabilities (Repp & Singh, 1990). Studies have attempted to identify factors that affect treatment acceptability, including procedural

restrictiveness (e.g. Tarnowski et al., 1989; Miltenberger et al., 1989) and problem severity (e.g. Lindeman et al., 1992; Tarnowski et al., 1990). Although the acceptability of a range of behavioural interventions has been investigated, the predominant focus of studies has been on procedures at the more restrictive end of the continuum. Furthermore, to date, how staff beliefs affect treatment acceptability has not been investigated empirically.

In a similar vein, attribution theory (Heider, 1958) has been applied to the understanding of staff beliefs about the causes of CB, and how this relates to implementation of interventions. For example, Dunne (1994) argued that 'fundamental attribution error' might help us understand the tendency for staff to attribute causes of CB to the individual, rather than to the situation. Given such biases, interventions requiring staff to change their own behaviour in order to effect change in the individual are unlikely to be acted on and followed consistently. Fenwick (1995) considered it possible that staff who attribute CB to causes within the individual's control, may feel the need to punish the person and view non-aversive approaches as inappropriate or too lenient. To date, there has been no systematic investigation of the dimensions of causality with respect to staff attributions about the causes of CB. Furthermore, no study has investigated how these dimensions relate to treatment acceptability.

AIMS AND RESEARCH QUESTIONS

Given the gaps in the research described above, this study aims to determine the nature of staff beliefs and attributions about the causes of CB and indicate whether such beliefs and attributions predict treatment acceptability. It will include a number of non-aversive treatments, such as 'Functional Communication Training' (e.g. Carr & Durand, 1985) and 'Gentle Teaching' (McGee et al., 1987).

Since previous research has identified that staff distinguish between different topographies of CB in terms of their causes (Hastings et al., 1995), this study will focus on self-injurious behaviour (SIB) alone. The severity of SIB will be held constant, since some studies have demonstrated that treatment acceptability varied as a function of behaviour severity (e.g. Lindeman et al., 1992).

Therefore, research questions in this study are:

1. How do staff rate the acceptability of non-aversive procedures, not previously researched, in comparison to more aversive procedures?
2. What is the nature of staff beliefs about the causes of SIB?
3. Do these beliefs predict treatment acceptability for SIB?
4. How do staff attribute the causes of SIB, along the dimensions of locus, stability, controllability, globality and intentionality?
5. Does attributional style predict acceptability of treatment interventions?

PLAN OF INVESTIGATION

Subjects & Setting

Participants will include all nursing staff at Lennox Castle Hospital, Lennoxtown, an institution for people with learning disabilities. Participants will be excluded from the study if they have had no experience of dealing with SIB, since Hastings et al., (1995) found differing belief systems for experienced compared to inexperienced staff. The potential number of participants is around 500, although due to response rates, only a percentage of this number will be obtained.

Measures

1. Treatment acceptability

Treatment Evaluation Inventory-Short Form (TEI-SF)

The TEI-SF is a 9-item acceptability rating scale developed by Kelley et al., (1989), a modified version of Kazdin's (1980) 15-item Treatment Evaluation Inventory (TEI-15). It was designed, and has been used, to assess parents' acceptance of procedures for behaviour problem children. It was found to be an internally consistent and valid instrument, but more readable, quicker to complete and better liked than the TEI-15. It

also differentiated among alternative treatments, thus supporting its construct validity (Kelley et al., 1989). Items are rated on a 5-point Likert scale, ranging from *strongly disagree* to *strongly agree*. Scores range from 9 to 45, higher scores representing greater acceptance of a given treatment. For the purposes of the present study, slight modification to the wording will be necessary so as to make the scale appropriate for people with learning disabilities (the word “client’s” will be substituted for “child’s”).

2. Beliefs

Untitled questionnaire developed by Hastings et al. (1995)

This questionnaire consists of 25 statements describing possible reasons for CB. The statements are based on the range of explanations of CB given in a pilot interview study of staff (Hastings, 1993) and additional statements not mentioned in the interview study that were designed to reflect scientific explanations of challenging behaviour. It was used in the Hastings et al., (1995) study to elicit staff beliefs about the causes of challenging behaviours. Subjects rated the statements on a 7-point scale ranging from *very likely* to *very unlikely*.

3. Causal attributions

Five **visual analogue scales (VAS)** will be make up the causal attribution measure. Statements anchoring the scales are based on those used in the established literature (e.g. Johnston et al., 1992). The first scale will assess locus of control, and be anchored by the statements, *something about him* and *something about other people or the situation/environment*. The second scale will assess stability, anchored by *changes from day to day* to *stays more or less the same*. The third scale will assess controllability, anchored by *completely under his control* and *not at all under his control*. The fourth scale will assess globality, anchored by *in every situation* and *in one situation only*. The final scale will assess intentionality, anchored by *completely intentional* and *completely unintentional*. Lower scores on these scales will indicate more internal, unstable, controllable, global and intentional attributions respectively.

Design and Procedure

A pilot study will be carried out on a similar population (institutionalised nursing staff), to determine the length of time taken to complete the questionnaire, and whether this is acceptable to participants. Permission to approach staff for the study proper will be

obtained from those responsible for their management. Anonymity will be maintained at all times, and will be stressed to participants. Feedback will be offered in terms of general results. Questionnaires will be handed to the person in charge of the ward who will be asked to distribute them to staff. Staff will be asked to complete them in a certain time period.

Questionnaires will include a written description of a fictitious young man exhibiting SIB. Following Hastings et al., (1995), the description of SIB will be based on a topographical definition derived from the research literature (Oliver et al., 1987) and will not contain information about the function of the behaviour so as to avoid biasing subjects' ratings of the possible causes. A written description of the possible treatment procedures applied to this problem will be presented. Treatments to be included in the study have yet to be determined. After reading the problem/treatments vignettes, participants will complete then TEI-SF to rate each treatment as it is applied to the problem. The causal attribution measure and the questionnaire developed by Hastings et al., (1995) will also be completed. In the final part of the questionnaire, participants will be asked about their age, gender, length of their experience in working with people with learning disabilities, and whether they have had direct experience of SIB.

Data Analysis

The statistics employed (parametric or non-parametric) will be determined by examining the nature of the data. The following description considers that the assumptions for parametric tests will be met.

Research Question 1

TEI-SF mean total scores and standard deviations for each treatment will be reported. A repeated measures one-way analysis of variance will be conducted to compare TEI-SF mean total scores. The relevant post-hoc test will be applied to test where differences lie, if an overall significant difference is found.

Research Question 2

Frequency histograms will be plotted to describe the pattern of responding within each question on the beliefs questionnaire. An exploratory principal components analysis will be conducted to examine the factor structure of the questionnaire.

Research Question 3

A number of regression analyses will be conducted to assess whether responses on the beliefs questionnaire predict responses on the treatment acceptability measure.

Research Question 4

Responses on each VAS, ranging from 0 to 100, will be divided into 10 categories of 10, and the number of respondents scoring within these categories will be reported.

Research Question 5

A number of regression analyses will be conducted to assess whether responses on the attribution measures predict responses on the treatment acceptability measure

Collation and analysis of the data will take place at the Department of Psychological Medicine, Gartnavel Royal Hospital, Glasgow.

PRACTICAL APPLICATION

If a relationship is found between staff beliefs and attributions about the causes SIB, and perceived acceptability of different treatment interventions, this would have important implications for practice. For example, before asking staff to apply an intervention, clinicians may need to examine their causal attributions about SIB as part of their assessment, so as to identify whether there is a mismatch between these attributions and the underlying principles of the intervention. If there is a mismatch, staff attributions may need to be addressed first, or else the likelihood exists that the intervention will not be implemented effectively.

TIMESCALE

| | |
|---------------------------------------|-----------------------|
| Pilot study conducted and evaluated: | October/November 1997 |
| Data collection for the study proper: | January to March 1998 |
| Data analysis and write-up: | April to July 1998 |

ETHICAL APPROVAL

Advice is being sought within the University of Glasgow and the Greater Glasgow NHS Trust, as to whether ethical approval is required.

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4. MAJOR RESEARCH PROJECT PAPER

**The effect of causal attributions and beliefs on the acceptability
of interventions for self-injurious behaviour**

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Written in accordance with guidelines for submission to *Research in Developmental Disabilities* (Appendix 4.1)

**The effect of causal attributions and beliefs on the acceptability
of interventions for self-injurious behaviour**

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Running Title: Causal attributions, beliefs and treatment acceptability

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ABSTRACT

Carers' beliefs and attributions about the causes of challenging behaviour in people with learning disabilities may influence their perceived acceptability of treatment interventions for such behaviours, and therefore potentially affect intervention implementation.

The current study, using a questionnaire measure with 154 institutional nursing staff examined; (i) their ratings of the acceptability of a number of interventions, including more recently developed non-aversive procedures, for self-injurious behaviour, (ii) the nature of staff beliefs and attributions about the causes of self-injury and (iii) whether such beliefs and attributions predicted ratings of treatment acceptability.

Results suggested that nursing staff rated the acceptability of interventions according to the level of aversiveness, with less aversive interventions rated as more acceptable. Subjects held wide-ranging attributions and beliefs about the causes of SIB. However, causal attributions and beliefs had little predictive value for the acceptability of treatment procedures. Methodological shortcomings of the present study, and suggestions for future research are discussed.

INTRODUCTION

There has been considerable debate about the acceptability of different treatment procedures used to reduce challenging behaviours of people with learning disabilities (Repp & Singh, 1990). Treatment acceptability has been defined as “judgments by laypersons, clients, and others of whether treatment procedures are appropriate, fair, and reasonable for the problem or client” (Kazdin, 1981, p493). The term is derived from the concept of social validity, which refers to the fact that interventions will be judged in terms of, (i) the social significance of their outcomes, (ii) the acceptability of their procedures and (iii) the importance of the effects achieved (Kazdin, 1977; Wolf, 1978). Wolf and Kazdin considered that it might be important to determine treatment acceptability not only for ethical and legal reasons, but also because acceptability might relate to implementation of, and adherence to, treatment procedures. Identifying factors that affect acceptability may therefore lead to the recommendation of more acceptable, and potentially more effective treatments (Rasnake, 1993; Reimers, Wacker, & Koepl, 1987). Accordingly, this has been one of the main objectives of researchers in this area (Miltenberger, 1990).

It has been suggested that staff beliefs may affect how they perceive the appropriateness of different treatment interventions (Emerson, Hastings, & McGill, 1993; Hastings & Remington, 1994). With the development of a functional analytic approach to assessment and intervention, contemporary treatment of challenging behaviour is closely linked to hypotheses about its origins (Emerson, 1992, 1993, 1995; Repp, Felce, & Barton, 1988). If there is a mismatch between staff causal beliefs and the principles underlying the planned intervention, this may potentially affect the delivery of the intervention (Bromley & Emerson, 1995). For example, Bromley and Emerson (1995) considered that an intervention based on the notion of "positive programming" (LaVigna & Donnellan, 1986), may not be implemented effectively if staff believe a client's challenging behaviour is the manifestation of an underlying medical disorder.

In a similar vein, attribution theory (Heider, 1958) has been applied to the understanding of staff beliefs about the causes of challenging behaviour, and how these relate to implementation of interventions. For example, Fenwick (1995) considered it possible that staff who attribute challenging behaviour to causes within the individual's control, may feel the need to punish the person and view non-aversive approaches as

inappropriate or too lenient. Hastings (1995) predicted that, if staff view behaviour as intentional, they may deem punishment-based procedures as more appropriate.

Although studies have investigated a variety of factors that affect the acceptability of a range of behavioural procedures when applied to challenging behaviours of people with learning disabilities (see literature review, pp 20-54), there has been no systematic study of whether staff attributions and beliefs affect acceptability. The acceptability of more recently developed non-aversive procedures, such as 'Functional Communication Training' (Carr & Durand, 1985) and 'Gentle Teaching' (McGee, Menolascino, Hobbs, & Menousek, 1987) have also not been considered.

The current study therefore examined; (i) institutional nursing staff's ratings of the acceptability of a number of interventions for self-injurious behaviour (SIB) (including more recently developed non-aversive procedures), (ii) the nature of their beliefs and attributions about the causes of SIB, and (iii) whether such beliefs and attributions predict ratings of treatment acceptability. Since previous research has identified that staff distinguish between different topographies of challenging behaviour in terms of their origins (Hastings, Remington, & Hopper, 1995), and that treatment acceptability varies as a function of severity of the behaviour (e.g. Lindeman, Miltenberger, & Lennox, 1992), the current study considered SIB alone, and its severity was held constant.

It was hypothesised that staff would rate the acceptability of relatively recently developed non-aversive procedures as more acceptable than aversive procedures, and that their beliefs and attributions would predict ratings of treatment acceptability. Staff who attribute SIB to more internal, controllable, intentional, specific and stable factors, were expected to rate aversive interventions as more acceptable, and non-aversive interventions as less acceptable in comparison to staff who attribute SIB to external, uncontrollable, unintentional, global and unstable factors. A number of hypotheses could be generated with respect to beliefs and treatment acceptability. For example, it might be expected that if staff view the function of SIB as a means of gaining attention, then this would be predictive of high acceptability of a treatment involving the removal of attention contingent on the occurrence of SIB. Staff who perceive SIB to function as means of gaining stimulation might be expected to rate an intervention based on enrichment of the environment as more acceptable. If SIB is seen as a communicative

act, an intervention consisting of providing the individual with a functionally equivalent, but more socially appropriate way of communicating, may be rated as more acceptable.

