Doctor of Clinical Psychology Degree

This volume was submitted in partial fulfillment of the degree of Doctor of Clinical Psychology

"Psychological Treatment of Reported Sleep Difficulties in Intellectually Disabled Adults Using a Multiple Baseline Design."

and

Research Portfolio.

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Major Research Project Literature Review

"Psychological Treatment of Reported Sleep Difficulties in Intellectually Disabled Adults - A Review."

Prepared in accordance with notes for contributors for: Journal of Intellectual Disability Research.

Abstract

The study of sleep problems and treatment of sleep problems has advanced in recent decades although many areas of the sleep process and function remain disputed. However, the advancement of sleep research is unparalleled in the area of intellectual disability. This paper reviews the available literature on sleep and treatment of sleep problems in people with an intellectual disability alongside relevant research using other client groups. Studies indicate that sleeping problems are commonplace in adults with an intellectual disability. Their disability appears to make the impact of sleeping problems more severe with a number of daytime correlates. However, preliminary evidence, backed by evidence from other client groups indicates that a psychological treatment of their sleeping problems is an efficacious one. The author suggests that this group may be particularly well served by targeting sleeping problems.

Introduction

In recent years there has been an increasing interest in sleep process and sleep problems. Accordingly, there is a substantial body of literature available regarding sleep processes such as the function of sleep and physiology of sleep (e.g. Horne, 1990). In addition, the study of sleep problems and of their treatment has advanced at a similar rate with the development of diagnostic and classification systems and treatment regimes for the insomnia's (e.g. Morin, 1993). These developments have primarily focused on the 'normal' adult and child population. This research interest and development has not been paralleled in the intellectually disabled population where

literature is sparse despite studies within the last six years (e.g. Espie and Wilson, 1993 or Piazza et al , 1998).

The study of sleep problems and their treatment are of particular relevance to intellectually disabled people for a number of reasons. The current emphasis on 'quality of life' advocates research in this area as quality of one's sleep is an important marker for optimal daytime functioning. As intellectually disabled people have problems with information processing, learning etc the improvements gained by improving sleep patterns are worthwhile. Additionally, long periods in bed, daytime napping and early settling times are a feature of institutional and other settings for intellectually disabled people (Espie and Tweedie, 1991). Such features hinder an optimal sleep-wake schedule for these people with subsequent deficits in information processing, learning, motivation and mood.

The aim of this paper is to review the available literature relating to sleep problems and their treatment. The literature relating to intellectually disabled adults and children will be reviewed alongside that relating to the 'normal' population taking note both of the similarities as well as the special considerations for intellectually disabled people. Initially, classifications of sleep disorders will be reviewed, followed by prevalence rates of sleep problems and other sleep studies in intellectually disabled people and finally, a review of studies of treatment of sleeping problems.

Classification of Insomnia

The classification of sleep disorders is not a recent phenomenon (e.g. Rechtschaffen and Kales, 1968). Current diagnostic and classification systems such as The International Classification of Sleep Disorders-Revised, or Diagnostic and Statistical Manual of Mental Disorders (DSM IV) separate primary insomnia from other categories of sleep disturbance such as the parasomnias, hypersomnia and circadian rhythm sleep disorder. Primary insomnia is considered to be "difficulty in initiating or maintaining sleep, or of nonrestorative sleep" (DSM IV). The parasomnias include sleep walking and sleep terrors.

The insomnia's are further subdivided according to the Disorders of Initiating and Maintaining Sleep (DIMS) classification whereby the term insomnia is used to describe initial , maintenance or terminal disorders according to which part of the sleep process is affected. At the next level of this classification the disorders are grouped into primary, secondary or specific disorders. Primary insomnia is considered to be a disorder in isolation with no other aetiology (e.g. mental illness). Secondary insomnia can be seen as a symptom of a medical or mental health problem or of drug/alcohol use. Finally, the specific insomnia category lists a number of disorders that cannot be accommodated in other categories and includes disorders such as sleep apnea, nocturnal myoclonus and childhood onset insomnia.

Prevalence of Sleep Problems

A number of studies have examined the prevalence of sleep problems among adults, children and both adults and children with an intellectual disability. The literature regarding the prevalence of sleep problems in the 'normal' adult population indicates some variability according to the stringency of criteria used in the study. For example, rates of 1.7% for women and 1.4% for men were found in a Swedish study using stringent criteria (Liljenberg et al, 1988). Ohayon's (1997) study reported prevalence rates of insomnia according to DSM-IV criteria. In a sample of 5622 subjects a total of 18.6% reported insomnia complaints with 12.7% reporting insomnia for a period of over 1 month with daytime repercussions. Within the group 5.6% were given sleep disorder diagnoses, mostly secondary to a mental disorder, and 1.3% were diagnosed with primary insomnia. Broman et al (1996) reported 12% of their sample fulfilled criteria for 'persistent insufficient sleep (PIS)'. Rates of sleeping problems amongst children are significantly higher than in adults. Quine (1997) estimates that 20% of 2 year olds and 5% of 8 year olds wake regularly throughout the night. In addition, up to 20% of 1 - 2 year olds and 12% of 8 year olds experience settling problems.

Amongst intellectually disabled adult's literature examining sleep patterns is extremely sparse. However, the available literature indicates similar prevalence rates to the 'normal' adult population and rates may be even higher amongst certain groups. Rates of around 15% of samples of intellectually disabled adults presenting significant sleep problems are reported (Espie and Tweedie, 1991). Sleep problems amongst intellectually disabled children have been more extensively studied and indicate high levels of sleep problems amongst this group. Quine (1991) reported that 51% of a

sample of severely intellectually disabled children (0 - 16 years) had settling difficulties with 67% suffering waking problems and 32% sleeping in the parental bed. In addition, these problems appeared to be remarkably persistent with a half of the children with settling problems still reporting difficulties three years later, and two thirds of the children with waking problems still suffering over the same time period. A number of studies have also illustrated high levels of sleep problems in older intellectually disabled children in comparison to 'normal' children. For example, Clements et al. (1986) reported 26% of children in the 10 - 15 age group reported sleep problems although in the under five age group 56% reported sleep problems. Rates as high as 65% of samples of severely intellectually disabled children suffering settling problems and 87% with waking problems have been reported (e.g. Quine, 1992). Variability within the group of children with intellectual disability is reported. Piazza, Fisher and Kahng (1996) described sleep patterns in a group of 51 individuals (aged 3 - 21 years) with intellectual disability and severe behavioural problems, reporting rates of 88% exhibiting sleep disturbances such as delay in sleep onset, frequent night wakening and early wakening. Richdale and Prior (1995) studied children with Autism, reporting that the majority of these children will experience sleep problems and are likely to be severe in many cases. The findings with regard to variability of prevalence rates of sleep problems in people with an intellectual disability reinforce the need for individualised assessment of sleep problems and the dangers implicit in regarding people with intellectual disability as a homogenous group.

Sleep Studies in Intellectual Disability

Research on a number of aspects of sleep patterns, sleep problems and daily routines indicate that the study of sleep patterns and problems of intellectually disabled is particularly important. Espie and Tweedie (1991) indicated a number of significant differences in the 'sleep architecture' of people with an intellectual disability including reduced REM sleep and increases in stage 4 (deep) sleep. These marked differences in sleep patterns of intellectually disabled individuals have also been related to the level of intellectual functioning. Espie et al (1997, in press) reported that REM rates were reduced or absent, in proportion to the degree of intellectual disability, and high levels of "indiscriminate non-REM sleep" whereby the depth of sleep is difficult to determine. Numerous studies have linked REM sleep to nervous system plasticity and learning although the issue is a contentious one e.g. Horne (1988). Grubar's (1983, 1989) review of this area outlined that intellectually disabled people, whose REM rate is reduced, have a lower degree of plasticity of the nervous system. Castaldo (1972) demonstrated that REM sleep rates increase subsequent to learning through a 'special training programme'. Gigli (1987, 1988) demonstrated that intensive learning in animals is followed by consistent increases in REM sleep, and similar effects in a sample of Down's Syndrome patients. Research has indicated the involvement of REM sleep in memory processes (Smith, 1995). The effect of sleep patterns on daytime performance in adults has been extensively studied (Horne, 1991), including the effects of sleep deprivation on performance. These studies raise a number of questions regarding improving sleep patterns of intellectually disabled people with a view to improving potential learning capacities and also, the overuse of psychoactive drugs which reduce REM sleep. However, sleep architecture studies in intellectually

disabled groups must be treated cautiously as high levels of epilepsy and resultant epilepsy medication amongst samples may explain some of the findings.

Finally, within both the 'normal' adult sleep literature and that of intellectually disabled clients there is general agreement that daytime performance and behaviour are linked to sleep patterns. This factor is particularly salient in the study of people with an intellectual disability due to existing impairments of attention, learning, arousal etc. Insomnia has been linked to poor physical health, abuse of drugs and alcohol, impaired efficiency at work and in social relationships (e.g. Lacks and Morin, 1992) and increased subjective pain (Affleck et al, 1996). Effects of brain damage and institutionalisation in intellectually disabled people can often lead to desynchronisation of circadian rhythms. This can be clearly seen amongst many people with severe disabilities who spend large amounts of time asleep or in drowsy states with implications for 'quality of life' as well as learning potential, (Green et al, 1994). A number of studies have indicated the possible effects of sleep problems on behavioural problems amongst people with intellectual disabilities. As many such people have significant deficits in communication it would appear plausible that many sleep problems and resultant problems with wakefulness may present behaviourally. Wiggs and Stores (1996) reported significantly more types and greater severity of challenging behaviour in intellectually disabled children with sleep problems than those without a sleep problem. These findings accord well with those of other research (e.g. Richman, 1981, and Quine, 1991). In addition to the distress to the individual of a sleep problem we must consider high levels of maternal stress (Quine 1991) and the increased burden on carers (Richman 1981) who are already highly stressed, in many instances, by caring for an intellectually disabled person. The nature of institutional care and the use of

early bedtimes as 'respite' for carers is well documented (e.g. Espie et al, in press) with time in bed and the duration's of sleep significantly greater than a 'normal' population. These factors have considerable influence on circadian rhythms and, resultantly, on the individuals daytime experience.

Treatment of Sleep Problems

The literature regarding the treatment of sleep problems amongst the 'normal' adult population is large and well established. The treatment of sleep disorders using psychological methods appears to be highly efficacious. Psychological treatment frequently involves a multi-component approach tailored to the individuals particular problem and includes one or more of the following elements: education, behavioural methods (sleep restriction, stimulus control), and cognitive methods (altering dysfunctional beliefs about sleep). Morin et al, (1994) treated a series of 100 clients presenting with insomnia and demonstrated reductions in sleep onset latency, wake after sleep onset and early morning wakening. An improvement rate of among 40 - 60% for cognitive-behavioural treatment of symptoms such as sleep onset latency and time awake after sleep onset has been calculated (e.g. Lacks and Morin, 1992). Morin et al's (1993) meta-analysis of outcome studies indicates that 81% of sleep onset insomnia patients and around 74% of sleep maintenance insomnia patients are significantly better off after treatment than untreated subjects. The efficacy of psychological treatment of sleep problems has also been underlined by Espie et al, (1989). However, medication remains the treatment of choice despite the efficacy of

psychological treatments, and the paradoxical treatment effects of medication, (Morin et al, 1994).

