The Effect of Training and One-to-One Supervision Sessions on the Knowledge, Attitudes and Emotional Reactions of Staff who Work with People with Learning Disabilities who display Challenging Behaviour

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Abstract

Introduction: People with learning disabilities who display challenging behaviour are significantly more likely to experience a number of negative life events. The empirical evidence base highlights that in order to understand and successfully intervene in challenging behaviour it is essential that staff reactions are understood. It is considered that staff responses tend to be counter-habilitative and are likely to shape and maintain challenging behaviour. A number of factors may contribute to staff responses including: lack of knowledge, organisational factors, staff attributions and emotional responses. This thesis aims to explore the impact of a one day workshop and four one-to-one support sessions on participant's level of knowledge, attributions and emotional responses.

Method: An experimental, repeated measures design was employed in this study. Fifty-four staff members who worked in inpatient services for people with learning disabilities who displayed challenging behaviour were recruited as participants. Participants in the experimental condition attended a one-day workshop and four one-to-one support sessions with the principle researcher. All participants completed outcome measures on four occasions: pre and post training; post one-to-one support sessions and at 12-week follow-up. Outcome measures assessed behavioural knowledge, attributions and emotional responses.

Results: All data were analysed using quantitative, parametric analyses which examine the interaction between groups across conditions. There were no statistically significant interactions in measures which examine behavioural knowledge and overall adoption of a behavioural perspective. There were statistically significant interactions in some measures which examine attributions between groups across conditions but not in others. There were no statistically significant interactions in measures which examine emotional reactions between groups across conditions.

Discussion: The findings of this study would suggest that the combination of training and one-to-one support sessions increased the likelihood that the participant would shift their attributions from an internal emotional model towards a behavioural model. Further, these changes appeared to be maintained. It is suggested that interventions such as those implemented in this study could make a positive contribution to the support of people with learning disabilities who display challenging behaviours. This thesis also highlighted that the majority of the current evidence-base regarding staff attributions, including this research, has significant limitations since the measures used to assess attributions have poor ecological and construct validity. These limitations impact on the generalisability of most attributional research within this field. It is considered crucial that future research develops outcome measures which overcome these limitations.

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Chapter 1 - Introduction

1.1 General Introduction

It is reported that around 10-15% of people who are supported by learning disability services show challenging behaviours which are deemed to cause a serious management problem (Emerson, 1998). Challenging behaviour represents a serious problem for learning disability services. The current evidence base illustrates that the presence of challenging behaviour significantly increases the likelihood that the person displaying the challenging behaviour will experience a number of negative life events (e.g. Emerson et al., 1994). Staff who support people with learning disabilities who display challenging behaviour are more likely to experience higher levels of stress and negative affect (e.g. Hastings, 2002). A range of services exist to support people who display challenging behaviour, from community services to specialist outreach teams/inpatient units for the most severe forms of challenging behaviour. The explicit focus in the specialist inpatient units is to assess, formulate, intervene and evaluate the client's presenting behaviour in order that they can be successfully re-integrated into their local community.

There are a number of factors which may help us understand challenging behaviour. There is an established evidence-base, based on the principles of behaviour analysis, which illustrates effective intervention for challenging behaviour (British Psychological Society, 2004). The empirical evidence base reports that in order to understand and successfully intervene in challenging behaviour it is essential that we understand staff reactions (e.g. Hastings, 2002). It is considered that staff behaviour in services for

people with learning disabilities who display challenging behaviour tends to be counter-habilitative and is likely to shape and maintain challenging behaviour (e.g. Hastinsg, 1996). A number of factors may contribute to staff responses including:

- Lack of knowledge (e.g. Lowe et al., 2007);
- Organisational factors (e.g. Grey et al., 2007);
- Staff causal explanations: specifically, it has been found that staff tend to attribute challenging behaviours to controllable, internal and stable factors. It is considered that attributing behaviours along these dimensions is inconsistent with the evidence base (e.g. Allen, 1999);
- Staff emotional responses: it is considered that emotional responses play a pivotal role in staff responses to challenging behaviour (e.g. Jones & Hastings. 2003).

Research has demonstrated that training staff in behavioural approaches can broaden attributions (e.g. McGill et al., 2007) and enhance knowledge (e.g. Lowe et al., 2007) so that they are more consistent with the challenging behaviour evidence base. However, it is considered that, without organisation support, it is unlikely that these changes will be maintained and generalised in the workplace (Cullen, 1988). The empirical evidence base illustrates that attributions can be altered by employing cognitive reattribution techniques (Forsterling, 1985).

The present study examines whether an intervention could be implemented which targets both lack of knowledge and challenges unhelpful attributions. It is considered that perhaps a combination of 'workshop' type training and one-to-one sessions with staff, which employ cognitive reattribution techniques, could be an efficacious vehicle

for altering both attributions and knowledge whilst maintaining these over the longer term. Thus, the primary aim of this thesis was to explore the impact of training and one-to-one sessions which focus on attribution retraining on knowledge, attributions and emotional responses.

1.1.1 Identification of Studies Under Review

The studies reviewed in this thesis have been identified by two methods. Firstly, a literature search was conducted using the Psychinfo database (1967-2007). The following key words were entered and combined using the OR function: *mental retardation*; *learning disabilities*; *intellectual disabilities* and *intellectual impairment*. Then the following key words were entered using the OR function: *challenging behaviour*; *self-injurious behaviour* and *problem behaviour*. All of these were then separately combined using the AND function with the key words *staff emotional reactions*; *staff knowledge* and *staff attributions*. These papers were then studied to determine which were relevant for inclusion in the thesis. The second method involved reading through papers identified by the literature search and using their references to find further relevant studies.

Appendix I provides a summary of the major papers reviewed in this thesis, explaining their relevance and highlighting some of the strengths and weaknesses of the methodology and analyses of the studies.

1.2 Definitions

1.2.1 Learning Disability

Whilst there may be terminological differences or slight variations, it is generally considered that there are three core criteria for learning disability:

- significant impairment of intellectual functioning
- significant impairment of adaptive/social functioning
- age of onset before adulthood

(British Psychological Society, 2004)

This definition is in keeping with those detailed in the Valuing People White Paper (Department of Health, 2001), American Association on Mental Retardation (Luckasson et al., 2002), ICD-10 (World Health Organisation, 1992) and the DSM-IV (American Psychiatric Association, 2000). It is accepted across professional groups and is recognised internationally.

1.2.2 Challenging Behaviour

The most commonly used definition of challenging behaviour is:

> "Severely challenging behaviour refers to behaviour of such 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 limit of delay access to and use of ordinary community facilities"
>
> (Emerson et al., 1988, p17)

The three major types of challenging behaviour are: aggressive/destructive behaviour, self-injurious behaviour and stereotypy (Hastings & Remington, 1994a).

Whilst the above formal definition of challenging behaviour is very familiar to most researchers and academics who work within this field research indicates that this may

be at odds with staff definitions. Reviewing the research which examined staff definitions of challenging behaviour Hastings (1997) reported that staff typically define challenging behaviours as those actions that constitute a management problem.

It is considered that the definition of challenging behaviour must reference the importance of the social context in which it occurs since it is the complex interaction between the individual who displays challenging behaviour and the environment in which he/she lives which decides whether a behaviour is considered to be challenging or not (Hassiotis & Hall, 2008).

1.3 Challenging Behaviour – the size of the problem

Within the empirical evidence base there has been ongoing discussion about how best to measure challenging behaviour. Studies which examine populations of adults with learning disabilities show inconsistent prevalence rates of all problematic behaviours that range from 6.1% in the community to 40% of those in institutions (Hassiotis & Hall, 2008). It is reported that between 10% and 15% of people who are supported by learning disability services show challenging behaviours which are deemed to cause a serious management problem, or would do if it were not for intervention (Emerson, 1998). Mansell et al. (1993) reported that the prevalence of people with learning disabilities who display challenging behaviours is probably about 20 per 100,000 of the whole population (as cited in Cullen, 1999).

It is now relatively well accepted that the prevalence of challenging behaviour is higher in institutions than in family homes, group homes, and supported accommodation

(Cullen, 1999). Severity of challenging behaviour correlates with the level of intellectual impairment, institutional setting, age and co-existing disabilities (Hassiotis & Hall, 2008). There is limited empirical evidence about the development or course of challenging behaviour.

1.4 The Service Context

A range of services exist to support people with learning disabilities who display challenging behaviour. These range from 'typical' community based services to more specialist services community based services through to specialist inpatient units within local health services. Typically, the population that inpatient services support are considered to display challenging behaviour which is at the most severe end of the range of challenging behaviours and is such that the person cannot be safely supported within the community. The explicit focus of these specialist inpatient units is to assess, formulate, intervene and evaluate the client's challenging behaviour in order that they can be successfully re-integrated back into their local community. These services are considered to be amongst the most specialist and thus require the highest level of skills and knowledge.

1.5 Impact of Challenging Behaviour

1.5.1 On the Client

People who display challenging behaviour are typically amongst the last to leave institutional care (Wing, 1989 as cited in Broadhurst & Mansell, 2007) and, once in the community, challenging behaviour is the most frequently cited cause of placement breakdown and institutional readmission (Broadhurst & Mansell, 2007).

Emerson et al. (1994) reported that people who display challenging behaviour are often at risk, not only as a direct result of their behaviour, but as a consequence of how staff and services respond to them. Emerson and colleagues (1994) detail some of the unhelpful responses as:

- Physical abuse – those who display challenging behaviour in institutional settings are more at risk of suffering physical abuse than those who do not (Rusche et al., 1986 as cited in Emerson et al., 1994).
- Unnecessary or excess medication – between 40-50% of people who display aggressive or self-injurious behaviours are administered psychotropic medications over long periods of time (Emerson et al. 1994). This is contrary to the evidence base which does not support the use of such pharmacological interventions to reduce challenging behaviour in the long-term (Emerson et al., 1994).
- Physical or mechanical restraint is commonly used in self-injurious behaviour which can result a number of physical injuries (Emerson et al., 1994).
- Deprivation, neglect and abuse – people who display challenging behaviour are at risk of:

> "substantial material and social deprivation through being excluded from everyday activities and settings, having their needs neglected and being subjected to abusive practices"
>
> (Emerson et al., 1994, p9).

People with learning disabilities who display challenging behaviour are significantly more at risk of being excluded from the community and admitted to

institutional care. Those who have been institutionalised are likely spend most of their time in:

> "materially deprived surroundings, disengaged from their world and avoided by staff"
>
> (Emerson et al., 1994, p10).

1.5.2 On Staff...

Emotional Reactions to Challenging Behaviour

There has been significant research investigating the emotional impact that working with people who display challenging behaviour has on staff. It has been consistently reported that staff typically experience a wide range of emotional reactions when dealing with episodes of challenging behaviour. Bromley & Emerson (1995) asked staff members what percentage of their staff team would usually experience certain emotional reactions to different challenging behaviours. The results suggested that for aggressive challenging behaviours 41% of staff would feel annoyance, 24% anger and 19% fear. For self-injurious challenging behaviours the results suggested that 38% of staff would feel sadness, 32% despair, 15% anger and 15% disgust. Bromley & Emerson (1995) asserted that the emotional reactions to challenging behaviour that staff experience are an important area of investigation since they may be impede the effective delivery of treatment plans. Mitchell & Hastings (1998) reported that when investigating staff emotional reactions there are two key dimensions which emerge, fear/anxiety and depression/anger.

Jenkins et al. (1997) found that staff who support people with learning disabilities who display challenging behaviour in the community are significantly more likely to feel anxious, feel less well supported and to have lower levels of job satisfaction. There is

some research to indicate that these emotional reactions may weaken over time (Hasting, 1995). However, this is contrary to the findings of Bromley & Emerson (1995) who reported that 75% of staff interviewed reported that it was the wearisome nature of working with people who display challenging behaviour over long periods of time that was the most significant cause of staff stress. It is also noteworthy that they found that the lack of effective intervention strategies, staff inability to understand why challenging behaviours occur and the unpredictability of its occurrence were all significantly greater sources stress than the threat of injuries.

In a review of the evidence Hastings (2002) reported that there is reasonable evidence to indicate that there is an association between challenging behaviour and staff stress and for an association between challenging behaviour and staff negative emotional reactions. Hastings (2002) proposed that the effect of challenging behaviour on staff psychological well being is mediated by their negative emotional responses. At a very basic level staff psychological well being is important since employers have a moral and often legal responsibility to their staff (Hastings, 2002). However, staff well being is also significant since research indicates that staff stress impacts on staff turnover and absenteeism (Hastings, 2002). This is particularly significant since staff turnover and absenteeism have been recognized as a problem in learning disability services. It is reported that this will have a direct impact on client care since the discontinuities in care, created by absenteeism and high staff turnover, have been found to be one of the general predictors of various psychological difficulties, including challenging behaviour (Hastings, 2002). More specifically, research has demonstrated that staff who reported higher levels of stress are less likely to be observed engaging in positive interactions with clients (Hastings, 2002). Also, Rose et al. (1998) illustrated that interventions

which effectively reduce staff stress levels also demonstrate positive changes in staff/client interactions (as cited in Hastings, 2002).

The main points thus far are:

- The empirical evidence base illustrates that the presence of challenging behaviour significantly increases the likelihood that the person displaying the behaviour will experience a number of negative life experiences.
- Staff who support people with learning disabilities who display challenging behaviour are more likely to experience higher levels of stress and negative affect which may also influence the quality of interactions with the client.

1.6 Understanding Challenging Behaviour

Understanding why challenging behaviour occurs has been the focus of a significant body of empirical research. Murphy (1994) reported that much is known about challenging behaviour and specifically what factors influence its appearance, frequency and intensity. The evidence base indicates that biological, operant and ecological factors should be considered when trying to understand why challenging behaviour occurs.

1.6.1 Biological Factors

The evidence base demonstrates that a number of conditions correlate with increased likelihood of challenging behaviour. This includes learning disability itself (with

increased prevalence of challenging behaviour as the level of impairment increases), epilepsy, Fragile-X, possibly autistic spectrum disorders and mental illness (Murphy, 1994). However, whilst correlations exist, understanding why this is the case is more difficult. The neurobiological basis for many of these conditions is poorly understood never mind the link between neurobiology and behaviour. Murphy (1994) asserts that only two conditions, Lesch-Nyhan syndrome and Prader-Willi syndrome, are clearly sufficient to produce certain types of challenging behaviours. Thus, for the vast majority of people with learning disabilities, the biological conditions which they experience are neither necessary nor sufficient for explaining the existence of challenging behaviours.

Emerson (1998) summarised the evidence base for neurobiological theories which attempt to explain challenging behaviour. It is reported that the dopaminergic, serotoninergic and β-endorphin systems may be implicated in the development and maintenance of some forms of self-injurious behaviours. There is no evidence of the role of neurobiological mechanisms in the development and maintenance of any other forms of challenging behaviour.

1.6.2 Operant Factors

There is a well-established evidence base which demonstrates that challenging behaviour can be learnt. The principles of operant learning would predict that challenging behaviour is learnt either by positive reinforcement (the presentation of a desired response following the incident of challenging behaviour) or by negative reinforcement (the removal of aversive stimuli following the incident of challenging

behaviour). Positive reinforcers may include the attention of those in the environment (either by reassurance or reprimand), the attainment of tangibles and, for stereotypy and self-injurious behaviour, perceptual reinforcement or intrinsic reinforcement (Hastings & Remington, 1994a). Negative reinforcement may occur when, as a consequence of the challenging behaviour, the individual avoids or escapes aversive consequences for example demand cessation. Murphy (1994) reported that operant learning is sufficient to maintain a variety of challenging behaviours. From this perspective, challenging behaviour serves a purpose or function. Developments in the use of functional analysis have demonstrated that the function or purpose of the challenging behaviour can be elicited. Murphy (1994) asserted that, from this perspective, it may be helpful to view challenging behaviour as communication.

In support of the operant model of challenging behaviour Derby et al. (1992) (as cited in Grey et al., 2002), summarising the results of analogue assessments completed on 79 clients, reported that 72% of challenging behaviours were found to be maintained by attention or escape. In another study, functional analysis identified escape/avoidance (negative reinforcement) as the function of challenging behaviour is approximately 50% of cases whilst positive reinforcement (attention or tangible) maintains challenging behaviour is around 25% of cases (Derby et al., 1997; Wacker et al., 1998 *as cited in Grey et al. 2002*).

1.6.3 Ecological Factors

The development of challenging behaviour has also been viewed within the context of people interacting with their environment (Murphy, 1994). Researchers have examined

the context in which people with learning disabilities live highlighting that they are more likely to experience impoverished physical environments and social interactions. Murphy (1994) reported that these issues may maintain challenging behaviours.

1.7 Challenging Behaviour – The Current Evidence Base

Ball, Bush and Emerson (2004) have produced clinical practice guidelines for psychological interventions for severely challenging behaviours shown by people with leaning disabilities. In identifying the strength of evidence they categorised each guideline according to 3 levels of support:

Level 1: evidence from well-designed randomised controlled trials, meta-analyses or systematic reviews.

Level 2: evidence from well-designed cohort or case controlled studies (this includes well designed single case (n=1) experimental studies).

Level 3: evidence from uncontrolled studies or clinical consensus

(British Psychological Society, 2004)

They identified 58 guidelines of which 52 were rated on the above system of categorisation. Of the 52 which were rated, 5 were supported by level 1 evidence and 10 were supported by level 2 evidence. In addition, the guidelines were extensively reviewed by clinicians and further categorised into those which were deemed 'good practice', those which a competent psychologist should follow, and 'essential practice' which, if the psychologist did not adhere to, would risk bad practice.

Of the 52 rated guidelines 15 were thought to be essential. Only 3 of the essential practice guidelines were supported by level 1 evidence whilst 2 were supported by level 2 evidence. This is consistent with Cullen's (1999) assertion that the evidence base for therapeutic interventions in challenging behaviour is not firm as it ought to be.

The three guidelines which have both a strong evidence base and considered to be essential practice are:

- "to establish the function of the challenging behaviours to determine the correct basis for an intervention usually through a functional analysis (guideline 10.12).
- To follow the principle of functional equivalence to replace the challenging behaviour with functionally equivalent but more positive behaviours (guideline 12.15).
- To use extreme caution when considering the use of punishment (guideline 12.20.2)".

(British Psychological Society, 2004, p45, p71 & p76)

The two guidelines which have a strong evidence base but only considered to be good practice are:

- "Extinction is effective under certain conditions (12.20.1).
- Interventions for severely challenging behaviours should be routinely evaluated for their effectiveness (13.2)".

(British Psychological Society, 2004, p75 & p87)

A number of reviews have investigated what constitutes as effective intervention in challenging behaviour, specifically for those who have a learning disability. Two major meta-analytic reviews, completed by Scotti et al. (1991) and Didden et al. (1997), have been published. The Didden et al. (1997) paper is considered to be the most comprehensive analysis in the field and it's three main conclusions represent the clearest report on intervention effectiveness (Ager & O'May, 2001). The three principal conclusions are:

- "intervention with socially disruptive and internally maladaptive behaviours is significantly more successful than with externally destructive behaviours;
- interventions involving manipulation of response contingencies (i.e., the consequences of behaviour) are significantly more effective than other forms of intervention;
- conducting an explicit functional analysis of behaviours significantly enhances the effectiveness of a subsequent intervention".

(Ager & O'May, 2001, p244)

Thus, the evidence base unequivocally states that the function of challenging behaviour should be established in order to determine the correct basis for intervention. It is considered that the most appropriate way of doing this would be using a functional analysis (British Psychological Society, 2004). It is also noted within the BPS guidelines that a functional analysis is a term which is used with different degrees of accuracy by different authors. It is noted that the stricter behaviour analytic procedure where structured observation and other methods of assessment are employed to generate hypotheses about the challenging behaviour, its antecedents and consequences, which then tested out by experimental trial to support or refute the hypothesis is supported by the evidence base (British Psychological Society, 2004).

Once the function of the behaviour has been established appropriate intervention can be implemented. Murphy (1994) reported that during the 1960's and 1970's a vast number of research articles published in the Journal of Applied Behaviour Analysis demonstrated operant learning theory can also be utilised to 'unlearn' behaviours. The techniques used to reduce challenging behaviours included extinction, differential reinforcement of other appropriate behaviour, stimulus control, time-out and punishment techniques (Murphy, 1994).

During the 1970's and 1980's this type of intervention, where challenging behaviours were extinguished without any consideration of the communicative value of the behaviour, were heavily criticised. A significant development was the work of Michael (1982) who focussed the empirical field towards the context in which these behaviours occur. This refocused behavioural assessment and interventions based on functional analysis. In the 1980's and 1990's the emphasis shifted towards constructional approaches, moving away from the single aim of reducing challenging behaviour, to also include skill development, teaching more appropriate communicative responses and towards selecting the least restrictive alternatives (Murphy, 1994). Efforts shifted towards fixing problem contexts, not problem behaviour (Carr, 2002). This approach emphasised proactive, preventative interventions. This is confirmed in the BPS guidelines whereby it notes that whilst extinction technologies can be effective intervention should also include functional communication training and advocates extreme caution when considering the use of punishment procedures.

To summarise, to effectively intervene to reduce challenging behaviour a functional analysis should be completed to directly inform the intervention plan. This should comprise of proactive components (understanding the setting events which increase the likelihood of challenging behaviour and addressing these so that they do not occur or occur less often) and reactive components (understanding the reinforcing consequences and ensuring that these are not provided when the challenging behaviour does occur). Therefore, staff working with people with learning disabilities who display challenging behaviour should understand and consequently implement such a treatment plan.

The main point from this section is:

- There are a number of factors which may help us understand challenging behaviour. There is an established evidence-base, based on the principles of behaviour analysis, which illustrates effective intervention for challenging behaviour.

1.8 Research on Staff/Client Interactions and Responses to Challenging Behaviour

1.8.1 The importance of staff responses

Consistently clinicians and empirical theorists report that it is vital that we understand the way in which support staff respond to challenging behaviour. Tharp & Wetzel (1969) (cited in Allen, 1999) reported that since behaviour analytic interventions are concerned with the interaction between people and their environments, the obvious place for behavioural interventions is the person's natural, everyday environment rather than contrived settings such as clinics or laboratories. Thus, the agents of change should be the carers' who support the individual on a day to day basis. Also, as noted previously, the behavioural model suggests that challenging behaviour communicates social functions, such as social interaction or avoidance. Thus, a comprehensive behavioural model should not only account for the actions of the individual displaying challenging behaviour but also the actions of others in the environment since they are likely to act as antecedents and consequences to the challenging behaviour.

Hastings (2002) stated that the responses of staff are essential in understanding and successfully intervening in challenging behaviour. He reported that there are three

strands of empirical evidence to support this assertion. Firstly, the importance of staff actions is demonstrated in the functional assessment methodologies such as the analog assessment where assessment requires the participating staff member to behave in a prescribed manner. As highlighted earlier, the evidence base documents successful intervention when they are based on such functional hypotheses. Secondly, the importance of staff behaviour is also demonstrated in traditional behavioural literature. Behavioural interventions most often require staff to alter their behaviour. As noted previously there is a considerable evidence base to verify the effectiveness of behavioural interventions for challenging behaviour (Carr et al., 1999, Didden et al. 1997 and Scotti et al. 1991). Finally, the findings of observational and self-report studies examining staff responses to challenging behaviour suggest that staff are likely to respond in such a way that challenging behaviour is maintained (Hastings & Remington, 1994a).

Berryman et al. (1994) reported that carers' who support people with learning disabilities can be critical in a least two ways. Firstly, they may be the key agents of change in any behaviour intervention. Secondly, the interaction between carer and client has a direct impact (both positive and negative) on the clients development regardless of whether the carers are implementing an specific behavioural treatment plan or not.

1.8.2 Actual Staff Response – The Evidence Base

Reviewing the observational and self-report literature Hastings & Remington (1994a) reported that the evidence base suggests that staff spend little time interacting with people with learning disabilities, however, those who display challenging behaviour

attain disproportionately high level of interaction. Also, in terms of quality of interaction;

- interactions tend to be brief;
- there is very little time spent teaching appropriate skills
- there is very little time spent in 'positive' interactions; and
- the content of staff speech tends to be 'controlling' rather than the more initiative 'social' speech.

When reviewing how staff respond to challenging behaviour, Hastings & Remington (1994a) reported that observational studies have revealed that staff rarely attend to appropriate or inappropriate behaviours but that when they do they may respond both encouragingly (e.g. smiling, coaxing) and discouragingly (e.g. reprimanding). It is reported that if either encouraging or discouraging responses act as reinforcers then the infrequent rate of responses would suggest that the challenging behaviour is on a variable ratio schedule (Hastings & Remington, 1994a). Skinner and Ferster (1957) reported that operant research has demonstrated that behaviour can be easily shaped and maintained on this reinforcement schedule (as cited in Hastings & Remington, 1994a).

The results of self-report studies suggest that generally there is a hierarchy of responses to challenging behaviour:

Highest Level Response	Call other staff for help
	Physical Response
	Active ignoring
	Verbal Response
Lowest Level Response:	No Response

Thus, depending on the function of the behaviour, staff may be maintaining challenging behaviour by providing low rate reinforcement. Hastings (1996) highlighted that research on shaping behaviour demonstrates that low rates of reinforcement can effectively develop and maintain behaviours and that, those which are maintain on this reinforcement schedule, may be more difficult to extinguish (Ferster & Skinner, 1957 as cited in Hastings 1996). Also, it has also been shown that some forms of challenging behaviour (violence, destruction and withdrawal) are more likely to result in the highest levels of response from staff (Hastings & Remington, 1994a). It is also possible that if staff respond only to the more severe challenging behaviours then they are differentially reinforcing these behaviours.

The research into staff responses to challenging behaviour suggests that their longer term interventions are consistent with the evidence base however, their immediate, reactive strategies may be counter-habilitative (Hastings, 1996). The current evidence base focuses on the long term repercussions of staff's reactive interventions on the maintenance of challenging behaviours whilst staff may have a more pragmatic focus of coping the best that they can with challenging behaviours (Hastings, 1996). Staff are more likely to revert this more pragmatic agenda than the longer term intervention plan detailed in the written behavioural interventions (Hastings, 1996). Hastings & Remington (1994a) reported that even when clear procedures for managing challenging behaviour are available staff do not follow them.

In summarising the staff/client interactions research, specifically regarding clients who display challenging behaviour, Hastings & Remington (1994a) concluded that:

- staff's behaviour influence clients' challenging behaviour which, in turn, impacts on staff behaviour;
- staff behaviour in services for people with learning disabilities who display challenging behaviour tends to be counter-habilitative and is likely to shape and maintain challenging behaviour.

Thus, it is perhaps unsurprising that consistently the research has indicated that achieving behavioural change within the field of challenging behaviour is 'hugely problematic' (Woods & Cullen, 1983; Emerson & Emerson, 1987; as cited in Allen, 1999).

The main point from this section is:

- The empirical evidence base reports that in order to understand and successfully intervene in challenging behaviour it is essential that we understand staff reactions. It is considered that staff behaviour in services for people with learning disabilities who display challenging behaviour tends to be counter-habilitative and is likely to shape and maintain challenging behaviour.

1.9 Understanding Staff Responses to Challenging Behaviour

There are a number of issues which are considered to contribute to staff responses in relation to challenging behaviour. Drawing from the empirical literature base these include;

- Knowledge deficit
- Organisational Factors

And drawing from the theoretical literature;

- Behavioural Understanding - Contingently Shaped Behaviour and Rule-Governed Behaviour
- Cognitive-Emotional Understanding – the role of causal attributions and emotions.

1.9.1 Knowledge Deficit

It is recognised that there is a lack of widespread knowledge in mainstream and, perhaps surprisingly, in specialist services (Lowe et al., 2007). This has been demonstrated in a range of areas relevant to the care of people with learning disabilities (McKenzie et al., 1999a; 1999c; 2001). Specifically, this has also been illustrated within the context of challenging behaviour and behavioural models and theory (McKenzie et al., 1999b). The reported deficit in specialist behavioural knowledge amongst staff groups is well cited within the literature. However, as mentioned previously, this alone does not account for all practice which is inconsistent with the evidence base.

1.9.2 Organisational Factors

It is well documented that there are a number of barriers which obstruct staff from implementing effective behavioural plans. Grey et al. (2007) noted that these include: the lack of a supportive organizational culture; the lack of sufficient performance management systems to support behavioural interventions; inadequate competency-based training for staff; negative staff perceptions and a poor understanding about behavioural interventions and the discrepancy between a behavioural rationale and everyday belief systems about the causes of challenging behaviour.

As previously noted, it is recognised that challenging behaviour is a recognised staff stressor however the impact of this appears to be intensified or alleviated by the organizational structures and context in which is occurs (Allen 1999 as cited in Broadhurst & Mansell 2007). It is well documented within the literature that services which provide appropriate training, amongst other key organisational structures and systems, are more likely to provide and maintain successful placements of those who display challenging behaviour (McGill & Toogood, 1994). It is also considered that training contributes to maintaining staff motivation and commitment (Mansell, 1987 as cited in Broadhurst & Mansell 2007).