MATERIALS AND METHOD

Subjects

Subjects were 154 nursing staff who had returned a questionnaire sent to all (458) nursing staff working in a large institution for people with learning disabilities (32% return rate). Respondents were excluded from the study if they had no experience of working with people with learning disabilities who self-injure ($n=6$). 62% of subjects were female and 38% male. The mean and modal age category was '31 to 40 years' and the mean and modal category for length of experience of working with people with learning disabilities was 'more than 5 years'.

Procedure

Agreement to conduct the study was obtained from the senior management of the institution. The purpose and nature of the study was then described by the investigator at a Ward Manager's meeting. Each Ward Manager was asked to distribute questionnaires (described below) to nursing staff on their ward. Questionnaires were accompanied by a cover letter that stated the purpose of the study and provided a brief description of the questionnaire. Respondents were asked to complete the questionnaire anonymously, place it in the envelope provided and return it to their Ward Manager by a set closing date. After this date, the investigator collected the questionnaires from Ward Managers.

Measures

The questionnaire (see Appendix 4.2) contained measures of treatment acceptability, causal attributions and beliefs (see below), which respondents were asked to complete after reading a short vignette. The vignette, used in Hastings et al.'s (1995) study, described 'James Robinson', a fictitious learning disabled young man who displayed

SIB. The vignette was based on a topographical definition of SIB (Oliver, Murphy, & Corbett, 1987). There was no information about the function of the SIB, so as to avoid biasing respondents' ratings of its possible origins (Hastings et al. 1995). In the vignette used in the present research (see below), the term "learning disability" was substituted for "mentally handicapped".

James Robinson

James has a learning disability. Sometimes, James repeatedly hits himself around the head with his fists. This often leads to bruising and even bleeding.

Treatment Acceptability

A selection of treatment descriptions was taken from the established literature (Lindeman et al. 1992; Miltenberger, Suda, Lennox, & Lindeman, 1991), whilst others were devised specifically for the current study, so as to include more recently developed non-aversive procedures. The validity of the treatment descriptions had been ascertained by asking 10 local Clinical Psychologists, practising in the field of learning disabilities, to name the treatments on the basis of the descriptions. Eight treatments were then selected on the basis of consistency of identification and also to represent varying levels of treatment restrictiveness according to the model proposed by Brazier and MacDonald (1981). The eight treatment descriptions were: Differential Reinforcement of Other Behaviours (DRO), Contingent Electric Shock (Shock), Environmental Enrichment, Psychotropic Medication (Medication), Gentle Teaching, Physical Restraint (Restraint), Progressive Muscular Relaxation (PMR) and Functional Communication Training (FCT).

The acceptability of these treatments was assessed using the Treatment Evaluation Inventory- Short Form (TEI-SF; Kelley, Heffer, Gresham, & Elliott, 1989). The TEI-SF contains nine items rated on a five-point Likert scale, ranging from *strongly disagree* to *strongly agree*. Scores range from 9 to 45, with higher scores representing greater acceptance of a given treatment. The internal consistency and validity of the TEI-SF has been demonstrated (Kelley et al. 1989). Slight wording modification was necessary to make the scale applicable to people with learning disabilities (the word "client" was substituted for "child") (see also Miltenberger, Lennox, & Erfanian, 1989).

Causal Attributions

Five visual analogue scales (VAS), each 10cm in length, assessed respondents' causal attributions for SIB. Statements anchoring the scales were based on those used in the established literature (Butler, Brewin, & Forsythe, 1986; Geller & Johnston, 1995; Johnston & Patenaude, 1994; Johnston, Patenaude, & Inman, 1992; Walker, Garber, & Van Slyke, 1995). Although the method of measuring dimensions of causality has previously been through use of Likert-like scales, VAS were used in the current study since this would allow richer data and facilitate statistical analyses.

The first scale assessed the locus of control of James' SIB (Locus), anchored by the statements *something about him* to *something about other people or the situation/environment*. The second scale assessed the stability of the behaviour (Stability) with anchors of *changes from day to day* to *stays more or less the same*. The third scale assessed controllability (Controllability), ranging from *completely under his control* to *not at all under his control*. The fourth scale assessed globality (Globality) ranging from *in every situation* to *in one situation only* and the final scale assessed intentionality (Intentionality) ranging from *completely intentional (on purpose)* to *completely unintentional (not on purpose)*. Lower scores on these scales therefore indicated more internal, unstable, controllable, global and intentional attributions respectively.

Beliefs

Beliefs about the origins of SIB were obtained by using an untitled questionnaire developed by Hastings et al. (1995). In this questionnaire, 25 statements describing possible reasons for James' SIB are rated on a 7-point scale, ranging from *very likely* to *very unlikely*. Although no data exists demonstrating the validity and reliability of this measure, the lack of other standardised measures used to assess beliefs about the causes of SIB in the literature, necessitated its use in the current study.

Pilot Study

The questionnaire was piloted with 10 nursing staff working within a different institution for people with learning disabilities. This was to determine whether the time to complete the questionnaire was reasonable and whether the causal attribution dimensions of controllability and intentionality were distinct, given that this has been debated in the literature (Weiner, 1979). The mean time to complete the questionnaire was 23 minutes. The two attribution dimensions were found to be positively correlated (see Appendix 4.3). It was decided that both of these dimensions would be retained in the main study, so as to determine which dimension was the more valid measure.

RESULTS

Treatment Acceptability

The TEI-SF mean total scores, standard deviations and the number of cases constituting the means¹ are shown in Table 1.

Table 1 about here

A repeated measures one-way analysis of variance was conducted to compare the eight TEI-SF mean total scores. There was an overall significant difference between the mean total scores ($F_{(7, 1015)}=220.27, p<0.05$). Treatments rank-order from most to least acceptable were Environmental Enrichment, Gentle Teaching, PMR, FCT, Medication, DRO, Restraint and Shock. The post-hoc Scheffe test revealed that Environmental Enrichment did not differ significantly from Gentle Teaching or PMR, but was significantly more acceptable than all the other treatments. Gentle Teaching, PMR, FCT and Medication did not differ significantly from each other, and each were significantly more acceptable than DRO, Restraint and Shock. DRO was rated as significantly more acceptable than Restraint and Shock, and Restraint was significantly more acceptable than Shock.

¹ For each TEI-SF total score, a criterion of 8 out of 9 non-missing values on individual TEI-SF questions required to be met, else the total score was defined as missing.

Causal Attributions

Spearman's correlation coefficients were calculated to investigate the relationship between each causal attribution measure (Table 2). There was a significant positive relationship between the controllability and intentionality scales ($r_s=0.59$, $p<0.01^2$) and between locus and globality ($r_s=0.21$, $p<0.05$), and a significant negative correlation between the controllability and globality scales ($r_s= -0.27$, $p<0.01$). As previously mentioned, there has been debate as to whether the dimensions of controllability and intentionality are distinct (Weiner, 1979). The significant positive correlation found suggested that the two dimensions were probably not distinct, and that the scales may have been measuring something similar. In subsequent regression analyses, the controllability scale had less predictive value than the intentionality scale, suggesting that the intentionality scale was a more valid measure. Therefore, further results of the controllability scale are not reported.

Table 2 about here

Responses on the four remaining VAS (Locus, Stability, Globality and Intentionality), ranging from 0 to 100, were collapsed into 10 categories of 10 (i.e. 1 = '0 to 10', 2 = '11 to 20' . . . 10 = '91 to 100'). Figure 1 shows the percentage of responses, and the number of valid cases³, within each category.

Figure 1 about here

In general, responses on the VAS suggested that subjects' attributions about the causes of SIB were wide-ranging. On the Locus dimension, the majority of subjects attributed the cause of James' SIB to more external factors, although 13.2% of subjects responded at the extreme internal end of the scale. The distribution of responses on the Stability dimension was relatively flat, with similar percentages of responses within each

² A significance level of 0.01 is reported, to emphasise the strength of this relationship.

³ A case within a scale was defined as missing where a respondent failed to score.

category from stable to unstable. The majority of responses on the Globality dimension were midway between the extreme points, although 19.3% of subjects responded at the extreme global end of the scale. Finally, while 17.7% of subjects perceived the cause of James' behaviour as unintentional, there was again a preponderance of responses midway between the extreme points, with only 8.8% of subjects viewing the behaviour as intentional.

Beliefs

(The frequency and percentage of responses within each category for each question on the beliefs questionnaire, along with the number of valid cases, is shown in Appendix 4.4, and the data are demonstrated graphically in Appendix 4.5).

On the beliefs questionnaire, the majority of subjects viewed items relating to attention/communication (attention of other people, communicate something, doesn't get what he wants, wants something), environmental factors (stressful events, crowded place, noisy place), stimulation (bored, wound up), mood (unhappy, bad mood) and 'organic' factors (learning disability, mentally ill) as likely causes of James' SIB. In other words, over 50% of subjects rated these items as very likely, likely or fairly likely causes. Items suggesting that James self-injures because he enjoys it, he feels guilty, he is copying others, it makes him feel better, or because it is a natural thing to do, were, as a majority, viewed as unlikely (very unlikely, unlikely or fairly unlikely) causes. Items suggesting that James self-injures due to physical illness, a biological process, personality or to make people leave him alone, showed a tendency towards subjects viewing these as unlikely causes.

To examine the factor structure of the beliefs questionnaire, an exploratory principal components analysis⁴ was conducted. Factors with eigenvalues greater than one were extracted (Table 3). Orthogonal rotation using the Varimax procedure was employed since factor scores were to be used as independent variables in a subsequent analysis. Items with loadings greater than ± 0.4 are listed in Table 4.

⁴ Since Hastings et al. (1995) did not report the factor structure for different topographies of challenging behaviour, the analysis in the current study was exploratory, rather than confirmatory.

*Tables 3 and 4
about here*

As can be seen from Table 4, items with high loadings on Factor 1 were related to both environmental elicitation (SIB as a response to aversive environmental conditions) and emotional aspects of SIB. Factors 2, 6 and 7 were difficult to interpret, and each contained a mixture of relatively unrelated items. Items with high loadings on Factor 3 seemed related to SIB as a means of gaining attention. Factors 4 and 5 may be interpreted according to the outcome of Hastings et al.'s (1995) factor analysis. Factor 4, termed 'abnormal', appeared to reflect possible biological causes of SIB, and Factor 5, termed 'natural', suggested SIB as a natural response. The final factor, although again not easy to interpret, seemed to emphasise factors related to frustration.

Treatment Acceptability and Casual Attributions

Stepwise multiple regression analyses were conducted to examine the contribution of the four causal dimensions (Locus, Stability, Globality and Intentionality) and two 'dummy' variables (sex, length of experience of working with learning disabled people), to the prediction of treatment acceptability scores. Eight regressions were completed, one for each treatment description (see Table 5).

Table 5 about here

The analysis yielded a statistically significant regression equation ($F_{(1, 128)}=3.949$, $p<0.05$) for the acceptability of Restraint, with Intentionality accounting for 2.2% of the variance. Results suggested that the more intentional James' behaviour was viewed, the more acceptable Restraint was rated. Significant regression equations were also found for the acceptability of DRO ($F_{(1, 128)}=3.949$, $p<0.05$), PMR ($F_{(1, 128)}=6.796$, $p<0.05$) and Shock ($F_{(1, 129)}=6.028$, $p<0.05$), with sex accounting for 3.3%, 4.3% and 3.8% of the variance, respectively. The results suggested that females rated DRO and PMR as more

acceptable, and Shock as less acceptable, than males. Finally, a significant regression equation was found for the acceptability of FCT ($F_{(1, 127)}=7.688, p<0.05$), with length of experience accounting for 5.0% of the variance. Subjects with a greater length of experience rated FCT as less acceptable than those with a shorter length of experience.

Treatment Acceptability and Beliefs

Eight further stepwise multiple regression analyses were conducted to study the contribution of each factor identified from the principal components analysis of the beliefs questionnaire⁵, and two 'dummy' variables (sex, length of experience), to the prediction of treatment acceptability scores. Analyses revealed statistically significant regression equations for the acceptability of DRO ($F_{(2,129)}=5.988, p<0.05$), Medication ($F_{(2,130)}=6.531, p<0.05$), Environmental Enrichment ($F_{(1,130)}=22.178, p<0.05$), Shock ($F_{(2,131)}=4.805, p<0.05$), PMR ($F_{(2,130)}=8.881, p<0.05$), Restraint ($F_{(1,131)}=5.601, p<0.05$) and FCT ($F_{(2,130)}=7.799, p<0.05$), but not Gentle Teaching (see Table 6).

Table 6 about here

Factor 4 ('abnormal') on the beliefs questionnaire emerged as the strongest predictor variable of DRO, accounting for 4.7% of the variance, while sex accounted for 2.5%. Factor 4 also emerged as the strongest predictor variable of Medication, accounting for 5.6% of the variance, while length of experience accounted for 2.2%. The results suggested that subjects who considered Factor 4 a likely cause of James' behaviour rated DRO and Medication more acceptable, than subjects who considered it a less likely cause. Females rated DRO as more acceptable than males. Subjects with a longer, rather than shorter, length of experience rated Medication as more acceptable.

Factor 5 ('natural') on the beliefs questionnaire accounted for 14% of the variance of Environmental Enrichment. Factor 5 also emerged as the strongest predictor variable of Shock, accounting for 3.2% of the variance, while sex accounted for 2.3%. Subjects who considered Factor 5 a likely cause of James' behaviour rated Environmental

⁵ A subject's average score across items loading on a factor was taken as the subject's overall factor score. An overall factor score was defined as missing when a subject failed to score on any item constituting the factor.