Amongst intellectually disabled people there appears, once again, to be a disparity in the level of research interest between adults and children. A number of studies have advocated a mainly behavioural approach to sleep problems in intellectually disabled children (Quine 1991, 1992, 1993 or Piazza et al, 1997, 1998). However, Quine (1992) points out that a mere 7% of her sample of children with sleeping problems were receiving treatment (medication) and only one child was receiving a behavioural treatment.

In terms of adult intellectually disabled subjects the literature is sparse and existing studies have presented preliminary material. However, a number of studies have indicated the efficacy of using a psychological approach with this group. Espie (1992) used a sleep restriction technique ('optimal scheduling') with a 16 year old girl with an intellectual disability. Development of an 'optimal' sleep-wake schedule led to improvements in daytime functioning and reductions in challenging behaviour. Espie and Wilson (1993) used a similar technique with five intellectually disabled clients. All clients obtained some benefit from treatment across a number of variables including reduced sleep latency and reduced daytime napping. However, the treatment studies have presented preliminary material, with small subject numbers and largely in single case study format without elements of control. Additionally, these studies have largely used sleep restriction techniques alongside management of bedtime routines without consideration of cognitive techniques. In conclusion, a great deal of research is required in this area, with focus on adults with a variety of level's of ability, and

individualised assessment of sleep problems. To this end, a multiple baseline design that allows for individualised assessment/treatment alongside elements of experimental control appears appropriate as a further step.

Conclusion

To conclude the literature indicates that sleep problems are relatively commonplace. Sleep problems are most prominent in children, particularly intellectually disabled children, and reduce into adulthood with a rise in elderly people. Research suggests that the prevalence of sleep problems in people with an intellectual disability is at least as common as in the general population with a number of groups displaying significantly higher levels of sleep problems. However, amongst intellectually disabled people the facts of medication, use of sleep as respite, brain damage and an inability to communicate sleep problems magnify the problem. The different sleep architecture in intellectually disabled people again has implications for daytime functioning. Therefore, as learning, mood and attentional levels may already be disturbed as a feature of the intellectual disability, any improvement to functioning as a result of improved sleep patterns would be worthwhile. Research indicates that psychological treatment of sleep problems is efficacious in adults, children and intellectually disabled adults although the evidence for intellectually disabled adults is sparse. The paucity of research into the efficacy of a psychological approach validates a study in this area. Furthermore, the need for work in this area is strengthened by the evidence regarding high prevalence rates, low rates of treatment and proposed quality of life improvements in this group. Furthermore, few treatment studies have examined efficacy across intellectual levels and aetiologies of intellectual disability.

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Major Research Project Proposal

"Psychological Treatment of Reported Sleep Difficulties in Intellectually Disabled Adults Using A Multiple Baseline Design."

Prepared in accordance with guidelines detailed within the Doctorate in Clinical Psychology Handbook. Guidelines are based on the application for a mini-project grant in Health Services Research.

Summary

This study involves a treatment trial of a Psychological approach towards the management of sleep problems in an adult learning disabled population. Psychological treatment will be offered to adults with a learning disability and a named parent/carer. Baseline, treatment and post-treatment measures will be collected and analysed in order to examine the effectiveness of a psychological approach to treatment of sleep problems in this population. Data collection will involve self report/psychometric measures in conjunction with detailed assessment with client and carer. Self report measures will be provided by clients wherever possible and by carers where clients are unable to provide self report measures. The study will take place at Arrol Park/Strathlea Resource Centres in Ayr/Kilmarnock. Subjects will be recruited through local Adult Training Centres. Assessment/treatment sessions will take place within the clients home if travel to either resource centre is impractical.

Introduction

The literature examining sleep patterns of adults with a learning disability is extremely sparse. The available literature parallels research in the normal population in that 15% of samples present significant sleep problems (Espie and Tweedie, 1991). Significant depletion of REM sleep and lengthy periods of sleep, particularly amongst adults with a profound levels of learning disability have been highlighted (Espie et al, under review). Additionally, there have been a number of studies illustrating possible benefits of a psychological approach to sleep problems amongst adults with a learning disability

(Espie and Tweedie, 1993 , and Espie, 1992). However, the majority of studies have presented preliminary material. No large-scale research studies have been carried out examining the efficacy of a psychological approach in this population. Treatment outcome studies have largely used sleep restriction techniques such as 'optimal scheduling' (Espie and Wilson, 1993) alongside management of bedtime routines. It should be noted that studies of sleep difficulties found in this population do not deal purely with the 'insomnia's' found in the 'normal' adult population as settling difficulties and difficulties usually associated with childhood are commonly reported.

A more varied and extensive literature exists examining sleep patterns and problems amongst children with a learning disability. Again, the majority of studies have examined prevalence and patterns of sleep disturbance in these children. Some degree of sleep problem is reported to occur in over 30% of the population (Clements et al, 1986). A number of studies have highlighted links between poor sleep amongst learning disabled children with daytime challenging behaviour (Wiggs and Stores, 1996) and with indices of family stress (Clements et al, 1986). Reported sleep problems appear to decline with age. Around 26% of a 10 - 15 year old group were reported to have sleep problems (Clements et al, 1986). However, studies of sleep problems amongst children with a learning disability show that very low numbers receive treatment. In a study of 96 children with sleep disturbance only 7% were receiving medication and only 1 child received a behavioural programme. Amongst the studies detailing management of sleep difficulties amongst children with learning difficulties there has been support for the efficacy of intervention by health professionals and through parents (Quine, 1991, 1992, and 1993).

The literature regarding prevalence and treatment of sleep problems amongst the 'normal' population of adults is large and well established. Specifically, the treatment of sleep problems using psychological methods has been well researched and appears highly efficacious (Espie et al, 1989, and Morin et al, 1994). Treatment protocols amongst adult populations have largely incorporated one or more of the following components: education (sleep hygiene education covering areas such as the effects of caffeine, alcohol, nicotine and exercise on sleep), behavioural (combination of sleep restriction and stimulus control procedures aimed at regulating the sleep-wake schedule, reducing sleep incompatible activities e.g. watching television in bed, and restricting the time spent awake in bed), and cognitive (altering dysfunctional beliefs and attitudes about sleep using cognitive restructuring techniques).

This study aims to begin to address the paucity of research into sleep problems amongst learning disabled adults and particularly the impact of psychological methods on sleep problems in this group. This is an area which is clearly under-researched. Additionally, it is hoped that the study will be of direct benefit to the clients/carers involved in the study through improved sleep patterns and associated sequelae. A positive outcome for psychological methods will also provide a guide to future treatment regimes and research in this area.

Aims and Hypotheses

The aim of this study is to investigate, through a controlled single subject design, the effectiveness of a Psychological treatment for reported sleep difficulties in the adult

learning disabled population. Additionally, initial data will be collected with a view to establish rates of sleep problems amongst this population. The following questions shall be addressed :

1) Will a Psychological approach to treatment of sleep problems in this population be effective in terms improving total sleep time, and reducing of night-time wakenings, sleep onset latency and daytime napping?

2) Do improvements in sleep pattern have additional beneficial effects on perceived attention, concentration, irritation, daytime tiredness and behavioural problems?

A subsidiary question on which data will be gathered will be: are rates of sleep problems in this population in line with earlier studies and studies of prevalence rates in the 'normal' adult population.

Method

Subjects:

Subjects shall be recruited through local Adult Training Centres (ATC) with assistance from the Centre Managers. Initially, all trainees within the centres shall be provided with a short assessment for completion by themselves or in conjunction with a carer where necessary. This will be accompanied by a letter from the researcher/Centre Manager outlining the nature of the research being undertaken. The

majority of assessments shall be completed at home by carers in conjunction with the client. Respondents who appear to suffer from a sleep problem and who are willing to take part in the study shall be offered an assessment interview carried out by the researcher. Following these assessment interviews a sample of 9 - 12 subjects shall be recruited into the treatment study.

Subjects shall be excluded from the treatment study if suffering from a concurrent psychiatric disorder or serious physical ill health such as a degenerative illness. Additionally, clients who may be suffering from sleep disorders such as the Parasomnias, Obstructive Sleep Apnea, Nocturnal Myoclonus or Hypersomnolence shall also be excluded.

Measures:

Initially, a short self report questionnaire shall be provided to clients. This questionnaire will be developed by the researcher, be around two pages long and involve questions such as "do you think your son/daughter has a sleep problem?" and questions aiming to identify clients sleep patterns over a seven day period.

Secondly, a more detailed interview type assessment will take place aimed at identifying clinical sleep problems within the framework of the International Classification of Sleep Disorders (ICSD) (1990). Wherever possible, analogue scales will be used to gain estimations from clients and carers about sleep patterns, attention/concentration levels etc. At this time detailed demographic and relevant

historical data will be collected including family structure, aetiology of learning disability, medical history etc.

Finally, during baseline, treatment and post-treatment phases a number of measures shall be collected: sleep diaries measuring pattern and quality of sleep over a 7-day period (adapted from Morin et al 1994), parents and ATC keyworkers shall use analogue scales to estimate levels of daytime tiredness/functioning/attention/ concentration and irritability. Additionally, the Aberrant Behaviour Checklist shall be carried out pre and post-treatment (Aman and Singh, 1986).

Treatment:

The treatment phase which will last 28 days and consist of four 60-minute sessions which will be driven by previous and ongoing assessment. A clients treatment regime will be structured around his/her presentation with components of treatment selected accordingly. These treatment components will be drawn from previous work with adults with sleep difficulties. The components and appropriate uses can be seen in Table 1.

Table 1 - Treatment Components and brief description/appropriate applications

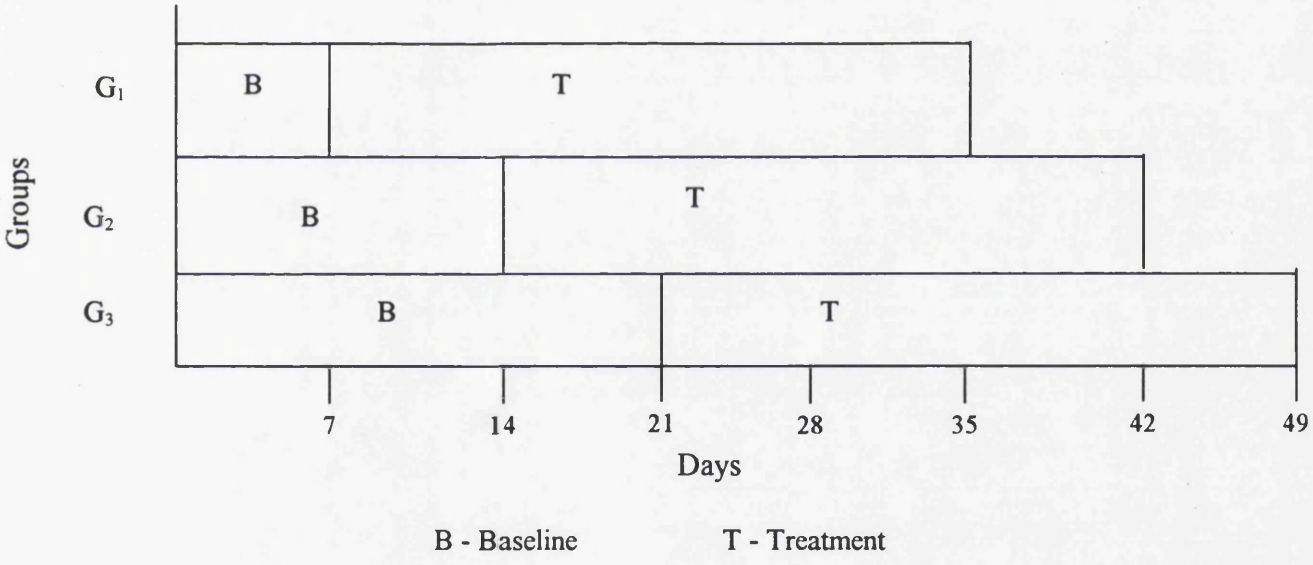
Treatment Technique	Description	Application
Optimal Scheduling	Modification of the sleep routine through progressive adjustment of time in bed/daytime napping to achieve most 'efficient' sleep pattern.	Problems with the sleep-wake schedule. Spending excessive amounts of time in bed.
Sleep Hygiene	Advice/assessment of night-time routine. Amendment of lifestyle.	Problems with the bedtime routine e.g. high intake of caffeine at night.
Stimulus Control	Reduction of stimuli associated as cues for wakefulness and increase of sleep stimuli.	Sleep incompatible behaviour at night e.g. use of bedroom for watching television. Lying awake in bed for lengthy periods.
Relaxation	Muscular relaxation. Mental Imagery	High levels of anxiety.
Cognitive Techniques	Thought Stopping. Paradoxical Intention. Distraction Techniques.	Intrusive thinking or 'worry'. An overactive mind.