1.9.3 Behavioural Understanding – Contingently Shaped and Rule-governed Behaviour

There is evidence to suggest that staff responses are, in part at least, contingently shaped (i.e. that they may respond in a way that meets the function of the behaviour, thus reinforcing and maintaining the behaviour in order to avoid the aversive incident – the

challenging behaviour). Thus, challenging behaviour acts as a very powerful establishing operation for staff responses, specifically avoidance or defensive behaviour (Hastings & Remington, 1994b). Mitchell & Hastings (1998) reported that recent research and theory have suggested that one reason why staff may respond to challenging behaviours in a way which maintains challenging behaviour is through the process of positive and negative reinforcement processes. The suggestion is that challenging behaviours and staff responses is best considered as a 'dynamic behavioural system' (Mitchell & Hastings, 1998). To illustrate, the establishing operation for self-injurious behaviour may be the presentation of demand (antecedent) to which staff may respond by removing the demand (consequence). From the perspective of the staff, when self-injury is displayed (antecedent for staff behaviour) they remove the demands thus ending the self-injurious behaviour (consequence for the staff). It is considered that staff are engaging in escape or avoidance behaviour (of the challenging behaviour). Mitchell & Hastings (1998) report that the behaviour of clients and staff are intertwined.

In addition to discussing the notion of contingency-shaped behaviour Hastings & Remington (1994b) speculated that staff responses may also be rule governed. Rules are "verbal formulations of contingencies" which explain behavioural and environmental incidents that would typically have required direct experience (Hastings & Remington, 1994b). They reported that rules are externally supplied or self-generated. Examples of externally supplied rules are service policies and guidelines, specific programs for the challenging behaviour and those which come from the informal staff culture. They may arise from formal training experiences and other interactions with role models. It is hypothesised that the informal staff culture rules are

likely to be the most influential source of externally supplied rules. It is reported that there are often "unwritten" but very powerful reinforcement contingencies for adhering to, or failing to adhere to, unwritten rules. Hastings & Remington (1994b) hypothesised that the consequences of "unwritten" rule compliance was likely to be far more important than compliance of most other external rule sources.

Self-generated rules relate to the individual's own "internal" rules. It is noted that these are most akin to the psychological concepts of attitudes and beliefs. It is reported that the self-generated rules may result from generalisation of rules from other situations which they perceive are similar to the challenging situations they may face. For example, they may generalise responses from socially deviant behaviours such as criminal to aggressive behaviour displayed by people with learning disabilities. If this were the case then their responses would likely be inappropriate since it has been developed from different rule structures than successfully working with people with learning disabilities who display challenging behaviours.

When working with a client during an episode of challenging behaviour, the 'rules' that are successful in the short-term are often different from those that will successfully impact in the long-term. However, if staff consider the consequences of the short-term rules to be positive then the ineffective, short-term rules are likely to be preserved. Hastings & Remington (1994b) propose to effectively intervene in challenging behaviour a functional analysis of both staff and client behaviour is required. The functional analysis on staff behaviour should include an understanding of both

contingent-shaped and rule-governed behaviours, including an analysis of both external and internal rules.

1.9.4 Cognitive-Emotional Understanding

1.9.4.1 Attributions

Attribution theory presents a model for understanding human behaviour. It rests within the context of a cognitive-behavioural understanding of human behaviour. Within a cognitive-behavioural framework, people are understood to hold mental models of reality. Mental models are cognitive representations of the world. These representations hold information about the world and how it operates and are used to make predictions about reality (Munton et al., 1999). To understand anything about behaviour and learning we need to know about peoples mental models of their world. Specifically, it would be useful to understand how people view the relationship between events and causes. Attributions are beliefs about causality (Munton et al., 1999).

Munton and colleagues reported that whilst there have been numerous definitions of attribution perhaps the most helpful definition is "an attribution is any answer to the question 'why'?" (Munton et al., 1999, p17). They reported that whilst this may not be the best definition it is most pragmatic since it allows acceptable levels of consistency when identifying attributions in everyday dialogue.

Munton and colleagues report that attributions are comprised of three elements:

i) an event of outcome;

ii) the cause of that outcome;

iii) the link between the cause of that outcome.

It is reported that a sufficient description of an attribution should detail information about all three elements.

1.9.4.2 Development of Attributional Dimensions

Attribution theorists have developed a number of different dimensions which provide information about different aspects of causal beliefs. Weiner (1980) describes that attributional dimensions 'describe the basic properties' of causes. Munton and colleagues (1999) highlight that rating attributions on different dimensions allows us to make accurate predictions about how causal beliefs are likely to influence behaviour. Munton et al (1999) described a number of dimensions including: internal-external; personal-universal; stable-unstable; global-specific and controllable-uncontrollable. Relevant to this study is the internal-internal; stable-unstable and controllable-uncontrollable dimensions. Definitions for each of these dimensions is included in Appendix II.

1.9.4.3 Attributions in the Clinical Context

Clinical psychologists are interested in the way people make sense of their own and other peoples behaviours. Within the cognitive-behavioural framework, research has demonstrated that the attributions that people make can predict subsequent emotional reactions. Importantly, understanding how people interpret the world enables the clinician to formulate complex emotional problems and help them identify effective interventions. Munton and colleagues (1999) detail the evidence base for this in relation to a number of clinical issues including: attributions and depression; attributions

and distressed adult relationships and parental attributions regarding children's behaviour.

Within the context of learning disabilities and challenging behaviour researchers have been interested in the role that staff causal attributions about challenging behaviour play, and particularly, in their subsequent emotional reactions and responses to challenging behaviour. Unlike the notion of rule-governed behaviour, there has been a substantial body of literature in the field of learning disabilities and challenging which explores the relevance of staff attributions.

Allen (1999) reviewed the literature to investigate the types of attributions that paid carers who work with people with learning disabilities who display challenging behaviour made. He summarised that a consistent theme emerges in the literature, that variables over which paid carers are not likely to be able to exert some control (e.g. internal factors) are more likely to be attributed as causes of challenging behaviour than those over which they have some influence (e.g. communication) (Hastings et al., 1995). This is very significant within the context of the evidence base for effective intervention in challenging behaviour, as Allen (1999) asserts:

> "the frequent tendency of staff to attribute challenging behaviour to essentially internal causes would appear to be in conflict with the behavioural model in general, and specifically in conflict with evidence which, for example, indicates that such behaviour often serves a function of allowing the person to escape from a variety of aversive carer demands" (Allen, 1999, p328).

Allen (1999) reported such disparity between current evidence base (focussing primarily of external causation) and research on carer attributions (focussing on internal causation) perhaps goes some way to explaining why many behavioural interventions fail. Similarly, Noone et al. (2006) reported that when discussing challenging behaviour staff tended to make internal, stable and controllable attributions. It is considered that this pattern of attributions is in direct contrast to a behavioural model which emphasises external, uncontrollable and unstable causal factors.

1.9.4.4 Weiner's (1980, 1986) Model of Helping Behaviour

The field attributional research has developed beyond detailing typical attributions that staff who work with people with learning disabilities who display challenging behaviour. Some researchers have attempted to detail models which help us understand staff attributions, emotional reactions and behavioural responses.

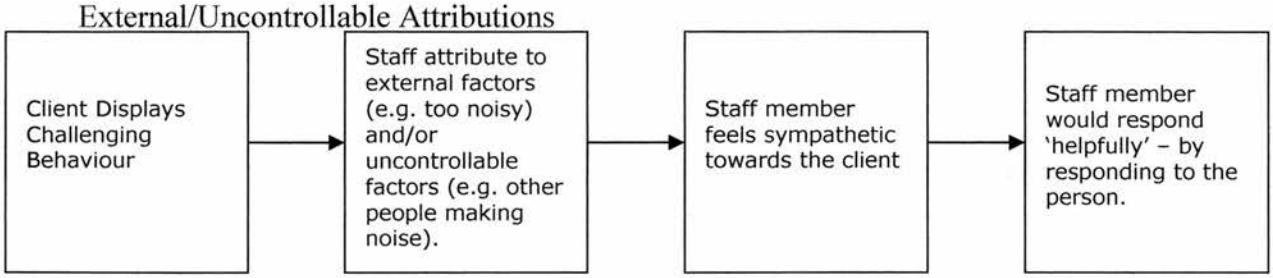
Weiner (1980) reported that many 'behavioural sequences appear to be initiated following a causal ascription' (Weiner, 1980, p186). Drawing on the previous research he developed a series of six experiments which investigated the attributional and emotional determinants of helping judgements. He asserted that helping judgements would be a good indicator of likely helping behaviours. All six experiments used a simulational, judgement paradigm; the first experiment used the scenario of lending class notes whilst the remaining five described a disabled or drunk person requiring assistance (this scenario had been used in previous research, Piliavin et al., 1969 as described in Weiner, 1980). The experiments drew on both correlational and experimental design. In all six experiments the participants were university students

who were studying psychology and who needed to participate in research in order to fulfil their course requirements.

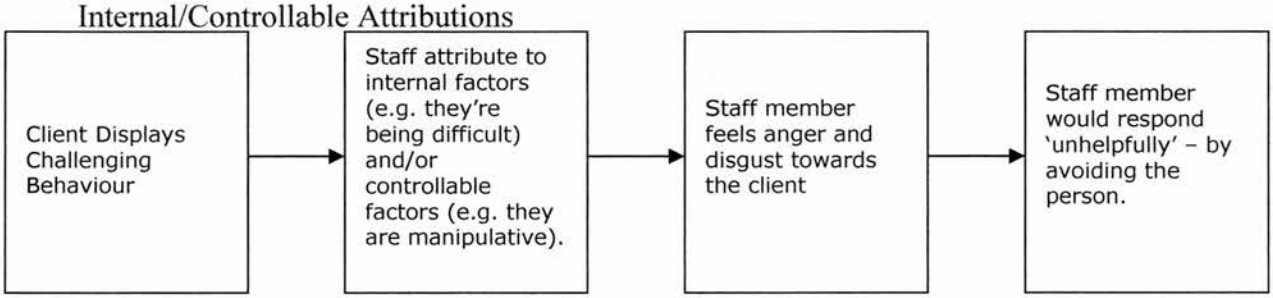
The first experiment investigated the influence of the attributional dimensions of locus, stability and control on judgements of help giving. The results demonstrated that helping judgements were at their lowest when the cause of the need was attributed as internal and controllable to the person requiring help. From this Weiner (1980) suggested that attributions to internal controllable causes generated negative affect (disgust and anger) and promote avoidance (unhelpful) behaviours whilst attributions to external uncontrollable behaviours produced positive affect (sympathy) and promoted approach or helpful behaviours (responding to the individual). The remaining five experiments investigated and supported these hypotheses. This became Weiner's (1980) model of helping behaviour which he asserted would generalise across a variety of helping situations. The core tenet of this model is that attributions guide emotional reactions which in turn provide the drive and direction of our behaviour, the so-called attribution-affect-action sequence.

If this model were to generalise to the field of learning disabilities and challenging behaviour then it might look like this:

External/Uncontrollable Attributions



Internal/Controllable Attributions



In later work Weiner (1986) extended the model beyond the attribution dimensions of internal/external and controllable/uncontrollable to include the dimension of stablility reporting that if the causal attribution is stable then the staff member would feel that there is little chance that they can effect change and so are less likely to intervene.

Very broadly, this model would appear to fit with empirical research base. Staff working with people with learning disabilities typically make causal attributions that are internal to the person, they are more likely to experience negative affect and are likely to respond to challenging behaviours in a way that is counter-habilitative. Of course, the applicability of this model to staff working with people with learning disabilities who display challenging behaviour would require direct empirical testing.

1.9.4.5 Weiner's Model the Empirical Evidence Base

Over the past ten years a number of studies have directly and indirectly investigated Weiner's attribution model specifically within the context of staff who work with people with learning disabilities who display challenging behaviour. Appendix III summarises the findings identifying those which support and those which refute Weiner's (1980; 1986) model. The information detailed in Appendix III illustrates that the current empirical evidence base reports mixed findings for Weiner's attributional model. As a complete model the empirical evidence base is not supportive however many papers report partial support.

A number of researchers contend that Weiner's (1980;1986) model does not help us understand staff cognitive, emotional and behavioural responses to challenging behaviour. Jones & Hastings (2003) assert that there are both conceptual and empirical difficulties with the clinical application of Weiner's model to staff working with people with learning disabilities who display challenging behaviours. At the conceptual level they identify two main problems: difficulties with the definition of staff emotional responses to challenging behaviour and the definition of 'helping' behaviour. As stated previously, Weiner's model focuses on only two emotional responses, sympathy and anger. However, as previously discussed, empirical research into staff's emotional reactions to challenging behaviour indicate that there are two key dimensions of negative emotion: fear/anxiety and depression/anger (Mitchell & Hastings, 1998). Thus, Jones & Hastings (2003) highlight that anger and sympathy may not be the key emotional reactions. They also highlight that Weiner's definition of 'helping behaviour' is conceptually problematic. They argue that, whatever the motivation of the

staff member, in order to assess the helpfulness of their response that should be considered in terms of its functional relationship with the challenging behaviour. For example, under some circumstances avoidance may well be 'helpful' but under other circumstances it will be 'unhelpful' and serve to maintain the behaviour.

The issue of interpreting 'helpful' behaviours in a behaviour analytic formulation has also been highlighted by a number of other researchers. Allen (1999) illustrated this by example. Imagine a scenario whereby a person with learning disabilities who displays aggressive behaviour towards others when demands are being placed upon them. The staff member may attribute the cause of behaviour to external (e.g. there's too much noise) and uncontrollable factors (e.g. they can't help it) which may in turn generate positive affect (e.g. sympathy) which is likely to lead to the behavioural response (e.g. termination of demand). This may lead to the quick reduction in challenging behaviour in the short term but, according to the behavioural model, may strengthen the behaviour of both the staff member (via negative reinforcement) and the person displaying the challenging behaviour (via positive reinforcement).

Wanless & Jahoda (2002) also report that Weiner's model is too simplistic to capture the stressful emotions that staff who work with people who display challenging behaviour experience. They also note that it fails to accommodate the dynamic nature of the interaction between staff and client. They assert that future cognitive behavioural models should invest in focussing in the interpersonal cognitions which staff make but within the context of the dynamic staff/client relationship.

Thus, the empirical and conceptual evidence base for Weiner's model is very much mixed. There does seem to be more support for the link between attributions of controllability, stability and internality and affect. Specifically, if staff often make causal attributions about challenging behaviour that is internal to the person, stable over time and controlled by the person then they are more likely to experience negative affect. As previously noted, such attributions are at odds with the behavioural literature which would suggest that challenging behaviours are situation specific (not stable) and related to the social context (external and outwith the persons control). On the other hand, if the causal attributions relate to the behaviour being external, uncontrollable and unstable then the person is more likely to experience positive affect. However, if the Jones & Hastings (2003) study were to replicated then this be more applicable to forms of challenging behaviour other than self-injurious behaviours.

Jones & Hastings (2003) report that whilst they refute the applicability of Weiner's model it is essential that we continue to examine the emotional and attributional responses to challenging behaviour that staff experience. They assert that the emotional responses to challenging behaviours are seen to play a pivotal role and so intervention approaches which are designed to reduce negative affect are likely to also positively influence staff well-being and also increase that likelihood of habilitative staff responses. Finally, they report that research suggests that cognitive factors may influence staff responses and so interventions which examine attributional processes may have a positive impact.

This is consistent with the position of a number of researchers. Generally it is asserted that whilst we do not yet have strong empirical data supporting a defined model linking attributions to behaviour this is consistent with cognitive-emotional and cognitive behavioural theories (Noone et al., 2006). Thus, it is considered that further research into staff attributions is warranted and, specifically, targeting reappraisal of assumptions and expectations may positively shape staff behavioural responses towards challenging behaviour (Ager & O'May, 2001; Dagnan et al., 1998; Stanley & Standen, 2000; Tierney et al., 2007). Bailey et al. (2006) conclude that it could be beneficial for staff to attend training which, in addition to behaviourally based skills training, focuses on their attributions, emotions and behaviours using a cognitive behavioural approach.

It is worth noting that there have been a number research studies have investigated variability within staff attributions and specifically which factors influence attributions. It is reported that that they typology of the challenging behaviour (Hastings et al., 1995; Bailey et al., 2006; Jones & Hastings, 2003; Stanley & Standen, 2000); judgements of responsibility (Dagnan & Cairns, 2005); behavioural function (Hastings et al., 2003); staff experience (Oliver et al., 1996; Hastings et al., 2003) and coping styles (Hill & Dagnan, 2002).

The main point from this section is:

- A number of factors may contribute to staff responses including :
    - Lack of knowledge;
    - Organisational factors;

- Staff may attribute causation to controllable, internal and stable factors which are inconsistent with the evidence base;
- Staff emotional responses are likely to be influenced by their causal attributions (in keeping with cognitive behavioural and cognitive emotional models).

Thus, in order to alter staff responses it is worth considering how these factors may be altered. Specifically, it is worth considering the impact of training on knowledge, attributions and emotional responses and the impact of attribution retraining on altering attributions.

1.10 Training

Generally, it is reported that training is one of the key aspects for high quality service delivery (e.g. Lowe et al., 2007; Ager & O'May, 2001). Consistently researchers and clinicians recommend training staff in behavioural analysis (e.g. Hastings et al., 1995; Bailey et al., 2006). Berryman et al. (1994) asserted that training carers in the principles of behaviour analysis is one of considerable importance.

1.10.1 Can training improve knowledge?

A number of researchers have investigated whether training staff who support people with learning disabilities who display challenging behaviour in the behavioural model improves their level of knowledge. Lowe et al. (2007) described an intensive training programmed in positive behavioural for support for staff, both registered and non-registered healthcare staff, working in specialist challenging behaviour services. The

training programme comprised 80 hours direct classroom teaching as well as a further 100 hours study time in which to complete an assessment portfolio which comprised a series of written assignments to demonstrate knowledge of course content plus five manager observations of performance relating to the implementation of the active support model. This study reported dramatic improvements in the knowledge of its participants, especially non-registered staff. McGill et al. (2007) examined the impact of extended training on staff knowledge. They reported that staff knowledge, and specifically behavioural knowledge, did significantly increase as a result of extensive training in positive behaviour supports. McKenzie et al. (2000, 2002) examined whether participants who attended a one-day challenging behaviour course demonstrated increased knowledge. Both papers reported that the one-day training programmed significantly increased participants' knowledge as evaluated by the participant.

1.10.2 Can training alter attributions?

Hastings (1997) asserts that if staff training is successful and in keeping with the current evidence base then one might expect that, post training, staff place prominence on attributions that emphasise setting events and contingency information (external, uncontrollable and unstable attributions) rather than emotional factors. Berryman et al. (1994) reported that, after formal nonaversive behaviour analytic training, staff were more likely to broaden their attributions about challenging behaviours to include tangible reinforcement and escape/avoidance and were less likely to attribute to internal emotional factors. Grey et al. (2002) assessed staff attributions before, during and on completion of an extensive longitudinal training course in assessment and intervention

for challenging behaviour. They reported that significantly more staff attributed challenging behaviour to negative reinforcement and self-stimulation whilst significantly fewer staff attributed challenging behaviour to positive reinforcement after training. These findings are consistent with Hastings (1997) hypothesis, that learned positive attributions would decrease and learned negative attributions would increase as a function of staff training. Grey et al. (2002) reported that these findings may indicate an increased alignment between staff attributions and the actual function of the challenging behaviour.

Dowey et al. (2007) examined whether a one day training workshop could have an effect on staff causal explanations. They reported that staff causal explanations can be altered using a relatively brief training intervention. Specifically, participants selected more behaviourally correct causal explanations following training. Kalsy et al. (2007) examined the effects of staff training (psychoeducation on ageing and dementia in people with learning disabilities) on the attributional factor of controllability, optimism and knowledge regarding behavioural change. The result of this study suggested that training can favourably influence staff knowledge and the likelihood that they will make controllable causal attributions within the context of people with Down Syndrome and dementia.

As cited earlier, Lowe et al. (2007) described an intensive training programmed in positive behavioural for support for staff, both registered and non-registered, working in specialist challenging behaviour services. The results of this study indicated that the course appeared to have an immediate impact on staff attitudes but had little enduring

impact on causal attributions held by staff. In keeping with this finding Tierney et al. (2007) evaluated whether a three say 'typical' challenging behaviour staff training course impacted on staff attributions. They compared staff pre-training and three months following the course. They reported that there were no significant changes in causal attributions three months after the course. Whilst it cannot be concluded that the training did not have any impact on causal attributions it can be assumed that any potential change in response did not maintain.

McGill et al. (2007) evaluated whether an extended training program altered staff causal attributions about challenging behaviour. They noted that staff were more likely to report behaviourally appropriate causal responses and were less likely to attribute challenging behaviour to emotional causation. This is in keeping with the current evidence base and consistent with the training program content.

McKenzie et al. (2002) reported no change in participant attributional dimensions following attendance at a one day training course on challenging behaviour. This is perhaps in keeping with Tierney et al. (2007) who reported that it is important to consider the value of general introductory training to challenging behaviour. They considered that the jury is still out.

In summary, there are mixed reports of whether training can change staff causal attributions about challenging behaviour; however, there is some concern that any change that does occur is unlikely to maintain in the longer term.

1.10.3 Can training change emotional reaction?

Tierney et al. (2007) evaluated whether a three day 'typical' challenging behaviour staff training course impacted on staff emotional responses to challenging behaviour. They compared staff pre-training and three months following the course. They reported that there were no significant changes in emotional responses three months after the course. However, McGill et al. (2007) examined the impact of extended training in positive behaviour support on staff emotional reactions. They found that following training staff reported less depression/anger reactions.

1.10.4 Can training change actual staff response?

There is some evidence that teaching behaviour analytic skills to reduce challenging behaviours can be achieved by training. Positive training outcomes have been achieved with evidence, in some cases, of measurable effects on challenging behaviours. Grey et al. (2002) investigated the impact that an extensive nonaversive behaviour analytic training programme had on levels of challenging behaviour. They concluded that training which requires participants to generate behaviour assessment reports and behaviour support plans is an effective and efficient intervention, it results in the production of rehabilitative intervention plans and a decrease in challenging behaviours. McKenzie et al. (2002) reported that staff practice improved following a one-day course on challenging behaviour with follow-up.

1.10.5 Deficits of Training Alone

There is a general concern amongst the challenging behaviour research community that, whilst there may be individual exceptions, generally training alone has very limited

impact on the long-term knowledge, attributions or responses of staff who work with people with learning disabilities who display challenging behaviour.

Lowe et al. (2007) comment that classroom based training, although often required, has been shown not to impact on staff performance when used alone. Stokes and Baer (1977) (as cited in Lowe et al., 2007) termed such traditional training approaches as insufficient 'train and hope' strategies. Lowe et al. (2007) describe that this has led other commentators to conclude that combining different training techniques alongside management attention is likely to be a more effective means of changing staff behaviour and sustain improved methods of working. The staff training literature continues to support the contention of Cullen (1988) that training has little impact on staff performance in service settings without additional emphasis on organisational change in the workplace including clear incentives for staff to work with clients in a specified manner. Ager & O'May (2001) conclude that in terms of developing staff competence to implement interventions consistent with the evidence-base training has little impact on staff performance in service settings without additional emphasis on organisational processes. However, that formalised procedures of feedback, supervision and support do have an established impact on staff behaviour.

1.11 Attribution Retraining/Challenging

The contribution of attribution theory when examining staff causal explanations regarding challenging behaviour gives rise to the assumption that causal attributions could be altered towards those which are more in keeping with the current challenging behaviour evidence base. If, as has been suggested, causal attributions influence

emotional and behavioural response then causal attributions that are congruent with the current evidence base may have a positive effect on the emotional well-being of the staff member and potentially increased the likelihood that they will habilitatively respond to incidents of challenging behaviour. This assertion is consistent with both cognitive-behavioural and cognitive-emotional theories.

Stanley & Standen (2000) reported that in order to moderate excessive negative reactions attribution retraining methods could be developed. The objective of such retraining would be to develop new ways of understanding the effect of locus, control and stability attributions on their personal well-being and as their role as a staff member.

Forsterling (1985) reviewed the early literature on attributional retraining. As described previously the central assumption of attributional research is that many behaviours, emotions and cognitions are the outcome of causal attributions that are made about events or behavioural outcomes. Reattribution training programs attempt to alter causal cognitions about behavioural outcomes. Forsterling reviewed 15 attributional training studies influenced by different theoretical models. Importantly, this early research focussed on attributions of personal failure and not attributions about the behaviour of others. The fifteen studies reviewed used a variety of reattribution techniques including:

- persuasion (i.e. without a reason or rationale participants were told that a specific cause was responsible for an event);
- operant reinforcement (i.e. reinforcing only desired attributions);

- modelling (i.e. as the participant completed tasks the experimenter verbalised desired attributions);
- misattribution paradigm (i.e. participants who were low in achievement motivation were given a pill which they were told interfered with their performance in order to alter the causal explanation);
- informational approaches (i.e. they provided participants with information designed to lead to desired attributions).

Forsterling (1985) concluded that there is empirical support for attributional retraining. In later work, Forserling (2001) went further to report that:

> "Attribution retraining studies ... have demonstrated that short, economical cognitive imterventions deduced from contemporary, experimentally based psychological theories can be effectively used to modify behaviour in 'therapy-like' situations" (Forsterling, 2001, p205).

It is reported that whilst all of the specific reattribution techniques used were reported to alter the causal explanations the most effective reattribution techniques were yet to be determined.

Forsterling (2001) reported that attributional retraining usually consists of:

i) identification of attributions that are 'unhelpful';

ii) application of different techniques to change attributions (as outlined above)

iii) evaluate the effectiveness of the intervention.

Forsterling (2001) reported that the therapeutic mechanism to achieve attributional change should follow the metaphor of the "scientist" where the person collects data (in attributional theory, to use covariation information) to test the maladaptive attribution.

Thus, it is suggested that the focus of 'therapy' should be on utilising 'scientific method' to the causal attributions that create psychological difficulties (Forterling, 2001).

The main points from this section are:

- The empirical evidence base illustrates that knowledge, and specifically knowledge regarding behavioural models, can be improved by training staff. However, there is some concern regarding the long-term maintenance of any such gains.
- Research has demonstrated that training staff in behavioural approaches can broaden attributions and enhance knowledge to be more consistent with the challenging behaviour evidence base but, without organisation support, it is unlikely that these changes will be maintained and generalised in the workplace.
- The empirical evidence base illustrates that attributions can be altered by employing cognitive reattribution techniques.

With this information, the core question to this piece of research is whether an intervention could be implemented which targets both the lack of knowledge and challenges unhelpful attributions whilst addressing the maintenance issue?

Before considering what this intervention might look like it is worth examining some of the most common methodological limitations within this field.

1.12 Methodological Limitations

For any study, there are a number of methodological limitations. However, within this field, and particularly within the field of attribution research, there would appear to be two main areas of concern: construct and ecological validity.

1.12.1 Construct Validity

To understand the context in which this issue arises it is helpful to outline the different types of attribution measures that are commonly used within the relevant literature. A description of commonly used attribution measures is included in Appendix IV.

The purpose of describing each of these outcome measures was to illustrate that whilst they all report that they are assessing attributions there is little evidence to suggest that they are all measuring the same thing. Whilst each measure, in its own right, reports reasonable reliability there are some concerns over the construct validity of each measure. As far as is known, there has not been any research which investigates the construct validity of any of the measures and how they compare to the other measures discussed above.

One of the issues is that attribution measures have been developed within different conceptual frameworks, for example, some have been developed from the general attribution research field and adapted to the learning disabilities and challenging behaviour context (e.g. the modified ASQ and the LACS) whilst others have been specifically developed with the learning disabilities and challenging behaviour context in mind (e.g. CHABA and SIBUQ). However, even if the assessments are developed

within similar contexts that is not to say that they have enhanced construct validity, for example, the CHABA assesses attributions within the context of several dominant theories of challenging behaviour, the SIBUQ assesses attributions within the context of a behavioural model only. As described earlier, McGill et al. (2007) examined the impact that an extended training program (University level Diploma) had on the knowledge and attributions of staff. They used and directly compared the causal explanations subscale of the SIBUQ with the CHABA. They reported that these measures appear to assess different things describing that the SIBUQ items are much more detailed and would appear to carry less implications than some of the CHABA items.

In discussing the attribution literature earlier one of the conclusions was that there is little consensus within the evidence base to suggest an agreed understanding of the role of attributions in the responses of staff who work with people with learning disabilities who display challenging behaviour. Perhaps, one the main contributory factors for this lack of clarity is that there is not a common approach to assessing attributions within this field. It appears likely that they all measure slightly different things and thus, are low in construct validity.

1.12.2 Ecological Validity

Some authors have reported that there have been significant methodological limitations in most of the research papers that examine staff attributions about challenging behaviour (Grey et al., 2002). Many studies have elicited attributions using case vignettes describing anonymous clients who display challenging behaviours. A number

of researchers report that this method lacks ecological validity, that is vignettes may obtain different causal explanations to those that occur as a result of real-life situations (Grey et al., 2002; Wanless & Jahoda, 2002). Grey et al. (2002) reported that in real-life situations staff are exposed to at least four sources of information that cannot be obtained from vignettes. These include:

> "the variance of the behaviours; the effects of the behaviour; the constraints imposed on the behaviour by the environment; and the personal impact of the behaviour on the observer" (Grey et al., 2002, p299).

Grey et al. (2002) asserts that it is unhelpful to assess attributions outwith their context,

> "the process of attribution is likely to be complex and dynamic, with attributions being shaped or consolidated in light of ongoing experiences with the person" (Grey et al., 2002, p299).

This would suggest that any conclusions drawn from vignette methodology may be difficult to support and have limited clinical utility.