Enrichment as less acceptable, and Shock as more acceptable, than subjects who considered it a less likely cause. Females rated Shock as less acceptable than males. Sex emerged as the strongest predictor variable of PMR, accounting for 6.2% of the variance, while Factor 5 on the beliefs questionnaire accounted for 4.6%. PMR was rated more acceptable by females than males and by subjects who considered Factor 5 to be a less likely cause of James' SIB than subjects who considered it a more likely cause.

Factor 8 ('frustration') on the beliefs questionnaire accounted for 3.4% of the variance of Restraint. Factor 8 also emerged as the strongest predictor variable of FCT, accounting for 5.2% of the variance, while length of experience accounted for 4.3%. Subjects who considered Factor 8 to be a likely cause of James' behaviour rated Restraint as less acceptable, and FCT as more acceptable, than subjects who considered it a less likely cause. Subjects with longer, rather than shorter, length of experience rated FCT less acceptable, consistent with previous regression analyses.

DISCUSSION

When comparisons were made between the acceptability of different treatment interventions for SIB, the results suggested that, in general, nursing staff rated the acceptability of interventions according to the level of aversiveness, with less aversive interventions rated as more acceptable. This overall finding held for more recently developed non-aversive interventions that have not been considered in the treatment acceptability literature to date. Environmental Enrichment, Gentle Teaching, PMR and FCT were viewed by subjects as highly acceptable interventions. Shock and Restraint were rated as significantly less acceptable than any other treatment, which is consistent with previous research (Foxy, Bremer, Shultz, Valdez, & Johndrow, 1996a; Foxy, McHendry, & Bremer, 1996b; Lindeman et al. 1992; Miltenberger et al. 1989; Tarnowski, Rasnake, Mulick, & Kelly, 1989; Tarnowski, Mulick, & Rasnake, 1990). However, Medication was found to be significantly more acceptable than DRO, which is discrepant with the results of Lindeman et al. (1992), one of the few studies to consider the acceptability of medication. Furthermore, acceptability ratings for Medication in the present study did not differ from Gentle Teaching, PMR or FCT. These findings may be attributable to the nature of the populations studied. Lindeman et

al. studied the acceptability of treatments to superintendents of public residential facilities. It therefore seems reasonable to conclude that, since nursing staff have medical backgrounds, they perceive medication as a relatively more acceptable intervention. The mean acceptability rating of DRO was perhaps lower than to be expected from other studies (e.g. Irvin & Lundervold, 1988). It is again possible to attribute this to the nature of the population. Miltenberger et al. (1989) found that institutional staff rated DRO as less acceptable than community staff.

With regard to nursing staffs' causal attributions, the significant relationship between controllability and intentionality suggested that, for this population at least, these dimensions were not distinct. The range of subjects' attributions about the causes of SIB, along the dimensions of locus of control, stability, globality and intentionality, is of interest. In general, the results suggested that subjects held diverse attributions about the causes of SIB and were prepared to represent these based on minimal information. For locus of control, the majority of subjects attributed the cause of SIB more to external factors, although there was a group (13.2%) of subjects who attributed causes as internal. Along the dimension of stability, similar percentages of subjects responded within each category, which suggested that there was no overall tendency to view self-injury as stable or unstable. The majority of subjects responded midway along the dimensions of globality and intentionality, which suggested that they viewed SIB as neither global nor specific, and as neither intentional nor unintentional. However, 19.3% of subjects made extreme global attributions, perceiving SIB to occur in every situation, whilst few considered the behaviour to be specific to one situation. Also, 17.7% of subjects perceived the cause of SIB as unintentional (responses at the extreme end of the scale) and only 8.8% viewed the behaviour as intentional. This latter result is extremely different from that of Hastings (1995), who found that, when asked whether clients engage in challenging behaviour intentionally, 74% of care staff responded affirmatively. It is difficult to interpret why this was the case, although, perhaps the difference in outcomes is partly related to the different response formats.

Direct comparisons of the outcome of the current research with the work of Bihm and colleagues (Bihm & Sigelman, 1991; Bihm, Sigelman, & Westbrook, 1997) on causal attributions cannot be made, since their research concerned perceptions regarding a learning disabled man who was the recipient of a behavioural programme, and attributions were not measured independently of receiving the programme. However,

since Bihm and Sigelman (1991) demonstrated that perceptions and attributions about a learning disabled individual were affected by the setting in which the individual lived (community or institution), it would be interesting to extend the current research on attributions to a community setting. It would also be of interest to examine staff causal attributions for different topographies and severity of challenging behaviour.

Consistent with past research, staff showed wide-ranging beliefs about the causes of SIB (Berryman, Evans, & Kalbag, 1994; Bromley & Emerson, 1995; Hastings, 1995; Hastings et al. 1995). Statements related to attention/ communication, environmental factors, stimulation, mood and 'organic' factors were viewed as likely causes of James' SIB. Enjoyment, guilt, copying others, a natural thing to do, physical illness, a biological process, personality or escape/ avoidance were generally viewed as unlikely causes of SIB by staff. Therefore, most of the categories of responses that were viewed as likely causes of SIB were consistent with contemporary models of the origins of challenging behaviour (Hastings, 1995; Hastings et al. 1995). However, as found by Hastings (1995), escape/ avoidance was not viewed as a likely cause of SIB, whereas research findings have consistently indicated this be a function of SIB (e.g. Iwata, Pace, Dorsey, Zarcone, Vollmer, et al. 1994). Similarly, SIB has been suggested to occur sometimes as a response to pain resulting from untreated medical conditions (e.g. Gunsett, Mulick, Fernald, & Marten, 1989). If staff do not view physical illness as a possible cause of SIB, they would be unlikely to initiate a medical screening for the client, thus, potentially leaving self-injury 'untreated'.

The research hypotheses regarding the relationship between causal attributions and beliefs, and treatment acceptability, were, in general, not confirmed. The outcome of the regression analyses that examined the contribution of causal attributions of SIB to the prediction of treatment acceptability suggested that no one dimension accounted for a substantively meaningful proportion of the variance. Only one causal dimension had predictive value for the acceptability of one treatment description; the more intentional the behaviour was viewed, the more acceptable Physical Restraint was rated. The factors determined from the beliefs questionnaire seemed to have more predictive power than causal attributions, although, again, beliefs accounted for a relatively small proportion of the variance. If Factor 4 ('abnormal') was perceived as a likely cause of SIB, then DRO and Medication were rated as more acceptable than if Factor 4 was considered a less likely cause. If Factor 5 ('natural') was perceived to be a likely cause,

Environmental Enrichment and PMR were considered less acceptable, and Shock was viewed as more acceptable. Finally, if Factor 8 ('frustration') was perceived as a likely cause, Restraint was seen to be less acceptable, and FCT more acceptable.

There are a number of potential reasons why beliefs and attributions had relatively little predictive power. It is possible that the influence of beliefs and attributions about the causes of SIB on acceptability of interventions for SIB is not as strong as the influence of other variables. Past research has consistently shown that the level of restrictiveness and stated effectiveness of an intervention influence the acceptability of the intervention (see literature review, pp 20-54). The outcome of the regression analyses suggested that the 'dummy' variable of sex had more predictive power than the attribution dimensions, with females rating DRO and PMR as more acceptable, and Shock as less acceptable than males. Additionally, nurses with a longer, rather than shorter, length of experience of working with people with learning disabilities who self-injure, rated FCT as less acceptable, and Medication as more acceptable. This finding is interesting in itself, and may, in part, be explained by the emphasis placed on different interventions for challenging behaviour over time. Staff who have been nursing for a longer time will have had proportionately less exposure to non-aversive interventions, such as FCT, than staff who have trained more recently. Consequently, they may view FCT as less acceptable.

The findings of the current research indicated that the factor structure of Hastings et al.'s (1995) beliefs questionnaire was relatively weak, at least when considering the ratings of institutional staff for SIB alone. A number of the factors (Factors 2, 6 and 7) identified through the principle components analysis contained a mixture of relatively unrelated items. These factors did not have significantly predictive value, as would be expected. It is possible that the relatively weak factor structure of the beliefs questionnaire contributed to the poor predictions. However, according to the research hypotheses, staff who perceived the function of SIB as a means of gaining attention (high scores on Factor 3) would have been expected to rate DRO as highly acceptable, since DRO involves the removal of attention contingent on the occurrence of SIB. This was not found. Therefore, even when a factor contained clearly related items, the hypotheses were not confirmed. Nevertheless, the relationship, albeit weak, of Factor 5 and Factor 8 to the acceptability of particular interventions, could be seen to be consistent with the research hypotheses.

Similar conclusions can be made for the effect of causal attributions on treatment acceptability. It is possible that the attribution measure used was not an entirely valid one, which may have effected the overall results. However, when an attributional dimension was predictive of acceptability, the relationship was in the hypothesised direction; the more intentional the SIB was viewed, the more acceptable Physical Restraint was rated (see Hastings, 1995).

Therefore, although, as stated, the hypothesised relationships between beliefs and attributions about the causes of SIB and the acceptability of interventions for SIB were not strictly confirmed, and when predictive relationships were found, they were weak, the above discussion suggests that further examination of these relationships is deserved. Future research should address the issue of the validity and reliability of measures of both causal beliefs and attributions.

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Table 1: TEI-SF total score means and standard deviations, and the number of valid cases, for each treatment description.

| Treatment description | Valid N | Mean (standard deviation) |
|--|---------|---------------------------|
| Differential reinforcement of other behaviours | 152 | 24.67 (8.95) |
| Contingent electric shock | 154 | 13.50 (5.84) |
| Environmental enrichment | 153 | 35.73 (5.93) |
| Psychotropic medication | 153 | 29.64 (6.81) |
| Gentle teaching | 153 | 33.49 (7.05) |
| Physical restraint | 154 | 19.63 (7.78) |
| Progressive muscular relaxation | 153 | 33.31 (5.73) |
| Functional communication training | 152 | 31.74 (6.21) |

Table 2: Spearman's correlation coefficient (r_s) and corresponding level of significance for the causal dimensions of locus of control, controllability, stability, globality and intentionality.

| Causal Attribution scale | Locus of Control | Intentionality | Globality | Controllability |
|--------------------------|------------------|----------------|-----------|-----------------|
| Stability | -0.0059 | 0.0296 | -0.1290 | 0.0748 |
| Locus of Control | | 0.1278 | 0.2080* | 0.1871* |
| Intentionality | | | -0.0676 | 0.5866** |
| Globality | | | | -0.2656** |

** Significant at the 0.01 level, two-tailed⁶.

* Significant at the 0.05 level, two-tailed⁶.

⁶ A two-tailed test was selected since, although it was predicted that the scales of intentionality and controllability could be positively related, no such predictions between other scales were made.

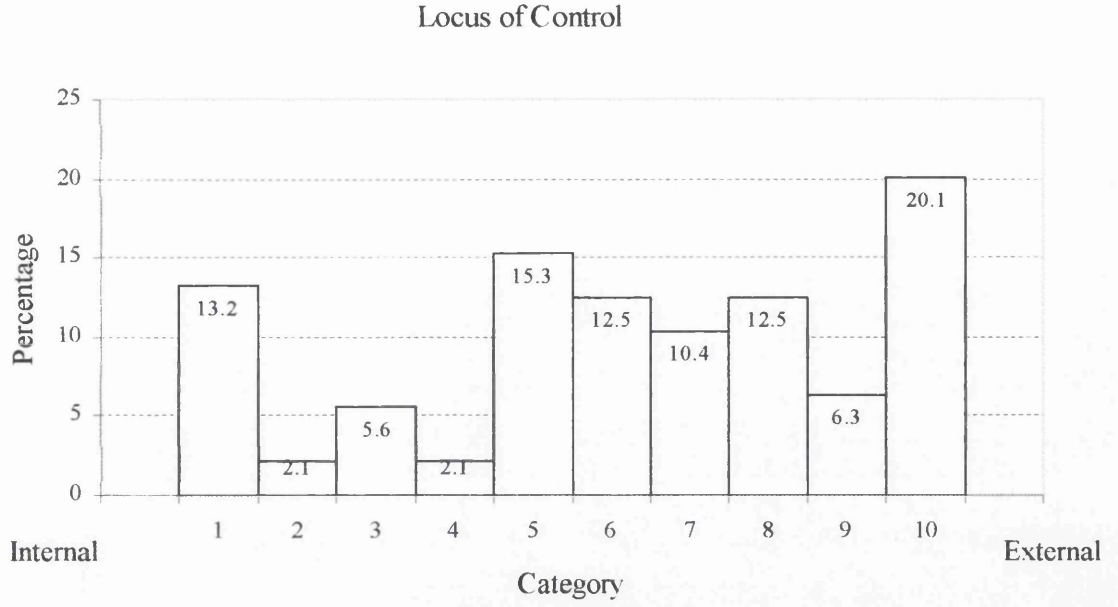


Figure 1.1: Graph showing the percentage of scores within each category along the causal dimension of locus of control (valid n = 144).