Design/Analysis:

A multiple baseline design will be employed for this study. A multiple baseline design will involve allocation of subjects to three groups according to the length of the baseline phase. Group one's baseline will be 7 days in length, group two will have a 14 day baseline period, and group three will have a 21 day baseline period. Subjects will

be randomly allocated to one of the three alternative length of baseline groups. Therefore, each subject acts as their own control with the groups providing a replicative element. For each subject the treatment phase will begin immediately following the baseline period. The treatment phase will consist of 4 x 60 minute weekly sessions with client/carer comprising a treatment phase of 28 days. Follow-up will consist of a 60 minute session at 1 month post treatment at which time measures shall be repeated. A multiple baseline design will initially provide a robust visual analysis of change. A visual representation of a multiple baseline design can be seen in Figure 1.

Figure 1 - The multiple baseline design



Analysis:

Data will be analysed initially using Freedman's two-way ANOVA by ranks. Following this the location of any statistical significance will be determined using the Wilcoxon matched pairs signed-ranks test. Daily data will be collected throughout the

experimental period allowing a Time Series Analysis to be conducted. Time Series Analysis is a recognised method for dealing with single case material. A number of studies have illustrated the use of such single case designs (e.g. Barlow and Hersen, 1984). Advice regarding statistical analysis will be provided by Professor C. Espie. The data will be collated, stored and analysed using SPSS for Windows on a personal computer. Personal information relating to clients/carers will be stored within Arrol Park Resource Centre, Dept of Clinical Psychology.

Timescale:

Resultantly, a maximum time scale for baseline, treatment and follow-up is 3-months. This will be preceded by an assessment period of around one and a half months. Total timescale for the project including statistical analysis is estimated to be 6 months.

Ethical approval is necessary for this project and a research protocol is currently under preparation for the Research Ethics Committee of Ayrshire and Arran Health Board.

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Major Research Project Paper

"Psychological Treatment of Reported Sleep Difficulties in Intellectually Disabled Adults Using A Multiple Baseline Design."

Prepared in accordance with notes for contributors for: Journal of Intellectual Disability Research.

Introduction

The literature examining the sleep patterns and sleep problems of adults with an intellectual disability is extremely limited. These limitations can be compared to the advancement of study in sleep patterns and problems in the 'normal' adult population and in populations of intellectually disabled and non-intellectually disabled children. The available literature suggests that the sleep of people with intellectual disabilities is qualitatively different from patterns exhibited by other populations and that sleep problems are at least as prevalent compared to a 'normal' adult population. Finally it has been suggested that a number of benefits may be accrued from improving sleep patterns in this group. These factors highlight the need for further research in this area.

Amongst the non-intellectually disabled adult population (ndap) numerous studies have estimated the prevalence of sleep problems. Ohayon (1997) reported a rate of 18.6% of the sample with insomnia complaints. A rate of around 12 - 15% of the population is generally agreed for severe insomnia with significantly higher rates of sleep problems reported in the general population. Rates of sleep problems amongst children are significantly higher e.g. Quine (1997). Amongst adults with an intellectual disability (awid) rates of sleep problems have been reported at around 15% (Espie and Tweedie, 1991). Amongst children with a intellectual disability (cwid) rates are reported as high as 65% of severely disabled children having settling difficulties (Quine, 1992). Great variability exists amongst awid with variations according to diagnosis, degree of

impairment etc. A full examination of prevalence studies can be found in Gunning (unpublished review article).

The psychological treatment of sleep problems in ndap is large and well established with the use of education, behavioural techniques such as stimulus control, and cognitive techniques. The efficacy of such a psychological approach has been demonstrated by Morin et al (1994) and Espie et al (1989). Amongst cwid the efficacy of psychological techniques (predominantly behavioural) have also been demonstrated (Quine, 1993, Piazza et al, 1997). In terms of awid the treatment literature is sparse and preliminary. However a few studies have indicated the efficacy of psychological approaches in this group (Espie, 1992, Espie and Wilson, 1993). For a full critical review of the available treatment literature see Gunning (unpublished review article).

The improvement of sleep patterns amongst the general population offers a number of benefits including improved general health and daytime functioning (Lacks and Morin, 1992). However, for adults with intellectual disabilities the benefits of an optimal sleep-wake schedule may be even more far reaching. Overall, the current emphasis on 'quality of life' for people with an intellectual disability points to the targeting of sleep problems, an important marker for optimal daytime functioning and general well-being. Long periods in bed, daytime napping and early settling times have been identified as commonplace in this group (Espie and Tweedie, 1991). The effects of brain damage, institutionalisation and lack of daytime stimulation can lead to desynchronisation of circadian rhythms and effects on learning potentials. In terms of sleep architecture a number of significant differences in the awid group have been outlined. These

differences include reduced REM sleep, increased stage 4 (deep) sleep and decreased sleep spindle activity in stage 2 sleep (Espie and Tweedie, 1991). These differences are associated with level of intellectual functioning (Espie et al, 1998). In people with severe intellectual disabilities the conventional staging of sleep often proves impossible. Differences in sleep architecture may have implications for learning in that improved sleep patterns may improve learning capacities. REM sleep has been identified as particularly important as evidenced by the importance of REM sleep in memory processing (Smith, 1995). Additionally, the use of drugs, primarily Benzodiazepines, for the management of sleep disorders is contraindicated due to REM suppression. Finally, important relationships have been demonstrated between sleep problems and severity of challenging behaviour (Wiggs and Stores, 1996), maternal/carer stress (Quine, 1991) and burden on carers (Richman, 1981).

Despite the relative paucity of research a number of tentative conclusions are possible. Firstly, prevalence of sleep disorders in the awid appears to be as high as in a 'normal' adult population and may be even higher in more severely disabled people and according to certain diagnoses. Secondly, the potential benefits arising from improved sleep patterns in awid are considerable, including improved learning potential and reduced levels of challenging behaviour. Finally, the use of psychological techniques for treatment of sleep problems is well established and preliminary studies of efficacy in intellectually disabled adults is encouraging. However, a larger scale study with robust experimental control, and taking into account individual differences is indicated. This study aims to partially address this need.

Method

Design:

In order to investigate the efficacy of a psychological approach to treatment in a case series of people with clinically significant sleep problems, a multiple baseline across subjects design was selected. In this design subjects act as their own controls. The design has the advantage of providing an element of experimental control alongside the flexibility and individualisation of a single case series. Subjects were randomly allocated to one of three baseline conditions which was followed by a 28 day treatment period and a 7 day follow up period some 28 days after treatment.

Subjects:

A total of 384 clients with an intellectual disability from 5 local Adult Training Centres were screened postally. A brief screening questionnaire (see Appendix 3.4) was accompanied by an information/consent sheet (see Appendix 3.3). A total of 155 clients and/or carers replied of which 118 gave consent for inclusion in the treatment phase of the study. From this group, 27 clients who reported significant levels of sleep disturbance were visited at home or at their Adult Training Centre in order to complete a more detailed assessment using a structured assessment schedule. From this group, 12 clients were selected for inclusion in the treatment phase with 3 dropping out for a variety of reasons. Nine clients completed the treatment and follow up phases of the study.

Procedures (Treatment Study):

Following the screening procedure, clients were interviewed using a structured assessment schedule aimed at diagnosing sleep problems within the framework of the International Classification of Sleep Disorders (ICSD, 1990). Additionally, demographic and historical data was collected including medical history, aetiology of intellectual disability etc. The structured assessment schedule is reproduced in Appendix 3.5. Following assessment, clients with an identified sleep disorder and who had given consent themselves or through their carer entered the baseline phase. Each treatment package and outcome measure was derived from assessment information and individually tailored. Clients were allocated randomly to one of three conditions: baseline length 1 week, baseline length 2 weeks or baseline length 3 weeks. All baseline phases began at the same time. These elements comprise the multiple baseline design. During this period a number of measures were collected as a means of evaluating treatment progress and outcome. Measures included: sleep diaries measuring pattern and quality of sleep over a 7-day period, analogue scales (0 - 10) which were used to measure levels of daytime tiredness, attention, concentration etc, and a number of idiosyncratic measures including length of ritual (as a feature of obsessive-compulsive behaviour). All measures were completed by carers and adult training centre staff. A full list of assessment items used in the study can be seen in Appendix 3.2.

Baseline measures were produced on a daily basis by subjects, carers and also by Adult Training Centre keyworkers. Measures were presented to carers as a weekly

'package' including one sleep diary and a daily sheet including all analogue measures (an example can be seen in Appendix 3.6 and 3.7).

Treatment commenced immediately after baseline phases and consisted of four 60 minute sessions with subject and carer. Subjects and carers were not informed of the details of treatment prior to completion of the baseline phase. Treatment was driven by previous and ongoing assessment, and was structured around each subjects presentation. Treatment components were selected from a variety of approaches used in previous work with adults and children. These components are presented in Table1.

Table 1 : Treatment components and brief description/appropriate applications.

Treatment Technique	Description	Application
Optimal Scheduling	Modification of the sleep routine through progressive adjustment of time in bed/daytime napping to achieve most 'efficient' sleep pattern.	Problems with the sleep-wake schedule. Spending excessive amounts of time in bed.
Sleep Hygiene	Advice/assessment of the night time routine. Amendment of lifestyle.	Problems with the bedtime routine e.g. high intake of caffeine at night.
Stimulus Control	Reduction of stimuli associated as cues for wakefulness and increase of sleep stimuli.	Sleep incompatible behaviour at night e.g. use of bedroom for watching TV. Lying awake in bed for lengthy periods.
Relaxation	Muscular relaxation. Mental imagery.	Intrusive thinking or 'worry'. An overactive mind.
Light Therapy	Provision of strong white light upon rising	Problems with arousal from sleep. Delayed Sleep Disorder.
Behaviour Therapy	Behavioural techniques based on learning theory	Behaviour problems associated with interference with sleep processes.