Wanless & Jahoda (2002) compared staff responses using both vignette methodology with actual incidents of challenging behaviour. They reported that real incidents of challenging behaviour evoked stronger emotions. Further, they found that staff perceptions of the clients who display challenging behaviour, rather than their perception of the specific behaviour, were more strongly linked to their cognitive and emotional responses to the challenging behaviour. Further, Jahoda & Wanless (2005), using a Rationale Emotive Behavioural Therapy (REBT) format, asked staff recall an incident of challenging behaviour and explore their perceptions of the client involved, how they felt they had been treated by the client, how they had wanted to react at the time and what had prevented them reacting in that way. They found that using this approach staff views about the clients who displayed challenging behaviour were in

stark contrast to the more socially desirable views that have been obtained in most research. They further supported their earlier research, that staff are concerned about the 'person's behaviour' rather than seeing behaviour as independent from the person. They also perceived that challenging behaviour was an insult to their sense of self and identity. Thus, they assert that this further strengthens the case for investigating the interpersonal appraisals that staff make, based on the staff wider belief systems, relationships and experiences, which cannot be captured by vignette methodology.

1.13 Summary

- The empirical evidence base illustrates that the presence of challenging behaviour significantly increases the likelihood that the person displaying the behaviour will experience a number of negative life experiences.
- Staff who support people with learning disabilities who display challenging behaviour are more likely to experience higher levels of stress and negative affect (including anger, depression, fear and anxiety) which may also influence the quality of interactions with the client.
- There are a number of factors which may help us understand challenging behaviour. There is an established evidence-base, based on the principles of behaviour analysis, which illustrates effective intervention for challenging behaviour.
- The empirical evidence base reports that in order to understand and successfully intervene in challenging behaviour it is essential that we understand staff reactions. It is considered that staff behaviour in

services for people with learning disabilities who display challenging behaviour tends to be counter-habilitative and is likely to shape and maintain challenging behaviour.

- A number of factors may contribute to staff responses including :
    - Lack of knowledge;
    - Organisational factors;
    - Staff may attribute causation to controllable, internal and stable factors which are inconsistent with the evidence base;
    - Staff emotional responses are likely to be influenced by their causal attributions (in keeping with cognitive behavioural and cognitive emotional models).
- The empirical evidence base illustrates that knowledge, and specifically knowledge regarding behavioural models, can be improved by training staff. However, there is some concern regarding the long-term maintenance of any such gains.
- Research has demonstrated that training staff in behavioural approaches can broaden attributions and enhance knowledge to be more consistent with the challenging behaviour evidence base but, without organisation support, it is unlikely that these changes will be maintained and generalised in the workplace.
- The empirical evidence base illustrates that attributions can be altered by employing cognitive reattribution techniques.
- Previous research illustrates that there are a number of ways to measure staff' behavioural knowledge, emotional reactions and attributions. Whilst there are

methodological difficulties with each of these, there is significant concerns about construct and ecological validity.

1.14 Aims of thesis

As mentioned previously the core question for this piece of research is whether an intervention could be implemented which targets both lack of knowledge and challenges unhelpful attributions, whilst addressing the maintenance issue. Taking into account the information provided thus far it was considered that perhaps a combination of 'workshop' type training and one-to-one sessions with staff could be an efficacious vehicle for altering both attributions and knowledge.

Thus, the primary aim of this thesis was to explore the impact of training and one-to-one sessions which focus on attribution retraining on knowledge, attributions and emotional responses.

This will comprise of two main components:

1 A group of staff who work with people with learning disabilities who display challenging behaviour will attend a one-day training course on behavioural approaches to challenging behaviour. It is hoped that, in keeping with previous research, that this will increase staff level of behavioural knowledge and broaden attributions.

2 The same group of staff will meet with the principle researcher on four occasions for ongoing support sessions. The focus of these sessions is to discuss with the staff member a recent incident of challenging behaviour that

they have witnessed or been involved in, to elicit their causal attributions and to discuss their attribution in relation to the behavioural evidence base. Thus, these sessions will act as further work-based training. In addition, using the techniques of attribution retraining, challenge the attributions that are contrary to the evidence base and provide support for attributions which are consistent with the evidence base. It is hoped that these support sessions will:

a. At least maintain or further enhance the level of behavioural knowledge;
b. Shift attributions towards the evidence base, attributions that emphasise control, stability and internality will proportionally decrease whilst attributions that emphasise uncontrollable, unstable and external factors will proportionally increase;
c. In keeping with the attribution-emotion research, if there is attributional shift towards the evidence base then staff' level of negative affect should also decrease.

It is considered that this intervention may target some of the barriers that are thought to impact on staff responses to challenging behaviour. Most explicitly, it targets knowledge deficits in behavioural models and 'unhelpful' attributions. Potentially, the ongoing work-based support sessions may also impact on some of the organisational factors that impact on staff responses since the provision of ongoing support is viewed as one of the key components of positive organisational support.

1.15 Hypotheses

Thus project includes a number of specific hypotheses:

Hypothesis 1: There will be a statistically significant change in behavioural knowledge in relation to challenging behaviour following attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff.

Hypothesis 2 - Following training and one-to-one support sessions there will be a statistically significant change in the attributions that are consistent with the behavioural model and in those which attribute challenging behaviour to incorrect behavioural interpretations or to other models (e.g. emotional, biomedical/organic, stimulation and physical environment).

Hypothesis 3: There will be a statistically significant change in the overall adoption of the behavioural perspective following attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff.

Hypothesis 4: Following the training workshop and one-to-one support sessions there will be a significant change in the causal attributions that emphasise control, stability and internality.

Hypothesis 5: There will be a significant change in ratings of anger/depression and fear/anxiety factors following training and one-to-one support sessions.

Chapter 2 - Method

2.1 Design

An experimental, repeated measures design was employed in this study. There were two groups of participants, an experimental and a control group. Each outcome measure was completed by each participant in each group on four separate occasions.

2.2 Ethical Issues and Approval

Ethical approval from this study was granted from the relevant NHS Research Ethics Committee and local Research and Development. Copies of the documentation demonstrating ethical approval and permission can be found in appendices V; all identifying information has been removed.

Perhaps the most potentially significant ethical issue that may have presented during the course of the study is that poor practice within the learning disability inpatient service was likely to be uncovered. However, whilst likely it was hoped that this research project may contribute towards improving practice within the service.

It may also have been the case that by discussing unhelpful attributions long-held beliefs and practices were called into question which had the potential to feel threatening and confrontational to the participants. It was hoped that by using a collaborative framework and guided questioning that this could be minimised.

It was considered that confidentiality, whilst always important, may have been of particular significance in this project since the researcher also worked as the trainee clinical psychologist who worked within the inpatient units. In this clinical role the researcher often works closely with both the inpatients and staff who support them as well as working within the multi-disciplinary team. This entails also working closely with the potential participants' supervisors and managers. Thus, it was considered essential that potential participants felt secure in the knowledge that all information would be kept entirely confidential. The voluntary and confidential nature of the study was emphasised both in the information sheet and verbally to the participants when they were informed about the study and then again at the consent interview. It was made clear to the participant that the only reason which would require that the researcher to breach their confidence would be if there was concern that the participant either were at risk of hurting themselves or others. They were also made aware of their right to refuse to participate or withdraw from the study at any time without giving a reason and they were assured that there would be no adverse effects as a consequence of that. Participants were provided with a consent form, informing them of all these rights, which they were asked to read and sign in the presence of the researcher prior to participation.

2.3 Power and Sample Size Calculations

The first step in estimating the power and sample size for this study was to determine the effect size required. A number of studies reported power and effect sizes in their papers. Dowey et al. (2007) reported that following a one-day training event, similar to the current study, staff selected significantly more behaviourally correct causal

explanations on the modified SIBUQ after a one-day training workshop. This represented an effect that can be considered clinically meaningful (an effect size of 0.76). Similarly, McKenzie et al. (2000; 2002) reported that following the completion of a one-day training course in challenging behaviour staff reported increases in behavioural knowledge. This represented a large effect one that can be considered clinically meaningful. McGill et al. (2007) reported that following the completion of a specialist University Diploma, staff selected significantly more behaviourally correct responses on the SIBUQ. This represented an effect that can be considered clinically meaningful (an effect size of 0.54).

Based on the above report an effect size between medium and large would achieve acceptable power. According to Cohen's (1992) tables for power calculations, when performing differential analyses to achieve a power of 0.80, $\alpha = 0.05$, an N of 28 will detect large population effect sized and to achieve a power of 0.80, $\alpha = 0.05$, an N of 85 will detect medium population effect sizes. Alternatively, examining Clark-Carter's (2004) tables for power calculations, when performing correlational analyses to achieve a power of 0.80, $\alpha = 0.05$, an N of 25 will detect large population effect sizes and to achieve of power of 0.80, $\alpha = 0.05$, an N of 70 will detect medium population effect sizes. Since 27 participants were recruited in each condition in the present study it would only be possible to detect large population effect sizes with adequate power.

2.4 Participants

Fifty-four staff members who worked in one of three inpatient services for adults with learning disabilities completed all required outcome measures and, where applicable, intervention procedures.

Seventy-two people were identified as potential participants by each unit's manager or charge nurses: of these four refused to take part; two ended their employment during the data collection period (both from the experimental group); six people were unable to complete all measure due to periods of absence from work (four from the experimental group and two from the control group); and six people chose not to complete all measures (two from the experimental group and four from the control group). It was not possible to collect any further information from those who refused to take part.

2.4.1 Inclusion and Exclusion Criteria

The sample was restricted to permanent staff who worked in one of three inpatient units for people with learning disabilities within a local health board in central Scotland. All participants reported that, as far as they were aware, they were not leaving the service for any periods longer than two weeks during the data collection phase.

2.4.2 Recruitment

Participants were recruited from one of three inpatient units for people with learning disabilities in a local health board in Central Scotland. The principle researcher provides clinical psychology input into some of these services and is aware of the client group in each service. The three inpatient units were chosen specifically due to their

regular experience of working with adults with learning disabilities who display challenging behaviour. Firstly, each unit's charge nurses, managers, medical staff and the overall inpatient services manager were approached. Initially this was informally, however, after some discussion all identified parties attended a presentation by the principle researcher where they were given both verbal and written material about the proposed research. All of the identified parties agreed that the research could take part in the inpatient service and in each of the three inpatient units identified by the researcher.

In each unit either a unit manager or charge nurse drew up a list of potential participants. Typically, this was a list of current permanent staff in each unit; however, each unit manager or staff nurse had excluded those who they knew would be unable to complete the research. This included: those who were known to be leaving the service or had planned absence for longer than two weeks during the data collection period and those whose work patterns prohibited them participating in the one-day challenging behaviour workshop. Since the dates for each of the one day training events were known in advance each manager and charge nurse provided a list of people who were able to attend the workshop and those who would not, due to annual leave or shift patterns. This informed which potential participants would be allocated to the experimental group (those who could attend the workshop) and who would be allocated to the control group (those who were unable to attend the workshop). At the request of the principle researcher for every eligible participant they reported for the experimental group they also identified one for the control group. This was to ensure that, in each unit, there were approximately the same numbers of staff participating in the

experimental and control groups. This was to minimise bias. The concept of research bias was discussed with those creating the potential participant lists and the principle researcher was reassured that only logistical factors influenced whether or not a participant could attend the challenging behaviour workshops.

For pragmatic reasons the recruitment of participants and implementation of the research procedure was staggered with the active implementation phase differing slightly for each unit.

2.5 Procedure

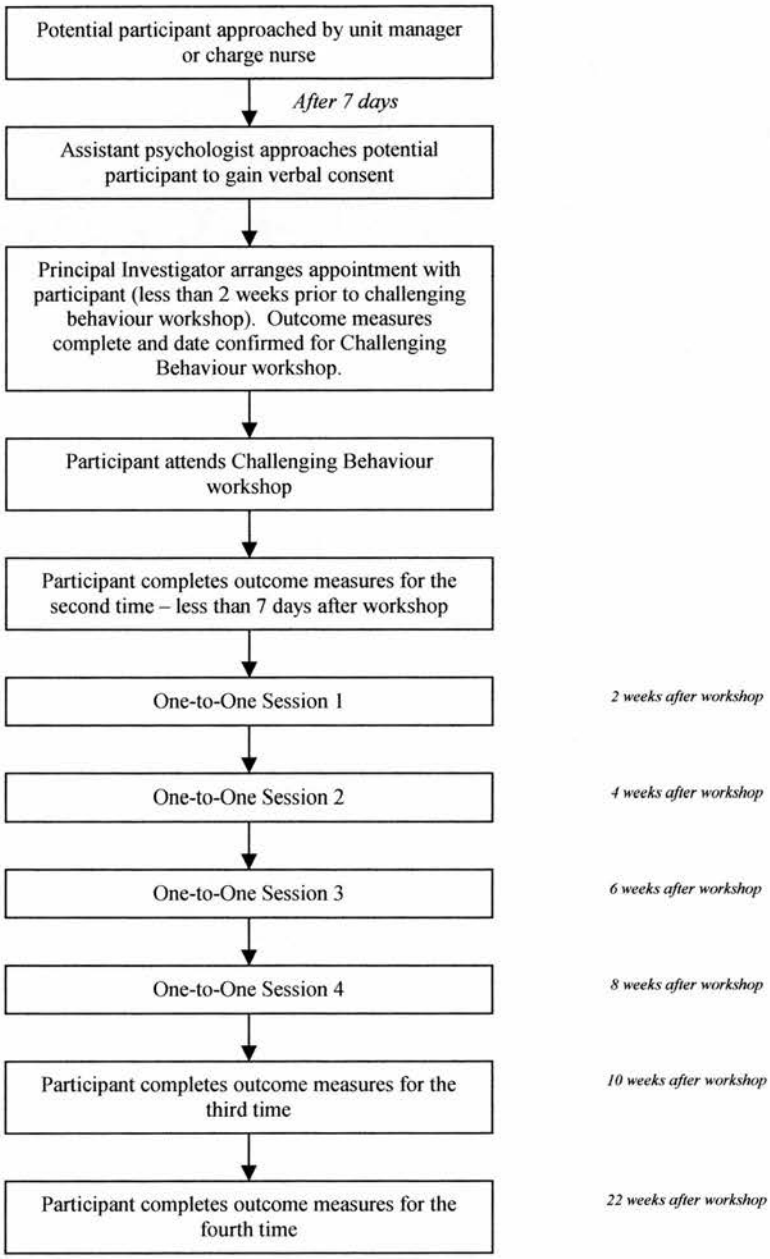
Once potential participants had been identified, they were approached by their unit manager or charge nurse who outlined the project and presented them with a participant information sheet (see appendix VI). At this point it was emphasised that participation was completely voluntary, that all information would be completely confidential, that all of the research would be completed within work time and that they could withdraw at any time without having to give a reason. Furthermore, potential participants were assured that choosing not to take part would not have any negative repercussions within their workplace. The potential participant was encouraged to take the information with them to consider. They were informed that an assistant psychologist would contact them within seven days to discuss whether they wish to participate in the project. Within seven days an assistant psychologist contacted each potential participant via telephone to ask if they wish to participate. For those who refused they were thanked for their time and withdrawn from the list of potential participants. For those who were

unsure or who agreed to participate were contacted via telephone by the principal researcher and an initial appointment was arranged.

At the initial appointment further verbal discussion and clarification on any aspect of the participant information sheet was given. The assurances initially offered by the unit manager or charge nurse with whom they spoke were reiterated. At this point particular attention was paid to assurances regarding confidentiality, specifically, that the content of any of the one-to-one interviews or outcome measures would not be made known to the potential participant's peers or managers and that the only information that their managers would have is whether or not they were participating in the study. If the potential participant chose not to take part then they were thanked for the time and the initial appointment ended. If the potential participant agreed to participate then they were asked to read over and sign the participant consent form (see appendix VII). They were asked to complete the first round of outcome measures. If the participant was allocated to the experimental group they were given the date for attending the challenging behaviour workshop.

The procedure for the experimental and control groups were as follows:

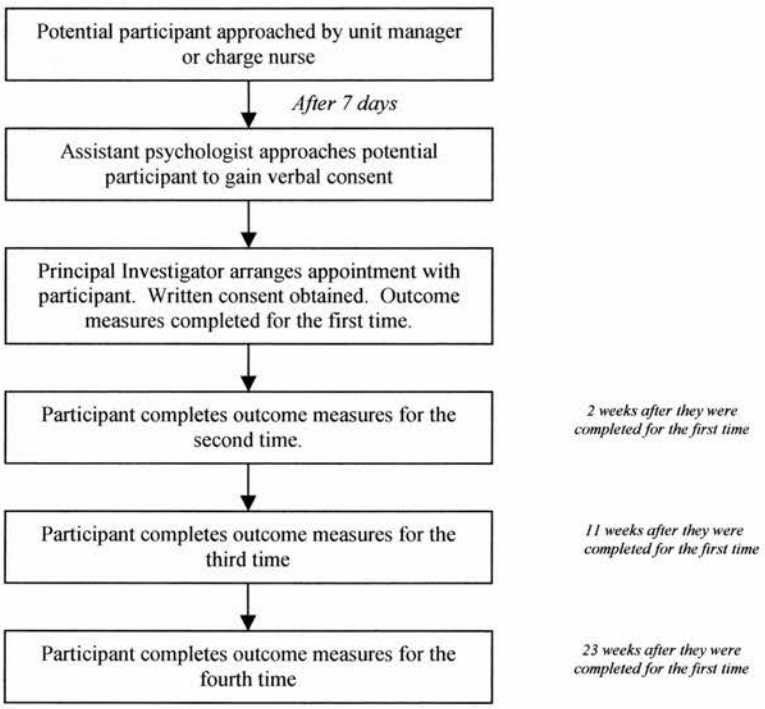
Participant Procedure – Experimental Group



Participant Procedure - The Control Group

The participants in the control group completed the outcome measures on four occasions at the same time as their experimental group counterparts.

The flow chart below outlines the research procedure for participants in the control group:



2.5.1 Intervention

As indicated by the experimental design, the participants in the experimental group participated in an intervention procedure. This was in two parts and included attending a one-day workshop on challenging behaviour and attending four one-to-one sessions with the principle researcher.

2.5.1.1 One-Day Challenging Behaviour Workshop

The training was delivered to the participants in the experimental group in a single day workshop across four separate days with group sizes varying between five and eleven participants. Training was delivered by the principle researcher with an assistant psychologist co-facilitator. In keeping with the evidence base the workshop was based on the principles of behaviour analysis. The workshop was broadly similar to those described in other papers (e.g. Tierney et al, 2007). The workshop comprised lectures, handouts and small group discussion exercises.

The aims of the workshop were to:

- Define challenging behaviour;
- Review the current evidence base for the treatment of challenging behaviour;
- Introduce behaviour analysis, specifically;
    - learning theory and the concept of reinforcement, extinction and punishment;
    - the value in understanding both the context in which a behaviour occurs (both in terms of immediate antecedents and setting events) and the consequences that occur following the behaviour;
    - the importance of understanding 'function' and understanding this using 'functional analysis';
    - some ideas about behavioural interventions
- Introduce functional analysis within the context of 'Positive Behavioural Supports';

- Introduce the concept of attributions and the role that they may play when working with people who display challenging behaviour.

The workshop was split into four sessions. Appendix VIII outlines the session content. Appendix IX includes the powerpoint presentation that was used during the workshop.

2.5.1.2 One-to-one sessions based on reattribution training

As described previously, the purpose of these sessions is to extend the training experience beyond the one-day workshop to the 'real' working environment where 'actual' incidents of challenging behaviour are discussed and formulated within the behavioural model.

The focus of these interviews was to elicit causal attributions about an incident of challenging behaviour the participant had witnessed or been involved in whilst at work. In keeping with reattribution training the purpose of the interviews was to:

I gather confirmatory information for attributions that are consistent with the evidence base;

Ii challenge causal attributions that are not in keeping with the evidence base.

The flow chart below details the format of these interviews:

As noted previously, each participant in the experimental group met with the principle researcher for one-to-one sessions on four occasions. Thus, 108 interviews were conducted.

To assess whether this format was reliably adhered to 11 interviews (approximately 10%) of interviews were listened to by a second independent rater. A systematic sampling procedure was employed to ensure that interviews selected for inter-rater testing were counter-balanced to include a selection from each of the four interview times. For each interview the rater completed a checklist (see appendix X) which detailed each of the components noted above to report whether each component had occurred in the interview or not. Appendix XI details whether the independent rater considered that each component was included in the interviews. This information would indicate that, on the whole, this format was reliably adhered to.

2.6 Outcome Measures

Each of the following outcome measures were completed by all 54 participants on four occasions:

- T1 the week prior to the experimental group participating in the challenging behaviour workshop;
- T2 the week following the experimental group participating in the challenging behaviour workshop;
- T3 the week following the completion of the one-to-one sessions;
- T4 twelve weeks following the completion of the one-to-one sessions.

2.6.1 The Self Injury Behavioural Understanding Questionnaire (Oliver et al, 1996)

The Self-Injury Behavioural Understanding Questionnaire (SIBUQ) was developed to measure the knowledge, causal explanations and behavioural intentions of staff. It is a 27-item multiple choice format questionnaire developed to examine the adoption of a behavioural perspective within the context of self-injurious behaviour. It comprises three subscales:

- Knowledge (of basic behavioural processes) – this subscale contains 11 questions; thus, the range of total scores for this subscale is 0-11. Oliver et al. (1996) reported that the test-retest reliability for the knowledge subscale was good (r=0.88).
- Action (knowledge of effective management of self-injury) – this subscale contains 5 questions. Each question describes a short scenario describing different challenging behaviours with information indicating behavioural function. Four categories of response are given:
    - a response which is considered **behavioural and correct**, i.e. is likely to reduce the future probability that the challenging behaviour would recur given the function of the behaviour;
    - a response which is considered to **reinforce** the challenging behaviour;
    - a response which would seek to **avoid** the challenging behaviour occurring in the first place;
    - a response fitting an **internal organic** cause.

  Thus, the range of total scores for each of these response categories is 0-5 (other than the internal organic response which is 0-4). Oliver et al. (1996)

reported that the test-retest reliability for the action subscale was unacceptably low.

- Causal Explanation (measuring the knowledge of the causes of self-injury) – this subscale contains 11 questions. In this subscale questions assess the attributions that participants make regarding challenging behaviour. There are two types of questions in this subscale, those which provide a short scenario detailing challenging behaviour with information indicating behavioural function whilst other questions are more general. Again, there are four categories of response:
  - A response which is **behavioural and correct** in that the participant has explains the behaviour in terms of its correct behavioural function;
  - A response which is considered **behavioural and incorrect** in that the participant explains the behaviour in terms of irrelevant antecedents and consequences;
  - A response which is considered to explain the challenging behaviour in terms of an **internal emotional** state;
  - A response which is considered to explain the challenging behaviour in terms of an **internal organic** state.

  The range of total scores for the behavioural correct, internal emotional and internal organic explanations is 0-11 whilst the range of total scores for the behavioural and incorrect explanation is 0-10. Oliver et al. (1996) reported that the test-retest reliability for the causal explanation subscale was acceptable (Behavioural and Correct, r=0.80; Behavioural and Incorrect, r=0.67; Internal Organic, r=0.67; Internal Emotional, r=0.73).

In addition to the three subscales the SIBUQ also provides a total behavioural and correct score which is considered to assess the participants overall adoption of the behavioural perspective. This score is comprised of all of the behavioural correct scores from each of the three subscales. Thus, the range of total possible scores for the total behavioural and correct score is 0-27. Oliver et al. (1996) reported that the test-retest reliability for the causal explanation subscale was good (r=0.87). Validity for the SIBUQ has not yet been established.

The original SIBUQ pertains to self-injurious behaviour only. However, the present study was interested in participants understanding of challenging behaviour. Thus, the original SIBUQ was modified to refer to challenging behaviour generally rather than self-injurious behaviour specifically. Throughout the SIBUQ the term 'self-injury' was replaced by 'challenging behaviour' but otherwise the questions were identical to those in the original measure. Modifying the SIBUQ in this way has been reported in previous literature (e.g. Dowey et al., 2007). It was decided that the results of the action subscale would not be investigated in this study since it had inadequate test-retest reliability. However, the knowledge and causal explanation subscales as well as the overall total behaviour and correct score were included as dependent variables.

Oliver et al. (1996) administered this measure to four different groups of staff with different levels of contact and training. Significant differences were found between staff groups dependent on level of training and specialism of their work environment.

Some of Oliver et al.'s (1996) results are detailed in appendix XII to permit comparison with the results obtained in this study.

2.6.2 Emotional Reactions to Challenging Behaviour Scale (Mitchell & Hastings, 1998)

The Emotional Reactions to Challenging Behaviour Scale (ERCB) was developed to elicit typical emotional reactions experienced, in an environment where challenging behaviour occurs, over the past few weeks. Participants are asked to rate the extent to which they experienced each of 25 emotions, both negative and positive, over the past few weeks. The negative emotions are scored along two dimensions derived from a factor analysis: depression/anger emotions (e.g. sad helpless, angry) and fear/anxiety emotions (e.g. nervous, frightened). Staff were asked to rate each emotion on a 0-3 rating scale (never, infrequently, frequently, very frequently) indicating the frequency with which they typically experience each emotion in response to challenging behaviour. Scores on the items for the two subscales (depression/anger and fear/anxiety) are summed, and divided by the number of items in each scale, to provide two total scale scores. To keep the level of measurement consistent, staff rated their emotional reactions generally to challenging behaviour rather then towards a specific example of behaviour.

Mitchell & Hastings (1998) report that the ERCB has good test-retest reliability (r = 0.74, 0.81; Mitchell & Hastings, 1998) and good internal consistency (Cronbach's alpha coefficients $\alpha = 0.83$, $\alpha = 0.85$; Mitchell & Hastings 1998). Validity for the ERCB has not yet been established. This scale has been used in a number of studies to assess the

emotional reactions of staff working with people with learning disabilities who display challenging behaviour (Mitchell & Hastings, 2001; Tierney et al, 2007; Rose et al, 2004).

2.6.3 Challenging Behaviour Attribution Scale (Hastings, 1997)

The Challenging Behaviour Attribution Scale (CHABA) was developed specifically to elicit the causal attributions made by staff as to the reasons why people with learning disabilities may display challenging behaviour. It has been reported to have acceptable levels of test-retest reliability (Hastings, 1997). Internal consistency for this scale has been found to be excellent (Hastings & Brown, 2002). Validity for the CHABA has not yet been established.

The CHABA is a 33 item self report instrument which is comprised of six subscales with statements which relate to six causal models of challenging behaviours represented in the challenging behaviour literature. These include:

- Learned behaviour (six items, here items each for learned positive and learned negative);
- Biomedical (six items);
- Emotional (seven items);
- Stimulation (six items), and;
- Physical Environment (eight items).

Participants rate the applicability or relevancy of each item of a five point scale ranging from 'very unlikely' (-2), 'unlikely' (-1), 'equally likely/unlikely' (0), 'likely' (1) and 'very likely' (2). To calculate each subscale score all subscale items are added and then

divided by the number of individual items. It is considered that a subscale score above zero indicates that the participant views this causal model as applicable to challenging behaviour whilst a subscale score below zero would indicate that the participant does not view this causal model as relevant to challenging behaviour. The sub-scales have acceptable levels of reliability with Cronbach's alpha values between $\alpha = 0.65$ and $\alpha = 0.87$ (Hastings, 1997).

Apart from the definition of challenging behaviour, no other information was given to staff when they recorded their responses. Staff were asked to complete the 33-items following the statement "People with learning disabilities engage in challenging behaviour because…". Thus, the scale was used as a general measure of staff causal beliefs about the challenging behaviour displayed by people with learning disabilities.

2.6.4 Semi-structured Interview

Each participant was interviewed by the principle researcher using a semi-structured format designed to elicit staff perceptions of one incident of challenging behaviour that they have witnessed or been involved in within their workplace. Before beginning the main part of the interview and beginning the audio recording the participant was briefed on the questions that they were going to be asked to minimise any anxiety about the interview. The main part of the interview began with the researcher asking the participant to describe an incident of challenging behaviour that the interviewee has witnessed or been involved in whilst at work. Once the participants had described the incident they were then asked when the behaviour occurred and who was around at the time of the incident if this was not included in the participant's description. This was

designed to act as a reference point for recall. Each incident of challenging behaviour was clarified, either by the interviewer or participant, before they were asked to recall what had occurred before and following the incident of challenging behaviour. Once all of this information had been elucidated the participant was asked why they thought the incident of challenging behaviour had occurred. Once their response had ended they were finally asked if there were any other reasons why the behaviour had occurred just to give them the opportunity to say everything they would like to. This was designed to support the integrity of the method, so that the researcher could not be accused of bias by selectively ending the interview. If the participant appeared unsure about the purpose of the final question this was explained to them. Each interview was audio recorded.

As noted previously, outcome measures were administered to the 54 participants on four occasions. Thus, there were 216 recorded interviews.

2.6.4.1 Coding Attributions – Modified Leeds Attributional Coding System

Each participant interview was fully transcribed and subject to an attributional content analysis coding procedure. The methodology used was Brewin, MacCarthy, Duda, and Vaughn's (1991) amended version of the Leeds Attributional Coding System (LACS; Stratton et al., 1986). Three attributional dimensions were coded from the interview transcripts:

1 Whether the origin of the cause of the challenging behaviour was with the client or not (internal-external);

2 Whether the cause was permanent (stable-unstable);

3 Whether the client was in control of their behaviour and intended to do what they did (controllable-uncontrollable).

The main focus of the coding process was the participants response to the questions "why do you think the incident of challenging behaviour occurred?" and "are there any other reasons why the behaviour occurred?" However, each interview transcript was analysed for attributional content since attributions were often made at other points of the interview. Definitions of the attributional dimensions are given in appendix II.