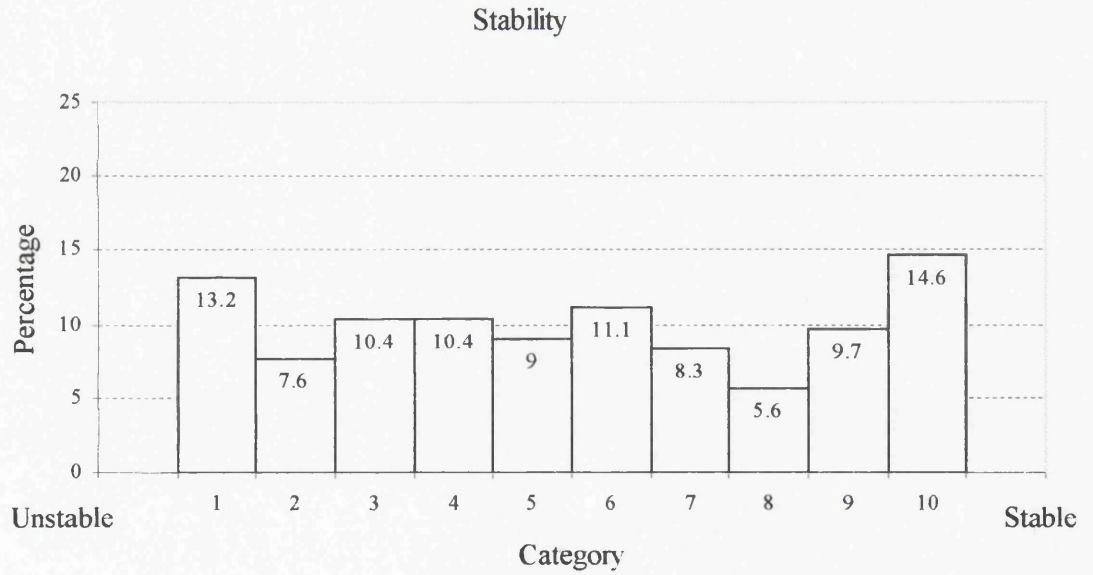


Figure 1.2: Graph showing the percentage of scores within each category along the causal dimension of stability (valid n = 144).

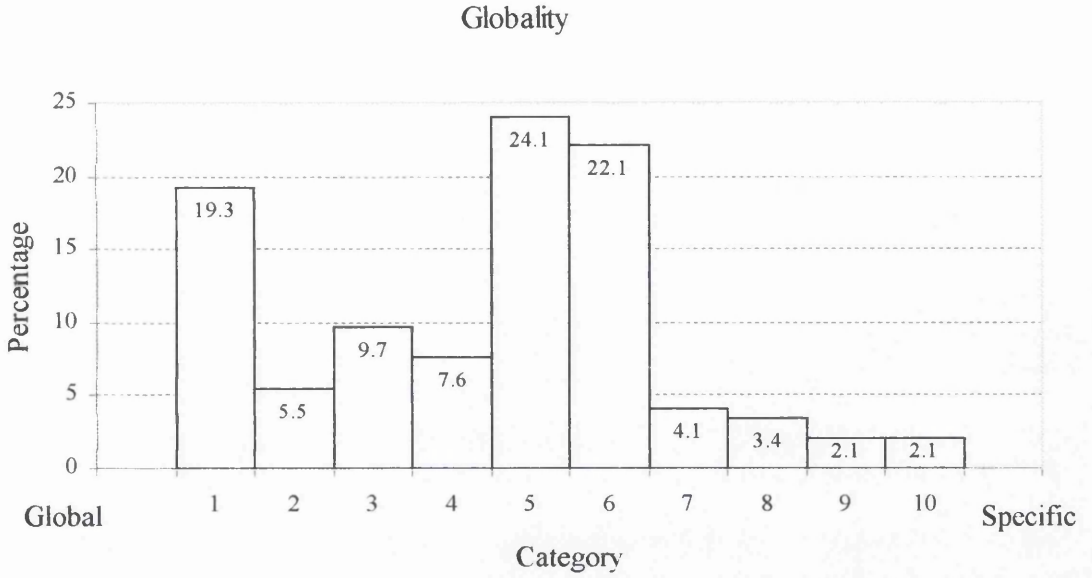


Figure 1.3: Graph showing the percentage of scores within each category along the causal dimension of globality (valid n = 145).

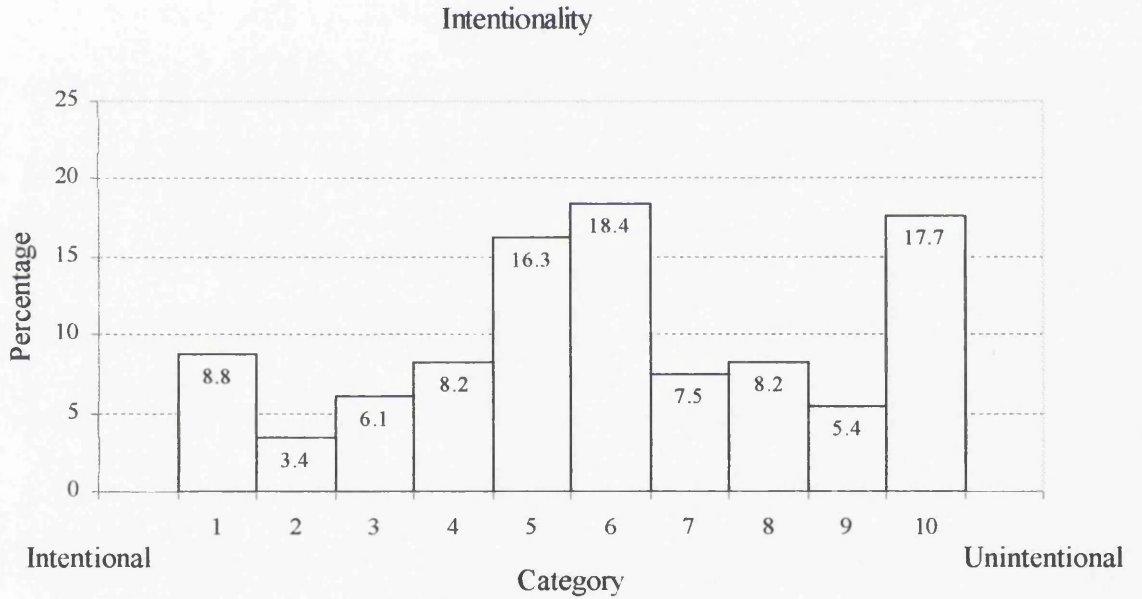


Figure 1.4: Graph showing the percentage of scores within each category along the causal dimension of intentionality (valid n = 146).

Figure 1: Graph showing the frequency of scores within each category along the causal dimension of locus of control, stability, globality and intentionality.

| Key to Category names for Figures 1: | | | |
|--------------------------------------|-------------|----------|-------------|
| Category | Score range | Category | Score range |
| 1 | 0 – 10 | 6 | 51 – 60 |
| 2 | 11 – 20 | 7 | 61 – 70 |
| 3 | 21 – 30 | 8 | 71 – 80 |
| 4 | 31 – 40 | 9 | 81 – 90 |
| 5 | 41 – 50 | 10 | 91 – 100 |

Table 3: Factors extracted from the beliefs questionnaire, and corresponding eigenvalues and percent of variance.

| Factors | Eigenvalues | Percent of variance |
|---------|-------------|---------------------|
| 1 | 5.305 | 21.2 |
| 2 | 3.250 | 13.0 |
| 3 | 1.993 | 8.0 |
| 4 | 1.648 | 6.6 |
| 5 | 1.272 | 5.1 |
| 6 | 1.157 | 4.6 |
| 7 | 1.085 | 4.3 |
| 8 | 1.012 | 4.1 |

Table 4: Factor structure, name and loadings of the beliefs questionnaire.

| Factor number and name (where possible) | Questionnaire items | Factor loadings |
|--|--------------------------------|-----------------|
| (1) Emotional and environmental factors | He is unhappy | 0.852 |
| | He gets 'wound up' | 0.780 |
| | Is in unpleasant surroundings | 0.721 |
| | He is bored | 0.609 |
| | Lives in a noisy place | 0.574 |
| | He lives in a crowded place | 0.483 |
| (2) [unrelated] | Stressful events in his life | 0.757 |
| | He feels guilty | 0.580 |
| | To communicate something | 0.493 |
| | He lives in a crowded place | 0.464 |
| | He is physically ill | 0.427 |
| (3) Attention requesting | To get the attention of others | 0.782 |
| | He wants something | 0.740 |
| | Does not get what he wants | 0.573 |
| (4) Abnormal | He is mentally ill | 0.797 |
| | He had a learning disability | 0.690 |
| | In a bad mood | 0.437 |
| (5) Natural | Makes him feel better | 0.738 |
| | A natural thing to do | 0.694 |
| | Biological process in his body | 0.641 |
| (6) [unrelated] | He enjoys it | 0.707 |
| | He is copying others | 0.559 |
| | To communicate something | -0.454 |
| | Does not get what he wants | 0.422 |
| (7) [unrelated] | To make people leave him alone | 0.773 |
| | His personality | 0.500 |
| (8) Frustration | He is sexually frustrated | 0.802 |
| | He is provoked by others | 0.544 |

Table 5: Outcome of the stepwise multiple regression analyses examining the contribution of 4 causal dimension (Locus, Stability, Global, Intent) and 2 'dummy' variables (sex, length of experience) to the prediction of the 8 treatment description acceptability scores.

| Dependent variable | Predictor | R Square | Adjusted R Square | F-ratio | Significance level (for F-ratio) | Standardised regression coefficient (beta) | t (for beta) | Significance level (for beta) |
|--------------------|----------------------|----------|-------------------|---------|----------------------------------|--|--------------|-------------------------------|
| DRO | Sex | 0.033 | 0.025 | 4.268 | 0.05 | 0.181 | 2.066 | 0.05 |
| CES | Sex | 0.045 | 0.038 | 6.028 | 0.05 | -0.212 | -2.455 | 0.05 |
| EE* | | | | | | | | |
| Med* | | | | | | | | |
| GT* | | | | | | | | |
| PR | Intentionality | 0.030 | 0.022 | 3.949 | 0.05 | -0.173 | -1.987 | 0.05 |
| PMR | Sex | 0.051 | 0.043 | 6.796 | 0.01 | 0.225 | 2.607 | 0.01 |
| FCT | Length of experience | 0.058 | 0.050 | 7.688 | 0.01 | -0.240 | -2.773 | 0.01 |

* Failed to conform for inclusion operated by Stepwise procedure.

DRO = Differential reinforcement of other behaviours; GT = Gentle teaching;
 CES = Contingent electric shock; PR = Physical restraint;
 EE = Environmental enrichment; PMR = Progressive muscular relaxation;
 Med = Psychotropic medication; FCT = Functional communication training.

Table 6: Outcome of the stepwise multiple regression analyses examining the contribution of 8 beliefs factors and 2 'dummy' variables (sex, length of experience) to the prediction of the 8 treatment description acceptability scores.

| Dependent variable | Predictor(s) | R Square | Adjusted R Square | F-ratio | Significance level (for F-ratio) | Standardised regression coefficient (beta) | t (for beta) | Significance level (for beta) |
|--------------------|--------------------------------|----------|-------------------|---------|----------------------------------|--|---------------------|-------------------------------|
| DRO | Factor 4 | 0.054 | 0.047 | 7.347 | 0.01 | 0.233 | 2.710 | 0.01 |
| | Factor 4, Sex | 0.086 | 0.072 | 5.988 | 0.01 | 0.179 ^a | 2.105 ^a | 0.05 ^a |
| CES | Factor 5 | 0.040 | 0.032 | 5.363 | 0.05 | 0.199 | 2.316 | 0.05 |
| | Factor 5, Sex | 0.069 | 0.055 | 4.805 | 0.01 | -0.172 ^a | -2.029 ^a | 0.05 ^a |
| EE | Factor 5 | 0.147 | 0.140 | 22.178 | 0.01 | -0.383 | -4.709 | 0.01 |
| Med | Factor 4 | 0.063 | 0.056 | 8.730 | 0.01 | 0.252 | 2.955 | 0.01 |
| GT * | Factor 4, Length of experience | 0.093 | 0.078 | 6.531 | 0.01 | 0.171 ^a | 2.030 ^a | 0.05 ^a |
| PR | Factor 8 | 0.041 | 0.034 | 5.601 | 0.05 | -0.203 | -2.367 | 0.05 |
| PMR | Sex | 0.069 | 0.062 | 9.622 | 0.01 | 0.263 | 3.102 | 0.01 |
| | Sex, Factor 5 | 0.122 | 0.108 | 8.881 | 0.01 | -0.229 ^a | -2.765 ^a | 0.01 ^a |
| FCT | Factor 8 | 0.060 | 0.052 | 8.175 | 0.01 | 0.244 | 2.8569 | 0.01 |
| | Factor 8, Length of experience | 0.109 | 0.095 | 7.799 | 0.01 | -0.224 ^a | -2.653 ^a | 0.01 ^a |

* Failed to conform for inclusion operated by Stepwise procedure.

^a Values reported are for the second predictor variable alone.

DRO = Differential reinforcement of other behaviours;

CES = Contingent electric shock;

EE = Environmental enrichment;

Med = Psychotropic medication;

GT = Gentle teaching;

PR = Physical restraint;

PMR = Progressive muscular relaxation;

FCT = Functional communication training.

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5. CLINICAL CASE RESEARCH STUDY 1 (ABSTRACT)

Cognitive-behavioural treatment for adolescent anorexia nervosa

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ABSTRACT

Cognitive theories of anorexia nervosa hold that dysfunctional cognitive processes play a critical role in the disorder's development and maintenance. Although empirical evidence is beginning to accumulate in support of the cognitive model, the success of the cognitive treatment approach has yet to be determined.

The present case study describes the application of a predominantly cognitive-based intervention with an adolescent girl who met DSM-IV criteria for anorexia nervosa. Specific hypotheses regarding negative schemata and thought processes in the determination of the disorder were tested through the use of cognitive techniques including cognitive restructuring, problem-solving training, assertiveness training and techniques to increase self-esteem. Scores on various outcome measures suggested improvement in mood, self-esteem, eating attitudes and behaviour. However, little change in body mass index was found. Details and limitations of the case are discussed.