Other techniques employed included Exposure and Response Prevention, and Positive Reinforcement. Following treatment subjects/carers were followed up four weeks later. At this time, identical measures were conducted for one week and further advice was provided with a view to the continuation of progress or adjustment of treatment regime. A full account of assessment, formulation, treatment and results for client F is presented in Appendix 3.8.

Results

Results are subdivided into two sections: prevalence data derived from initial screening data, and results from the period of psychological intervention.

Survey and Screening Data:

Subjects were 155 people with an intellectual disability recruited from adult training centres. The mean age of the sample was 31.6 years (standard deviation 16.5) and there was a small majority of females (72 male clients - 46.45% and 83 female clients - 53.55%). In terms of medication 102 clients were on regular medication (65.8%) with anti-epileptic medication the most commonly prescribed. Twelve clients received medication for the management of sleep problems. Within the experimental group (n=9) 6 clients (66.6%) received anti-epileptic medication (Epilim, Tegretol, Lamotrigine). Respondents were asked to indicate whether or not they felt that the individual concerned presented sleep problems in a number of areas and were also asked to estimate how many days/nights that the individual presented this problem in a

typical week. A cut off point of 3 or more days/nights for 'caseness' of a sleep problem was selected. In terms of difficulty in falling asleep, 17.42% (27 subjects) reported 3 or more nights with difficulty. In terms of staying asleep 11% (17 subjects) reported difficulty, and 4.5% (7 subjects) reported 3 or more days with difficulty staying awake during the day.

Intervention Data:

A total of 12 subjects entered the treatment phase of the study. Of these, 3 did not complete treatment due to bereavement, withdrawal of consent and onset of psychiatric illness. For each subject two main target outcome variables were chosen in conjunction with subject/carer. Full data on the treatment is presented in Table 2. Diagnoses accord with The International Classification of Sleep Disorders (ICSD - 1990). The subjects varied considerably in terms of level of disability. Despite a number of clients obtaining diagnoses of Delayed Sleep Phase Syndrome there was variability in the presenting problem and in treatment approaches adopted.

Table 2 : Descriptive data for the treatment group of subjects (n=9)

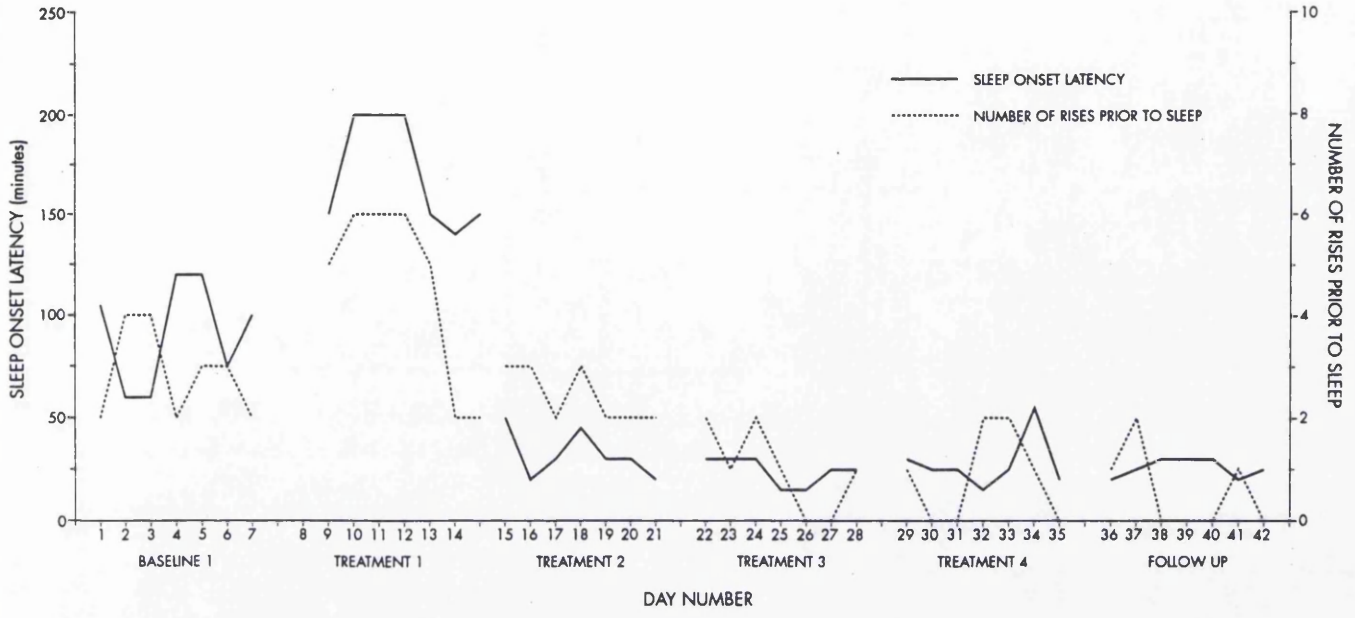
Client	Sex	Age	Level of Disability	ICSD Diagnosis	Target Variables	Treatment Approaches
A	F	20	Moderate	Delayed Sleep Phase Syndrome (780.55-0) - Severe	• Sleep onset latency • Number of rises prior to sleep onset	• Optimal Scheduling • Relaxation (mental imagery)
B	M	21	Severe	Irregular Sleep-Wake Pattern (307.45-3) - Severe	• Total daytime napping • Number of night wakenings	• Stimulus Control
C	F	29	Mild	Delayed Sleep Phase Syndrome (780.55-0) - Moderate	• Sleep onset latency • Carer's sleep	• Stimulus Control • Relaxation (mental imagery)
D	F	40	Moderate	Delayed Sleep Phase Syndrome (780.55-0) - Moderate	• Sleep onset latency • Morning sleepiness	• Light Therapy • Stimulus Control • Sleep Hygiene
E	F	22	Severe	Limit Setting Sleep Disorder (307.42-4) - Moderate	• Sleep onset latency • Number of rises	• Behavioural extinction programme • Cognitive work regarding parental concerns around epilepsy
F	M	37	Severe	Irregular Sleep-Wake Pattern (307.45-3) - Severe	• Sleep onset latency • Total daytime napping	• Optimal scheduling • Stimulus Control
G	M	36	Moderate	Delayed Sleep Phase Syndrome (780.55-0) - Severe Co-morbid Obsessive Compulsive Disorder	• Total sleep time • Length of night time 'ritual'	• Optimal scheduling • Behavioural management of nocturnal obsessional rituals
H	F	47	Severe	Delayed Sleep Phase Syndrome (780.55-0) - Severe Nocturnal Behaviour	• Sleep onset latency • Number of episodes of night bedclothes stripping	• Stimulus control • Behavioural management of nocturnal challenging behaviour
I	F	32	Mild	Inadequate Sleep Hygiene (307.41-1) - Moderate	• Sleep onset latency • Consumption of caffeine drinks prior to bedtime	• Sleep Hygiene • Relaxation (mental imagery • Stimulus Control

Client A exhibited lengthy sleep latency due to cognitive overactivity upon retiring to bed with resultantly high numbers of rises from bed prior to sleep onset. Client B exhibited a highly unstable sleep-wake pattern with long periods awake during the night and resultant daytime napping. Client C displayed very early bedtimes with cognitive overactivity whilst in bed. The client's mother used bed as respite to allow her to relax prior to bedtime. She suffered from a similar sleep problem and identified an approach applicable to herself and her daughter as desirable. Client D again exhibited long sleep latencies with high levels of morning sleepiness. This client's carer reported difficulties in enabling the client to prepare herself for her daytime training placement. Client E exhibited an unwillingness to go to bed prior to her parents and to sleep in her own bed. Her carer's highlighted their daughter's tendency to rise from bed as a target for intervention. However, their fears regarding triggering an epileptic seizure hindered treatment. Client F's presentation was similar to that of client B. Client G displayed pre-bedtime obsessive-compulsive rituals resulting in low total sleep times and daytime napping. Client H displayed nocturnal challenging behaviour (stripping of bedsheets and frequent visits to the toilet requiring wakening of sleeping staff) with long sleep onset latencies. Client I exhibited a Delayed Sleep Phase Syndrome related to poor sleep hygiene practices (high intake of tea and cola) and cognitive overactivity whilst in bed.

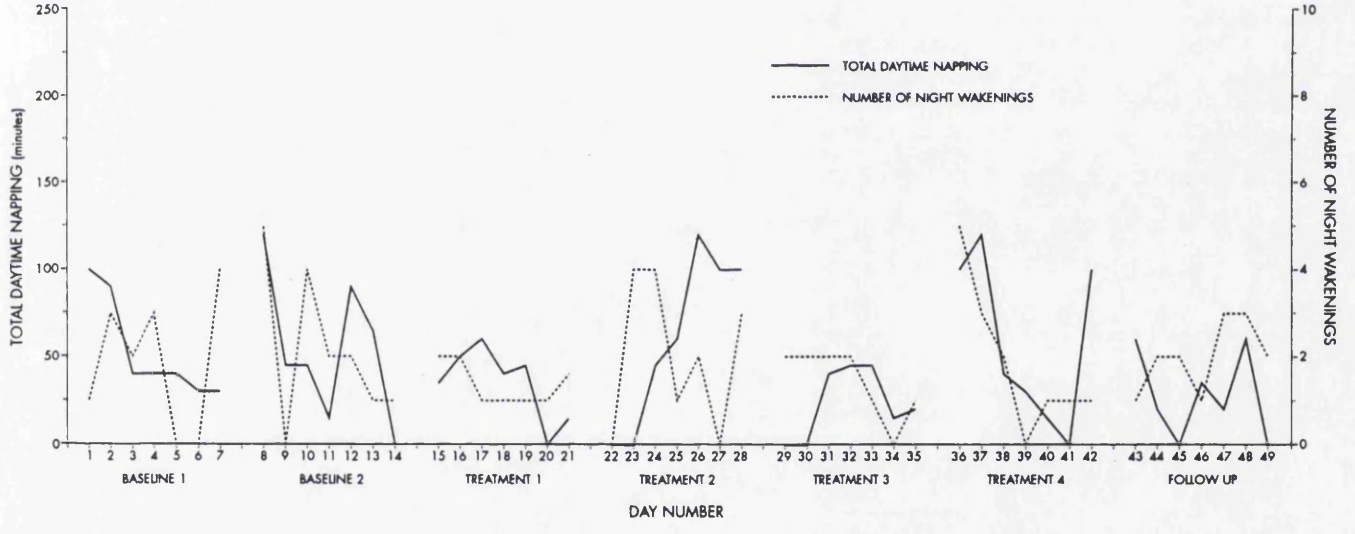
The results of intervention are represented graphically in Figures 1, 2, and 3. Baseline, treatment and follow-up periods are represented for each set of three multiple baseline designs. In Table 3 the results of intervention are represented as percentage changes in target variables. Inspection of graphical and percentage data indicates that most

Figure 1: Graphical representation of change in target variables for Clients A, B and C.