The LACS is a binary coding system that gives a score of 0 or 1 for the opposite poles of each attributional dimension. In the present study, codings were made for attributions regarding the third person (i.e. staff attributions about client behaviour) rather than attributions regarding the first person (participants' attributions about their own behaviour) as in the original LACS research. This amended version of the LACS has been utilised in previous research (e.g. Noone et al, 2006). Staff causal explanations were coded along the three attribution dimensions discussed and assigned one of two scores representing the opposite poles of the dimension. For each interview the information was summarised into total percentage of attributions coded as internal, controllable and stable. This type of summation has been used in previous research (Noone et al., 2006). These percentages were then summarised and compared between groups at baseline and within groups across the four data collection periods. This type of analysis of difference has been used with LACS outputs in previous studies (e.g. White & Barrowclough, 1998).

Inter-rater Reliability

Twenty-two (approximately 10%) of the interview transcripts were coded by one additional rater to explore inter-rater reliability. The additional rater was independent of this project. The Percentage Agreement Index was used (Suen & Ary, 1989). Two aspects of reliability was explored; firstly, whether there was agreement that causal attributions were highlighted and, secondly, once the attributions had been identified whether there was agreement on the LACS coding for each of the three dimensions. The table below reports the percentage agreement between the main coder (the principle researcher) and the additional rater.

Table 2.1 LACS inter-rater reliability, percentage agreement.

	% Agreement
Identification of causal attributions	77
Stability Dimension	92
Controllability Dimension	92
Locus Dimension	95

The table highlights that there was acceptable levels of agreement regarding attribution identification and good levels of agreement on each of the dimension codes. An example of a transcribed interview and the codes ascribed to the causal explanations is included in appendix XIII.

2.7 Statistical Analyses Employed in the Current Study

In order to analyse the interaction between group (experimental and control groups) and across condition (baseline, following workshop, following support sessions and at 12-

week follow-up) mixed ANOVA's were completed on all outcome measures. Where appropriate, further post hoc analyses were completed. The results were analysed using SPSS version 14.

Chapter 3. Results

3.1 Examination of Data

The data were initially checked for normality of the distribution. Tests which assess distribution were completed on all relevant subscales for each outcome measure across all four data collection periods for both the control and experimental group. These are summarised in appendix XIV.

The results of these tests illustrate that none of the outcome measure subscales, across the four data collection points and in both experimental and control groups, were consistently normally distributed. This violates one of the assumptions for parametric analyses. It could be argued that data which violates parametric assumptions should be analysed using non-parametric tests. However, it was decided to use parametric tests for the analyses for two reasons. Firstly, it is argued that Analysis of Variance (AVOVA) procedures are very robust when population normality is violated. Sawilowsky (1990) reviewed the literature on the analyses of interaction effects and concluded that parametric procedures are robust except when distributions are extremely skewed. However, even when distribution is extremely skewed parametric analyses are robust when sample sizes are equal and sample sizes are fairly large (the example of 20 or 30 participants was given). Thus, since the sample size in this research project would be deemed 'fairly large' by Samilowsky's criteria and the sample sizes are equal, both between groups and across conditions, it is considered that parametric analyses would be robust despite violating the assumption of population normality. Secondly, non-parametric tests which investigate interaction effects in a

repeated measures experimental design are not readily available using available statistical packages.

3.2 Sample Characteristics

Fifty-four staff members who work in inpatient services for people with learning disabilities completed this study. Twenty-seven completed the control condition whilst twenty-seven completed the experimental condition. There were more women in the experimental group than in the control group and more men in the control than experimental groups. The mean age in both groups were broadly similar (control: 37.44(SD 8.06); experimental: 38.81(SD 12.22)). At the time of the study, those in the control group tended to have more years experience working with people with learning disabilities (mean 12.78; SD 11.04) than participants in the experimental group (mean 8.05; SD 8.69). There were equal numbers of qualified nurses and nursing assistants in both groups (15 nurses; 12 nursing assistants). In both groups the level of qualification was broadly similar. In both groups 15 participants had a nursing qualification whilst 1 participant in each group had a degree other than nursing but related to learning disabilities. In the control group 5 participants had a Scottish Vocational Qualification (SVQ) related to working with people with learning disabilities versus 3 participants in the control group. In the control group 6 participants reported that they had no relevant qualifications versus 8 participants in the experimental group. These demographics are summarised in table 3.1 below.

Table 3.1

Summary of demographic characteristics of participants

Variables	Descriptives	
	Control	**Experimental Group**
Age	37.44 (SD 8.06)	38.81 (SD 12.22)
Gender	Female: 9 Male: 18	Female:12 Male: 15
Experience working with people with LD (years)	12.78 (SD 11.04)	8.05 (SD 8.69)
Position	Nurse – n= 15 Nursing Assistant – n=12	Nurse – n=15 Nursing Assistant – n=12
Qualifications	Nursing Degree - 15 Degree Other than nursing but related to Learning Disabilities - 1 SVQ - 5 No Relevant Qualifications - 6	Nursing Degree - 15 Degree Other than nursing but related to Learning Disabilities - 1 SVQ - 3 No Relevant Qualifications - 8

It is recognised that analysing correlations between the above variables and the specific dependent variables examined within this project (knowledge, attributions and emotional reactions) may contribute to the evidence base; however, this is outwith the scope of this research project.

3.3 Hypothesis 1:

There will be a statistically significant change in behavioural knowledge in relation to challenging behaviour following attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff.

As described earlier, behavioural knowledge was assessed using the knowledge subscale of the modified SIBUQ. The descriptive data for both groups, across the four

data collection points, are summarised in the table and graph below. Higher scores reflect higher behaviour correct scores on the knowledge subscale of the SIBUQ.

Graph 3.1

Summary of behavioural knowledge mean scores for both groups across the four data collection points.

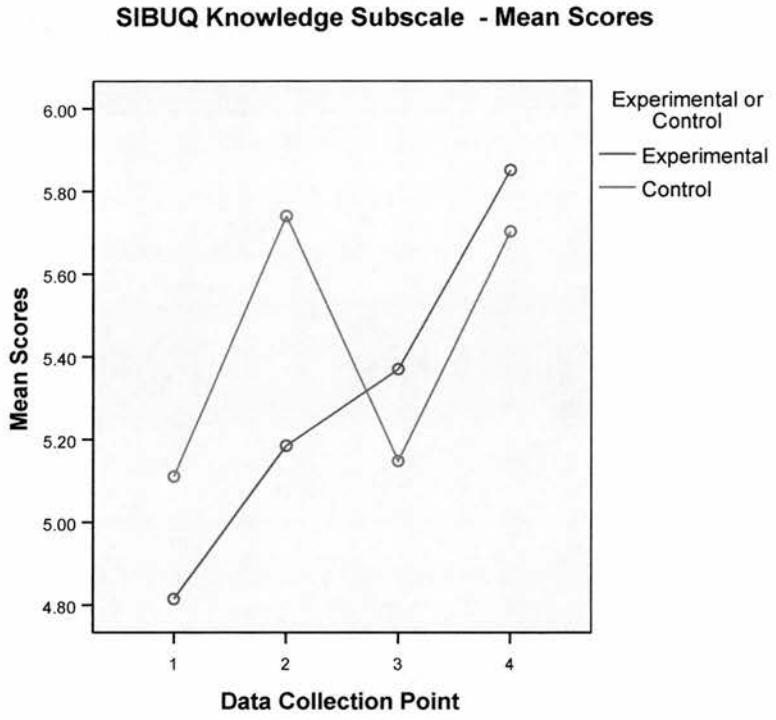


Table 3.2

Summary of behavioural knowledge descriptive data for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	5.00	5.11 (1.89)	2.00 – 9.00	6.00	5.74 (1.85)	3.00 – 9.00	5.00	5.14 (1.87)	2.00 – 8.00	6.00	5.70 (1.79)	2.00 – 8.00
E	5.00	4.81 (1.54)	2.00 – 7.00	5.00	5.07 (1.49)	2.00 – 8.00	5.00	5.37 (1.36)	3.00 – 8.00	6.00	5.81 (1.64)	3.00 – 9.00

*C=Control Group; E=Experimental.

As stated earlier, all data were analysed using parametric tests. Thus, to investigate whether there was a statistically significant interaction between groups across the four data collection points a Mixed ANOVA was carried out. The results of the Mixed ANOVA illustrate that there was no statistically significant interaction between groups and across data collection points, $F(3, 156) = 1.33$, $p>.05$, *ns*. The Mixed ANOVA output also reports on whether there was a main effect of group alone or data collection point alone. The results report that there was no main effect of group $F(1, 52) = 0.11$, $p>.05$, *ns*. However, the results report that there was a main effect of data collection point $F(3, 156) = 4.59$, $p<.01$. Examination of the profile plot, detailed in graph 3.1, indicates that over the four conditions there is a general increase in scores on the knowledge subscale. Post hoc analyses of the data collection points illustrate that there was a statistically significant difference between data collection point 1 (baseline) and data collection point 4 (12 week follow-up).

In relation to hypothesis 1, this must be rejected since the results indicate that whilst there was a statistically significant change in behavioural knowledge the absence of any statistically significant interaction effect illustrates that the attendance at the workshop or one-to-one supervisions sessions did not significantly change behavioural knowledge scores.

3.4 Hypothesis 2:

Following training and one-to-one support sessions there will be a statistically significant change in the attributions that are consistent with the behavioural model and in those which attribute challenging behaviour to incorrect

behavioural interpretations or to other models (e.g. emotional, biomedical/organic, stimulation and physical environment).

As described in the method chapter, two of the outcome measures, the SIBUQ Causal Explanation Subscale and the CHABA, directly evaluated the likelihood that participants causal attributions considered factors consistent with the behavioural model versus other models.

Analyses of the SIBUQ Causal Explanation Subscale

The SIBUQ causal explanation subscale examines the likelihood that the participant will attribute challenging behaviour described in a scenario to one of four types of causal explanations: a behavioural correct explanation; behavioural but incorrect explanation; an internal organic explanation; or to an internal emotional explanation. The graphs and tables below report on how much participants in each group ascribe to each category of causal explanation over the four data collection points. To investigate whether there was a statistically significant interaction between groups across the four data collection points in any of the subscales a series of Mixed ANOVA were carried out. It is also reported whether there was any main effects, for either condition or group.

Graph 3.2

Summary of participant mean scores regarding correct behavioural attributions for both groups across the four data collection points.

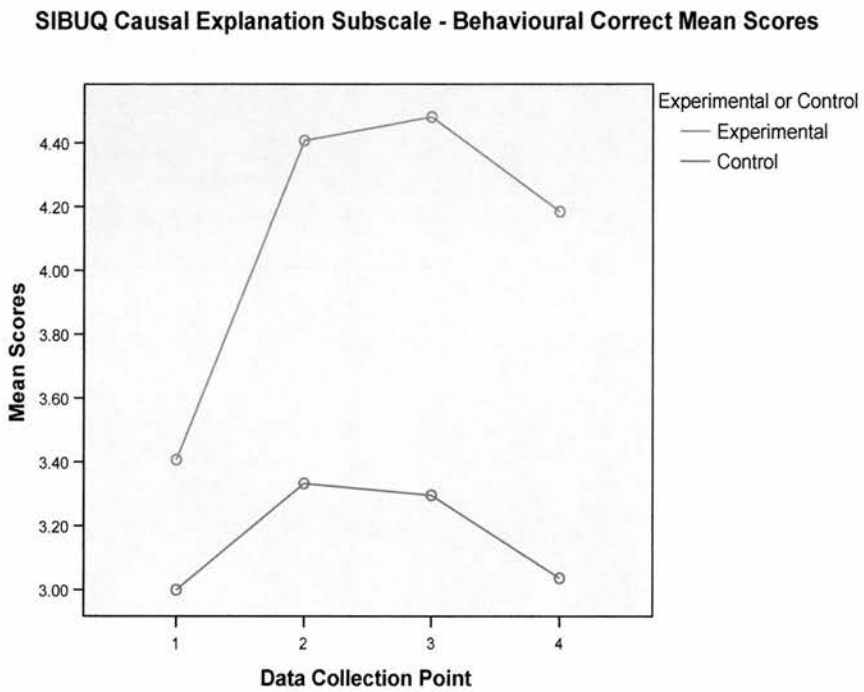


Table 3.3

Summary of participant scores regarding correct behavioural attributions for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	3.00	3.00 (2.25)	0.00 – 8.00	3.00	3.33 (1.86)	0.00 – 7.00	3.00	3.29 (2.63)	0.00 – 9.00	2.00	3.04 (2.42)	0.00 – 8.00
E	3.00	3.26 (1.87)	1.00 – 8.00	4.00	4.26 (2.01)	0.00 – 8.00	4.00	4.37 (1.92)	1.00 – 8.00	4.00	4.07 (2.07)	1.00 – 8.00

*C=Control Group; E=Experimental.

Higher scores reflect higher correct behavioural attributions.

The results of the Mixed ANOVA illustrated that there was no statistically significant interaction between groups and across data collection points, $F(3, 156) = 1.04$, $p>.05$, *ns*. There was no main effect of group $F(1, 52) = 3.65$, $p>.05$, *ns*. However, the results report that there was a main effect of data collection point $F(3, 156) = 3.16$, $p<.05$. Thus, whilst there was a significant change in scores over the four conditions, this was not dependent on group.

Graph 3.3

Summary of participant mean scores regarding incorrect behavioural attributions for both groups across the four data collection points.

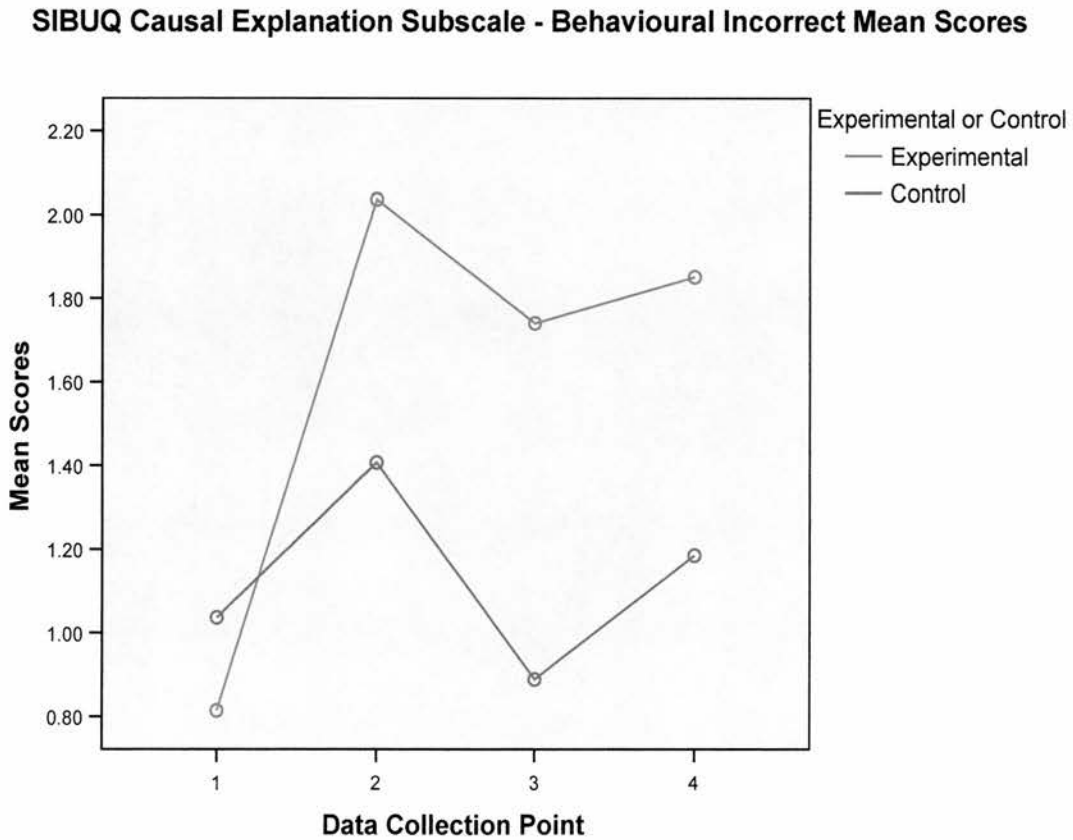


Table 3.4

Summary of participant scores regarding incorrect behavioural attributions for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	1.00	1.04 (1.16)	0.00 – 5.00	1.00	1.41 (1.25)	0.00 – 5.00	1.00	0.80 (0.80)	0.00 – 3.00	1.00	1.19 (1.4)	0.00 – 5.00
E	1.00	0.81 (1.08)	0.00 – 4.00	2.00	1.96 (1.48)	0.00 – 5.00	1.00	1.59 (1.39)	0.00 – 5.00	1.00	1.74 (1.70)	0.00 – 6.00

*C=Control Group; E=Experimental.

Higher scores reflect higher incorrect behavioural attributions.

The results of the Mixed ANOVA illustrated that there was a statistically significant interaction between groups and across data collection points, $F(3, 156) = 4.06$, $p<.01$. Thus, it is the combination of both the group and the data collection point that significantly changed the likelihood that participants would make incorrect behavioural attributions. Examination of the plot profile, detailed in graph 3.3, and of the within subject contrasts highlight that the interaction is significant between time 1 and time 2 whereby the experimental group are significantly more likely to make behavioural incorrect causal attributions at time 2 compared with time 1 $(1, 52) = 9.40$, $p<.01$, $r= 0.39$. This represents a medium effect size. Post hoc analyses show that the increase in incorrect behavioural attribution scores does not significantly change across conditions 2, 3 and 4. There are no such significant changes noted in the control group.

The Mixed ANOVA also highlighted that there was no main effect of group $F(1, 52) = 2.45$, $p>.05$, *ns*. However, the results report that there was a main effect of data

collection point $F(3, 156) = 7.61$, $p<.01$. Post Hoc analyses and examination of the profile plot of highlights that data collection point 1 is significantly lower than the three subsequent data collection points.

It should be noted that the Levene's Test of Equality of Error Variances indicated that the data collected at time 3 breached the assumption of Homogeneity of Variance. To correct this breach the data across the four conditions were transformed using the 'square root' transformation procedure.

Graph 3.4

Summary of participant mean scores regarding internal emotional attributions for both groups across the four data collection points.

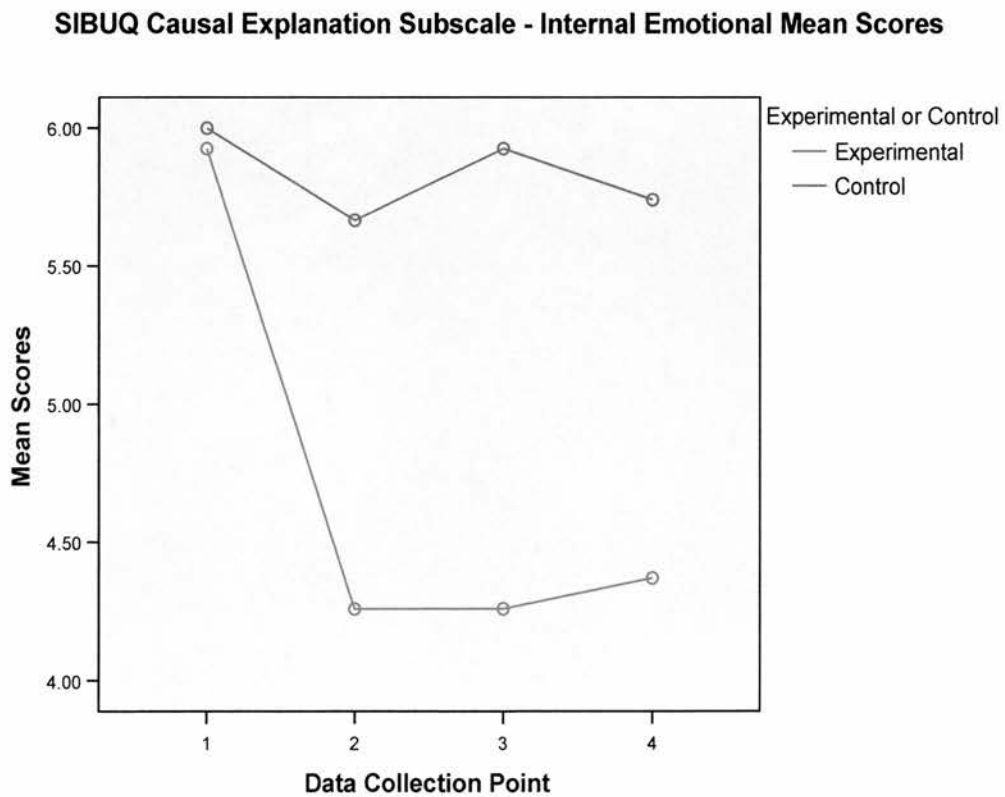


Table 3.5

Summary of participant scores regarding internal emotional attributions for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	6.00	6.00 (2.72)	0.00 – 9.00	6.00	5.67 (2.39)	1.00 – 10.00	6.00	5.93 (2.84)	1.00 – 10.00	6.00	5.74 (3.38)	0.00 – 11.00
E	6.00	6.07 (2.01)	2.00 – 10.00	4.00	4.48 (2.31)	1.00 – 10.00	4.00	4.52 (2.38)	1.00 – 10.00	4.00	4.59 (2.22)	1.00 – 10.00

*C=Control Group; E=Experimental.

Higher scores reflect higher internal emotional attributions.

The results of the Mixed ANOVA illustrate that the interaction between groups and across data collection points was statistically significant $F(3, 156) = 2.98$, $p<.05$. Thus, the combination of both the group and the data collection point significantly changed the likelihood that participants would make internal emotional attributions. Examination of the plot profile, detailed in graph 3.4, and within subjects contrasts illustrated that following the one-day workshop the experimental group were much less likely to make internal emotional attributions than the control group $F(1, 52) = 6.93$, $p<.05$, $r=0.34$. This represents a medium effect size. This change in the experimental group maintained across the three subsequent data collection points. There were no significant changes in the control group.

The Mixed ANOVA also illustrated that there was no main effect of group $F(1, 52) = 3.67$, $p>.05$, *ns*. However, the results demonstrated that there was a main effect of data

collection point $F(3, 156) = 5.06$, $p<.01$. That is, if we ignore the group (experimental or control) then the internal emotional attribution scores are significantly affected by the condition.

It should be noted that the F-values in this Mixed ANOVA may be compromised since the Levene's Test of Equality of Error Variances indicated that the data collected at time 2 breached the assumption of Homogeneity of Variance. To correct this breach transformation was attempted, however, none of the transformation procedures available on SPSS 14 amended this breach.

Graph 3.5

Summary of participant mean scores regarding internal organic attributions for both groups across the four data collection points.

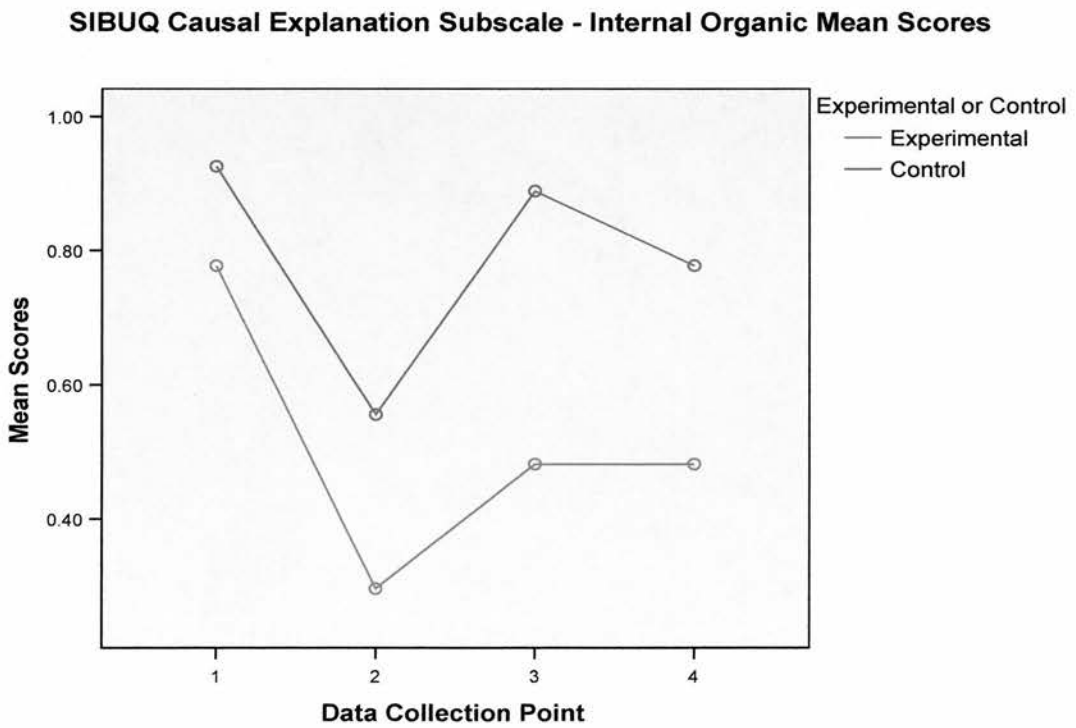


Table 3.6

Summary of participant scores regarding internal organic attributions for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	0.00	0.93 (1.24)	0.00 – 4.00	0.00	0.56 (0.85)	0.00 – 2.00	0.00	0.89 (1.55)	0.00 – 6.00	0.00	0.78 (1.31)	0.00 – 5.00
E	0.00	0.78 (1.12)	0.00 – 3.00	0.00	0.30 (0.67)	0.00 – 3.00	0.00	0.48 (0.94)	0.00 – 3.00	0.00	0.48 (1.05)	0.00 – 4.00

*C=Control Group; E=Experimental.

Higher scores reflect increased likelihood that the participants will make attributions that are consistent with internal organic attributions.

The results of the Mixed ANOVA illustrate that the interaction between groups and across data collection points was not statistically significant $F(3, 156) = 0.24$, $p>.05$. Thus, the combination of both the group and the data collection point that did not significantly change the likelihood that participants would make internal organic attributions.

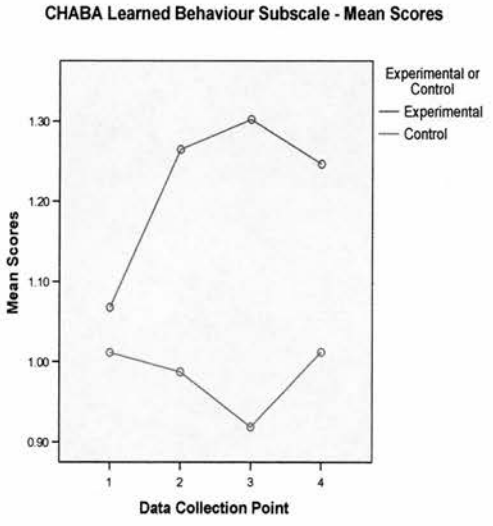
The Mixed ANOVA results reported that there was no main effect of group $F(1, 52) = 1.33$, $p>.05$, *ns* or data collection point $F(3, 156) = 2.64$, $p>.05$, *ns*. Again, it should be noted that the F-values in this analyses may be compromised since the Levene's Test of Equality of Error Variances indicated that the data collected at time 2 breached the assumption of Homogeneity of Variance. To correct this breach transformation was attempted, however, none of the transformation procedures available on SPSS 14 amended this breach.

Analyses of the CHABA

The CHABA examines the likelihood that the participant will attribute challenging behaviour to a number of causal models including: learned behaviour, biomedical, emotional, stimulation and physical environment. The following graphs and table report on how each group ascribe to each causal model over the four data collection periods.

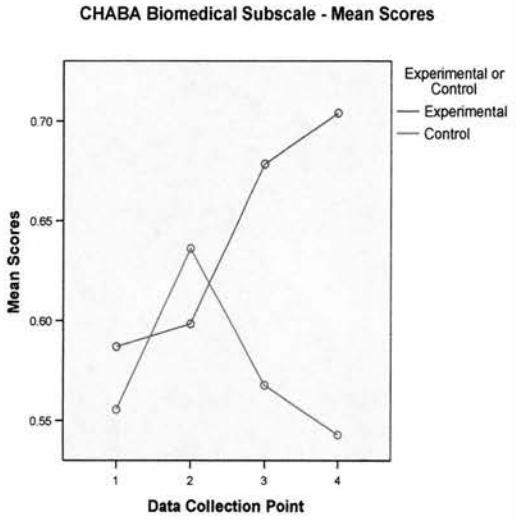
Graph 3.6

Summary of participant mean scores regarding learned behaviour attributions for both groups across the four data collection points.



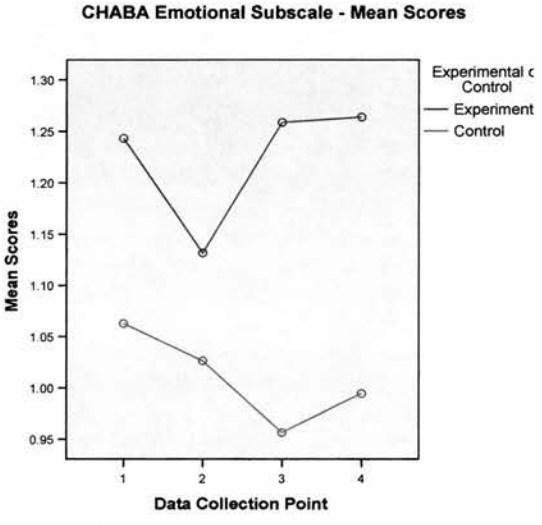
Graph 3.7

Summary of participant mean scores regarding biomedical attributions for both groups across the four data collection points.