6. CLINICAL CASE RESEARCH STUDY 2 (ABSTRACT)

**Clinical evaluation of dementia and depression
in a man with Down's syndrome**

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ABSTRACT

Despite the presence of Alzheimer's disease pathology in nearly all adults with Down's syndrome who come to autopsy after the age of 40 years, many do not demonstrate clinically significant dementia. The detection of dementia in people with learning disabilities is fraught with difficulties, particularly when the clinical picture is complicated by the presence of a depressive illness.

The current report describes the case of a 47-year-old man with Down's syndrome whose presenting symptomatology could be the manifestation of depression and/or dementia. Quantitative and qualitative assessment measures at baseline and one-year follow-up were compared in an attempt to answer the following questions. How do changes in functioning associated with dementia and depression present over time? Are there clear downward trend changes in areas of functioning that would be expected to decline in a dementing process? How are the symptom patterns associated with dementia and depression distinguishable from each other?

Particular difficulty was noted in trying to distinguish the two disorders, and the collective configuration of changes in functioning across time seemed to reveal symptom patterns consistent with both depression and dementia. Details of the case are discussed.

7. CLINICAL CASE RESEARCH STUDY 3 (ABSTRACT)

**Body Dysmorphic Disorder: Evaluation of exposure, response prevention
and cognitive therapy techniques**

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ABSTRACT

There is growing evidence to suggest that body dysmorphic disorder is related to, or a variant of, obsessive-compulsive disorder. Similarities with respect to clinical presentation, co-morbidity, age at onset, course and treatment response have been identified. Cognitive-behavioural therapies that have demonstrated success in the treatment of OCD have also shown significant improvements in BDD symptoms.

The present single-case study examined whether the application of cognitive-behavioural techniques often used in the treatment of OCD, including relaxation training, exposure and response prevention and cognitive restructuring, could demonstrate efficacy for a woman who met DSM-IV criteria for BDD. Reductions in overall levels of anxiety and depression, avoidance, compulsive checking and reassurance seeking were evidenced. However, even though the strength of belief in BDD-related thoughts and associated emotions was shown to decrease following cognitive restructuring, it was apparent that when the thoughts occurred initially (i.e. before cognitive restructuring), the belief and emotion were still relatively strong. The details and limitations of the case are discussed.

APPENDICES

APPENDIX 1: SMALL SCALE SERVICE EVALUATION PROJECT

Notes for Contributors

Papers, articles and other contributions should be sent to the Editor, Health Bulletin, Scottish Office Department of Health, Room 143, St Andrew's House, Edinburgh EH1 3DE. They must be submitted exclusively for Health Bulletin. Acceptance is on the understanding that editorial revision may be necessary. All papers are reviewed by the Editor and by peer review, referees being drawn from a panel of appropriate professionals in the NHS in Scotland. No correspondence can be entered into about articles found unsuitable and returned to authors.

Material submitted for publication must be typewritten on one side of the paper only, in double spacing and with adequate margins and each page should be numbered. The top typed copy should be submitted, with four other copies. All papers should be prefaced by a structured Abstract, of about 250 words in length. It should normally contain 6 clearly headed sections entitled Objective, Design, Setting, Subjects, Results and Conclusion. The name, appointment and place of work of the authors should be supplied on a separate title page. This same page should include the full postal address of one author, to whom correspondence and reprints will be directed. There should be adequate references to any relevant previous work on the subject; these references should appear at the end of the material on a separate page or pages, using the Vancouver style, which in the case of papers in journals includes:

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- Opening and closing page numbers

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APPENDIX 2: MAJOR RESEARCH PROJECT LITERATURE REVIEW

RESEARCH IN DEVELOPMENTAL DISABILITIES

AIMS AND SCOPE

Research In Developmental Disabilities is aimed at publishing original research of an interdisciplinary nature that has a direct bearing on the remediation of problems associated with developmental disabilities. Manuscripts will be solicited throughout the world. Articles will be primarily empirical studies, although an occasional position paper or review will be accepted. The aim of the journal will be to publish articles on all aspects of research with the developmentally disabled, with any methodologically sound approach being acceptable. A list of topics areas that is illustrative but not inclusive is applied behavior analysis, pharmacotherapy, traditional assessment, behavioral assessment, speech training and occupational therapy. Our aim is to publish the best available and most current research possible.

Audience

Psychologists, Social Workers, Rehabilitation Specialists and Sociologists

Instructions to Authors

SUBMISSION REQUIREMENTS: All manuscripts should be submitted to the Editor-in-Chief, Johnny L. Matson, Ph.D., Department of Psychology, Louisiana State University, Baton Rouge, LA 70803, USA. Submit five (5) high-quality copies of the entire manuscript; the original is not required. Allow ample margins and type **DOUBLE SPACED** throughout. One of the paper's authors should enclose a letter to the Editor, requesting review and possible publication; this letter must also state that the manuscript has not been previously published and has not been submitted elsewhere. Papers accepted for Research in Developmental Disabilities may not be published elsewhere in any language without written permission. Should a paper be accepted for publication, the author will be asked to complete a Transfer of Copyright form.

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APPENDIX 2 (continued)

TITLE PAGE: The title page should list (1) the article title; (2) the authors' names and affiliations at the time the work was conducted; (3) a concise running title; (4) an unnumbered footnote giving address for reprint requests and any acknowledgements; and (5) the corresponding author's telephone and fax numbers and E-mail address if available.

ABSTRACT: An abstract should be submitted that does not exceed 200 words in length. The abstract should be brief, concise, and complete in itself without reference to the body of the paper. Include purpose, methodology, results, and conclusions where applicable.

STYLE AND REFERENCES: Manuscripts should be prepared using the American Psychological Association Publication Manual, 4th ed., 1994.

The word retarded should be used as an adjective rather than a noun; retardate should be avoided. Terms that are scientifically precise should be adhered to. Therefore, mentally retarded will be preferred to retarded because it specifies the type of retardation, and intellectually average or normal intelligence will be preferred over normal. A similar format should be followed if other disabilities are involved. Abbreviations should be held to a minimum and should appear only after the full length term has been spelled out once in the text. It is understood that all investigations have been approved by the human subjects review committee of the author's institution.

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APPENDIX 3: MAJOR RESEARCH PROJECT PROPOSAL

- 1.1 Applicants – names and addresses including the names of co-workers and supervisor (s) if known.
- 1.2 Title – no more than 15 words.
- 1.3 Summary – No more than 300 words, including a reference to where the study will be carried out.
- 1.4 Introduction – of less than 600 words summarising previous work in the field, drawing attention to gaps in present knowledge and stating how the project will add to knowledge and understanding.
- 1.5 Aims and hypothesis to be tested – these should wherever possible be stated as a list of questions to which answers will be sought.
- 1.6 Plan of investigation – consisting of a statement of the practical details of how it is proposed to obtain answers to the questions posed. The proposal should contain information on Research Methods and Design i.e.
 - 1.6.1 Subjects – a brief statement of inclusion and exclusion criteria and anticipated number of participants.
 - 1.6.2 Measures – a brief explanation of interviews/ observations/ rating scales etc. to be employed, including references where appropriate.
 - 1.6.3 Design and Procedure – a brief explanation of the overall experimental design with reference to comparisons to be made, control populations, timing of measurements, etc. A summary chart may be helpful to explain the research process.
 - 1.6.4 Settings and equipment – a statement on the location(s) to be used and resources or equipment which will be employed (if any).
 - 1.6.5 Data analysis – a brief explanation of how data will be collated, stored and analysed.
- 1.7 Practical applications – the applicants should state the practical use to which the research findings could be put.
- 1.8 Timescales – the proposed starting date and duration of the project.
- 1.9 Ethical approval – stating whether this is necessary and, if so, whether it has been obtained.

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APPENDIX 4.1

RESEARCH IN DEVELOPMENTAL DISABILITIES

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APPENDIX 4.1 (continued)

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APPENDIX 4.2**INSTRUCTIONS**

Below is a description of a young man. Please read it carefully. Try to form a picture of what you think 'James Robinson' is like and especially think about the described behaviour. Keep James' behaviour in mind while you answer the questions in the following sections. You may re-read the description as often as you wish.

Please answer all the questions.

Your answers will be treated confidentially.

Thank you very much for your help.

James Robinson

James has a learning disability.

Sometimes, James repeatedly hits himself around the head with his fists.

This often leads to bruising and even bleeding.

APPENDIX 4.2 (continued)**Section A**

In this section, 8 different possible treatments for James' behaviour are described.

Each description is followed by a 9-item questionnaire.

Before writing anything, please read all 8 treatment descriptions in this section.

Once you have done this, please go back and re-read the description of Treatment 1 then fill in the questionnaire just below it to indicate how you feel about this treatment.

Then move on to re-read the description of Treatment 2, and fill in the questionnaire just below *it*, to indicate how you feel about *this* treatment.

And so on.

Please keep James' behaviour in mind whilst reading the treatment descriptions and answering each questionnaire.

Inclusion of treatment descriptions does not necessarily mean that the authors of this research would promote the use of such treatments.

APPENDIX 4.2 (continued)**TREATMENT 1:**

Whenever James has not hit himself for 15 minutes, staff members will praise him for being good and give him a reward, like something to eat or drink. When James is hitting himself, staff will ignore him and reinforce other clients for behaving appropriately.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 1. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour . | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)

TREATMENT 2:

Every time James starts hitting himself, a staff member will immediately say “Stop hitting yourself” and press a battery operated shock device against James’ forearm. The staff member will only make contact with James’ forearm for a maximum of one second after which it will be removed. The shock will be painful when applied but will leave no marks on James’ skin and will not cause any lasting physical injury whatsoever.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 2. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James’ problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James’ problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents’ consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)**TREATMENT 3:**

Staff members will ensure that a range of activities of interest to James are made available within and out-with the setting. This will include the introduction of equipment, such as board games, sensory equipment, music, television and computer games within the setting. It will also include the option of outdoor activities, such as swimming, shopping and trips to sport centres and cafes.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 3. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)**TREATMENT 4:**

After describing James' problem behaviour to the primary care physician and/or consultant psychiatrist, James will be placed on a single psychotropic medication for behaviour control. The medication prescribed will be one that has been utilised for cases like James' in the past and will be given at clinically acceptable doses.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 4. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)

TREATMENT 5:

A staff member will work with James on a task, such as a puzzle or sorting objects. Any attempt by James to hit himself will be blocked gently by the staff member with their hand but otherwise will be ignored. The staff member will then redirect James on to the task and praise any attempt by James to participate. Actual performance on the task is not important. James will be rewarded with social praise and affectionate physical contact at other times, regardless of whether he is participating in the task, or whether he is hitting himself. The staff member will also try to teach James to return warm, friendly responses.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 5. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)**TREATMENT 6:**

Every time James starts hitting himself, 2 staff members will hold down his arms to stop him hitting himself. The staff members will not talk to James or give him eye contact whilst holding down his arms. The staff members will keep holding James' arms in this position until 1 minute has gone by without James hitting or trying to hit himself.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 6. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)**TREATMENT 7:**

Staff members will teach James some exercises to help him to learn how to relax. This will involve showing James how to tense then relax different muscle groups in his body, for example, his hands, arms, shoulders, face, stomach, legs and feet. Staff will carry out these exercises with James once a day. Staff will also try to help James relax and to use the exercises whenever he starts hitting himself.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 7. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James' problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents' consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)

TREATMENT 8:

Staff members will teach James to shake his head or say “no” as a way of indicating that he wants to leave an activity or situation. This will involve showing James how to shake his head or say “no”, and then prompting James to do so. Staff members will try to anticipate when James is going to hit himself, or when he starts to indicate that he wants to leave an activity or situation, and then prompt him to make the appropriate response. A staff member will also do this every time James starts hitting himself.

Please complete the items listed below by placing a checkmark on the line next to each question that best describes how you feel about Treatment 8. Please read the items very carefully because a checkmark accidentally placed on one space rather than another may not represent the meaning you intended.

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. I find this treatment to be an acceptable way of dealing with James’ problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 2. I would be willing to use this procedure if I had to change James’ problem behaviour. | _____ | _____ | _____ | _____ | _____ |
| 3. I believe that it would be acceptable to use this treatment without residents’ consent. | _____ | _____ | _____ | _____ | _____ |
| 4. I like the procedure used in this treatment. | _____ | _____ | _____ | _____ | _____ |
| 5. I believe this treatment is likely to be effective. | _____ | _____ | _____ | _____ | _____ |
| 6. I believe James will experience discomfort during the treatment. | _____ | _____ | _____ | _____ | _____ |
| 7. I believe this treatment is likely to result in permanent improvement. | _____ | _____ | _____ | _____ | _____ |
| 8. I believe it would be acceptable to use this treatment with residents who cannot choose treatments for themselves. | _____ | _____ | _____ | _____ | _____ |
| 9. Overall, I have a positive reaction to this treatment. | _____ | _____ | _____ | _____ | _____ |

APPENDIX 4.2 (continued)

Section B

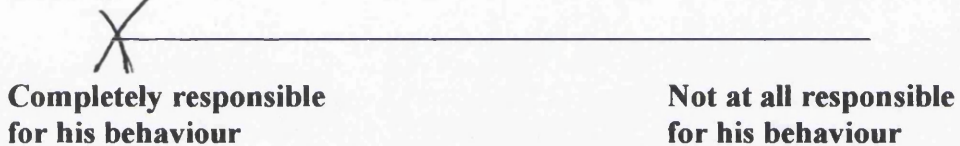
People often have different ideas about why people with learning disabilities, such as James, hit themselves.