Client A



Client B



Client C

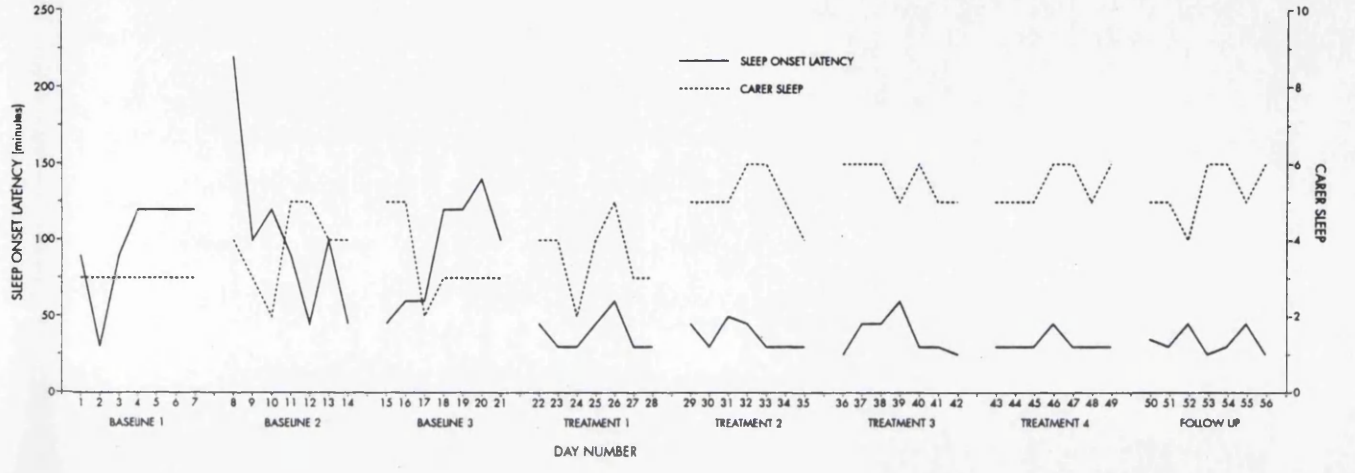
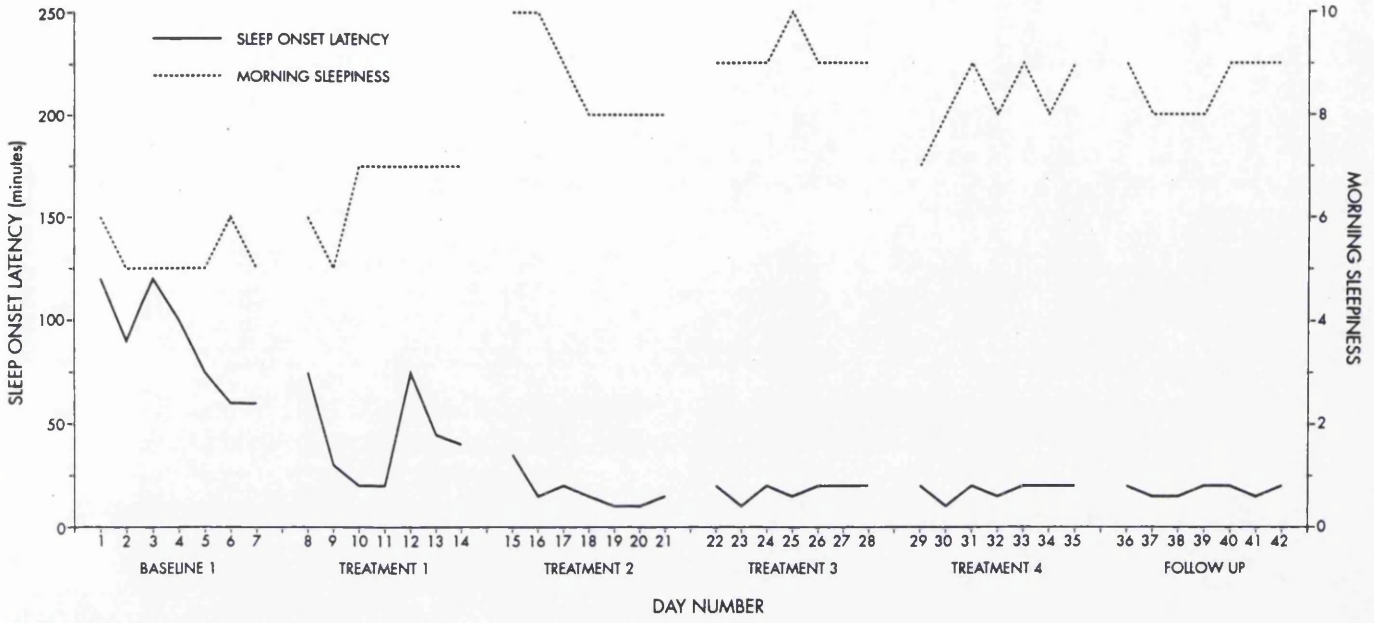
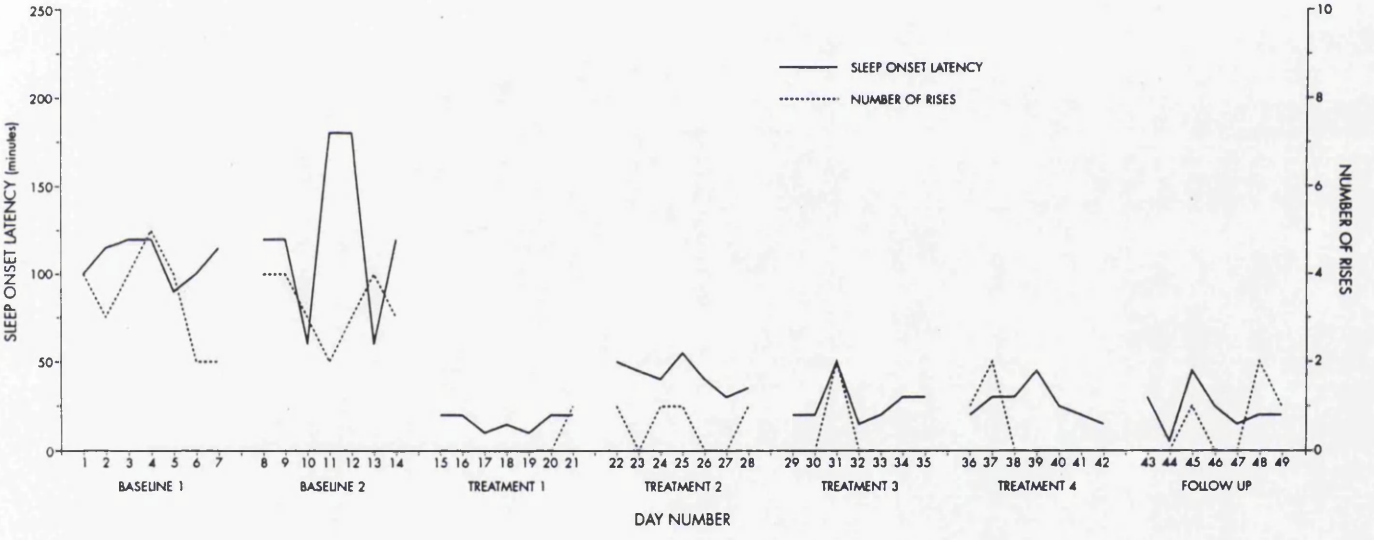


Figure 2: Graphical representation of change in target variables for Clients D, E and F.

Client D



Client E



Client F

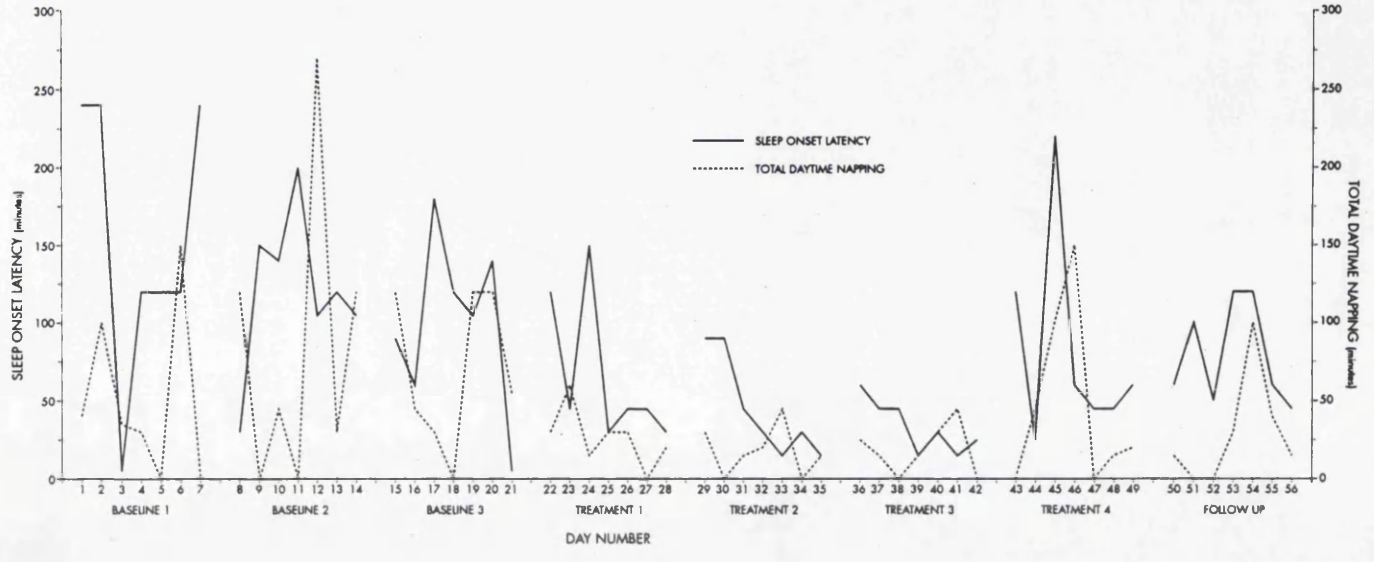
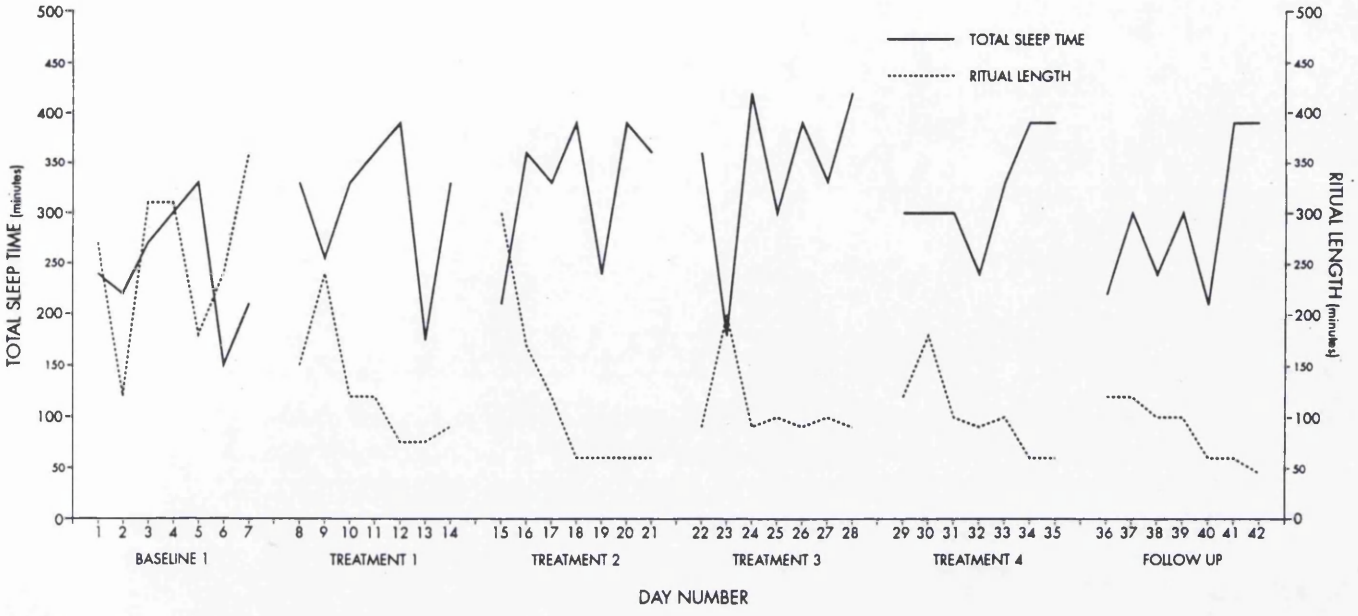
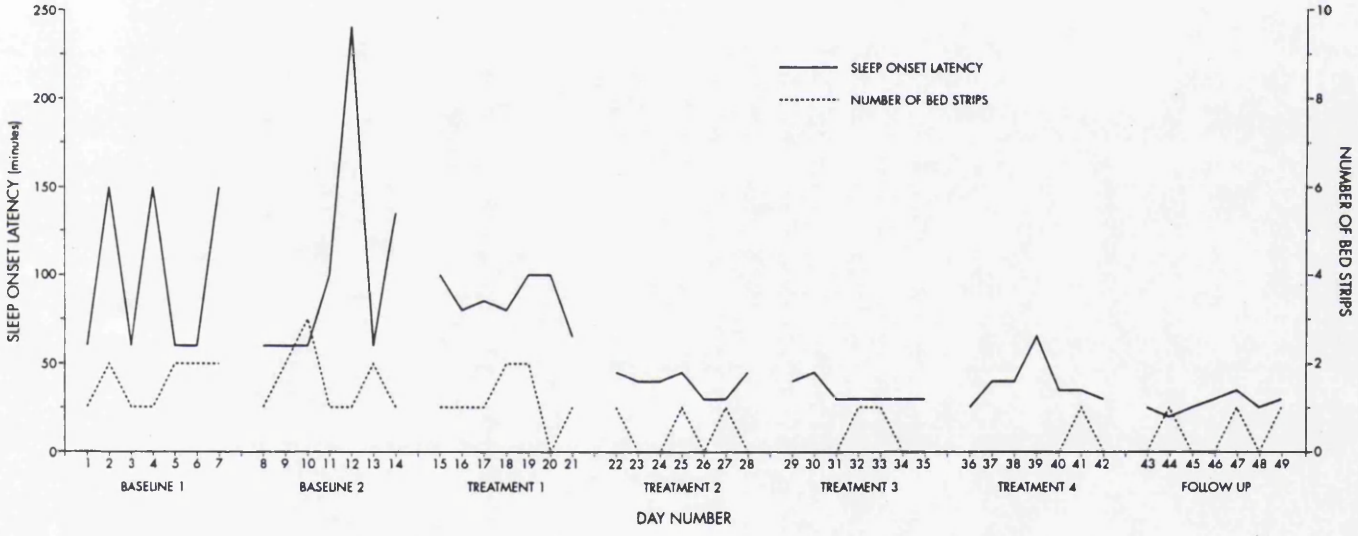