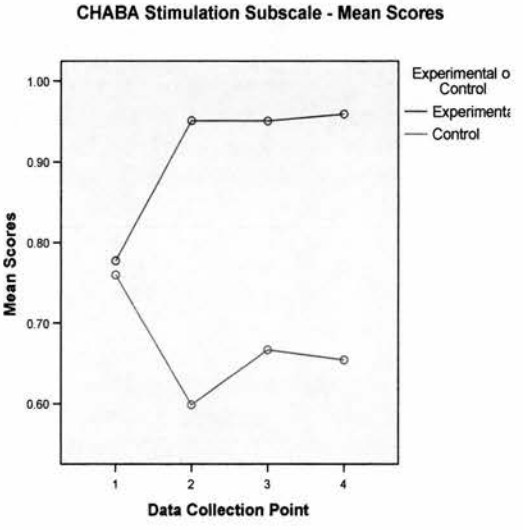
Graph 3.8

Summary of participant mean scores regarding emotional attributions for both groups across the four data collection points.



Graph 3.9

Summary of participant mean scores regarding stimulation attributions for both groups across the four data collection points.



Graph 3.10

Summary of participant mean scores regarding physical environment attributions for both groups across the four data collection points.

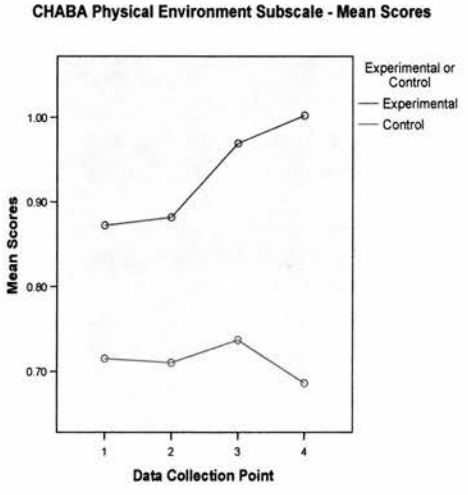


Table 3.7

Summary of participant scores in each of the CHABA subscales for both groups across the four data collection points.

Sub scale	Grp	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
		Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
LB	C	1.00	1.01 (0.51)	0.00 – 2.00	1.00	0.99 (0.60)	-.17 – 2.00	1.00	0.92 (0.61)	-.17 – 2.00	1.00	1.01 (0.58)	0.00 – 2.00
	E.	1.17	1.07 (0.53)	-.33 – 2.00	1.17	1.26 (0.45)	0.33 – 2.00	1.33	1.30 (0.44)	0.50 – 2.00	1.17	1.25 (0.47)	-.33 – 2.00
BM	C	0.50	0.56 (0.51)	-.17 – 2.00	0.50	0.64 (0.60)	-.33 – 2.00	0.67	0.57 (0.60)	-.50 – 2.00	0.50	0.54 (0.46)	-.17 – 2.00
	E	0.67	0.59 (0.70)	-1..33 – 2.00	0.67	0.60 (0.54)	-.83 – 1.50	0.83	0.68 (0.70)	-.83 – 1.83	0.67	0.70 (0.73)	-.67 – 2.00
Emot.	C	1.14	1.06 (0.52)	0.14 – 2.00	1.00	1.02 (0.55)	0.00 – 2.00	1.00	0.96 (0.58)	0.00 – 2.00	1.00	0.99 (0.51)	0.00 – 2.00
	E	1.29	1.24 (0.49)	0.14 – 2.00	1.14	1.13 (0.49)	-.29 – 2.00	1.14	1.26 (0.53)	-.14 – 2.00	1.29	1.26 (0.57)	-.57 – 2.00
Stim.	C	0.67	0.76 (0.48)	-.17 – 2.00	0.50	0.60 (0.58)	-.33 – 2.00	0.67	0.67 (0.57)	-.33 – 2.00	0.67	0.65 (0.60)	-.33 – 2.00
	E	0.83	0.78 (0.56)	-.17 – 1.67	0.83	0.95 (0.50)	-.17 – 1.67	0.83	0.95 (0.50)	-.33 – 1.83	0.83	0.96 (0.54)	0.00 – 2.00
PE	C	0.63	0.72 (0.51)	0.00 – 2.00	0.75	0.71 (0.64)	-.0 – 2.00	0.75	0.74 (0.60)	-.25 – 2.00	0.50	0.69 (0.59)	-.25 – 2.00
	E	0.88	0.87 (0.53)	-.25 – 2.00	0.88	0.88 (0.55)	-.25 – 1.88	1.00	0.97 (0.68)	-.38 – 2.00	1.13	1.00 (0.67)	-.13 – 2.00

LB = Learned Behaviour; BM = Biomedical; Emot. = Emotional; Stim = Stimulation; PE =Physical Environment; C=Control Group; E=Experimental.

Higher scores reflect increased likelihood that the participant considers that the subscale is causally relevant to challenging behaviour.

The results of the Mixed ANOVA's illustrated that there were no statistically significant interactions between groups and across data collection points for the: learned behaviour subscale $F(3, 156) = 2.30$, $p>.05$, *ns*; biomedical subscale $F(3, 156) = 0.86$, $p>.05$, *ns*;

emotional subscale $F(3, 156) = 1.21$, $p>.05$, *ns;* or physical environment subscale $F(2.61, 135.55) = 0.59$, $p>.05$, *ns*. Thus, the combination of both the group and the data collection point that did not significantly change the likelihood that participants would make correct behavioural, biomedical, emotional or physical environment attributions. It is also worth noting that there was no main effect of group or condition on any of these subscales. It should be noted that the F-values in the biomedical subscale analyses may be compromised since the Levene's Test of Equality of Error Variances indicated that the data collected at time 4 breached the assumption of Homogeneity of Variance. To correct this breach transformation was attempted, however, none of the transformation procedures available on SPSS 14 amended this breach.

There was a statistically significant interaction between groups and across data collection points for the stimulation subscale $F(3, 156) = 3.17$, $p<.05$. That is, it is the combination of group and condition which significantly influences the likelihood that participants will attribute stimulation as a likely cause of challenging behaviour. Examination of the plot profile, detailed in graph 3.9, and within subjects contrasts illustrated that following the workshop the experimental group were more likely to attribute challenging behaviour to stimulation compared with baseline whilst the control group was less likely to attribute challenging behaviour to stimulation compared with baseline. The combination of these changes was statistically significant $F(1, 52) = 8.37$, $p<.01$, $r = 0.37$. This represents a medium effect. These changes maintained across the subsequent data collection points.

Thus, there was partial support for hypothesis 2, that there will be change in those attributions which are consistent with the behavioural model and in those which attribute challenging behaviour to incorrect behavioural interpretations or to other models. The support for this hypothesis came from the results of the modified SIBUQ Causal Explanation Subscales, which indicated that there was a significant interaction between group and condition in the internal emotional and incorrect behavioural interpretations, and results of the CHABA, which indicated that there was a significant interaction between group and condition in the stimulation subscale. However, there was no change in the behavioural correct and internal organic SIBUQ Causal Explanation Subscales or the learned behaviour, biomedical, emotional and physical environment CHABA subscales.

3.5 Hypothesis 3

There will be a statistically significant change in the overall adoption of the behavioural perspective following attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff.

As described in the method section, the SIBUQ total behavioural and correct score assesses the participants overall adoption of the behavioural perspective. The descriptive data for both groups, across the four data collection points, are summarised in the graph and table below. Higher scores reflect higher overall adoption of the behavioural perspective.

Graph 3.11

SIBUQ Total Behavioural and Correct Mean Score Between Groups and Across Conditions

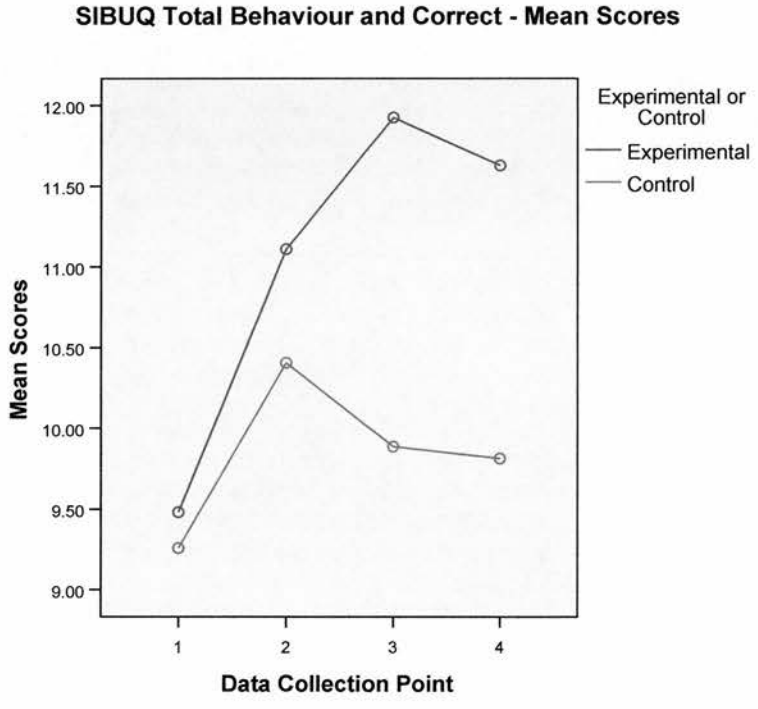


Table 3.8

Summary of participant total behavioural and correct scores for both groups across the four data collection points.

	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
C	9.00	9.26 (3.92)	3 - 17	11.00	10.41 (3.53)	4 - 16	9.00	9.89 (4.15)	3 - 20	9.00	9.81 (3.84)	4 - 17
E	9.00	9.33 (2.86)	4 - 15	11.00	10.89 (3.08)	6 - 16	11.00	11.67 (3.00)	6 - 17	11.00	11.37 (3.49)	6 - 18

*C=Control Group; E=Experimental.

The results of the Mixed ANOVA illustrate that there was no statistically significant interaction between groups and across data collection points, $F(2.45, 127.34) = 2.43$, $p>.05$, *ns*. The Mixed ANOVA also reports on whether there was a main effect of group alone or data collection point alone. The results report that there was no main effect of group $F(1, 52) = 1.30$, $p>.05$, *ns*. However, the results report that there was a main effect of data collection point $F(2.45, 127.34) = 6.01$, $p<.01$. That is, if we ignore the group (experimental or control) then the total behavioural and correct scores are significantly affected by the condition. Post Hoc analyses show that scores at time 1 were significantly lower than those collected at time 2, 3 and 4.

Thus, hypothesis 3 must be rejected since the results indicate that whilst there was a statistically significant change in total behavioural and correct scores the absence of any statistically significant interaction effect illustrates that the attendance at the workshop or one-to-one supervisions sessions did not significantly change the overall adoption of the behavioural approach.

It should be noted that the Levene's Test of Equality of Error Variances indicated that the data collected at time 1 breached the assumption of Homogeneity of Variance. To correct this breach the data across the four conditions were transformed using the 'square' transformation procedure.

3.6 Hypothesis 4:

Following the training workshop and one-to-one support sessions there will be a significant change in the causal attributions that emphasise control, stability and internality.

As described in the method section one of the outcome measures was a semi-structured interview with each participant at each of the data collection periods. The interviews were then transcribed and analysed. Within each interview causal attributions were identified and coded in accordance with a modified Leeds Attributional Coding System (LACS).

In total 216 interviews were conducted and transcribed; 1864 attributions were identified and coded. The table below provides a summary of numbers of attributions for both groups across the four data collection points.

Table 3.9

Summary of the number of attributions elicited for groups across the four data collection points.

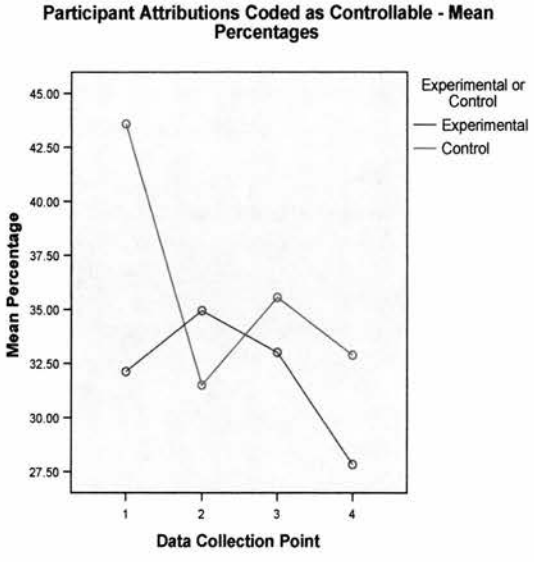
		Time 1	Time 2	Time 3	Time 4
Experimental	Mean	8.11	7.40	7.74	10.37
	Std Deviation	5.15	6.61	6.04	8.40
	Median	7.00	6.00	6.00	8.00
Control	Mean	10.70	8.07	9.04	7.59
	Std Deviation	6.70	4.95	6.38	4.38
	Median	8.00	7.00	8.00	6.00

The purpose of extracting the attributions was to then code each attribution along a number of attributional dimensions. The graphs and table below summarise the

percentage of participant attributions coded as controllable, stable and internal for each group across the four data collection points.

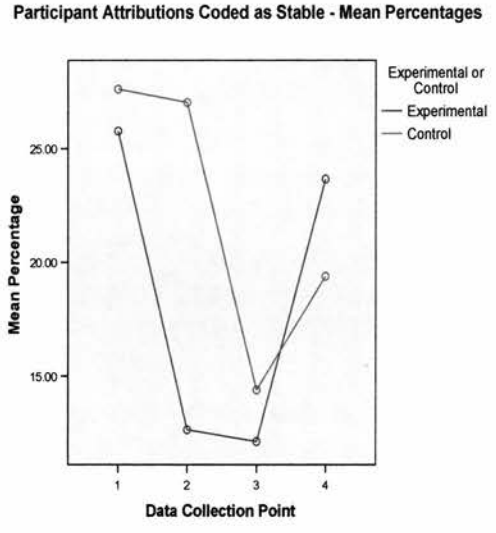
Graph 3.12

Mean percentage of participant attributions coded as controllable for each group across the four data collection points.



Graph 3.13

Mean percentage of participant attributions coded as stable for each group across the four data collection points.



Graph 3.14

Mean percentage of participant attributions coded as internal for each group across the four data collection points.

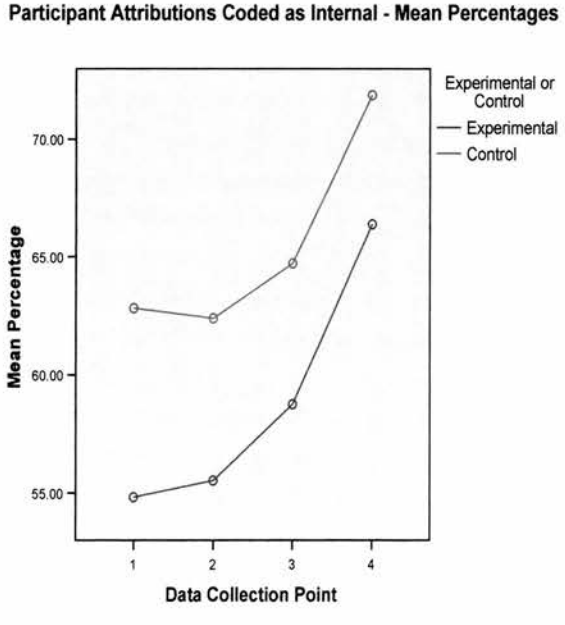


Table 3.10

Percentage of participant attributions coded as controllable, stable and internal for each group across the four data collection points.

Att. Dim.	Grp	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
		Mdn	Mean *SD*	Min/ Max	Mdn	Mean *SD*	Min/ Max	Mdn	Mean *SD*	Min/ Max	Mdn	Mean *SD*	Min/ Max
Cont.	C	33.30	43.59 *33.56*	0 - 100	25.00	31.51 *33.66*	0 - 100	33.30	35.56 *30.96*	0 - 100	33.30	32.90 *27.04*	0 - 80
	E	33.30	32.13 *22.92*	0 – 71.40	22.80	34.95 *34.19*	0 - 100	33.00	33.02 *25.48*	0 - 100	19.25	27.84 *23.61*	0 - 100
Stab.	C	22.20	27.63 *27.58*	0 – 83.30	20.00	27.04 *28.19*	0 - 100	6.70	14.40 *21.93*	0 - 100	16.70	19.39 *22.54*	0 - 100
	E	19.25	25.78 *27.44*	0 – 85.70	14.30	12.65 *16.29*	0 - 50	10.55	12.13 *11.94*	0 – 33.3	17.45	23.67 *21.86*	0 - 80
Int.	C	66.70	62.83 *26.85*	0 - 100	71.40	62.4 *27.08*	0 - 100	67.00	64.73 *20.36*	25 - 100	80.00	71.88 *28.98*	0 - 100
	E	59.30	54.83 *27.22*	0 - 100	62.50	55.53 *31.89*	0 - 100	66.85	58.76 *27.23*	0 - 100	73.20	66.39 *25.14*	22.2 - 100

*Att. Dim. = Attributional Dimension; Cont. = Control; Stab. = Stability; Int. = Internality; C=Control Group; E=Experimental.

Higher scores reflect higher percentage of attributions given that are coded as being on that attributional dimension. For example, 43.59% of the control group attributions were coded as controllable at time 1 whilst 32.13% of experimental group attributions were coded as controllable at time 1.

The results of the Mixed ANOVA's illustrated that there were no statistically significant interactions between groups and across data collection points for the controllability ($F(3, 156) = 0.34$, $p>.05$, ns), stability ($F(3, 156) = 1.63$, $p>.05$, ns) or internality ($F(3, 156) = 0.02$, $p>.05$, ns) measures. Thus, the combination of both the group and the data collection point that did not significantly change the likelihood that participants would make controllable, stable and internality attributions. It should be noted that the Levene's Test of Equality of Error Variances indicated that both the controllability and

stability data breached the assumption of Homogeneity of Variance. To correct this breach the data across the four conditions were transformed using the 'square' transformation procedure. It is also worth noting that there was no main effect of group or condition on any of these measures.

Thus, hypothesis 4, that following the training workshop and one-to-one support sessions there will be a significant change in the causal attributions that emphasise control, stability and internality, must be rejected since analyses demonstrated that there were no statistically significant interactions between the groups across the four time periods in any of the attributional dimensions.

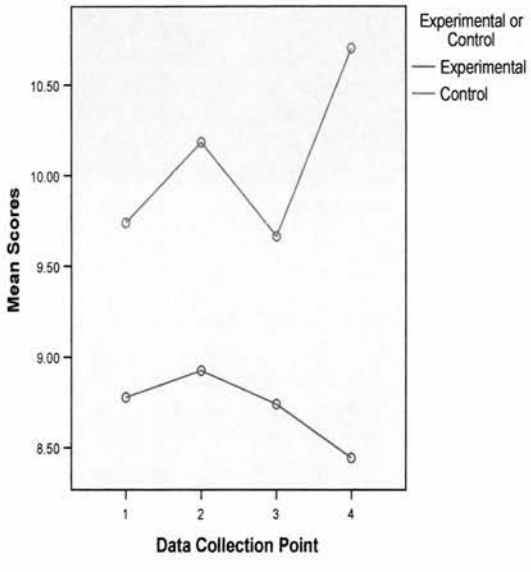
3.7 Hypothesis 5:

There will be a significant change in ratings of anger/depression and fear/anxiety factors following training and one-to-one support sessions.

As described in the method section participants rated their emotions using the Emotional Reactions to Challenging Behaviour scale (ERCB). The graphs and table below summarises the participants mean scores for the anger/depression and fear/anxiety factors.

Graph 3.15

Summary of participant scores on the anger/depression factor for both groups across the four data collection points.



Graph 3.16

Summary of participant scores on the fear/anxiety factor for both groups across the four data collection points.

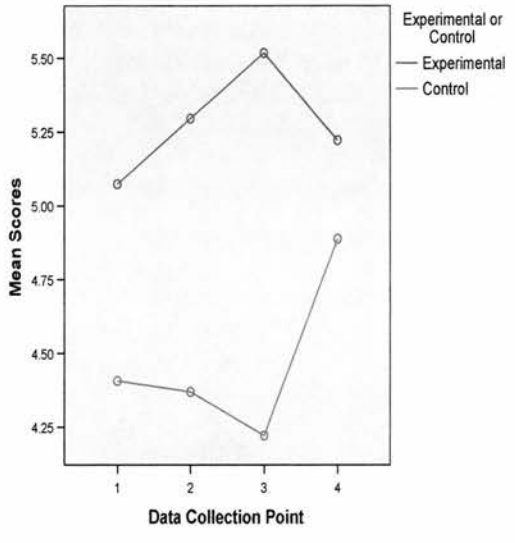


Table 3.11

Summary of participant scores on the anger/depression and fear/anxiety factors for both groups across the four data collection points.

Factor	Grp	Time 1 Baseline			Time 2 Post Workshop			Time 3 Post one to one sessions			Time 4 12 week follow-up		
		Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max	Mdn	Mean (SD)	Min/ Max
Anger/ Dep.	C.	10	9.74 (4.55)	0 - 18	10	10.19 (4.69)	0 - 19	10	9.67 (3.52)	4 - 20	10	10.70 (4.66)	3 - 21
	E.	9	8.78 (3.24)	2 - 17	8	8.93 (4.93)	3 - 23	7	8.74 (4.87)	2 - 23	7	8.44 (4.93)	1 - 22
Fear/ Anx.	C.	5	4.41 (1.80)	0 - 9	5	4.37 (2.59)	0 - 10	4	4.22 (2.42)	0 - 10	5	4.89 (2.28)	1 - 11
	E.	5	5.07 (1.75)	2 - 10	5	5.30 (1.90)	2 - 9	5	5.52 (2.74)	2 - 13	5	5.22 (3.06)	1 - 16

*C=Control Group; E=Experimental.

Higher scores reflect higher reported experience of the emotions which are included in the anger/depression and fear/anxiety factors.

The results of the Mixed ANOVA's illustrated that there were no statistically significant interactions between groups and across data collection points for the anger /depression ($F(3, 156) = 0.66$, $p>.05$, ns) or fear/anxiety ($F(2.48, 129.11) = 1.14$, $p>.05$, ns) factors. Thus, the combination of both the group and the data collection point did not significantly change the participants anger/depression or fear/anxiety ratings. It is also worth noting that there was no main effect of group or condition on any of these measures.

Thus hypothesis 5, that there will be a significant change in ratings of anger/depression and fear/anxiety factors following training and one-to-one support sessions, must be rejected since analyses demonstrated that there were no statistically significant interactions between the groups across the four time periods in either of the factors.

Chapter 4 – Discussion

The discussion will begin with a brief outline of the main findings before considering each hypothesis in more detail. Section 4.2 will examine the clinical and ethical implications of this study whilst section 4.3 will discuss the strengths and limitations of this study. The discussion will conclude with a summary of possible directions for future research before bringing the thesis to a close.

4.1 Summary of Main Findings

4.1.1 Training and one-to-one sessions – did they make any difference?

The primary aim of this thesis was to explore the impact of training and one-to-one sessions on the knowledge, attributions and emotional responses of staff working with people with learning disabilities who display challenging behaviour. As described previously, there were multiple analyses with a number of significant and non-significant findings. To succinctly summarise the impact that the training and one-to-one sessions had the following points highlight the statistically significant differences that were reported.

Those who attended the training workshop were:

- less likely to make internal emotional attributions;
- more likely to make incorrect behavioural attributions;
- more likely to attribute challenging behaviour to stimulation.

Those who attended the one-to-one sessions:

- maintained their reduced likelihood that they would make internal emotional attributions;
- maintained their increased likelihood that they would make incorrect behavioural attributions and were more likely to attribute challenging behaviour to stimulation.

Other noteworthy findings/implications:

- The statistically significant changes note following the training or one-to-one sessions were maintained at the 12-week follow-up (e.g. staff continued to be more likely to attribute challenging behaviour to incorrect behavioural or stimulation models and were less likely to make internal emotional attributions).
- The overall adoption of the behavioural approach was less than would have been expected in a specialist inpatient unit.
- There is some concern that the amended LACS does not sufficiently differentiate between attributions that are consistent with and those that are contrary to the behavioural model.
- There are significant concerns raised regarding the validity of the most typically used outcome measures which assess attributions.

4.1.2 The impact of training and one-to-one sessions on behavioural knowledge.

4.1.2.1 Results of hypothesis 1

The findings did not support hypotheses 1, that there will be a statistically significant change in behavioural knowledge in relation to challenging behaviour following

attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff. As detailed in the results chapter, whilst the experimental group showed a gradual increase in behavioural knowledge across the four conditions there was no statistically significant interaction between condition and group. These findings are contrary to previous research (Lowe et al., 2007; McGill et al., 2007; McKenzie et al., 2000; McKenzie et al., 2002) which reported that training staff in the behavioural model did significantly improve behavioural knowledge.

When considering why there was not a statistically significant increase in behavioural knowledge when comparing baseline data and with post workshop and post one-to-one supervisions session data a number of reasons are postulated. Firstly, the combined 'teaching time' of the workshop and one-to-one support sessions was relatively short (9 hours in total) and so it may be unrealistic to expect a significant increase in knowledge regarding such a complex and broad topic as behavioural approaches to challenging behaviour. Whilst previous research reported significant increases in behavioural knowledge this was often following extended training with many hours of input (e.g. Lowe et al., 2007; McGill et al., 2007). Secondly, there may have been a mismatch between the content of the workshop and the assessment content of the modified SIBUQ behavioural knowledge subscale. The modified SIBUQ behavioural knowledge subscale examines a broad range of behavioural concepts. Whilst every effort was made to ensure that these concepts were incorporated into the workshop it would have been impossible to provide a comprehensive understanding of all of the concepts examined in the subscale. Perhaps one solution to this issue would have been to design

an outcome measure which explicitly assessed only those concepts which were discussed in detail during the workshop. Whilst this may have resulted in a significant change in level of knowledge it was considered that the use of such an outcome measure would have also been problematic since it would have been idiosyncratic and without validation. Finally, the modified SIBUQ behavioural knowledge subscale relies on the participant being able to differentiate behaviourally correct responses from other inaccurate behavioural responses. It would appear that this requires the participant not only to recognise but to analyse. It could be argued that this is a more sophisticated outcome measure than many of the previous studies have used.

4.1.3 The impact of training and one-to-one support sessions on attributions consistent with a correct interpretation of the behavioural model and on those which attribute challenging behaviour to incorrect behavioural interpretations or to other models (e.g. emotional, biomedical/organic, stimulation and physical environment).

4.1.3.1 Results of hypothesis 2

There was some support for hypothesis 2, that there would be a statistically significant change in the attributions that are consistent with the behavioural model and in those which attribute challenging behaviour to incorrect behavioural interpretations or to other models (e.g. emotional, biomedical/organic, stimulation and physical environment).

There was no statistically significant interaction between group and condition on the subscales which assess the likelihood that participants would attribute challenging behaviour to a correct interpretation of the behavioural model (as assessed by the

modified SIBUQ Causal Explanation Subscale – Behavioural Correct Scores and the CHABA Learned Behaviour subscale). Also, contrary to hypothesis 2, there was no statistically significant change in the modified SIBUQ causal explanation subscale internal organic scores nor were there any statistically significant changes in the biomedical, emotional or physical environment subscales in the CHABA.

However, support for this hypothesis came from the internal emotional and behavioural incorrect scores in the modified SIBUQ causal explanation subscale and on the stimulation subscale on the CHABA. The internal emotional scores highlighted that participants in the experimental group were significantly less likely to make internal emotional attributions and significantly more likely to make incorrect behavioural attributions following attendance at the workshop. These changes were maintained over the subsequent data collection points. The CHABA stimulation subscale scores highlight that participants in the experimental group were more likely to attribute challenging behaviour to sensory stimulation whilst the control group were less likely to do so.

There are a number of points that arise when considering these results. Firstly, the decrease in internal emotional causal attributions is consistent with the findings of a number of previous studies (e.g. Berryman et al., 1994; Hastings, 1997; McGill et al., 2007), that training staff in behavioural approaches to challenging behaviour reduces the likelihood that they will make internal emotional attributions. Secondly, to understand why there was no reduction in internal organic causal explanations, it would be helpful to examine the minutiae of the results. It is perhaps expected that participants would

have been less likely to attribute challenging behaviour to internal organic causal explanations following the workshop; however, it can be seen from the results of both groups that across the four data collection periods that the median for this factor was zero. Thus, participants in both groups did not consider that internal organic factors were an important causal factor both before and following the workshop. Therefore, it is likely that this factor had a floor effect.

Thirdly, some studies have reported that training alone increases the likelihood that participants will make accurate behavioural attributions (e.g. Dowey et al., 2007; McGill et al., 2007) whilst others report no such change (e.g. McKenzie et al., 2002). The findings of this research are consistent with the latter. As far as can be ascertained, there are no reports within the empirical literature that those who attend challenging behaviour workshops are more likely to make incorrect behavioural attributions as noted in the present study. When considering this finding it is worth considering an earlier point, the modified SIBUQ causal explanations subscale like its knowledge subscale counterpart, does not only require participants to identify behavioural attributions but to analyse a specific scenario and make correct behavioural attributions. This would appear to be quite a sophisticated level of interpretation which goes beyond simply recognising behavioural terms and language. Thus, it could be speculated that following the workshop participants were more likely to make behavioural interpretations, hence the decrease in emotional interpretations, but that the participants did not yet have the level of analysis required to elicit behavioural function and thus make correct behavioural interpretations.