In this section, please consider why you think James behaves the way he does. Use the scales on the next page to indicate your opinion. Place a cross on each line at the point that corresponds with how you account for James' behaviour.

Please re-read the description of James Robinson on the front page before you answer. Again, try to form a picture of what you think 'James Robinson' is like and why he might be behaving the way that is described.

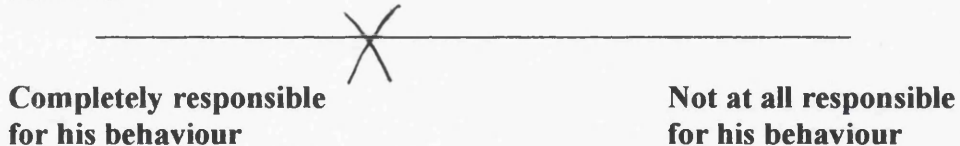
For example, if you thought James was completely responsible for his behaviour, you might place a cross at the extreme end of the line like this:

James is:



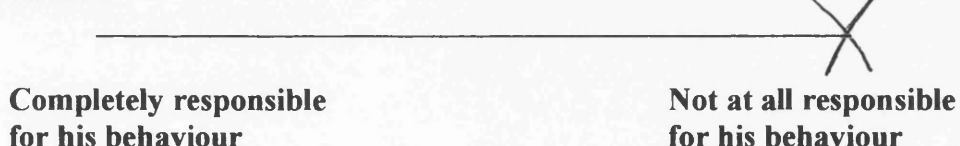
On the other hand, if you thought that James was not totally, but partly responsible for his behaviour, you might place a cross on the line like this:

James is:



However, if you thought that James was not at all responsible for his behaviour, you might place a cross on the line like this:

James is:



Please place a cross on the line at the point that best reflects your view.

APPENDIX 4.2 (continued)**Scale 1**

James behaves like this because of:

**Something about
him**

**Something about other
people or the situation/
environment**

Scale 2

James' behaviour:

Changes from day to day

Stays more or less the same

Scale 3

James' behaviour is:

**Completely under
his control**

**Not at all under
his control**

Scale 4

James behaves like this:

In every situation

In one situation only

Scale 5

James' behaviour is:

**Completely intentional
(on purpose)**

**Completely unintentional
(not on purpose)**

APPENDIX 4.2 (continued)

Section C

In this section, please consider how likely you think it is that the following statements are reasons for James' behaviour. Use the scale below to indicate your opinion. Re-read the description of James Robinson on the front page before you answer the questions.

The key shows what the points on the scale mean.

- 1 = Very Unlikely
- 2 = Unlikely
- 3 = Fairly Unlikely
- 4 = Equally Likely / Unlikely or No Opinion
- 5 = Fairly Likely
- 6 = Likely
- 7 = Very Likely

For example, if you thought that 'James does this because he is young', was unlikely, you might answer this:

| | | | | | | |
|-----------------------|-----------------|------------------------|-----------------|----------------------|---------------|--------------------|
| <i>Very Unlikely.</i> | <i>Unlikely</i> | <i>Fairly Unlikely</i> | <i>Equal/No</i> | <i>Fairly Likely</i> | <i>Likely</i> | <i>Very Likely</i> |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Please circle the number on the scale that best reflects your view.

1. James does this because he is physically ill.

| | | | | | | |
|----------------------|---|---|---|---|---|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Very Unlikely</i> | | | | | | <i>Very Likely</i> |

2. James does this because he is sexually frustrated.

| | | | | | | |
|----------------------|---|---|---|---|---|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Very Unlikely</i> | | | | | | <i>Very Likely</i> |

3. James does this to get the attention of other people.

| | | | | | | |
|----------------------|---|---|---|---|---|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Very Unlikely</i> | | | | | | <i>Very Likely</i> |

4. James does this because he has a learning disability.

| | | | | | | |
|----------------------|---|---|---|---|---|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Very Unlikely</i> | | | | | | <i>Very Likely</i> |

5. James does this because he wants to communicate something.

| | | | | | | |
|----------------------|---|---|---|---|---|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <i>Very Unlikely</i> | | | | | | <i>Very Likely</i> |

APPENDIX 4.3

Table showing Spearman's correlation coefficient (r_s) and corresponding level of significance for the causal dimensions of locus of control, controllability, stability, globality and intentionality for the pilot study.

| Causal Attribution scale | Locus of Control | Intentionality | Globality | Controllability |
|--------------------------|------------------|----------------|-----------|-----------------|
| Stability | -0.152 | 0.351 | -0.402 | 0.201 |
| Locus of Control | | -0.360 | -0.117 | -0.006 |
| Intentionality | | | -0.071 | 0.800* |
| Globality | | | | -0.450 |

* Significant at the 0.05 level, two-tailed.

APPENDIX 4.4

Table showing frequency and percentage of responses, and the number of valid cases, within each category for each question on the beliefs questionnaire.

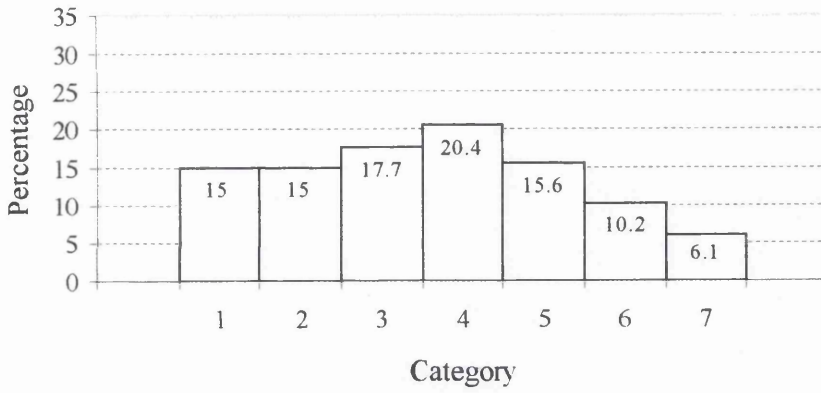
| Category | Question 1 (Valid N = 147) | | Question 2 (Valid N = 148) | | Question 3 (Valid N = 149) | |
|----------|--------------------------------|---------|--------------------------------|---------|--------------------------------|---------|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 22 | 15.0 | 8 | 5.4 | 0 | 0 |
| 2 | 22 | 15.0 | 13 | 8.8 | 6 | 4.0 |
| 3 | 26 | 17.7 | 25 | 16.9 | 10 | 6.7 |
| 4 | 30 | 20.4 | 49 | 33.1 | 14 | 9.4 |
| 5 | 23 | 15.6 | 31 | 20.9 | 45 | 30.2 |
| 6 | 25 | 10.2 | 18 | 12.2 | 43 | 28.9 |
| 7 | 9 | 6.1 | 4 | 2.7 | 31 | 20.8 |
| Category | Question 4 (Valid N = 149) | | Question 5 (Valid N = 149) | | Question 6 (Valid N = 148) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 8 | 5.4 | 0 | 0.0 | 9 | 6.1 |
| 2 | 14 | 9.4 | 3 | 2.0 | 15 | 10.1 |
| 3 | 10 | 6.7 | 6 | 4.0 | 15 | 10.1 |
| 4 | 25 | 16.8 | 16 | 10.7 | 36 | 24.3 |
| 5 | 27 | 18.1 | 46 | 30.9 | 25 | 16.9 |
| 6 | 29 | 19.5 | 49 | 32.9 | 29 | 19.6 |
| 7 | 36 | 24.2 | 29 | 19.5 | 19 | 12.8 |
| Category | Question 7 (Valid N = 150) | | Question 8 (Valid N = 151) | | Question 9 (Valid N = 150) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 13 | 8.7 | 10 | 6.6 | 10 | 6.7 |
| 2 | 19 | 12.7 | 13 | 8.6 | 11 | 7.3 |
| 3 | 20 | 13.3 | 12 | 7.9 | 13 | 8.7 |
| 4 | 42 | 28.0 | 30 | 19.9 | 32 | 21.3 |
| 5 | 33 | 22.0 | 39 | 25.8 | 44 | 29.3 |
| 6 | 16 | 10.7 | 34 | 22.5 | 26 | 17.3 |
| 7 | 7 | 4.7 | 13 | 8.6 | 14 | 9.3 |
| Category | Question 10 (Valid N = 151) | | Question 11 (Valid N = 151) | | Question 12 (Valid N = 151) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 3 | 2.0 | 4 | 2.6 | 15 | 9.9 |
| 2 | 1 | 0.7 | 5 | 3.2 | 25 | 16.6 |
| 3 | 4 | 2.6 | 11 | 7.1 | 10 | 6.6 |
| 4 | 19 | 12.6 | 28 | 18.2 | 45 | 29.8 |
| 5 | 45 | 29.8 | 47 | 30.5 | 26 | 17.2 |
| 6 | 31 | 20.5 | 34 | 22.1 | 17 | 11.3 |
| 7 | 48 | 31.8 | 22 | 14.3 | 13 | 8.6 |

APPENDIX 4.4

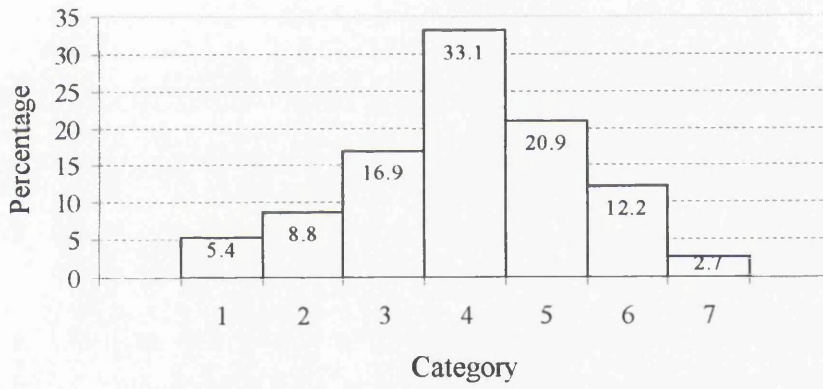
| Category | Question 13 (Valid N = 151) | | Question 14 (Valid N = 151) | | Question 15 (Valid N = 151) | |
|----------|--------------------------------|---------|--------------------------------|-----------|--------------------------------|---------|
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 5 | 3.3 | 42 | 27.8 | 4 | 2.6 |
| 2 | 4 | 2.6 | 29 | 19.2 | 15 | 9.9 |
| 3 | 9 | 6.0 | 16 | 10.6 | 18 | 11.9 |
| 4 | 26 | 17.2 | 37 | 24.5 | 37 | 24.5 |
| 5 | 38 | 25.2 | 15 | 9.9 | 30 | 19.9 |
| 6 | 36 | 23.8 | 8 | 5.3 | 25 | 16.6 |
| 7 | 33 | 21.9 | 4 | 2.6 | 22 | 14.6 |
| Category | Question 16 (Valid N = 152) | | Question 17 (Valid N = 151) | | Question 18 (Valid N = 149) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 5 | 3.3 | 19 | 12.6 | 14 | 9.4 |
| 2 | 8 | 5.3 | 26 | 17.2 | 25 | 16.8 |
| 3 | 17 | 11.2 | 22 | 14.6 | 17 | 11.4 |
| 4 | 33 | 21.7 | 47 | 31.1 | 54 | 36.2 |
| 5 | 48 | 31.6 | 20 | 13.2 | 18 | 12.1 |
| 6 | 30 | 19.7 | 7 | 4.6 | 11 | 7.4 |
| 7 | 11 | 7.2 | 10 | 6.6 | 10 | 6.7 |
| Category | Question 19 (Valid N = 151) | | Question 20 (Valid N = 152) | | Question 21 (Valid N = 152) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 40 | 26.5 | 2 | 1.3 | 16 | 10.5 |
| 2 | 35 | 23.2 | 6 | 3.9 | 22 | 14.5 |
| 3 | 24 | 15.9 | 10 | 6.6 | 23 | 15.1 |
| 4 | 38 | 25.2 | 28 | 18.4 | 45 | 29.6 |
| 5 | 5 | 3.3 | 44 | 28.9 | 23 | 15.1 |
| 6 | 5 | 3.3 | 46 | 30.3 | 14 | 9.2 |
| 7 | 4 | 2.6 | 16 | 10.5 | 9 | 5.9 |
| Category | Question 22 (Valid N = 152) | | Question 23 (Valid N = 151) | | Question 24 (Valid N = 152) | |
| | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 1 | 36 | 23.7 | 54 | 35.8 | 34 | 22.4 |
| 2 | 31 | 20.4 | 31 | 20.5 | 26 | 17.1 |
| 3 | 15 | 9.9 | 17 | 11.3 | 22 | 14.5 |
| 4 | 30 | 19.7 | 29 | 19.2 | 34 | 22.4 |
| 5 | 28 | 18.4 | 13 | 8.6 | 20 | 13.2 |
| 6 | 8 | 5.3 | 4 | 2.6 | 7 | 4.6 |
| 7 | 4 | 2.6 | 3 | 2.0 | 9 | 5.9 |
| Category | Question 25 (Valid N = 152) | | Category | Frequency | Percent | |
| | Frequency | Percent | | | | |
| 1 | 8 | 5.3 | 5 | 43 | 28.3 | |
| 2 | 17 | 11.2 | 6 | 21 | 13.8 | |
| 3 | 12 | 7.9 | 7 | 18 | 11.8 | |
| 4 | 33 | 21.7 | | | | |