Figure 3: Graphical representation of change in target variables for Clients G, H and I.

Client G



Client H



Client I

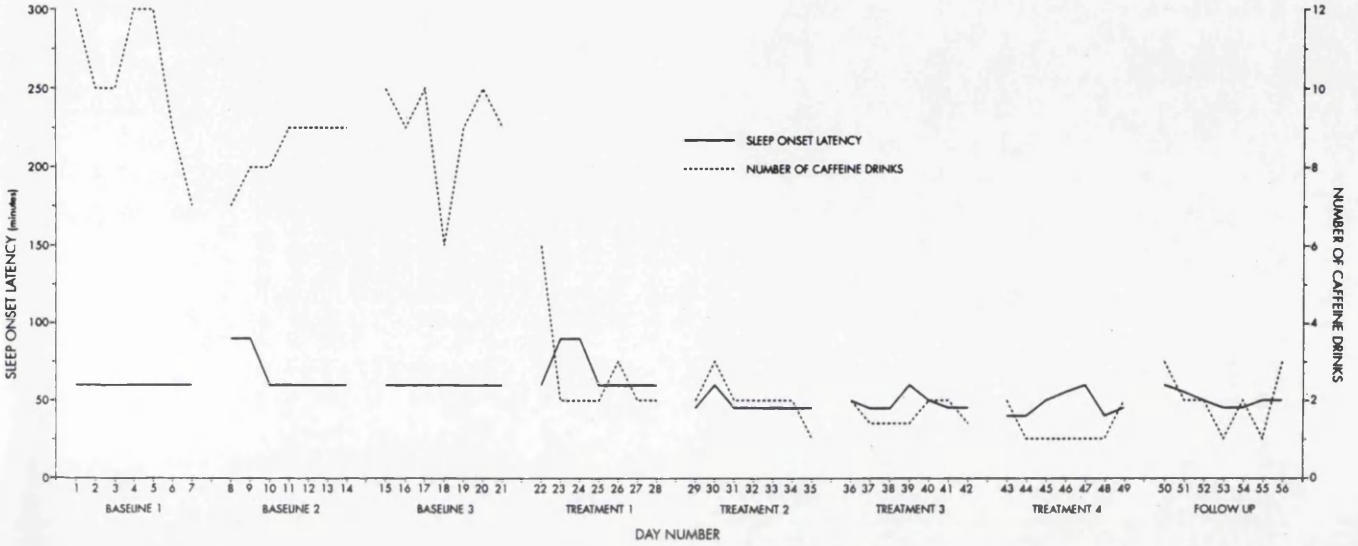


Table 3(a) : Mean, Standard Deviation and Percentage change data on target variable one for all clients across experimental period.

Client	A	B	C	D	E	F	G	H	I
Target Variable	Sleep Onset Latency (Minutes)	Toal Daytime Napping (Minutes)	Sleep Onset Latency (Minutes)	Sleep Onset Latency (Minutes)	Sleep Onset Latency (Minutes)	Sleep Onset Latency (Minutes)	Total Sleep Time (Minutes)	Sleep Onset Latency (Minutes)	Sleep Onset Latency (Minutes)
Baseline :	Mean = 91.43 SD = 26.25	Mean = 53.57 SD = 34.55	Mean = 97.86 SD = 42.53	Mean = 89.29 SD = 25.57	Mean = 114.29 SD = 34.74	Mean = 125.48 SD = 68.55	Mean = 245.71 SD = 60.24	Mean = 100.36 SD = 56.24	Mean = 62.86 SD = 9.02
Treatment 4	Mean = 27.86 SD = 12.86	Mean = 57.86 SD =27.50	Mean = 32.14 SD = 5.67	Mean = 17.86 SD = 3.93	Mean = 26.43 SD = 9.88	Mean = 82.14 SD = 67.63	Mean = 321.43 SD = 53.98	Mean = 38.57 SD = 12.82	Mean = 47.14 SD = 8.09
Percentage Change Of Baseline To Treatment 4 Periods	69.53% Reduction	8% Increase	67.15% Reduction	80% Reduction	76.87% Reduction	34.53% Reduction	30.8% Increase	61.6% Reduction	25% Reduction
Follow - Up	Mean = 25.71 SD = 4.5	Mean = 27.85 SD =32.72	Mean = 33.57 SD = 8.52	Mean = 17.86 SD = 2.67	Mean = 22.86 SD = 12.54	Mean = 79.29 SD = 32.97	Mean = 292.86 SD = 75.21	Mean = 27.14 SD = 4.88	Mean = 50.71 SD = 5.35
Percentage Change Of Baseline To Follow-Up Periods	71.88% Reduction	48.01% Reduction	65.7% Reduction	80% Reduction	80% Reduction	36.81% Reduction	19.19% Increase	72.96% Reduction	19.33% Reduction

Figure 3(b) : Mean, standard deviation and percentage change data on target variables across experimental period.

Client	A	B	C	D	E	F	G	H	I
Target Variable	Number of Rises From Bed	Number of Nocturnal Wakenings From Sleep	Carer Sleep Rating	Rating of Morning Sleepiness	Number of Rises From Bed	Total Daytime Napping (Minutes)	Length of Nocturnal Ritualistic Behaviour (minutes)	Number of Nocturnal Bed Linen Strips	Caffeine Drink Intake in Four Hours Prior to Bedtime (Glasses)
Baseline :	Mean = 2.86 SD = 0.90	Mean = 2.0 SD = 1.62	Mean = 3.43 SD = 0.93	Mean = 5.29 SD = 0.49	Mean = 3.36 SD = 0.93	Mean = 68.10 SD = 68.05	Mean = 255.71 SD = 83.04	Mean = 1.57 SD = 0.65	Mean = 9.24 SD = 1.58
Treatment 4	Mean = 0.86 SD = 0.90	Mean = 1.86 SD = 1.68	Mean = 5.43 SD = 0.53	Mean = 8.29 SD = 0.76	Mean = 0.43 SD = 0.79	Mean = 47.14 SD = 57.14	Mean = 101.43 SD = 41.0	Mean = 0.14 SD = 0.38	Mean = 1.29 SD = 0.49
Percentage Change Of Baseline To Treatment4 Periods	69.93% Reduction	7% Reduction	58.3% Increase	56.7% Increase	87.2% Reduction	30.78% Reduction	60.33% Reduction	91.08% Reduction	86.03% Reduction
Follow - Up	Mean = 0.57 SD = 0.79	Mean = 2.0 SD = 0.86	Mean = 5.29 SD = 0.76	Mean = 8.57 SD = 0.53	Mean = 0.57 SD = 0.79	Mean = 28.57 SD = 34.73	Mean = 86.43 SD = 30.92	Mean = 0.43 SD = 0.53	Mean = 2.00 SD = 0.82
Percentage Change Of Baseline To Follow-Up Periods	80.07% Reduction	0	54.23% Increase	62% Increase (improvement)	83.03% Reduction	58.04% Reduction	66.2% Reduction	72.6% Reduction	78.35% Reduction

client's benefited from psychological intervention across the range of target variables. Sleep latency was considerably reduced in cases A, C, D, E, F, and H with accompanying reductions in variables such as morning sleepiness, number of rises prior to sleep and daytime napping. In cases G and H respectively, a reduction in nocturnal behavioural problems were accompanied by an increase in total sleep time and a reduction in sleep onset latency. Interestingly, in client C, the treatment programme was adapted for use with her carer and led to reports of improved self reported sleep quality. However, for client B, any improvement in target variables was minimal. Similarly, for client I a significant reduction of caffeine consumption was accompanied by minimal reduction in sleep onset latency.