Fourthly, it is noteworthy that the statistically significant changes in attributions that did occur following the workshop maintained across the subsequent data collection points. This is contrary to previous literature which reported that often attributional changes which occur as a result of training are unlikely to be maintained (e.g. Lowe et al., 2007; Tierney et al., 2007). It is speculated that the combination of workshop and one-to-one support sessions may have been significant in the maintenance of these changes.

Also, to understand why there was a statistically significant change in the CHABA stimulation subscale scores it is important examine the detail of the results. As previously described, following the workshop the experimental group were more likely to attribute challenging behaviour to internal stimulation whilst the control group were less likely to, the combination of which made the group and condition interaction significant. These changes maintained over the subsequent data collection points. Whilst it could be speculated that the workshop was influential in altering the experimental group attributions there is no such logical explanation as to why the control groups attributions also changed. The contrast analyses highlights that it was the interaction between group across conditions 1 and 2 that was significant and so perhaps the most parsimonious explanation is that this interaction cannot be explained by the presence of the intervention procedures and so, as such, should not be interpreted as meaningful.

Finally, the results of the CHABA illustrate that, other than the erroneous findings in the stimulation subscale, there were no statistically significant changes in any of the subscales over the four data collection points. When postulating why this may be the

case two explanations appear most likely. Firstly, there were no statistically significant differences in attributions between the groups across the four data collection points which the results of the CHABA accurately reflect. Secondly, that there were significant differences in attributions but that the CHABA was not sensitive enough to pick these up or that the two outcome measures assess different things. Whilst the results of the modified SIBUQ causal explanation subscales did not entirely support hypothesis 2 it did evidence interactions between group and condition which altered some attribution scores. Thus, this may support McGill et al's (2007) assertion that the CHABA and SIBUQ causal explanation subscales appear to assess different things. This point will be discussed further later in this chapter when discussing the strengths and limitations of each outcome measure.

4.1.4 The impact of training and one-to-one support sessions on the overall adoption of the behavioural perspective.

4.1.4.1 Results of hypothesis 3

The results illustrated that there was not a statistically significant interaction between group and condition and so hypothesis 3, that there will be a statistically significant change in the overall adoption of the behavioural perspective following attendance at a one day training workshop on behavioural approaches to challenging behaviour and following four one-to-one support sessions with staff, must be rejected.

There are a couple of noteworthy points that arise from this finding. Firstly, whilst there was no significant interaction between group and condition the mean scores, illustrated in graph 3.11, highlight that the general trend in the experimental group was

a marked increase in total behavioural and correct scores over the four conditions whilst there was a slight increase in the control group over the four conditions. Given these trends it is possible that a genuine but modest effect was missed and a Type II error occurred. The power calculation in this thesis was based on a large effect size and, as such, the number of participants in each group reflected this. If however, there was a more modest effect size it is likely that this would not have been picked up in this analyses and, for this outcome measure, the thesis may have been under power.

Secondly, as described in the method chapter, the modified SIBUQ total behavioural and correct score assesses adoption of the behavioural model. Whilst a number of studies have employed subscales of the SIBUQ or the modified SIBUQ (e.g. McGill et al, 2007; Dowey et al., 2007) there is limited research which has reported on the measure in its entirety. Thus, there is limited scope for comparing results. The original Oliver (1996) reported on the development of the SIBUQ but also on its administration to four different categories of staff group who worked with people with learning disabilities. A description of each category and their mean scores and standard deviations are detailed in appendix XII. Comparison of the current research and Oliver's original paper illustrates that, at baseline, the mean scores of both the experimental and control groups total behavioural and correct are similar to Oliver's 'contact' group but lower than the 'hospital staff', 'behavioural unit' and 'behaviourally trained' groups. This is a noteworthy finding since the staff who participated in this study all worked within specialist inpatient services and are most akin to the 'behavioural unit' group. As detailed in the introductory chapter, typically the population that inpatient services support tend to display challenging behaviours which

is at the most severe end of the challenging behaviour spectrum. Such services are considered to be amongst the most specialist and thus require the highest level of knowledge and, concurrent with the empirical evidence base, the highest appreciation of the behavioural perspective. In this study this did not appear to be the case.

4.1.5 The impact of training and one-to-one support sessions on causal attributions which emphasise control, stability and internality.

4.1.5.1 Results of hypothesis 4

As detailed in the results chapter, there was no statistically significant interaction between groups and across conditions in participants who reported controllable, stable and internal causal attributions. Thus, hypothesis 4, that following the training workshop and one-to-one support sessions there will be a significant change in the causal attributions that emphasise control, stability and internality must be rejected. Again, when postulating why this may be the case a number of explanations may be relevant. Firstly, it may be that the interventions did not change attribution along these dimensions and the analyses accurately reflects this. Secondly, that a more modest effect was present but that, for this outcome measure, the analyses was under power and so a type II error occurred. Thirdly, that there were significant differences in attributions but the amended LACS was not sensitive enough to pick these up.

As far as is known there are no other studies within this field that investigate difference in attributions across time using the amended LACS and so there are no comparative research. As previously noted the rationale behind using the LACS was to investigate whether the workshop and one-to-one sessions changed attributions from internal, stable

and controllable towards external, unstable and uncontrollable. The rationale behind this was those who adopted behavioural approaches were more likely to attribute challenging behaviour to external, uncontrollable and unstable factors whilst those who did not were more likely to focus on internal, controllable and stable factors. Subjectively, there are some concerns that the amended LACS could not consistently differentiate between those attributions which are contrary or consistent with a behavioural approach. This point is perhaps best illustrated by example. Consider the following three sets of attributions that experimental participants made during the semi structured interviews and the subsequent codes that were assigned to them:

The episode of challenging behaviour occurred because....

Experimental Participant 3

Interview at time 1: "cos' he doesn't like me"

Coded as Internal: Controllable: Stable

Interview at time 3: "he's trying to communicate with staff"

Coded as Internal: Controllable: Unstable

Experimental Participant 4

Interview at time 1: "he wanted to attack staff"

Coded as Internal: Controllable: Stable

Interview at time 4: "he wanted to communicate with us"

Coded as Internal: Controllable: Unstable

Experimental Participant 13

Interview at time 1: "he was .... a little bitty hostile"

Coded as Internal: Controllable: Unstable

Interview at time 2: "his challenging behaviour you know was by saying stop this social interaction now this is me saying back off"

Coded as internal: Controllable: Unstable

These examples illustrate that when examining the specific content of participant attributions there may be evidence to suggest a shift in attributions towards a behavioural approach. However, when the attributions are coded there is little differentiation between the two since the participant's description continues to encompass controllable, internal and stable factors. It is difficult to assess to what extent this lack of differentiation impacted on the results. Thus, whilst the results may accurately reflect that there were no changes in the likelihood that participants would report internal, controllable and stable attributions or that the analyses was under power it is speculated that the amended LACS may not efficiently differentiate between attributions that are consistent with the behavioural model against those that are not.

Despite the lack of statistically significant interactions the results of the amended LACS provided some rich findings. Specifically, of the 1864 causal attributions that were elicited and coded approximately 30% were considered to be controllable by the client; approximately 66% were considered to be internal to the client whilst 15-20% were considered to be stable over time. This supports the assertion of Allen et al., (1999) and Noone et al., (2006) that staff who work with people with learning disabilities who display challenging behaviour tend to be attribute challenging behaviours to factors which are outwith their control (e.g. internal to the client). However, the controllable and stability findings differ from Noone et al. (2006) study where it was reported that

the majority of staff considered challenging behaviour to be due to controllable and stable factors. This difference may be accounted for by procedural differences, specifically, the inclusion of different questions to elicit attributions.

4.1.6 The impact of training and one to one support sessions on ratings of depression/anger and fear/anxiety.

4.1.6.1 Hypothesis 5

As described in the results chapter, there were no statistically significant interactions in ratings of anger/depression and fear/anxiety between groups across the four data collection points. Therefore, hypothesis 5, that there will be a significant change in ratings of anger/depression and fear/anxiety factors following training and one-to-one support sessions must be rejected. These findings are consistent with Tierney et al. (2007) who reported that a 3-day 'typical' challenging behaviour course did not alter emotional reactions but are contrary to McGill et al. (2007) who reported that staff who attended an extended training course in positive behaviour support reported less depression/anger reactions. Whilst the findings in the current study are in keeping with some of the previous research they would have perhaps contributed more to the theoretical and empirical evidence base if there had been a statistically significant change in attributions as predicted by hypotheses 2 and 4. However, since this was not the case these findings, whilst noteworthy, do not offer anything new to current theoretical models.

4.2 Clinical and Ethical Implications

The core question at the centre of this research was whether an intervention could be implemented which targets both lack of knowledge and challenges unhelpful attributions, whilst addressing the issue of maintenance. The results of this study have a number of clinical and ethical implications regarding changing participants level of behavioural knowledge, challenging unhelpful attributions and, where they occur, maintaining changes.

4.2.1 Behavioural Knowledge and Adoption of the Behavioural Approach

In the introductory chapter it was emphasised that staff who work with people with learning disabilities who display challenging behaviour are critical in the implementation of a behavioural approach (e.g. Allen, 1999). This study supports the finding of previous research, that there is a widespread lack of behavioural knowledge in both mainstream and specialist services (Lowe et al., 2007; McKenzie et al., 1996b). As discussed in the introductory chapter this has significant implications for the implementation of the behavioural model. This has specific clinical implications for the specialist service in which this research was conducted since part of the care pathway for that service details that nursing staff should conduct functional analyses. The evidence from this study would suggest that this may be outwith the current competence of that staff group. Further, this has significant ethical implications since the needs of the clients displaying the challenging behaviour are not being met thus increasing the likelihood that they will continue to experience the range of negative life-events discussed in the introductory chapter.

It is considered, from clinical experience, that this is unlikely to be unique to the specific service in which this research took part. It is considered that there is often discrepancy between expectation, that staff who work in services who support people with learning disabilities who display challenging behaviour can competently participate in the assessment, formulation and intervention process, and the actual level of knowledge of those staff.

The findings of this study illustrated that training and one-to-one sessions did not significantly enhance behavioural knowledge or the overall adoption of the behavioural approach. Earlier it was speculated that the lack of significant change in behavioural knowledge may have occurred because the SIBUQ knowledge subscale was a broad assessment tool requiring a relatively sophisticated level of analysis. Whilst this is speculative, if further research were to confirm this suggestion, the implication is that the aims and content of staff training require clarity; is the aim of training to familiarise staff with some aspects of behavioural approaches in a general way or is the aim that staff have a deeper level of understanding across the range of behavioural concepts in order that they can competently contribute to the assessment, formulation and intervention process? Related to this issue, training in behavioural approaches to challenging behaviour is a commonplace occurrence in clinical settings; however, there needs to be further clarity regarding the different roles that staff play in behavioural interventions in challenging behaviour and the level of training and knowledge that is required to competently understand those roles.

4.2.2 Attributions

There is evidence to suggest that when given discrete scenarios and multiple-choice responses, staff who attend training are less likely to make internal emotional attributions and more likely to make incorrect behavioural attributions following attendance at a training event. As discussed, this may suggest that whilst attending a brief training event may increase the likelihood that staff make behavioural, but not necessarily correct, attributions.

Whilst these findings are noteworthy it does not address the issues that were discussed in the introductory chapter, that questionnaires such as the SIBUQ, which are vignette-based and/or multiple choice responses, lack ecological validity. One of the implications of outcome measures that lack ecological validity is that their conclusions will not necessarily generalise to real-life, in this case the actual working environment. Thus, from the CHABA and modified SIBUQ causal explanation subscales there is insufficient evidence to determine whether attending the training workshop and one-to-one sessions actually altered attributions in any clinically meaningful way.

It was hoped that the semi-structured interviews and subsequent LACS analyses would have gone some way to rectifying the issue of ecological validity. Unfortunately, for reasons discussed previously, the LACS method of analyses was not as helpful as initially hoped. However, the LACS did provide some rich findings. The majority of staff who work with people with learning disabilities who display challenging behaviour are most likely to attribute these behaviours to internal events. As Munton et al. (1999) described the issue that arises from such causal explanations is that they are seen as

outwith the control of the person, in this case the staff member and so, in some ways, beyond intervention. Whilst this area requires further research, this may have significant clinical implications regarding the likelihood that staff will seek further help or implement behavioural interventions. It is also noteworthy that a significant proportion of staff reported that the causes of challenging behaviours are stable and controlled by the person exhibiting the behaviour. Whilst there has yet to be a robust model, specific to this field, that helps us understand how these factors impact on staff both cognitive behavioural and cognitive emotional models would suggest that these factors are likely to influence staff beliefs, behaviour and affect and ultimately their relationship with the clients with whom they work.

4.2.3 Maintenance

In the introductory chapter it was highlighted that one of the difficulties with training that has been identified in literature is that any gains made in staff training are often not maintained (Lowe et al., 2007; Tierney et al., 2007). One of the specific of aims of this project was to examine whether one-to-one sessions helped maintain the gains made post training. The results indicate that all of the attribution changes that were reported following the one-day workshop were maintained both immediately after the one-to-one sessions and 12 weeks after the one-to-one sessions (22 weeks following the workshop). Thus, whilst it can be asserted that the changes that occurred following the workshop were maintained it cannot be determined whether the one-to-one sessions were a significant factor in this maintenance since there was no comparison group that attended only the workshop but did not have the one-to-one sessions. However, if the difference between the findings of the previous research which did not maintain changes following

training and the current research is the one-to-one sessions then this would suggest that the inclusion of training and one-to-one sessions would help address at least one of the barriers (attributions) that are considered to impact on the likelihood that staff will respond to incidents of challenging behaviour in a habilitative, evidence-based way. Further, this would suggest that the format of the one-to-one sessions used in this study (i.e. discussing real incidents of challenging behaviour in relation to the behavioural model whilst also employing cognitive reattribution techniques) could be a helpful addition to clinical supervision for those staff who work in this field. However, it is considered that the implementation of this format would require that the supervisor has a competent understanding of attributional theory and retraining as well as behavioural theory and its application to challenging behaviour. It is suggested that the most appropriate professional that could competently undertake such supervision would be a clinical psychologist.

4.3 Strengths and limitations of current study

4.3.1 Design

One of the mains strengths of this research was that there was a control group. This increased the confidence that changes noted in the experimental group but not the control group were due to the intervention procedures. One of the main limitations of some of the previous studies within this field (e.g. Dowey et al., 2007; Lowe et al., 2007; McGill et al., 2007; McKenzie et al., 2002) is that they reported on interventions without a comparative control group. However, one of the main limitations with the design of the current study was that the intervention components (i.e. one-day workshop and one-to-one sessions) were examined cumulatively and not as discrete elements. A

more sophisticated design would have included three experimental groups: one group attending both training and one-to-one sessions, another group attending training only and a further group attending one-to-one sessions only, as well as a comparative control group. This would have permitted a clearer analyses of the role that each part of this intervention played on the key dependent variables.

4.3.2 Recruitment/sample

Recruitment of participants to this project was confined to staff who worked in three specialist inpatient services for people with learning disabilities who display challenging behaviour. However, within the confines of this criterion the only further criteria were pragmatic to exclude staff that would not be able to complete the procedure since it required participation over a 22 week period. Thus, one of the positive aspects of this research was that the majority of staff who worked within these services were eligible to participate and so it is fair to assume that this was a representative sample of staff who work within inpatient services. However, one of the limitations of this study is that given that the dependent variables may be influenced by a number of organisational factors, for example the service culture (Allen, 1999), there is a potential sampling bias and so caution should be noted when generalising the findings in this study to all staff who work with people with learning disabilities who display challenging behaviour.

It is acknowledged that there may be a number of demographic variables which have the potential to influence the dependent variables including: years of service; level of qualification; position within the inpatient unit etc. Due to the limited sample pool

these factors were not manipulated to match the sample of participants in the control or experimental groups. Despite this one of the areas of strength in this study was that when the demographic factors were examined there appeared to be a relatively good match between the two groups.

One of the limitations of this study was that the allocation of participants to the control or experimental group was not random but influenced by pragmatic factors. This was required to permit a significant proportion of unit staff to attend the one-day workshop. Using this allocation method increased the likelihood that the sample was biased. In an attempt to mediate this the principle researcher discussed the notion of research bias with those allocating participants into the groups (the staff or charge nurse) and was reassured that only pragmatic factors influenced participant allocation.

4.3.3 Procedure

One of the main strengths of the research was that the training experience was not confined to the one-day workshop but extended via the one-to-one sessions. As discussed in the introductory chapter, this approach has the potential to address a number of barriers that are considered to influence the likelihood that staff will respond to challenging behaviour in an evidence-based, habilitative way including lack of knowledge, unhelpful attributions as well as reinforcing positive organisational factors such as ongoing training and supervision. This process enabled the participant to relate the content of the workshop, specifically the applicability of the behavioural model, to actual incidents of challenging behaviour that they had been involved in whilst at work.

It is considered that the very broad topic of behavioural approaches to challenging behaviour cannot be justifiably covered in a single day workshop. The length of training was limited by organisational constraints; however, it is considered that this was a significant limitation in this study as previously discussed. Similarly, it is considered that the potential effectiveness of the one-to-one sessions may have been constrained by the four session limit. Since there are no comparative studies within this field it is more difficult to postulate whether there is an optimum number of sessions or whether the longer term inclusion of this format into clinical supervision would attain better outcomes.

Another positive aspect of this procedure was that it included a follow-up session 12-weeks after the one-to-one sessions, 22-weeks following the training. One of the limitations of some previous similar research is that they did not include follow-up data collection (e.g. Dowey et al., 2007). The inclusion of follow-up outcome measures is particularly important in this field since the issue of maintenance is a noteworthy concern (e.g. Cullen, 1999). Whilst the inclusion of follow-up data is an area of strength the findings would be more robust if the there was a longer follow-up period, for example, six months or a year following the one-to-one sessions. Unfortunately, this was not an option due to the time limits of this project.

4.3.4 Measures

Perhaps some of the most noteworthy discussion from this research is around the usefulness of the some of the outcome measures, specifically regarding the outcome measures which assess attributions. One of the strengths of this study is that the

SIBUQ, CHABA and ERCB have all been used in this field and, as previously detailed in the method section, have documented levels of reliability. Despite this there have been some significant concerns noted regarding the ecological and construct validity of these types of measures.

As discussed in the introductory chapter, whilst there has been fairly extensive research into the role of attributions on staff responses to challenging behaviour a coherent, evidence-based model has yet to emerge which has consistent predictive value. In the introductory chapter it was postulated that one of the reasons for this may be that the measures that have been consistently used within this field are inadequate since they generally lack ecological and construct validity. In employing both the modified SIBUQ causal explanation subscales and the CHABA this study demonstrated that whilst both are reported to examine the likelihood that staff ascribe to different challenging behaviour models they both provide different findings. Thus, the results of this thesis would support the view that there are significant difficulties with construct validity with both the CHABA and modified SIBUQ causal explanation subscales. Perhaps part of the reason for this is that whilst the modified SIBUQ causal explanation subscales elicits attributions in relation to a specific contrived scenario the CHABA elicits attributions regarding the broad unspecific concept of challenging behaviour. This difference in process may offer some explanation as to why the results of these measures differed in this and previous studies (e.g. McGill et al., 2007).

One of the strengths of using the semi-structured interview was that there were no limitations placed on the participant as to what incident of challenging behaviour they

discussed. This method of eliciting attributions enhanced ecological validity. This differs from the vast majority of previous research which relies on eliciting attribution by employing unspecific or contrived incidents of challenging behaviour (e.g. Bailey et al., 2006; Berryman et al., 1994; Bromley & Emerson., 1995; Dagnan & Cairns, 2005; Dowey et al., 2007; Hastings et al., 2003; Hill & Dagnan, 2002; Kalsy et al., 2007; McGill et al., 2007). However, not placing any limits regarding the chosen incident of challenging behaviour introduces the possibility that other influential factors (e.g. typology of behaviour, (Jones & Hastings 2003) that were not controlled for may confound the results. The use of the semi-structured interview and subsequent amended LACS analyses appeared to have the potential to assess actual attributions and whether they were consistent with the behavioural model. Unfortunately, whilst theoretically this method of assessment had the potential to progress attributional research it is postulated that actually the LACS analyses may not reliably differentiate attributions that are consistent with the behavioural model versus those that are not. Thus, whilst a significant area of strength is that the semi-structured interview does elicit actual attributions one of the significant limitations is that the method of analyses may be insufficient to contribute to the empirical or theoretical field.

Finally, it should also be noted that there are comparisons between the CHABA and the ERCB in that they both elicit responses, attributions and emotional responses respectively, by referring to the broad unspecified concept of challenging behaviour. Thus, it is reasonable to suggest that if this method of assessment lacks construct and ecological validity when assessing attributions then this is also likely to be the case when assessing emotions.

4.3.5 Statistics

The power calculation reported in the method chapter stated that a sample size of 25 would detect large population effect sixes and a sample size of 70 would detect medium population effect sizes. Following analyses of the previous research it was considered that a sample size of 25 would indicate acceptable level of power. The number of participants in each group was 27 and so the target number was reached. The results of this study detailed some statistically significant interactions suggesting that the study was able to detect some medium effect sizes. However, whilst there are a couple of statistically significant interactions there were many more interactions that were not statistically significant. As detailed throughout the discussion, there may be a number of reasons for this, however, one potential reason may be that there were a number of more modest interactions which have not been detected since the analyses was under power.

The main statistical analyses comprised of a series of Mixed ANOVA's. It is considered that these were the most robust and appropriate analyses given the design of the study and nature of the data.

4.4 Further directions for future research

Ideas and areas for future research have been identified or alluded to throughout this discussion. This section will focus on drawing these ideas together. Firstly, investigating the different roles that staff undertake in settings where challenging behaviours occur and identifying whether these roles require different levels of

knowledge would helpfully contribute to the empirical evidence base and clinical field. Specifically, this would help appropriately direct different training events to different groups of staff thus ensuring that there is a match between level of knowledge and level of competence. For example, a staff nurse who is required to competently analyse, formulate and intervene in a client's challenging behaviour is likely to require a different level of training than another member of staff who implements interventions under supervision. In addition, further research into outcome measures which assess different levels of behavioural knowledge would make a helpful contribution to this field. The availability of such measures would enable consistent assessment across the research arena thus permitting direct comparison intervention effectiveness.

Secondly, and perhaps more importantly, given the difficulties that have been highlighted regarding outcome measures which assess attributions it is considered that the development of new measures which address the issues of ecological and construct validity would make a significant contribution to this field. It is considered that in order to enhance ecological validity there has to be a move away from the measures which elicit attributions by creating poorly specified and contrived contexts and towards a much clearer analysis of the real-life contexts and experiences of staff who work with people with learning disabilities who display challenging behaviour. This is consistent with Jahoda & Wanless (2005) findings that development within this field will only take place when we investigate the cognitions that take place within the interpersonal context of the challenging behaviour. It is considered that the semi-structured interview that is employed in this study, and the similar interview that was employed in the in the Wanless & Jahoda (2002) study, successfully elicit attributions with high levels of

ecological validity. However, there has yet to emerge a method of analyses which assesses the helpfulness of the attributions within the context of the evidence base.

Ideally, it would be against the background of developments in the knowledge and attribution empirical evidence base, as described above, that further research examining the impact of training and one-to-one supervision sessions on the knowledge, attributions and emotional reactions of staff who work with people with learning disabilities who display challenging behaviour would be most helpful.

4.5 Summary and conclusions

Early in this thesis it was reported that the presence of challenging behaviour in someone with a learning disability increases the likelihood that both the person exhibiting the behaviour and the staff who support the person will experience negative events. The current evidence base, centred on the principles of behaviour analysis, has demonstrated efficacy in reducing incidents of challenging behaviour. In order to successfully implement behavioural interventions it is essential that staff responses are understood. However, the evidence base reports that staff responses tend to be counter habilitative and are likely to shape and maintain challenging behaviour. A number of factors are considered to contribute to the counter-habilitative responses including: lack of knowledge; organisational factors; emotional responses and attributions that are contrary to the evidence base. It is considered that changing only one of these factors would not be sufficient to alter staff responses but that since the presence of these factors is likely to influence the others it is considered that any successful intervention would have to address a number of these factors.

The primary aim of this thesis was to investigate whether an intervention could be implemented which targets both lack of knowledge and challenges unhelpful attributions in such a way that any gains are maintained. On reviewing the literature it was considered that training and one-to-one sessions, based on attribution retraining, had the potential to meet this aim. The findings of this study would suggest that the combination of training and one-to-one support session increased the likelihood that the participants shift their attributions from an internal emotional model towards a behavioural model, albeit not necessarily accurately interpreting behavioural function. Further, these changes appeared to be maintained. Thus, on the one hand, it is suggested that interventions such as those implemented in this study could make a positive contribution to the support of people with learning disabilities who display challenging behaviours. However, this the findings also suggest that altering behavioural knowledge may require a more clearer and focussed teaching intervention, that is specific to the staff members role. Pragmatically, there is likely to be a correlation between the level of knowledge required and time spent 'training', be that through formal training events or supervision. There is unlikely to be quick way of developing the level of competence required for such complex interventions. This thesis also highlighted that the majority of the current evidence-base regarding staff attributions, including this research, has significant limitations since the measures used to assess attributions have poor ecological and construct validity. These limitations impact on the generalisability of most attributional research within this field. It is considered crucial that future research develops outcome measures which overcome these limitations.

One of the overarching themes of this thesis is that improving behavioural knowledge and understanding and challenging unhelpful attributions requires a much more specific and detailed approach. Future research should move away from a broad strokes approach, both in terms of assessing and altering attributions and knowledge, and instead investigate the interpersonal complexities that occur when supporting people with learning disabilities who display challenging behaviour. It is considered that only when the rich detail is investigated will the issues of validity be addressed and both those who display challenging behaviour and those who support them will be better supported.

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List of Appendices

APPENDIX I

Summary of the Major Papers Reviewed

Summary and critique of the major papers reviewed in the study

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Ager & O'May (2001). Issues in the definition of "best practice" for staff delivery of interventions	Systematic Literature Review	N/A	Key paper considering the evidence base for "best practice" for intervention in people with learning disability who display challenging behaviour.	Broad review of current evidence base summarising key findings.	Not as broad as other meta-analyses.
Allen et al (1997). Changing care staff approaches to the prevention and management of aggressive behaviour in a residential treatment unit for persons with mental retardation and challenging behaviour.	Repeated comparison design	Information on the behavioural incidents of 7 clients who were inpatients in a specialist behavioural treatment unit.	Considers whether training impacts on staffs' actual behavioural responses	Ecologically valid; evaluates whether training impacts on actual behaviour.	Poor data recording, especially during baseline period; lack of control group; limited sample size.
Allen (1999). Mediator analysis: an overview of recent research on carers supporting people with learning disability and challenging behaviour.	Review	N/A	Reviewed the current impact of staff attitudes, beliefs and emotional states as setting conditions for interventions.	Broad review of current evidence base summarising key findings.	Not systematic.
Bailey et al (2006). The response to challenging behaviour by care staff: emotional responses, attributions of cause and observations of practice.	Experimental - within group design	27 care staff who worked within day services for people with learning disabilities.	Investigated the application of Weiner's model to 'real' service users challenging behaviour and to observe their responses to actual challenging behaviours displayed by clients.	Used 'real' clients and behavioural observations.	Use of 'exploratory' analysis with high probability of finding significance when there were none.
Berryman et al (1994). The effects of training in nonaversive behaviour management on the attitudes and understanding of direct care staff.	Experimental - repeated measures design	83 staff from both private and state run organisations.	Evaluated the effects of two types of training (one covering traditional behavioural approaches and one focussed on a nonaversive approach) on staff knowledge and attitudes.	Compares different training approaches and the impact that these have on attitudes and understanding.	Training was brief (1-day); no measure of actual changes in staff responses; no power analysis;
Bronley & Emerson (1995). Beliefs and emotional reactions of care staff working with people with challenging behaviour.	Survey	70 clients were identified as displaying challenging behaviour. For each clients a staff member reported on the emotional reactions of the staff group.	Presented information on reported emotional responses of staff following incidents of challenging behaviour and their causal attributions regarding the challenging behaviour.	Evaluates the responses of staff who work with all known individuals with a learning disability and displays challenging behaviour within a single metropolitan borough.	Speculative group responses were probed instead of individual staff responses.
Cullen (1999). A review of some important issues in research and services for people with learning disabilities and challenging behaviour.	Review	N/A	Reviewed issues such as: the current evidence base; the role of staff and service configuration.	Broad review of some papers and theories.	Explicitly reported as the author's personal interpretations; not systematic.

Summary and critique of the major papers reviewed in the study (cont.)