APPENDIX 4.5

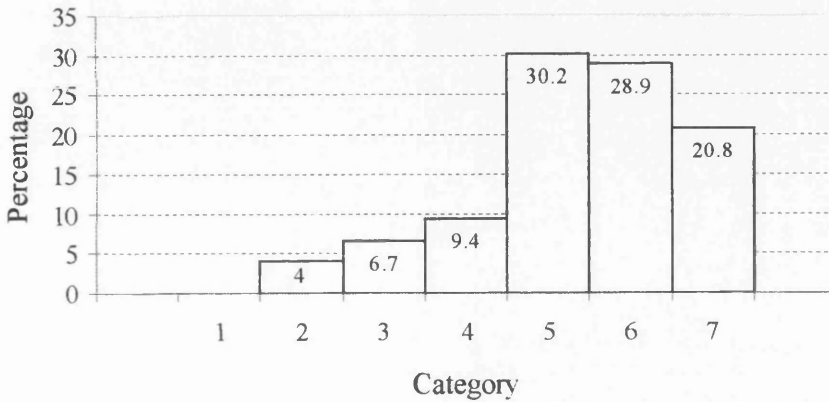
Physically ill



Sexually frustrated

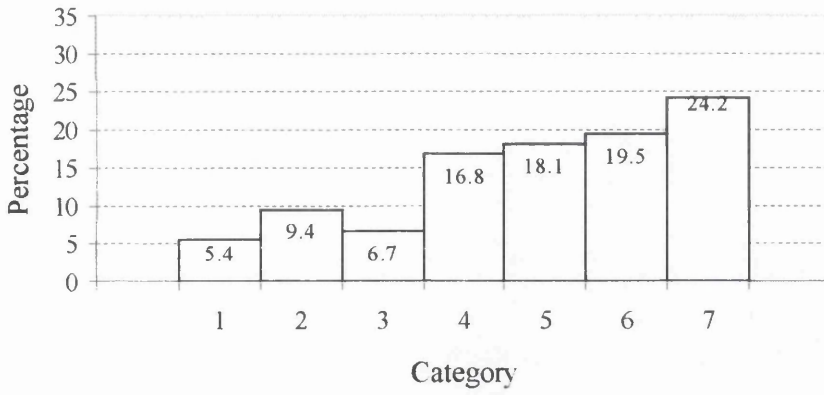


Attention of other people

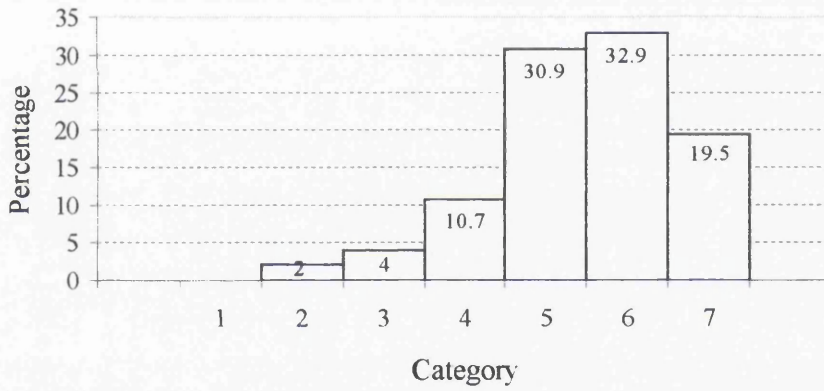


APPENDIX 4.5 (continued)

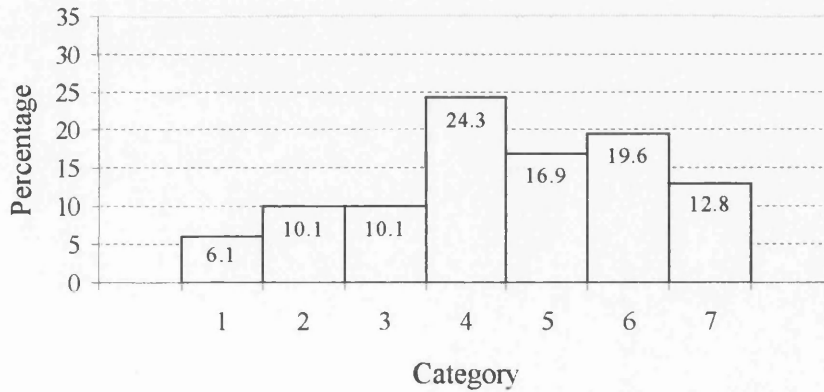
Learning disability



Communicate something

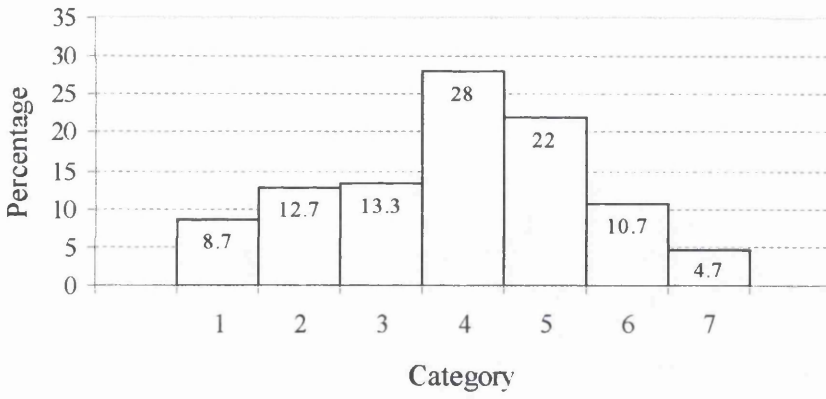


Mentally ill

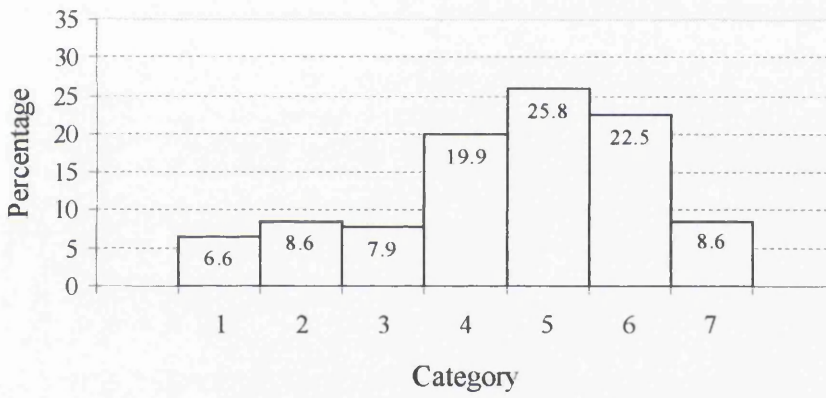


APPENDIX 4.5 (continued)

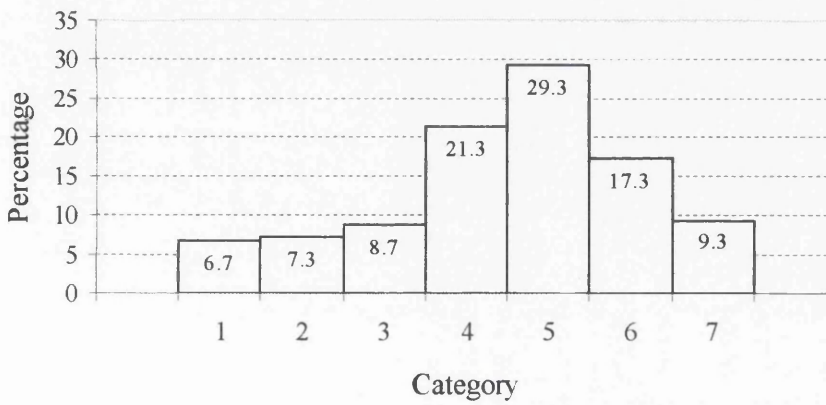
Provoked by other



Stressful events

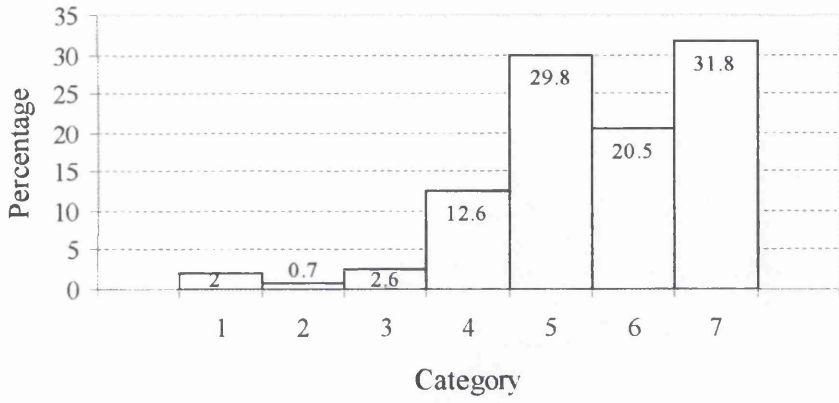


Crowded place

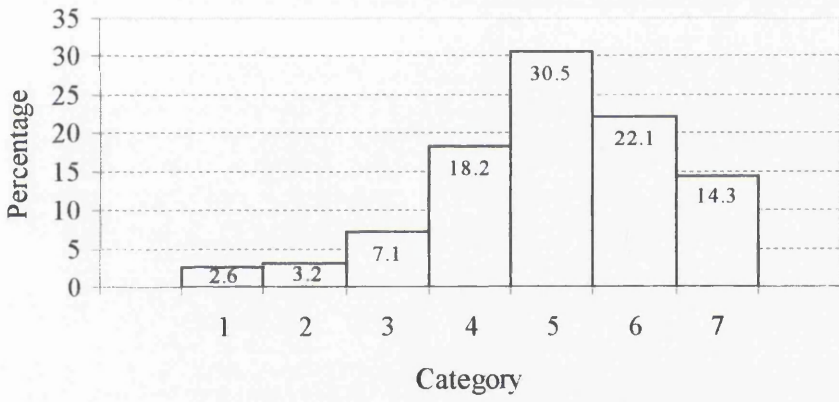


APPENDIX 4.5 (continued)

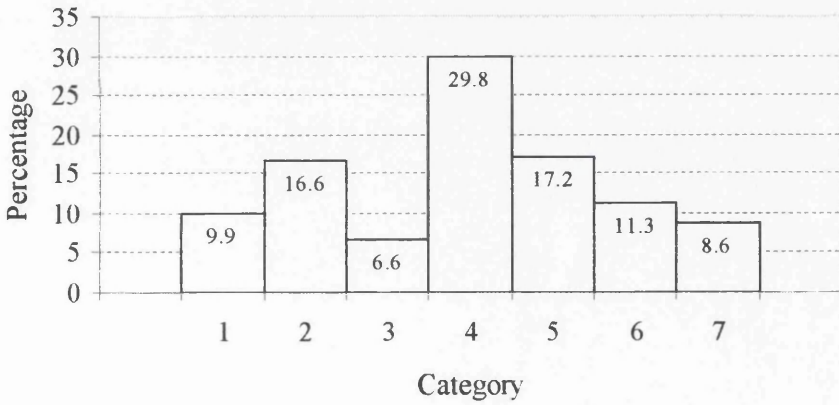
Bored



Wound up

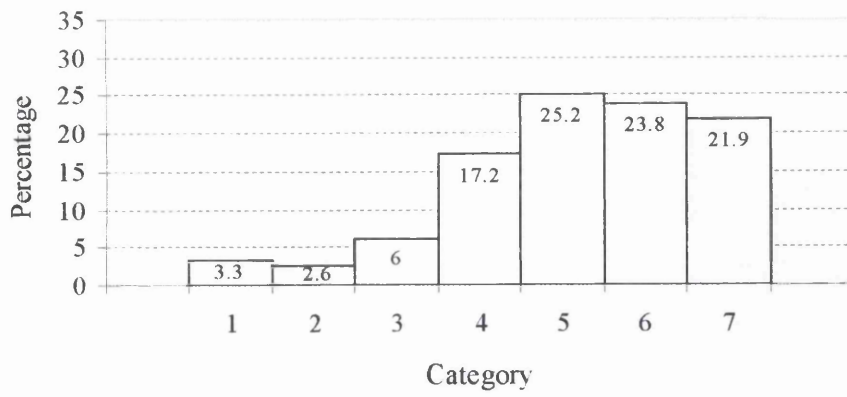


Unpleasant surroundings

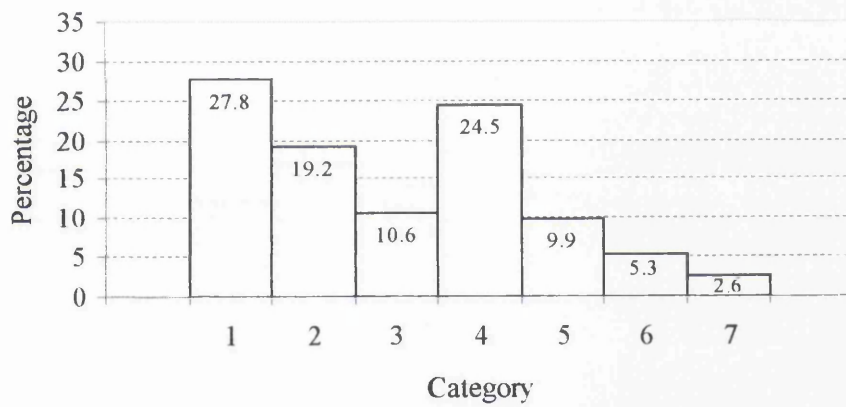


APPENDIX 4.5 (continued)