Statistical significance of the reported improvements in sleep patterns and associated behaviour was determined using a number of techniques. Initially, Friedman's two-way ANOVA was utilised as a means of investigating overall significance of the treatment effect. Secondly, a series of Wilcoxon matched-pairs signed ranks tests were used to determine the location of the treatment effect within the experimental period. Overall, the treatment effect was highly significant in statistical terms. The location of the statistically significant effect was found to lie in the Baseline to Treatment 4 period and Baseline to Follow-up periods. Baseline to baseline change is minimal. The results can be seen in Table 4.

Table 4 : Results of Statistical Testing

Test of Significance	Results
Friedman Two Way ANOVA	Chi-Square = 22.8529 Probability = <.0001
Wilcoxon Matched Pairs Signed Ranks Test	Baseline1 + Baseline2 z= -.3145 2-Tailed P=.7532 * (see below) Baseline1 + Baseline3 z = -.3556 2-Tailed P = .7221 ** (see below) Baseline3 + Treatment1 z = -2.5041 2-Tailed P = .0123 Treatment1 + Treatment2 z = -1.6767 2-Tailed P = .0936 Treatment2 + Treatment3 z = -2.3432 2-Tailed P = .0191 Treatment3 + Treatment4 z = -1.2927 2-Tailed P = .1961 Treatment4 + Follow-Up z = -.9941 2-Tailed P = .3202 Baseline3 + Treatment4 z = -3.4187 2-Tailed P = .0006 Baseline3 + Follow-Up z = -3.7236 2-Tailed P = .0002 * (note: the calculation for this comparison applies only to clients in the two and three week baseline groups). ** (note: the calculation for this comparison applies only to clients in the three week baseline group).

Discussion

The efficacy of psychological management of insomnia in non-intellectually disabled adults is well established. However, previous treatment studies of insomnia in intellectually disabled adults have been limited, making inferences from findings inconclusive. This study provides firmer evidence for the efficacy of this approach using a controlled case methodology in a larger sample size.

The results of the screening survey indicate prevalence data broadly in line with findings in intellectually disabled and other groups. Namely, 17.42% of clients reporting (3 or more nights) difficulty in falling asleep and 11% of clients reporting difficulty in staying asleep accords well with findings of around 12-15% prevalence. Additionally, screening data accords with findings of other studies with regard to earlier bedtimes, longer periods in bed, longer sleep duration and use of bed as 'respite' for carers amongst learning disabled populations (Espie and Tweedie, 1991).

Treatment was conducted in single case format with components based upon efficacious, principally behavioural techniques, commonly used in the treatment of sleep problems in adults, children and people with an intellectual disability. However, it did not prove possible to use cognitive methods such as paradoxical intention or thought restructuring, due to subjects levels of ability. Treatment proved beneficial for seven of the subjects with marked changes in target variables. Change was minimal for only two clients. This lack of improvement may be explained in case B, by inconsistency of carer and staff's management of daytime napping. Incontinence also

prevented any improvement in nocturnal sleep. Nevertheless, the possibility of reducing daytime napping levels was demonstrated and carer/staff continue to work on this target. In the case of client I intake of cola and tea was successfully reduced. However, this reduction also was accompanied by only minimal reduction in sleep onset latency. It proved difficult for this client to carry out the mental imagery exercises whilst in bed.

Overall, treatment can be regarded as having been successful. The multiple baseline design demonstrates consistently that change takes place during intervention and not during baseline; a finding replicated across the three sets of designs. Visual examination of graphical data suggests clinically significant changes in target variables for all clients aside from clients B and I. Statistical examination confirms a significant overall effect with treatment and related effects taking place and being maintained in the follow-up period.

These results build on those of Espie and Wilson (1993) and have a number of implications. Firstly, there appears to be a need for treatment of sleep problems in this population as demonstrated by the prevalence data. Secondly, the relatively brief nature of therapy in this study suggests that improvements in sleep pattern, and resultant improvements in daytime functioning, are possible within the time pressures of normal clinical practice. Thirdly, the value of individualised approaches to assessment and treatment is highlighted. It proved possible to tailor treatment to most individual clinical presentations.

However, a number of reservations must be noted. Firstly, the visual analysis of graphical data has been criticised by a number of authors (e.g. Furlong, 1982, Crosbie, 1993) who have pointed out biases and unreliability in ascertaining significance of change. Secondly, the use of statistical techniques such as ANOVA in single subject data has been criticised in terms of the higher probability of Type I errors (Crosbie, 1993). Resultantly, there is a need for replication of this study to bolster the research evidence. A randomised control study using larger sample sizes is required. Finally, it has proven outwith the scope of this study to present data on changes in daytime functioning variables (although changes in such variables can be seen in Appendix 3.8). The author proposes to present full daytime functioning data at a later date.

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Small Scale Research Project

"Client Satisfaction with Day and Home Based Alcohol Detoxification Services and Features of These Groups."

Prepared in accordance with notes for contributors for: British Journal of Addiction.

Introduction

Home based alcohol detoxification programmes are now well established and researched in terms of its safety, efficacy and acceptability. These areas have been researched by Stockwell et al (1990) and (1991). Detoxification in clients homes has been carried out for many years by GP's. However, in the past 5 - 6 years structured programmes have been developed which are carried out largely by CPN's. An example of such a programme can be seen in Cooper (1994).

Hospital based detoxification has taken place since the 1960's on an inpatient basis. However, during the 1970's a number of studies illustrated that out-patient detoxification was equally efficacious as in patient detoxification. Hospital based out patient detoxification has remained the treatment of choice since this time. However, the event of community based health care and questions of value for money has drawn attention to home detoxification.

Although the safety and efficacy of home detoxification (HD) services is well established there remain a number of questions and reservations regarding its use. The majority of HD services will not detoxify clients with a history of Delirium Tremens or withdrawal seizures and proponents of Day Patient Detoxification services (DD) argue that their services treat patients with more severe dependency problems. However, the HD service studied in this case has no exclusion criteria and all GP's in the catchment area have been encouraged to refer.

The study will ask three main questions:

1) Are the client groups served by each service similar in terms of demographic variables?

2) Do hospital based services cater for more severely dependent clients?

3) Are both groups of clients equally satisfied with the services received?

Method

Twenty-eight consecutive clients attending the Alcohol Problems Treatment Unit for Day Detoxification (DD) were selected. Clients already detoxified within the previous 6-months were excluded along with clients who were unable to complete detoxification. Clients were interviewed at admission, prior to discharge and at 10-days following the end of detoxification. Similarly, twenty-eight consecutive clients referred by their GP to the Home Detoxification Service (HD) were selected. These clients were interviewed during their detox by the CPN in charge of the service. The clients were followed up at the 10-day period by the author. During initial interviews data such as the Severity of Alcohol Dependence Questionnaire (SADQ), General Health Questionnaire (GHQ) and severity of withdrawal symptoms was collected. During the 10-day interview a standardised interview schedule was used covering recent and past alcohol and drug use, concurrent problems, previous treatment,

treatment plan and treatment satisfaction. Additionally measures were taken of breath alcohol level at this time.

This study is part of a much larger study as it does not utilise all of the data collected in the above procedure. This study aims to answer the questions raised in the introduction and will make use of demographic data, severity data and treatment satisfaction data. This data was analysed using direct comparison of the two groups (HD & DD) with descriptive statistics.

Results

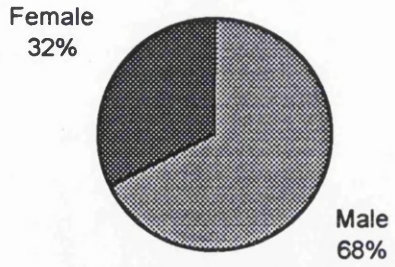
The results are divided into three main sections: demographic data, severity data and satisfaction with treatment. Additionally results of an examination of patients living in Clydebank but attending for Day Detoxification will be presented.

Demographic Data:

The mean age for the Home Detoxification (HD) group is 46.5 with a standard deviation of 12.5. The range of ages is 22 - 74. In the Day Detoxification group the mean age of client is 43.14 with a standard deviation of 9.52. The range of ages is 25 - 60.

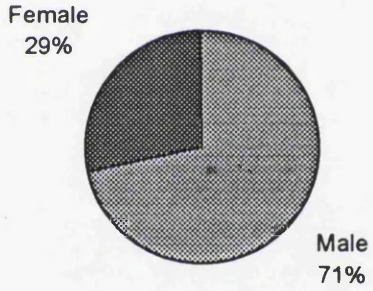
In terms of sex differences the HD group was composed of 68% males and 32% females:

Figure 1: Percentage of Male & Female Clients in HD Group



The DD group consisted of 71% males and 29% females:

Figure 2: Percentage of Male & Female Clients in DD Group



In terms of marital status respondents were allocated according to five categories: never married, married, widowed, divorced or separated. The results for the HD group are illustrated in Table 1:

Table 1 : Frequency and percentages for marital status in the HD group.

Marital Status	Frequency	Percentage
Never Married	5	17.9 %
Married	7	32.1 %
Widowed	1	17.9 %
Divorced	5	10.7 %
Separated	5	21.4 %

The results for the DD group are illustrated in Table 2:

Table 2 : Frequency and percentages for marital status in the DD group.

Marital Status	Frequency	Percent	Valid Percent
Never Married	6	21.4 %	25 %
Married	7	25 %	29.2 %
Widowed	1	3.6 %	4.2 %
Divorced	5	17.9 %	20.8 %
Separated	5	17.9 %	20.8 %
Missing	4	14.3 %	

Employment status was divided into the following three categories: employed, unemployed and retired. The results for the HD group are illustrated in Table 3:

Table 3 : Frequency and percentages for employment status in the HD group.

Employment Status	Frequency	Percent	Valid Percent
Employed	5	17.9 %	18.5 %
Unemployed	17	60.7 %	63 %
Retired	5	17.9 %	18.5 %
Missing	1	4.2 %	

The results for the DD group are illustrated in Table 4:

Table 4 : Frequency and percentages for employment status in the DD group.

Employment Status	Frequency	Percent	Valid Percent
Employed	2	7.1 %	8.7 %
Unemployed	20	71.4 %	87.0 %
Retired	1	3.6 %	4.3 %
Missing	5	17.9 %	

In terms of social class, clients were rated according to their occupation (current or former) and categorised according to HMSO's Standard Classification of Occupations into the following subdivisions: A, B, C1, C2, and D. The results for the HD group are illustrated in Table 5:

Table 5: Frequency and percentage for social class groupings in the HD group.

Social Class	Frequency	Percent	Valid Percent
A	0	0	
B	2	7.1 %	8.3 %
C1	16	57.1 %	66.7 %
C2	3	10.7 %	12.5 %
D	3	10.7 %	12.5 %
Missing	4	14.3 %	

The results for the DD group are illustrated in Table 6:

Table 6: Frequency and percentage for social class groupings in the DD group.

Social Class	Frequency	Percent	Valid Percent
A	0	0	
B	3	10.7 %	13.6 %
C1	7	25.0 %	31.8 %
C2	10	35.7 %	45.5 %
D	2	7.1 %	9.1 %
Missing	5	17.9 %	

Severity Data:

The major data consisted of results obtained using the SADQ. However, levels of concurrent Psychiatric Illness as measured by the GHQ were also examined. Severity

of alcohol dependence ratings for the HD group ranged from 10 - 57 with 18 clients falling within the 'severe' range. The mean score was 34.46 with a standard deviation of 12.67. In the DD group SADQ scores ranged from 17 - 58 with 23 clients falling within the 'severe' range. The mean score was 41.15 with a standard deviation of 11.75.