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Dagnan & Cairns (2005). Staff judgements of responsibility for the challenging behaviour of adults with intellectual disabilities.	Experimental- within group design	62 direct care staff from healthcare setting, social services department and the independent sector.	Explored judgements of responsibility for the development of challenging behaviour alongside the attributions of controllability, stability and internality.	Outcome measures easily administered and analysed.	Case vignettes; assessment of attributional dimensions using likert scales.
Dagnan et al (1998). Care staff responses to people with learning disabilities and challenging behaviour: a cognitive-emotional analysis.	Experimental - between group design	40 direct care staff who worked with people with learning disabilities; 20 worked with people who displayed challenging behaviour, 20 did not.	Explored the attributions of those who work with people with learning disabilities versus those who did not; also, adds to the research base regarding the applicability of Weiner's model.	Outcome measures easily administered and analysed.	Case vignettes; assessment of attributional dimensions using likert scales
Didden et al (1997). Meta-analytic study on treatment effectiveness for problem behaviours with individuals who have mental retardation.	Meta-analysis	N/A	Evaluated 482 empirical studies on treatment effectiveness for challenging behaviours displayed by people with learning disabilities.	Systematic meta-analyses summarising key findings; included papers published in some British journals,	Did not evaluate the quality of methodology in the papers included in review; potential reporting bias since most papers are published only if they report clinically significant effects; the majority of studies refer to individuals who function at the profound and severe level of impairment and individuals were not randomly assigned to treatment conditions.
Dowey et al (2007). Can brief workshop interventions change care staff understanding of challenging behaviour.	Experimental - repeated measures design	54 staff from community based services for individuals with a learning disability	Explored whether a 1-day training workshop could have an effect on staff causal explanations.	Outcome measures easily administered and analysed.	Lack of control group; no follow-up;
Forsterling (1985). Attributional Retraining: A Review.	Review Paper	N/A	Reviewed 15 attributional training studies; discussed theoretical concepts, methodology and interventions techniques.	Evaluated studies which focus on attributional training and discussed different methodologies; discussed attributional training within the context of different theoretical models.	The studies included are dominated by those which investigate attributions regarding personal failure and lack of effort.
Grey et al (2002). Staff attributions about the causes of challenging behaviours.	Experimental - repeated measures design	34 staff working in services for people with learning disabilities.	Explored attributional change as a function of attending an extended training course.	Good ecological validity since it assessed attributions towards actual incidents of challenging behaviours.	No follow-up after training; no assessment of whether changes in training impacts on actual staff performance; no power analysis.

Summary and critique of the major papers reviewed in the study (cont.)

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Hastings (1995). Understanding factors that influence staff responses to challenging behaviours: an exploratory interview study.	Exploratory study using content analysis	19 direct care staff	Explored staff beliefs about challenging behaviour and their working environment.	Semi-structured interview	
Hastings (1997). Staff beliefs about challenging behaviours of children and adults with mental retardation.	Review	N/A	Reviewed research addressing three domains of staff beliefs: definitions of challenging behaviour, causal attributions, and beliefs about appropriate intervention.	Broad analysis of empirical literature with ideas on how future literature could develop the current evidence base are described in detail.	Not a systematic review.
Hastings (2002). Do challenging behaviours affect staff psychological well-being? Issues of causality and mechanism.	Review	N/A	Critically reviews research which investigates whether there is a causal relationship between working with people who display challenging behaviour and staff experience of stress.	Broad analysis and evaluation of relevant literature.	Not a systematic review.
Hastings & Brown (2002). Behavioural knowledge, causal beliefs and self-efficacy as predictors of special educators' emotional reactions to challenging behaviours.	Survey	74 staff for participants working in schools for children with learning disabilities.	Explored whether behavioural knowledge, causal beliefs of self-efficacy influenced staff' emotional reactions to incidents of challenging behaviour.	Outcome measures easily administered and analysed; good sample size.	Only included those who worked with children with learning disabilities so potential difficulty in generalising findings; no measure of exposure to challenging behaviour was taken.
Hastings & Remington (1994a). Staff behaviour and its implications for people with learning disabilities and challenging behaviour.	Review	N/A	Reviewed the research literature on the behaviour of staff and their interactions with people with learning disabilities who display challenging behaviour.	Broad analysis of empirical literature with ideas on areas where future research and practice could develop.	Not a systematic review.
Hastings & Remington (1994b). Rules of engagement: toward an analysis of staff responses to challenging behaviour.	Conceptual/ Theoretical	N/A	Considered a new way of interpreting staff responses to challenging behaviour within the framework of 'rule-governed' behaviour.	Clear description of 'new' model for understanding staff responses to challenging behaviour.	Speculative; limited description of how this might be evaluated in empirical research.
Hastings et al (2003). Determinants of negative emotional reactions and causal beliefs about self-injurious behaviour: an experimental study.	Experimental – between group design	60 direct care staff working in a private residential service for children and adolescents with challenging behaviour and 60 university students.	Explored factors affecting caregivers' emotional and cognitive responses including staff experience; severity of behaviour and contingencies that elicit behaviour.	Use of video depicting challenging behaviour; outcome measures easily administered and analysed.	Video contains actors; demographic differences between groups; only included those who worked with children.

Summary and critique of the major papers reviewed in the study (cont.)

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Hill & Dagnan (2002). Helping, attributions, emotions and coping style in response to people with learning disabilities and challenging behaviour.	Survey	33 staff working with people with challenging behaviour who were participating in a training course working with people with challenging behaviour.	Examined the role of coping style, causal attributions and emotions in response to challenging behaviour in predicting the helping behaviour of staff who support people with learning disabilities.	Outcome measures easily administered and analysed; related findings to theoretical model.	Case vignettes used to elicit attributions; limited emotional reactions examined; did not discuss limitations.
Jahoda & Wanless (2005). Knowing you: the interpersonal perceptions of staff towards aggressive individuals with mild to moderate intellectual disabilities in situations of conflict	Exploratory study using content analysis.	36 staff working within day services for people with learning disabilities.	Explored staff perceptions of individuals who are frequently aggressive.	Semi-structured interview; used qualitative methodology; differentiated between vignettes and 'real' cases.	Retrospective account; bias in selection of 'cases' for discussion.
Kalsy et al (2007). Effects of training on controllability attributions of behavioural excesses and deficits shown by adults with down syndrome and dementia.	Repeated measures design	97 staff working in day services with adults with learning disabilities.	Explored attributional shift as a result of training.	Outcome measures easily administered and analysed.	Case vignettes used to elicit attributions; attributional dimensions assessed using Likert scales.
Lowe et al (2007). Staff training in positive behaviour support: impact on attitudes and knowledge.	Repeated measures design	275 staff working in specialist health care services attended the training; 122 completed all attributional outcomes measures; 205 completed all knowledge outcome measures.	Explored attributional and knowledge shift as a result of intensive training course.	Outcome measures easily administered and analysed; good sample size; one-year follow-up;.	No power analysis; no assessment of actual change in actual staff behaviour; no control group.
McGill et al (2007). Impact of extended education/training in positive behaviour support on staff knowledge, causal attributions and emotional responses.	Repeated measures design	Between 35-57 (dependent on outcome measure) of staff working with people with learning disabilities who display challenging behaviour	Explored shift in causal attributions, knowledge and emotional responses as a result of extended training.	Outcome measure easily administered and analysed.	No post training follow-up; no assessment of actual change in staff behaviour; no power analysis; no control group.
McKenzie et al (2002). The impact of training and staff attributions on staff practice in learning disability services	Repeated measures design	36 staff from non-statutory residential services for individuals with a learning disability	Examined the impact of a training course on attributions and practice.	Used attributional measure which specifically investigated attributional dimensions	Self-assessment knowledge measure; lack of control group.

Summary and critique of the major papers reviewed in the study (cont.)

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Noone et al (2006). Care staff attributions about challenging behaviours in adults with intellectual disabilities.	Report on two studies: 1) Descriptive study using content analysis; 2) Quasi-experimental design	1) 34 staff working with people with learning disabilities in a residential setting; 2) 23 staff working with people with learning disabilities who display aggressive behaviour in a residential setting.	1) Explored attributions about a client that they worked with; 2) Explored attributions about known clients who displayed challenging behaviours with different behavioural functions.	1) Good ecological validity with real clients; semi-structured interview which yielded more 'everyday' attributions; 2) Used known clients; manipulated some of the variables that may impact on attributions; data analyses easier.	1) More complex data analysis; no control over some of the variables that may effect attributions, restrospective account. 2) Used likert scales to assess different attributional dimensions.
Rose & Rose (2005). Staff in services for people with intellectual disabilities: the impact of stress on attributions of challenging behaviour.	Survey	107 staff working in community homes for people with learning disabilities.	Examined the impact of stress on attributions of challenging behaviour within Weiner's model of helping.	Outcome measures easily administered and analysed.	Case vignettes used to elicit attributions; limited emotional reactions examined; did not discuss limitations.
Sharrock et al. (1990). Explanations by professional care staff, optimism and helping behaviour: an application of attribution theory.	Survey	34 staff working within a medium secure unit for "mentally disordered offenders".	Examined the applicability of Weiner's model of helping behaviour in staff who support people with learning disabilities	Outcome measures easily administered and analysed; referred to 'real' clients challenging behaviour.	Limited sample size; limited range of emotions; helping behaviour measure has limited ecological validity.
Stanley & Standen. (2000). Carers' attributions for challenging behaviour.	Repeated measures design	50 care staff working in challenging behaviour day services.	Examined the application of Weiner's (1986)attributional model of helping to the care of clients presenting with challenging behaviour.	Outcome measures easily administered and analysed.	Case vignette methodology lack ecological validity; did not discuss limitations.
Tierney et al. (2007). Impact of a 3-day Training Course on Challenging Behaviour on Staff Cognitive and Emotional Responses	Repeated measures design	48 staff attending a 3-day course on understanding challenging behaviour.	Evaluate whether a typical challenging behaviour staff training course had an effect on staff feelings of efficacy, there negative emotional reactions to challenging behaviour, and their causal beliefs.	Outcome measures easily administered and analysed.	No immediate post-course data; measures lack ecological validity.
Scotti et al. (1991). A Meta-Analyses of Intervention Research with Problem Behavior: Treatment Validity and Standards of Practice.	Meta-Analyses	N/A	Evaluated 318 empirical studies on treatment effectiveness for challenging behaviours displayed by people with learning disabilities.	Systematic meta-analyses summarising key findings.	Did not evaluate the quality of methodology in the papers included in review; potential reporting bias since most papers are published only if they report clinically significant effects; the majority of studies refer to individuals who function at the profound and severe level of impairment and individuals were not randomly assigned to treatment conditions.

Summary and critique of the major papers reviewed in the study (cont.)

	Type of Paper	Sample Size	Why Relevant?	Strengths	Weaknesses
Wanless & Jahoda. (2002). Responses of staff towards people with mild to moderate intellectual disability who behave aggressively: a cognitive emotional analysis.	Survey	38 staff who worked with frequently aggressive clients.	Compared different methods of examining the cognitive and emotional responses to challenging behaviour; also, attempted to replicate previous studies which supported Weiner's model.	Used real incidents of challenging behaviour thus enhanced ecological validity.	Relied on retrospective self-report; measures vulnerable to socially desirable responses.

APPENDIX II

Definitions of Attribution Dimensions

Definitions of Attribution Dimensions

The internal-external dimension

A number of theorists have discussed this dimension, unfortunately each with their own definition. Munton and colleagues reported that the common theme in this dimension is that we equate internal attribution with 'personal causal factors, personality traits or dispositions' whereas if we can attribute an event to:

> 'some impersonal or situational factor, a feature of the environment, then we can rate it as external' (Munton et al., 1999, p48).

They report that this dimension involves looking at the causal element of attributions. For clarity they define this dimension as:

> "internal causes come from within the person. External causes are found in the person's surrounding environment" (Munton et al., 1999, p50).

The stable-unstable dimension

Munton and colleagues describe that this dimension predicts success in future tasks. They report that attributing success to stable causes will increase expectation of future success also attributing failure to unstable causes will increase expectation of future success. This dimension involves looking at the causal element of the attribution. Munton and colleagues define this dimension as whether the:

> "speaker believes that the cause is something unlikely to change in the future" then it is rated as stable whilst "if the event occurred because of some temporary state of affairs, the cause is rated unstable" (Munton et al., 1999, p58).

The controllable-uncontrollable dimension

Munton and colleagues report that this can involve any element of the attribution. If the speaker feels that the person exhibiting the behaviour could have had some influence over the link, cause or outcome then the attribution is rated as controllable. If not, it is rated as uncontrollable.

APPENDIX III

Summary of empirical research which has examined the applicability of Weiner's model of helping behaviour in staff who work with people with learning disabilities who display challenging behaviour.

Summary of Empirical Research which has examined the applicability of Weiner's Model in Staff who work with people with learning disabilities who display challenging behaviour

It is helpful to explicitly state that if Weiner's (1980; 1986) model was applicable to staff who work with people with learning disabilities who display challenging behaviour then the following correlations would be reported;

- Internality and anger (if the staff member attributes the behaviour as internal to the person the more likely they are to report feelings of anger);
- Internality and sympathy (if the staff member attributes the behaviour as external to the person the more likely they are to report felling of sympathy;
- Controllability and anger (if the staff member attributes that the person has control over their behaviour the more likely they are to feel anger);
- Controllability and sympathy (if the staff member attributes that the person does not have control over their behaviour the more likely they are to feel sympathy);
- Stability and anger (if the staff member attributes that the behaviour is stable then they are more likely to feel anger);
- Stability and sympathy (if the staff member attributes that the behaviour is unstable then they are more likely to feel sympathy);
- Anger and helping behaviour (if the person feels angry then they are less likely to respond by providing help);
- Sympathy and helping behaviour (if the person feels sympathy then they are more likely to respond by providing help).

	Brief description of study	Evidence which supports Weiner's model	Evidence which does not support Weiner's model
Bailey et al. (2006)	To investigate the application of Weiner's model to 'real' clients with learning disabilities and challenging behaviours and to observe the care staff's actual responses to challenging behaviours. It is worth noting that the affective response of sympathy was not investigated in this study.	They reported the following predicted correlations; • Internality and anger; • Controllability and anger; • Stability and anger; • Anger and helping behaviour; Found that negative emotion scores were associated with internal, stable and uncontrollable attributions.	They did not report the following predicted correlations; • Anger and helping behaviour;
Dagnan and Cairns (2005)	This study examines the importance of staff judgements of responsibility for challenging behaviour in predicting their emotional and intended helping responses.	They reported the following correlations; • Internality with anger; • Stability with sympathy; • Internality with sympathy; • Sympathy with helping behaviour.	They did not report the following predicted correlations; • Stability with anger; • Controllability with anger or sympathy; • Anger with helping behaviour
Dagnan and Weston (2006)	Examines the relationship between the topography of challenging behaviour, subsequent attributions and emotional responses with whether carers use physical interventions and their satisfaction with their intervention.	They reported the following correlations: • Controllability and anger;	The study did not report the following predicted correlations; • Internality and anger; • Internality and sympathy ; • Controllability and sympathy; • Stability and anger; • Stability and sympathy;

			• Anger and helping behaviour; • Sympathy and helping behaviour.
Dagnan et al. (1998)	Directly explored the application of Weiner's model to staff responses.	They reported the following correlations: • Controllability and anger; • Negative emotion and helping behaviour; • Sympathy and helping behaviour.	They did not report the following predicted correlations: • Internality and anger; • Internality and sympathy ; • Controllability and sympathy; • Stability and anger; • Stability and sympathy; • Sympathy (in this study under the broader description of 'positive emotion') and helping behaviour.
Hill & Dagnan (2002)	Examined the role of coping style, attributions and emotions in response to challenging behaviour in predicting the helping behaviour of support staff of people with learning disabilities.	They reported the following predicted correlations; • Internality and sympathy; • Stability and sympathy; • Sympathy and helping behaviour. It was reported that the attributions of internality and controllability independently predict effort in helping.	They did not report the following predicted correlations; • Internality and anger; • Controllability and anger; • Controllability and sympathy; • Stability and anger; • Anger and helping behaviour;
Jones & Hastings (2003)	Participants were asked about their responses to an incident of self-injurious behaviour where the function of the challenging behaviour was manipulated experimentally.	They reported the following predicted correlations for attention-maintained behaviours; • Internality and anger in escape maintained self-injurious behaviour only;	They did not report the following predicted correlations; • Internality and anger for attention maintained self-injurious behaviour; • Controllability and anger; • Stability and anger;

	It is worth noting that this study did not investigate 'sympathy' or 'helping behaviour' as dependent variables.		They found that when the self-injury was perceived as uncontrollable by external forces staff reported more positive affect and less negative affect. This is inconsistent with Weiner's model since increased negative affect is predicted to be associated with controllability attributions.
Stanley & Standen (2000)	To apply Weiner's attributional model to staff who work with clients with learning disabilities who display challenging behaviour.	They reported the following predicted correlations; • Controllability and anger; • Controllability and sympathy; • Sympathy and helping behaviour.	They did not report the following predicted correlations; • Internality and anger; • Internality and sympathy; • Stability and anger; • Stability and sympathy; • Anger and helping behaviour.
Wanless & Jahoda (2002)	To examine different methods of obtaining the cognitive and emotional responses of staff to challenging behaviour displayed by people with learning disabilities – to compare vignettes with their reactions to real incidents. Secondly, to attempt was made to replicate previous findings concerning the utility of Weiner's model of helping behaviour in explaining staff reactions to challenging behaviour.	They did not report any predicted correlations using vignette methodology; They reported the following predicted correlations using 'real incident' methodology; • Internality and anger; • Controllability and anger; • Controllability and sympathy.	They did not report the following predicted correlation using vignette methodology; • Internality and anger; • Internality and sympathy; • Controllability and anger; • Controllability and sympathy; • Stability and anger; • Stability and sympathy; • Sympathy and helping behaviour; • Anger and helping behaviour.

			They did not report the following predicted correlations using 'real incident' methodology; • Internality and sympathy; • Stability and anger; • Stability and sympathy; • Anger and helping behaviour; • Sympathy and helping behaviour. It is worth noting that they did find some correlations between affect and helping behaviour but these were in the opposite directions of that predicted by Weiner's model.

APPENDIX IV

A description of commonly used attribution measures.

A description of commonly used attribution measures:

- The Modified Attributional Style Questionnaire, (Peterson et al., 1982).
    - This assessment requires participants to consider an incident of challenging behaviour and then report their attributions by completing a series of seven point bipolar scales. Each bipolar scale rates a different attributional dimension. For example, controllability, stability, internality and globality.
    - This outcome measure was used by Dagnan et al. (1998); Dagnan & Cairns (2005); McGuiness & Dagnan (2001) and Hill & Dagnan (2002).

- The Challenging Behaviour Attribution Scale (CHABA), (Hastings, 1997).
    - This assessment was developed specifically to elicit the causal attributions made by staff as to the reasons why people with learning disabilities may display challenging behaviour. It is a 33 item self report instrument which is comprised of six subscales with statements which relate to six causal models (learned behaviour; biomedical; emotional; stimulation and physical environment) of challenging behaviours represented in the challenging behaviour literature.
    - This outcome measure was used by Smidt et al. (2007); Grey et al. (2002); Hastings & Brown (2002); Hastings et al. (2003); Lowe et al. (2007); Bailey et al. (2006) and Tierney et al. (2007).

- Causal Explanations Subscale of The Self-Injury Behavioural Understanding Questionnaire (Oliver et al., 1996).
    - The Self-Injury Behavioural Understanding Questionnaire (SIBUQ) was developed to measure the explanations and behavioural intentions of staff. It is a 27-item multiple choice format questionnaire developed to examine the adoption of a behavioural perspective within the context of self-injurious behaviour. It comprises three subscales, knowledge (of basic behavioural processes), action (knowledge of effective management of self-injury), and causal explanation (measuring the knowledge of the causes of self-injury). Many studies have used the causal explanation subscale to assess causal attributions.
- This outcome measure was used by Downey et al. (2007) and McGill et al. (2007).

- The Causal Attributions for Challenging Behaviour Scale (CACBS), (Berryman, 1991 as cited in Berryman, 1994).
    - In this measure each participant considers an incident of challenging behaviour followed by open-ended questions regarding why the participant thought the challenging behaviour occurred. These are then scored as belonging to categories which often appear in the literature. These include: social reinforcement; emotions; changing the task or environment; medical problems or pain; intrinsic reinforcement; communication; skill deficit; distant antecedent; low self-esteem; specific psychiatric disorder; drive state; escape or avoidance behaviour; and tangible reinforcement.

- This outcome measure was used by Berryman et al. (1994).

- The amended Leeds Attribution Coding System (LACS) (Brewin, MacCarthy, Duda & Vaughn, 1991).
  - In this measure each participant is interviewed, typically using a semi-structured format, to elicit attributions regarding an incident of challenging behaviour. Typically, each interview is then transcribed and subject to an attributional content analysis coding procedure. Each individual causal attribution is coded along attributional dimensions (e.g. stable/unstable; internal/external; controllable/uncontrollable).
  - This outcome measure was used by Noone et al. (2006).

APPENDIX V

Ethical Approval and Permission from the NHS

[redacted] NHS Board

[redacted]

NHS [redacted]

09 July 2007

Mrs J W Ferris

[redacted]

Dear Mrs Ferris

Full title of study: **The Effect of Training and One-to-One Supervision Sessions on the Knowledge, Attitudes and Emotional Reactions of Staff who Work with People with Learning Disabilities who display Challenging Behaviour**

REC reference number: **07/S1103/22**

Thank you for your letter of 5 June 2007, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered on behalf of the Committee by the Chair, [redacted]

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The Committee has not yet been notified of the outcome of any site-specific assessment (SSA) for the research site(s) taking part in this study. The favourable opinion does not therefore apply to any site at present. We will write to you again as soon as one Research Ethics Committee has notified the outcome of a SSA. In the meantime no study procedures should be initiated at sites requiring SSA.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Application	AB/96051/1	24 April 2007
Investigator CV	1	24 April 2007
Protocol	1	25 April 2007
Covering Letter	1 - with original submission	
Covering Letter	2 - with changes	05 June 2007
Summary/Synopsis	1	24 April 2007
Letter from Sponsor		24 April 2007
Questionnaire: The Amended Challenging Behaviour Questionnaire	The Amended Challenging Behaviour Questionnaire	

ESTOR IN PEOPLE

POSITIVE ABOUT DISABLED PEOPLE

Questionnaire: ERCB	Emotional Reactions to Challenging Behaviour	
Questionnaire: CHABA	The Challenging Behaviour Attributions Scale	
Participant Information Sheet	2	01 June 2007
Participant Consent Form	2	01 June 2007
Response to Request for Further Information		
C.V. of Dr Karen McKenzie	Supervisor's C.V.	

R&D approval
All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so. R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance
The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

Feedback on the application process
Now that you have completed the application process you are invited to give your view of the service you received from the National Research Ethics Service. If you wish to make your views known please use the feedback form available on the NRES website at:

https://www.nresform.org.uk/AppForm/Modules/Feedback/EthicalReview.aspx

We value your views and comments and will use them to inform the operational process and further improve our service.

REC Reference Number	**07/S1103/22**	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

[redacted]

Chair

[redacted]

Enclosure: Standard approval conditions

Copy to: Dr Marise Bucukoglu, University of Edinburgh

R&D office for [redacted]

University Hospitals Division

NHS

[redacted]

HAC/SM/approval/2e

20th July 2007

Mrs Jan W Ferris

[redacted]

Dear Mrs Ferris

MREC No:	**N/A**
CRF No:	**N/A**
LREC No:	**07/S1103/22**
R&D ID No:	**2007/P/PSY/12**
Title of Research	The effect of Training and one to one supervision sessions on the Knowledge, attitudes and emotional reactions of staff who work with people with learning disabilities who display challenging behaviour
Protocol No/Acronym:	**N/A**

The above project has undergone an assessment of risk to NHS [redacted] and review of resource and financial implications. I am satisfied that all the necessary arrangements have been set in place and that all Departments contributing to the project have been informed.

I note that this is a single centre study sponsored by **University of Edinburgh.**

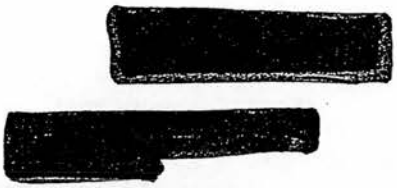
On behalf of the Chief Executive and Medical Director, I am happy to grant management approval from NHS [redacted] to allow the project to commence, subject to the approval of the appropriate Research Ethics Committee(s) having also been obtained. You should note that any substantial amendments must be notified to the relevant Research Ethics Committee and to R&D Management with approval being granted from both before the amendments are made.

Please note that under Section A, Q35, NHS [redacted] provides indemnity for negligence for NHS and Honorary clinical staff for research associated with their clinical duties. It is not empowered to provide non-negligent indemnity cover for patients. NHS [redacted] does not provide indemnity against negligence for healthy volunteer studies. This is the personal responsibility of both NHS and honorary employees and is usually arranged with a medical defence organisation or through the University of Edinburgh.

This letter of approval is your assurance that NHS [redacted] is satisfied with your study. As Chief Investigator or local Principal Investigator, you should be fully committed to your responsibilities

within the Research Governance Framework for Health and Community Care, an extract of which is attached to this letter.

Yours sincerely



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Research Governance Certificate	☐ (to be signed and returned)
NRR authorisation	☑ (to be signed and returned)
Tissue Policy (if applicable)	☐
MTA (if applicable)	☐ (to be signed and returned by the recipient of Tissue)

Copies *Administrators, Research Ethics Committee*

APPENDIX VI

Participant Information Sheet

Research Participant Information Sheet – Version 2, 1 June 2007

Project Title: The Effect of Training and One-to-One Supervision Sessions on the Knowledge, Attitudes and Emotional Reactions of Staff who Work with People with Learning Disabilities who display Challenging Behaviour.

Invitation
You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of the study?
A number of studies have shown that applied behavioural interventions are the most effective for reducing the incidence of challenging behaviour in people with learning disabilities. It has been demonstrated that training staff who work with those who display challenging behaviour in behavioural approaches improves staff knowledge and can impact on staff practice. It has also been demonstrated that how staff interpret the behaviour of those who display challenging behaviour can affect how the staff member will feel following an episode of challenging behaviour and also how they will react to that person. This study will attempt to improve staff knowledge about behavioural approaches to challenging behaviour as well as spending time to individually reflect on each staff members understanding of the causes of challenging behaviour.

Why have I been chosen?
This study is being carried out with staff who work in the some of the inpatient units for people with Learning Disabilities in the [redacted]. Either your charge nurse or unit manager has identified you as a potential participant.

Do I have to take part?
It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect you at all.

What will happen to me if I take part?
There are two groups in this study. If you agree to participate you will be randomly allocated to one of the groups.

Group 1
Participants in this group will be asked to attend a one-day workshop on challenging behaviour and four 30 minute one-to-one supervision sessions with the principal researcher. The supervision session will take place 2, 4, 6 and 8 weeks after attending the challenging behaviour workshop. The supervision sessions will be audio

recorded. In addition to this, participants in this group will be asked to complete four short questionnaires and a 15 minute interview with the principal researcher on four occasions; prior to the challenging behaviour workshop, on completion of the workshop, on completion of the individual supervision sessions and three months after the final supervision session.

Group 2
Participants in this group will be asked to complete four short questionnaires and a 15 minute interview with the principal researcher on four occasions over five months. If the results of the results show favourable outcomes then the challenging behaviour workshop and one-to-one supervision sessions will be offered to the participants in Group 2.

It has been agreed by the managers within the LD service that all of the participants' time will be during their working day. The workshop will take place in one of training suites in the [redacted]. All other sessions will take place in a quiet space within the unit, for example, the meeting room.

What do I do once I've made my decision?
An Assistant Psychologist will phone you a week after you have received this form and you can tell them if you wish to take part. If you agree to take part then I will phone you to introduce myself and to arrange an initial appointment.

Will my taking part in this study be kept confidential?
All information which is collected about you during the course of the research will be kept strictly confidential. Any information about you will have you name removed so that you cannot be recognised from it. Your line manager will be told that you will be taking part in this study. However, details of the outcome of the sessions will be kept entirely confidential. The only occasion where confidentiality may be breached is disclosure of evidence to suggest that there is a risk of harm, either to yourself or others.

What will happen to the results of the research study?
The results of the study will be reported in the Lead Researcher's doctoral thesis. The thesis is being written as part of training to become a Clinical Psychologist. Once it is completed a copy will be available from the University of Edinburgh library. People who take part in the study will not be identified in the thesis.

Who has reviewed the study?
The study has been reviewed and approved by the [redacted] Research Ethics Committee.

Contact for Further Information
If you have any questions, or if you would like further information, then please feel free to get in touch with me using the contact details below.

Many thanks once again for taking the time to read this information sheet.