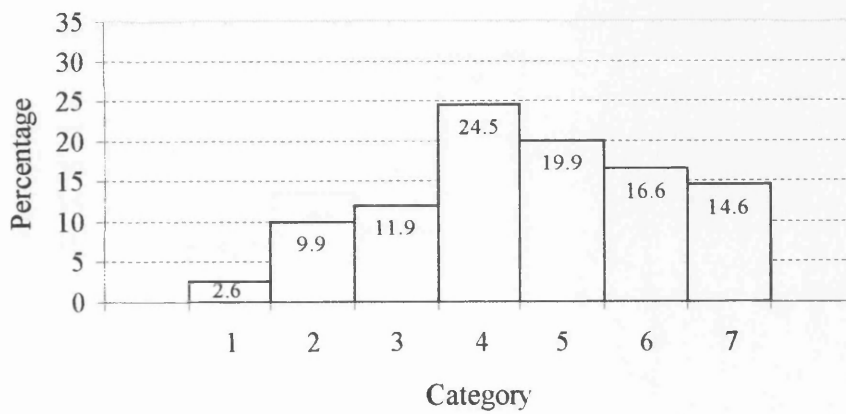
Unhappy



Enjoys it

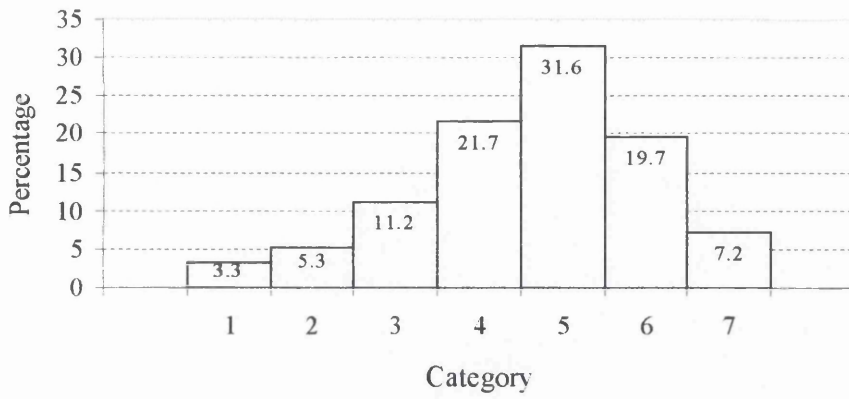


Does not get what he wants

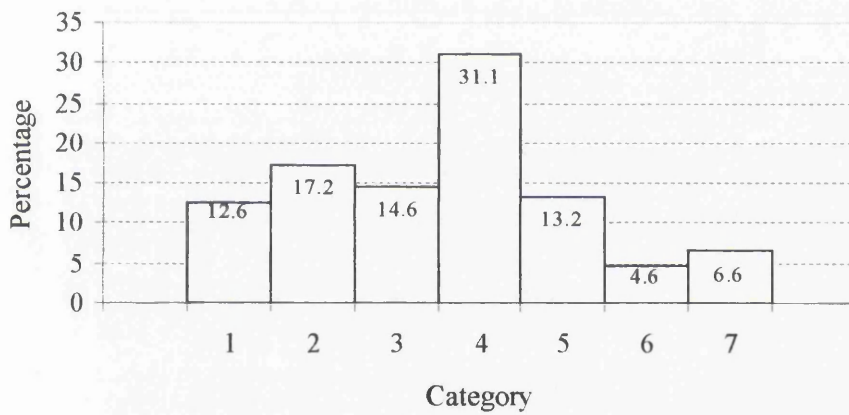


APPENDIX 4.5 (continued)

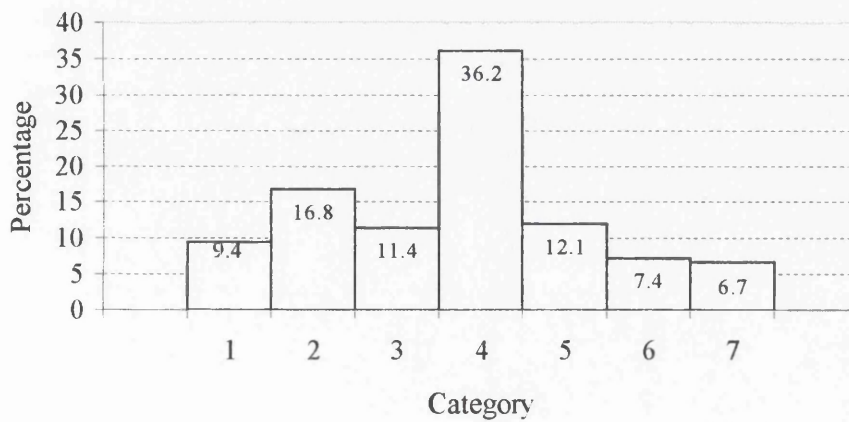
Bad mood



Make people leave him alone

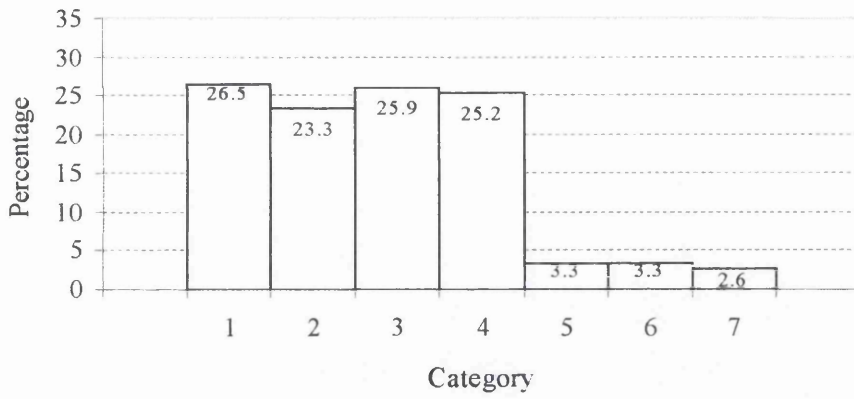


Biological process

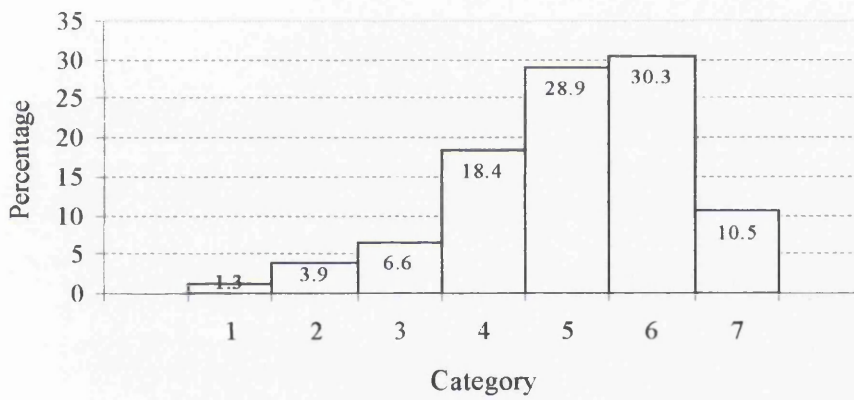


APPENDIX 4.5 (continued)

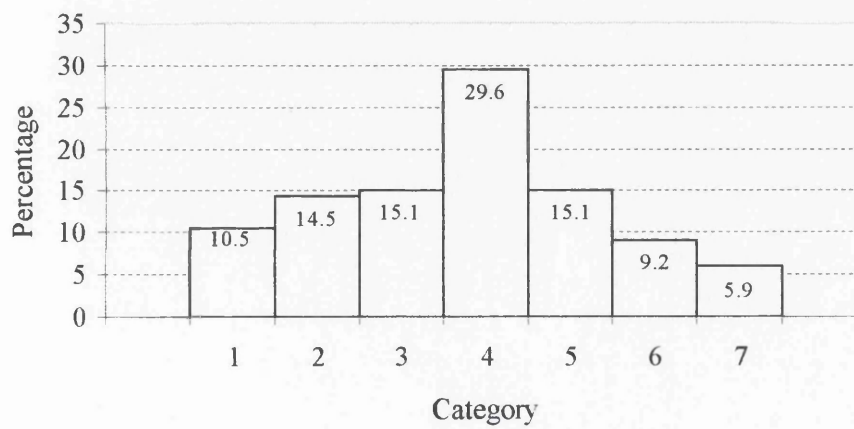
Feels guilty



Wants something

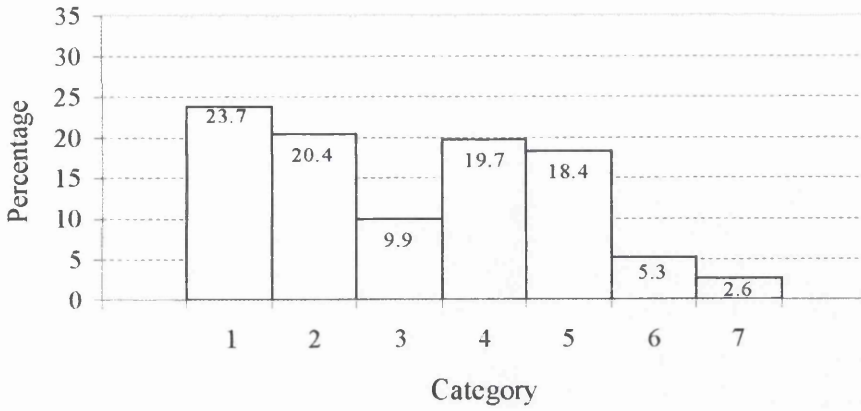


Personality

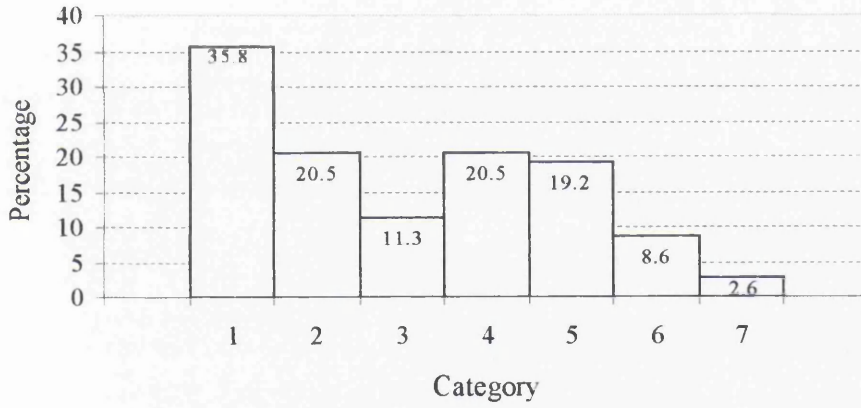


APPENDIX 4.5 (continued)

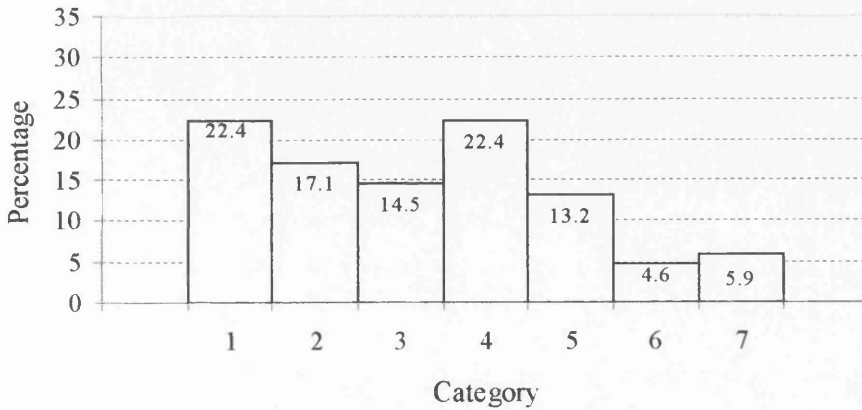
Copying others



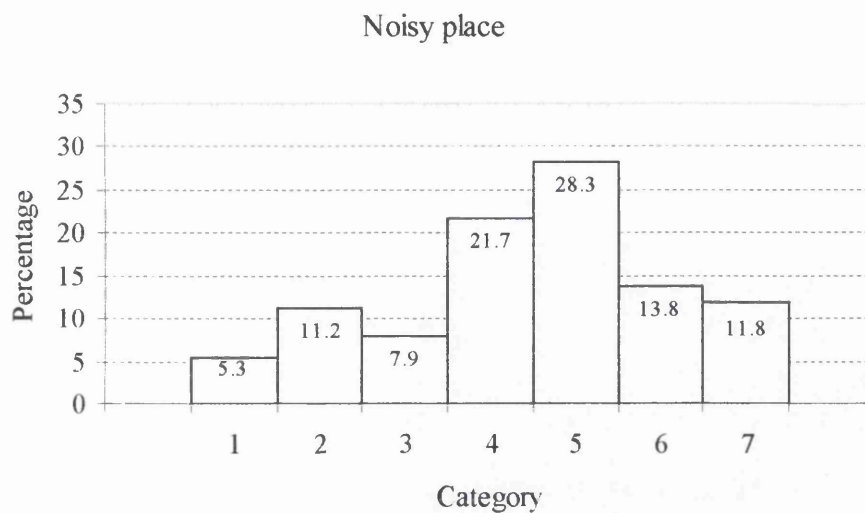
Natural thing to do



Feel better



APPENDIX 4.5 (continued)



Graphs showing the percentage of scores within each category for Question 1 to 25 on the beliefs questionnaire.

Key to Category names:

1 = very unlikely

2 = unlikely

3 = fairly unlikely

4 = equally likely/unlikely or no opinion

5 = fairly likely

6 = likely

7 = very likely