Jan Ferris (Lead Researcher), Trainee Clinical Psychologist,
[redacted]

APPENDIX VII

Participant Consent Form

Version 2 – 1st June 2007

Consent Form for Participant

Title of Project: The Effect of Training and One-to-One Supervision Sessions on the Knowledge, Attitudes and Emotional Reactions of Staff who Work with people with Learning Disabilities who display Challenging Behaviour

Name of Researcher: Jan Ferris

		Please initial box
1	I confirm that I have read and understood the information sheet dated (1st June 2007, Version 2) for the study named above and I have had the opportunity to ask questions.	☐
2	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without my medical or legal rights being affected.	☐
3	I understand that my line manager will be told that I will be taking part in this study but that the detail of the sessions will be kept entirely confidential. The only occasion where confidentiality may be breached if I disclose evidence to suggest that there is a risk of harm, either to myself or others.	☐
4	I agree to take part in the above study	☐

Name of Participant	Date	Signature
Name of person taking consent (if different from researcher)	Date	Signature
Researcher	Date	Signature

APPENDIX VIII

Challenging Behaviour Workshop Outline

Challenging Behaviour Training Workshop Outline

	Topics Covered	Description
Session 1	Introduction to Challenging Behaviour	This was delivered in lecture format with information on definition, social context, epidemiology and prevalence. The content of this presentation was largely abstracted from Emerson (1998).
	Group Task 1	• The participants were split into three groups. Each group was presented with a case vignette describing an actual case that the principle researcher had worked with. For each case confidentiality was upheld by anonymising each individual and changing non-essential clinical details. For each vignette the behavioural function of the challenging behaviour detailed differed. • The participants were required to identify the challenging behaviour(s) in the vignette, explain why the behaviours were challenging, identify possible causes and any first thoughts on intervention. • The purpose of this task was to introduce each group to the case vignette that they would be discussing over the first three sessions and to elicit their initial views on the causes of challenging behaviour and appropriate intervention. The structure of this group task was similar to that in the Dowey et al (2007) paper.
	Challenging Behaviour: The Current Evidence Base	This was delivered in lecture format with information on models which have been investigated in the literature and the current evidence base. The structure of this lecture was influenced by Emerson (1998) chapter on challenging behaviour with additional material from the literature review detailed previously.
Session 2	Introduction to the Behaviour Model	This was delivered in lecture format with information introducing behavioural analytic principles and core assumptions. This included the concepts of operant learning, positive and negative reinforcement and extinction. To facilitate understanding each concept was elucidated using examples from everyday life and from the work environment.
	The Importance of	This was delivered in both lecture format and by a small group exercise. The lecture included information on the

	Context	importance of understanding the immediate precursors to incidents of challenging behaviour and the setting events in which they occur. Information on typical immediate antecedents and setting events was given.
	Group Task 2	Following from the previous discussion the small group exercise required the participants to re-examine the case vignette and detail the setting events and antecedents.
Session 3	The Importance of Consequence	This was delivered in both lecture format and by a small group exercise. The lecture included information on the importance of understanding the immediate consequences to incidents of challenging behaviour. Information was given on broad categories of consequence in keeping with behavioural function. The concept of 'function' was discussed.
	Group Task 3	Following from the previous discussion the small group exercise required the participants to re-examine the case vignette and detail the consequences of the challenging behaviour and, from the information they had gathered, offer a functional hypothesis.
	Introduction to 'functional analysis'	This was delivered in lecture format. The lecture outlined the merits of functional analysis with reference to the previous discussion on evidence base, the core components of a functional analysis and functional assessment methods. Specific attention was drawn to the group tasks that they had completed thus far and highlighting that the group tasks had incorporated some of the basic tenets of functional assessment. Particular attention was drawn to the differences in outcome of group task 1 compared with group tasks 2 and 3.
Session 4	Introduction to Behavioural Intervention	This was delivered in lecture format. The lecture included information on broad intervention guidelines based on functional analysis results. This was informed by O'Reilly et al (2007).
	Group Task 4	Following from the previous discussion the small group exercise required the participants to detail potential interventions, based on their functional hypothesis.
	Behavioural Interventions in Context	This was delivered in lecture format. The behavioural model was placed within it's historical context, noting historical criticisms and the essential element of functional analysis. The concept of punishment was discussed within the context of

	Positive Behaviour Support	NHS policy. This was delivered in lecture format. The Positive Behaviour Support model was very briefly introduced with explicit focus of the essential component of the behavioural model and functional analysis.
	Introduction to Attributions	This was delivered in lecture format. Attributions were defined and their dimensions discussed within the context of the 'fundamental attribution error' , an everyday example of this was described by the principle researcher. The relevance of this to working with people with learning disabilities who display challenging behaviours was discussed within the wider group discussion. The current evidence base was summarised emphasising the role that attributions potentially play in staff emotional and behavioural responses.

APPENDIX IX

Challenging Behaviour Workshop Powerpoint Presentation

Challenging Behaviour Workshop

Jan Ferris

Welcome

- House keeping
- Plan for the day:

0915 – 1045 – Introduction to Challenging Behaviour & Review of the Evidence Base
1045 – 1100 – Coffee
1100 – 1230 – Introduction to Behaviour Analysis
1230 – 1315 – Lunch
1330 – 1500 – More Behaviour Analysis
1500 – 1515 – Coffee
1530 – 1615 – Attributions
1615 – 1630 – Summary & Close

What is Challenging Behaviour?

- Case vignettes
- Working in pairs can you read over the case vignette that you have been given and identify –
  - Identify the challenging behaviour(s)?
  - Explain why the behaviour were challenging?
  - Identify possible causes?

What is challenging behaviour?

- Definitions

"Challenging behaviour refers to culturally abnormal behaviour of such 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 the use of, or result in the person being denied access to, ordinary community facilities"

(Emerson, 1995)

- There important aspects to this definition:
  - Challenging behaviours are defined by their impact;
  - Challenging behaviour is a social construction
  - Challenging behaviour have wide-ranging personal and social consequences

Epidemiology of challenging behaviours

- Between 10% and 15% of people who are supported by learning disability services show behaviours which are considered to cause a serious management problem, or would do were it not for the implementation of specific controlling measures.
- Physical aggression, self-injury and destructiveness towards the environment tend to be the most commonly reported specific forms of challenging behaviour.
- Bates & Wehman (1977) describe:
  - Physical aggression such as biting, choking, or hitting others;
  - Self-injury such as head banging, self-biting, scratching or gouging, and voluntary falling;
  - Destructiveness towards the environment such as throwing objects
- Challenging behaviours are more common among:
  - Boys and men
  - People between the ages of 15 and 35 years
  - People with severe learning disabilities
  - People with additional sensory impairments, reduced mobility or specific impairment of communication

Prevalence of specific forms of challenging behaviour among 393 people with learning disabilities (Emerson et al, 1997)

Behaviour	Shown by (%)	Behaviour	Shown by (%)
Non-compliance	54	Pulling others' hair	15
Hitting others	46	Biting self	14
Outbursts of temper	45	Pinching others	14
Repetitive 'pestering'	39	Hitting own body with hand	12
Destructive Behaviours	35	Biting others	12
Verbal Aggression	34	Scratching self	9
Repetitive Screaming	28	Stripping in public	9
Over-activity	27	Hitting own body with objects	8
Hitting others with objects	24	Smearing faeces	7
Meanness or cruelty	22	Eating inedible objects	7
Running away	21	Pinching self	7
Inappropriate sexual behaviour	18	Stuffing fingers in body openings	5
Hitting own head with hand	17	Excessive drinking4	
Hitting own head against objects	17	Pulling own hair	4
Scratching others	16	Regurgitating food	4
Theft	16	Teeth grinding	3

Models to help us understand

- Neurobiological Models
  - Dopamine
  - Serotonin
  - B-Endorphin
- Applied Behaviour Analysis
  - Learning Theory
    - Contextual Control
    - Functional Relationships

The Evidence Base

- Neurobiological Models
  - In spite of extensive efforts, no rational pharmacological treatment for aggression and SIB has yet been found for people with LD
- Applied Behaviour Analysis
  - ABA has produced the most influential and clinically significant body of research in the area of learning disability (Sigafoos et al, 2003).
  - Scotti et al (1991) and Didden, Duker and Korzilius (1997) have reported on major meta-analytical reviews of treatment of challenging behaviour.
  - Didden et al. (1997) – involving consideration of 482 studies – clearly represents the most comprehensive analysis in the field and its three principal conclusions represents the most comprehensive analysis in the field. That is;:
    - Addressing socially disruptive and internally maladaptive behaviour;
    - Involving manipulation of response contingencies;
    - Based upon prior functional analysis of behaviour

The Evidence Base

- Didden et al. (1997)– involving consideration of 482 studies – clearly represents the most comprehensive analysis in the field and its three principal conclusions represents the most comprehensive analysis in the field. That is;
  - Addressing socially disruptive and internally maladaptive behaviour;
  - Involving manipulation of response contingencies;
  - Based upon prior functional analysis of behaviour
- Consistent with this, Carr etal (2007) reported that
  - Challenging behaviour, for the most part, is controlled by the consequences that it produces. (Iwata et al. 1994)
  - Other variables such as permanent biological conditions (e.g. genetic syndromes), transient physical or health conditions (e.g. menses, sleep difficulties, illness) or environmental conditions (e.g. general quality of services provided to the person) can influence the severity and type of challenging behaviour

Behavioural Model

- The basics!
  - All behaviour is learned
  - The focus is on current behaviour and specific behaviour interactions. Through these interactions people learn how their behaviour affects the environment.
  - Challenging behaviours may be considered to be learnt and maintained in one of two ways:
    - Positive reinforcement – is an event that increases the probability that the response that directly precedes it will occur again
    - Negative reinforcement – the occurrence of a behaviour is followed by the removal of an aversive stimulus or a decrease in the intensity of a stimulus, and results in a strengthening of the behaviour
  - From this perspective, there is a function to challenging behaviours - in some way it meets the persons needs.
  - This has led several researchers to propose that challenging behaviour might best be conceptualised as a form of communication.
  - The goal of behavioural intervention is to change (either increase or decrease) one or more specific behaviours.

Behavioural Model

- To ascertain what function the challenging behaviour meets for the person, we need to know:
  - The context in which it occurs:
    - immediate precursors to the incident but also,
    - in terms of 'the bigger picture', setting events which inform us
  - The consequences that follow the behaviour

Behavioural Model

- Research indicates that there is a limited number of 'functions' that challenging behaviours serves:
  - **Social Attention** – some of the earliest work in this area suggested that problem behaviour in some individuals may be shaped and maintained by social attention as a consequence, that is, some challenging behaviour may be positively reinforced by the attention of others.
  - **Tangible Consequences** – in addition to social attention, tangible consequences may also serve as positive reinforcement for these behaviours.
  - **Escape** – some individuals may engage in these behaviours to remove themselves from aversive situations (negative reinforcement). Some people may learn that if they want demands or other unpleasant situations to end then engaging in problem behaviour will serve this purpose.
  - **Sensory Feedback** – the sensory consequences provided by some problem behaviours (e.g. auditory, visual, tactile) have been suggested as possibly involved in their maintenance.

Context Analysis

- *Possible influences on challenging behaviours – personal factors*
- The characteristics 'inside' people can make them more or less likely to show challenging behaviour
- Communication Difficulties
  - Not being able to use or understand language
  - Difficulties with expression – verbal, non-verbal signing
  - Difficulties understanding others, e.g. because of deafness
- Personality and Character
  - Being introvert or extrovert
  - Neurotic or stable
  - Impulsiveness
  - Sense of humour
  - Frustration tolerance (ability to tolerate frustration)
  - Mood Changes
  - Coping style (ability to cope with own emotions)
  - Hormonal influences (e.g. menstruation, menopause)

Context Analysis Personal Factors

- Sense of self
  - Degree of self-knowledge
  - Self-esteem
  - Self-image
  - Need for attention
  - Need to avoid demands
- Psychological problems as a result of abuse, loss or bereavement
  - Sexual abuse
  - Physical abuse
  - Racial abuse
  - Effects of loss or bereavement
- Biological and medical influences
  - Genetic influences (e.g. characteristics of a syndrome)
  - Addictions – smoking, alcohol, drugs
  - Brain damage
  - Epilepsy
  - Sensory impairment (ie vision and hearing)
  - Influence of medication
  - Sexual motivation

Context Analysis Environmental Factors

- *Possible influences on challenging behaviour – environmental factors*
- While a person with LD brings many personal characteristics to any situation, it is the way these interact with the environment – both social and physical – that will determine whether his or her behaviour is constructive or challenging.
- Controlling and unresponsive environment
  - Being ignores/not responded to
  - Subject to inappropriate behaviour of others
  - No incentive to act positively
  - Lack of opportunity to make choices
  - Lack of involvement in decision-making
  - Lack of privacy
  - Over-emphasis on compliance and conformity
  - Confrontational approach by staff
  - Use of punishment by staff
  - Staff are over-intrusive and rigid

Context Analysis Environmental Factors

- Quality of physical environment
  - Lighting
  - Acoustics
  - Noise level
  - Space available
  - Heating and humidity
  - Colours
- Unpredictable occurences
  - Being startled
  - Lack of understanding about what is happening
  - Unpredictable behaviour of others
- Communication difficulties with environment
  - Lack of access to communication at own level of ability
  - Lack of communication with staff and others
  - Poor communication between staff

Context Analysis Environmental Factors

- Cultural features
  - Cultural norms and expectations differ betweerfamily and service
  - Family cultural expectations different from individuals
- Quality of the social environment
  - Social environment too boring, unstimulating
  - Environment is too complex, with too many people
- Being places in a position of powerlessness
  - Not being able to reach goals
  - Use of punishment
  - Lack of choice over own actions and decisions
  - Staff stress conformity and compliance
  - Staff rely on confrontation and win/lose situations

Functional Analysis

- Functional analysis is qualitatively different from an assessment that focuses on problem behaviour solely as residing within an individual.
- Functional assessment generally refers to a collection of procedures that are used to assess the relationship between the physiological and environmental events and problem behaviours.

ABC Analysis

- Contextual Control - Antecedents & Setting Events
- Setting Events are the conditions that precede and surround behaviour.
- Consequence Analysis

Functional Assessment Methods

- Behavioural Interview
- Behaviour Rating Scales
- Direct Observation
- Analogue Assessment

Behavioural Intervention

- People who display challenging behaviour should be helped to develop alternative approaches to controlling their environments, such environments should avoid circumstances which, unnecessarily evoke challenging behaviour and challenging behaviour should not be reinforced (McGill, 1999)

Behavioural Intervention

- 'Get a life' (Risley, 1996)

Intervention for Attention-Maintained Challenging Behaviour

- There are four main strategies for reducing attention-motivated challenging behaviour. It is preferable to combine as many of these strategies as possible when conducting an intervention:
  1) Increase the overall level of attention
  2) Provide attention for appropriate behaviour
  3) Extinction
  4) Teach attention-gaining skills

Intervention for escape-maintained challenging behaviour

- Again, it is preferable to use as many of these strategies as possible when conducting an intervention (Durand, 1990)
  1) Reinforce participation
  2) Escape extinction
  3) Reduce Task Difficulty
  4) Task preference
  5) Task duration

Punishment

Positive Behaviour Support

- Goals are 'applying behavioural principles in order to reduce problem behaviours and build appropriate behaviours that result in durable change and rich lifestyle' (Carr et al, 1999)
- Rather than ask the question 'what is the problem to be eliminated?', the question should be 'what skill would achieve the same ends for the person as the current behaviour achieves?'

Positive Behaviour Support

- PBS is defined in terms of three key elements:

1) Selection of interventions on the basis of functional assessments;
2) The nature of the intervention themselves;
3) The emphasis on social validation

The nature of the intervention

- Range of specific interventions
- LaVigna & Willis (1995) multi-element behaviour support plan:
  1) Environmental Accommodation
  2) Functionally Equivalent Skills Teaching
  3) Direct Interventions
  4) Reactive Strategies

Environmental Accommodations	Skills Teaching	Direct Interventions	Reactive Strategies
Activity Sampling Access to food and drink Access to relaxation Picture sequencing Adaptations to activity schedule Adaptations to instructional style Adaptations to duration and type of activities Choice-making protocol Transition protocol Adaptations to diet	Picture exchange communication Escape communication training Discrimination skills training Relaxation training Systematic Desensitization Conversation skills Self-help skills Community life skills Leisure skills training	Differential reinforcement of other behaviour Differential reinforcement of low rates of behaviour Differential reinforcement of alternative behaviours Instructional control Stimulus satiation	Active listening Feedback Redirection Limit Setting Facilitated relaxation Facilitated communication Facilitated problem solving Interpositioning Breakaway techniques Non-violent crisis intervention Debriefing

Attributions

Attribution Theory – The Basics

- Process where people search for causal attributions concerning events that provoke emotion along the dimensions of locus, stability and controllability (Heider, 1958).
- These attributions may influence expectations, behaviour and emotional responses, but may also be riddled with errors and biases (Heider, 1958).
- Errors, such as 'fundamental attribution error', occur when behaviour is attributed to internal states, such as personality variables, rather than environmental influences that may actually be producing the behaviour (Heider, 1958).

Attributions & Emotional Responses

- Both cognitive and behavioural models highlight the central role played by staff's emotional response in determining their behavioural reaction to the challenging behaviour.
- From a cognitive perspective, how staff view the behaviour is thought to drive this emotional and behavioural response. In particular, the causal explanations, or attributions, staff make regarding CB are seen as having a central role in predicting their emotional and behavioural responses.
- Weiner's model of helping behaviour –

Attribution (stability/ control)	Affective Reaction (anger/sympathy)	Help Giving

"Stability" – whether the cause of a behaviour is viewed as the same each time;
"Control" - whether the cause of a behaviour is seen as under the control of the person being observed.

Attributions
The research backs up the theory! (sort of)

- Research indicated that attributions about the challenging behaviour (Hastings, 1997) and emotional responses to challenging behaviour (Mitchell & Hastings, 1998) may influence the likelihood that staff use habilitative, evidence-based management strategies.

APPENDIX X

One-to-one Session Reliability Checklist

One-to-one Session Reliability Checklist
Interview:

Did the participant describe an incident of challenging behaviour that they have been involved in whilst at work?	Yes/No
Did the interviewer seek further clarification regarding what happened before and/or after the incident of challenging behaviour?	Yes/No
Did the interviewer elicit the causal attribution by asking the participant what they thought caused the challenging behaviour?	Yes/No
Did the participant provide a causal attribution (what they thought caused the challenging behaviour)?	Yes/No
If the causal attribution is consistent with the behavioural model: • Was this related back to the challenging behaviour workshop? • Was the function specified? • Was the participant supported to elicit evidence to support this attribution? • Was the attribution summarised reinforcing the attribution?	 Yes/No Yes/No Yes/No Yes/No
If the causal attribution is inconsistent with the behavioural model: • Was the behaviour related back to the challenging behaviour workshop? • Was the function(s) of behaviour discussed? • Was the participant supported to generate a behaviourally consistent attribution? If this did not occur did the interviewer explicitly hypothesis an alternative formulation that is consistent with the evidence base? • Was the participant supported to elicit evidence to support this attribution? • Was the attribution summarised reinforcing the attribution?	 Yes/No Yes/No Yes/No Yes/No

APPENDIX XI

One-to-One Session – Results of Reliability Checklist

Results of Reliability Checklist

Did the participant describe an incident of challenging behaviour that they have been involved in whilst at work?	100%
Did the interviewer seek further clarification regarding what happened before and/or after the incident of challenging behaviour?	91%
Did the interviewer elicit the causal attribution by asking the participant what they thought caused the challenging behaviour?	100%
Did the participant provide a causal attribution (what they thought caused the challenging behaviour)?	100%
If the causal attribution is consistent with the behavioural model: • Was this related back to the challenging behaviour workshop? • Was the function specified? • Was the participant supported to elicit evidence to support this attribution? • Was the attribution summarised reinforcing the attribution?	 82% 100% 100% 100%
If the causal attribution is inconsistent with the behavioural model: • Was the behaviour related back to the challenging behaviour workshop? • Was the function(s) of behaviour discussed? • Was the participant supported to generate a behaviourally consistent attribution? If this did not occur did the interviewer explicitly hypothesis an alternative formulation that is consistent with the evidence base? • Was the participant supported to elicit evidence to support this attribution? • Was the attribution summarised reinforcing the attribution?	 82% 100% 100% 100% 100%

APPENDIX XII

Results of SIBUQ from Oliver et al.'s (1996) sample

Results of SIBUQ from Oliver et al.'s (1996) sample

	Group						
	A. Contact (n=42)	B. Hospital Staff (n=28)	C. Behavioural Unit (n=17)	D. Behaviourally Trained (n=12)	F (3,95)	Sig.	Tukey's HSD
Total Score Behavioural & Correct	9.48 (4.72)	14.21 (4.20)	18.18 (5.32)	22.50 (2.94)	33.06	<0.0001	A<B C D B< C D
Subscale Scores Causal Explanation							
Behavioural & Correct	3.00 (2.30)	5.04 (2.36)	7.05 (2.46)	8.67 (1.72)	25.46	<0.0001	A<B C D B< C D
Behavioural & Incorrect	1.55 (1.33)	2.03 (1.64)	2.29 (1.31)	1.08 (1.00)	2.46	n.s.	
Internal Organic	1.31 (1.49)	0.57 (1.14)	0.35 (1.00)	0.33 (0.49)	4.02	<0.01	A>B C D
Internal Emotional	4.34 (2.20)	3.36 (2.09)	1.29 (1.31)	0.58 (0.90)	17.77	<0.0001	A B > C D
Knowledge	4.08 (1.93)	6.96 (2.00)	7.29 (2.31)	10.17 (0.94)	26.64	<0.0001	A < B C D B C < D

Oliver et al's (1996) Description of Each Group:

"Contact Group: this group comprised people who had close daily contact with on of 5 children or adults with intellectual disabilities who showed severe SIB".

"Hospital Staff Group: this group comprised hospital staff working on wards with no specified intervention perspective and with no specified level of contact with SIB, over and above which would be expected by chance".

"Behavioural unit group: this group comprised staff working on a unit for children with challenging behaviour which primarily adopted a behaviour approach".

"Behaviourally trained group: this comprised individuals who had received behavioural training".

Oliver et al. (1996), page 231.

APPENDIX XIII

An example of a transcribed interview and the codes ascribed to the causal explanations.

Interview Transcript with C7 OM3

R: Interview with C7 the *date* at eight thirty. C7 can you describe an incident of challenging behaviour you have witnessed or been involved in whilst at work?
P: em yeah there was one when we came in on night shift last Wednesday
R: hmm hm
P: after the admission of a client of our old clients
R: hmm hm
P: who had been who'd had been bothered within his community placement he had been running apparently running up and down in the street and escaped and generally doing damage to various people and
R: hmm hm
P: generally up.. upsetting people and so was admitted on a short term treatment order to see if they can sort things out
R: yep and what was
P: and he
R: the challenging behaviour?
P: wait a minute, I'm just giving you you want the background
R: (laughs)
P: right and bas… the challenging behaviour although it might not seem all that much was basically grabbing a member of staff by the th.. well by the collar more than by the throat although it was difficult it was only about I reckon about two three four maybe four hours after he was admitted
R: hmm hm
P: em he alarms went he was in process of assaulting nursing eh nursing assistant *x*
R: hmm hm
P: em who'd asked him I think he'd actually asked him to be quiet to actually quieten down *(1)* because he was being he was making a lot of he was making a lot of noise he wasn't I know what it was it wasn't he was actually trying to intimidate a new a female
R: hmm hm
P: bank nurse *(2)*
R: hmm hm
P: and *Staff a* just sort of intervened and asked him not to do it so *Client a* turned his turned his aggression
R: hmm hm
P: towards *Staff a (3)*
R: okay so this occurred last week?
P: this occurred last week
R: who else was around at the time
P: em there was *Staff a* there was em I've forgotten her name eh is it *staff b*
R: was there a couple of staff?
P: there was a couple of staff there was two members there was basically two members of staff it occurred just as handover was
R: hmm hm
P: going on *(4)*
R: hmm hm
P: so basically the staff from handover came down
R: hmm hm

P: to sort of basically deal with *Client a* assist with *Client a*
R: yep yep and what happened after that?
P: well what happened after that was we took *Client a* using a figure of four hold and put him into seclusion at which point he waved at us whilst he was inside seclusion he went hello, how are you and then two seconds later just as we thought oh should we have put him there he started in a in a *Client a* ilk of 'ya fucking bastard' *(5)*
R: huh uh
P: ya various other pieces of things that *Client a* has been known to use in the past insulting various people's sort of personalities there sexuality there religion there whatever banging stuff *(6)*
R: why do you think that behaviour occurred?
P: because he was being asked to do something *(7)* he was basically somebody had told him not to do something *(8)*
R: any other reasons why it might have occurred?
P: the fact he had just been admitted back here from his community placement *(9)*
R: that's great, thank you very much C7

(1) External/Uncontrollable/Unstable
(2) Internal/Controllable/Unstable
(3) External/Uncontrollable/Unstable
(4) External/Controllable/Unstable
(5) Internal/Controllable/Stable
(6) Internal/Controllable/Stable
(7) External/Uncontrollable/Unstable
(8) External/Uncontrollable/Unstable
(9) External/Uncontrollable/Unstable

APPENDIX XIV

Results of Kolmogorov-Smirnov Tests

Results of Kolmogorov-Smirnov Tests

	Time 1		Time 2		Time 3		Time 4	
	Control	Exp.	Control	Exp.	Control	Exp.	Control	Exp.
Modified Self Injury Understanding Questionnaire (SIBUQ)								
• Total Behavioural Correct	D(27)=.13, p>.05	D(27)=.14, p>.05	D(27)=.15, p>.05	D(27)=.12, p>.05	**D(27)=.17, p<.05**	D(27)=.14, p>.05	**D(27)=.25, p<.05**	**D(27)=.17, p<.05**
• Causal Explanation Subscale:								
o Behavioural Correct	D(27)=.14, p>.05	**D(27)=.22, p<.05**	D(27)=.13, p>.05	D(27)=.17, p>.05	**D(27)=.16, p<.05**	**D(27)=.16, p<.05**	**D(27)=.22, p<.05**	D(27)=.14, p>.05
o Behavioural Incorrect	**D(27)=.25, p<.05**	**D(27)=.28, p<.05**	**D(27)=.16, p<.05**	**D(27)=.19, p<.05**	**D(27)=.33, p<.05**	**D(27)=.29, p<.05**	**D(27)=.25, p<.05**	**D(27)=.22, p<.05**
o Internal Emotional	**D(27)=.20, p<.05**	D(27)=.12, p>.05	D(27)=.14, p>.05	D(27)=.10, p>.05	D(27)=.10, p>.05	D(27)=.14, p>.05	D(27)=.12, p>.05	**D(27)=.16, p<.05**
o Internal Organic	**D(27)=.29, p<.05**	**D(27)=.34, p<.05**	**D(27)=.41, p<.05**	**D(27)=.44, p<.05**	**D(27)=.30, p<.05**	**D(27)=.43, p<.05**	**D(27)=.35, p<.05**	**D(27)=.45, p<.05**
• Knowledge Subscale – total behavioural correct	D(27)=.12, p>.05	**D(27)=.21, p<.05**	D(27)=.13, p>.05	**D(27)=.17, p<.05**	**D(27)=.17, p<.05**	D(27)=.20, p>.05	D(27)=.15, p>.05	**D(27)=.19, p<.05**

	Time 1		Time 2		Time 3		Time 4	
	Control	Exp.	Control	Exp.	Control	Exp.	Control	Exp.
Challenging Behaviour Attribution Scale (CHABA)								
• Learned behaviour	D(27)=.12, p>.05	D(27)=.15, p>.05	D(27)=.10, p>.05	D(27)=.13, p>.05	**D(27)=.18, p<.05**	D(27)=.12, p>.05	D(27)=.10, p>.05	**D(27)=.18, p<.05**
• Biomedical	**D(27)=.17, p<.05**	**D(27)=.21, p<.05**	D(27)=.14, p>.05	D(27)=.15, p>.05	D(27)=.12, p>.05	D(27)=.14, p>.05	D(27)=.15, p>.05	D(27)=.12, p>.05
• Emotional	D(27)=.10, p>.05	D(27)=.09, p>.05	**D(27)=.18, p<.05**	D(27)=.13, p>.05	D(27)=.09, p>.05	D(27)=.11, p>.05	**D(27)=.21, p<.05**	D(27)=.13, p>.05
• Stimulation	D(27)=.15, p>.05	D(27)=.17, p>.05	D(27)=.11, p>.05	D(27)=.12, p>.05	D(27)=.13, p>.05	D(27)=.15, p>.05	**D(27)=.18, p<.05**	**D(27)=.17, p<.05**
• Physical Environment	D(27)=.14, p>.05	D(27)=.11, p>.05	D(27)=.10, p>.05	D(27)=.14, p>.05	D(27)=.08, p>.05	D(27)=.08, p>.05	D(27)=.14, p>.05	D(27)=.12, p>.05
Emotional Reactions to Challenging Behaviour Scale (ERCB)								
• Depression/Anger	D(27)=.09, p>.05	D(27)=.13, p>.05	D(27)=.14, p>.05	**D(27)=.19, p<.05**	D(27)=.16, p>.05	**D(27)=.21, p<.05**	**D(27)=.18, p<.05**	**D(27)=.17, p<.05**
• Fear Anxiety	D(27)=.15, p>.05	**D(27)=.19, p<.05**	**D(27)=.22, p<.05**	**D(27)=.22, p<.05**	**D(27)=.19, p<.05**	**D(27)=.21, p<.05**	**D(27)=.18, p<.05**	**D(27)=.20, p<.05**

	Time 1		Time 2		Time 3		Time 4	
	Control	**Exp.**	**Control**	**Exp.**	**Control**	**Exp.**	**Control**	**Exp.**
Leeds Attributional Coding System (LACS)								
• **Internality**	D(27)=.15, p>.05	D(27)=.12, p>.05	D(27)=.15, p>.05	D(27)=.11, p>.05	D(27)=.13, p>.05	D(27)=.10, p>.05	**D(27)=.20, p<.05**	D(27)=.11, p>.05
• **Stability**	D(27)=.16, p>.05	**D(27)=.17, p<.05**	**D(27)=.17, p<.05**	**D(27)=.30, p<.05**	**D(27)=.26, p<.05**	**D(27)=.25, p<.05**	**D(27)=.20, p<.05**	D(27)=.14, p>.05
• **Controllability**	D(27)=.14, p>.05	D(27)=.12, p>.05	**D(27)=.18, p<.05**	**D(27)=.18, p<.05**	D(27)=.13, p>.05	**D(27)=.16, p<.05**	D(27)=.15, p>.05	**D(27)=.19, p<.05**