GHQ scores were obtained during the first contact interview and again at the 10-day interview. In the HD group initial GHQ scores ranged from 2 - 28 with a mean of 15.29 and a standard deviation of 10.10. 10-day GHQ scores ranged from 1 - 28 with a mean of 12.24 and a standard deviation of 9.8. In the DD group initial GHQ scores ranged from 1 - 27 with a mean of 16.75 and a standard deviation of 8.19. 10-day GHQ scores ranged from 1 - 24 with a mean of 11.75 and a standard deviation of 8.27.

Treatment Satisfaction:

Treatment satisfaction was measured on a 0 - 10 scale ranging from 'not at all satisfied' to 'completely satisfied' covering ten areas of service: level of support, use of a breathalyser, input from carers, medication provided, information sheets, physical examination, input from GP/medical staff, environment in which detox took place, treatment plan and overall satisfaction. The results for the HD group can be seen in Table 7:

Table 7: Means and standard deviations for treatment satisfaction categories in HD group.

Satisfaction	Mean	Standard Deviation
Level of Support	7.95	0.22
Breathalyser	7.53	0.84
Input from Carer	7.45	0.88
Medication	7.10	1.22
Information Sheet	7.00	0.92
Physical Examination	6.90	1.04
Input from GP	6.76	2.00
Environment	7.24	1.26
Treatment Plan	7.14	1.06
Overall Satisfaction	7.62	0.59

The results for the DD group can be seen in Table 8:

Table 8: Means and standard deviations for treatment satisfaction categories in DD group.

Satisfaction	Mean	Standard Deviation
Level of Support	7.19	1.86
Breathalyser	7.33	1.24
Input from Carer	5.81	1.83
Medication	5.76	2.48
Information Sheet	6.31	1.54
Physical Examination	6.24	2.02
Input from SHO	5.67	2.48
Environment	6.90	1.34
Treatment Plan	7.35	0.93
Overall Satisfaction	6.81	1.21

Other Results:

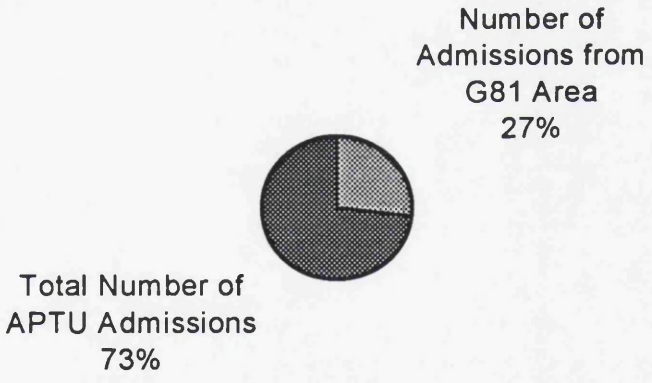
Clients in the DD group with residences and/or GP practices within the Clydebank area (G81) were removed from the dataset and SADQ/GHQ scores were examined separately. The results are outlined below in Table 9:

Table 9 : SADQ and GHQ (initial and 10-day) scores of Clydebank residents in the DD group.

Questionnaire	Mean	Standard Deviation
SADQ	44.67	10.33
GHQ (initial)	19.17	7.05
GHQ (10-day)	14.60	5.68

Admissions to the APTU during the study period were examined. During the study period 271 clients were admitted for detoxification of which 73 were residents of the Clydebank (G81) area. This represents 27% of all admissions for detoxification and is represented in Figure 3:

Figure 3: Percentage of G81 Admission from Total APTU Admissions



Discussion

The purpose of this study was to compare demographic, severity, and treatment satisfaction data between Home Detoxification (HD) and Day Detoxification (DD)

groups. This comparison aimed to answer the questions raised earlier in this paper: are the client groups served by each service similar, do hospital based services cater for clients with more severe alcohol dependency problems and are clients equally satisfied with the services received?

In terms of client groups, demographic data was used as a means of comparing the HD and DD groups. Both groups exhibited similar compositions in terms of age, sex and marital status. However, in terms of employment status we can see higher proportions of employed and retired clients in the HD group. This finding fits well with the claim that HD can provide treatment for those still in employment who are unable to obtain leave from work or who are unwilling to inform employers about their difficulties. This may also represent that the HD service is able to attend to clients earlier in their drinking career and prevent problems such as loss of work. The higher proportion of retired clients illustrates that the HD service is suitable for clients who are either unable to travel to a hospital based service or who are unwilling to attend a psychiatric hospital due to attitudes which are widely held in older generations. Examination of social class data shows a preponderance of clients in the HD group falling into the C1 class. In the DD group the clients are more widely dispersed although the majority of clients fall into the C2 class. This finding may well be an artefact of the greater number of clients in employment in the HD group.

As already mentioned a major claim of hospital based detoxification services is that they cater for clients with more severe dependency problems. Indeed, a history of seizures and/or delirium tremens is an exclusion factor for many HD services. The

SADQ was used as a measure of severity and is a well validated measure. The data presented appears to hold that DD services cater for more severely dependent clients in that the mean SADQ score in the DD group was over 6 points higher than that of the HD group. Additionally, 23 clients in the DD group fall within the 'severe' range as opposed to 18 clients in the HD group. In examining the clients in the DD group who are residents of Clydebank (the catchment area for the HD service) we can see that the mean score of 44.67 is some 10 points higher than that for the HD group and higher than the mean for DD clients overall. This further strengthens the argument that more severely dependent clients attend for DD. Ranges of scores were largely similar indicating that both services detoxify clients with wide ranges of severity although in general the DD group was composed of more severely dependent clients. Additionally, the General Health Questionnaire (GHQ) was used as a measure of concurrent psychiatric disturbance. However, mean scores, standard deviations and ranges were similar for both groups under both conditions (initial scores & 10-day scores).

Finally, treatment satisfaction data indicates that, overall, clients were satisfied with both services. In the HD group, mean scores did not fall below 6.5 on any item with a very high level of overall satisfaction. Clients expressed particular satisfaction with levels of support and use of the breathalyser. Answers to open ended questions concerning what was liked 'most' or 'least' resulted in the support of the CPN as the most favourable item and a lack of an evening telephone service as one of the very few complaints. In the DD group mean scores did not fall below 5.5 although items such as level of medical support and use of medication were rated as 5.67 and 5.76

respectively. Clients expressed particular satisfaction with the treatment planning and use of the breathalyser. In comparing the two groups HD clients appeared to be more satisfied with their service. Open ended questions revealed support from nursing staff as the 'most' liked aspect and the unavailability of medical staff (SHO's) as the worst aspect. Many clients also complained of boredom in the DD unit. Interestingly, items such as medication and medical supervision were rated poorly in the DD group; areas where hospital based detox programmes rate themselves as superior to HD services. Overall, the data presented indicates that HD and DD clients are similar in many respects. However, HD appears to be able to offer a more accessible service to those in employment and to those unwilling to attend hospital for detoxification. These areas are important in that such clients may be missed if only a DD service was offered. The severity data backs the claim that DD services treat more severely dependent clients. However, HD services are more acceptable to clients who do not see themselves as 'alcoholics' and may serve an early intervention role. Both groups appear to be broadly satisfied with the service, although HD services received greater levels of satisfaction on the majority of categories. It would appear that clients were more satisfied with HD largely due to the personal service offered by the CPN and all clients were happy to complete their detox at home whereas some clients in the DD group expressed a dislike for the hospital setting.

To conclude, it would appear that both HD and DD services have much to offer and can co-exist with greater consultation between services and matching of clients to suitable services. Research work may be carried out into relative suitability of clients to each service.

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Clinical Case Research Study I

"Cognitive Therapy For Borderline Personality Disorder - A Single Case Study."

Prepared in accordance with notes for contributors for: Behavioural and Cognitive Psychotherapy.

Abstract

A case involving the treatment of a female with Borderline Personality Disorder as defined by DSM-IV criteria is presented. Treatment involved schema-focused Cognitive Therapy for personality disorders, an adaptation of 'standard' Cognitive Therapy for anxiety or depression. Results after 13 x 60 minute treatment sessions indicated change on a number of standardised and idiosyncratic measures. Substantial reductions in belief of core schema and concomitant reductions in depressive/anxious symptomatology and in thoughts of suicide/self-harm are illustrated. The importance of further research and controlled treatment studies is emphasised.

Clinical Case Research Study II

"Cognitive-Behaviour Therapy for Delusional Beliefs and Concomitant Anxiety in Schizoaffective Disorder - A Single Case Study."

Prepared in accordance with notes for contributors for: Behavioural and Cognitive Psychotherapy.

Abstract

A case involving the treatment of a male with Schizoaffective Disorder as defined by DSM-IV criteria is presented. Specifically, a cognitive-behavioural approach for the treatment of anxiety was used as a means of reducing behavioural avoidance with a concomitant reduction in delusional beliefs, anxiety levels and an increase in social functioning. These treatment targets had been identified following a period of neuroleptic medication treatment and cognitive therapy aimed at reducing the traumatic effects of the clients illness. Results after 9 x 60 minute treatment sessions indicated change on a number of standardised and idiosyncratic measures. Substantial reductions in beliefs of 'supernatural' involvement in the clients life, preoccupation with thoughts of the supernatural and distress caused by thoughts of the supernatural on idiosyncratic measures are illustrated alongside reductions in anxious symptomatology and an increase in social functioning. The applicability of early cognitive-behavioural interventions with this client group and the use of the Social Functioning Scale as an outcome measure is emphasised with the need for continuing research in this area. In addition, the case demonstrates the utility and flexibility of a psychological approach with this client group as well as the ability of such an approach to reduce secondary disability associated with a psychotic illness such as anxiety and social disability.

Clinical Case Research Study III

"Cognitive-Behaviour Therapy for Depression - A Single Case Study."

Prepared in accordance with notes for contributors for: Behavioural and Cognitive Psychotherapy.

Abstract

A case involving the treatment of a female with a Major Depressive Disorder as defined by DSM-IV criteria is presented. The client additionally displayed many features of non-response to antidepressant medication. Treatment involved a cognitive-behavioural approach for depression. Targets were twofold: reduction in conviction in recurrent negative beliefs and an increase in activity. Results after 12 x 60 minute treatment sessions indicated change on a number of standardised and idiosyncratic measures. Change in standardised measures and conviction in two recurrent negative beliefs is illustrated. The continuation of research in the area of psychological treatment of depression, and specifically amongst non-responders to antidepressant medication is highlighted.

Appendices

Appendix1.1

Instructions to Authors "Journal of Intellectual Disability Research."

Information for contributors

Papers (in English) should be sent to the Editor, *Journal of Intellectual Disability Research*, University of Wales College of Medicine, Meridian Court, North Road, Cardiff CF4 3BL, Wales, UK. Papers are accepted on the understanding that they have not been and will not be published elsewhere. The original and two copies should be submitted to aid refereeing and these should be typed (with a wide margin), double spaced, on one side of standard paper (A4—30 × 21 cm). A title page should contain the author's name(s), place of work, address for correspondence, full title and short running title. Authors should retain one copy of the text, tables and illustrations as the editor cannot accept responsibility for damage or loss of manuscripts.

Page proofs must be returned to the Publisher within **three days** of receipt. Typographical errors and essential changes can be made at this stage. Major text alterations cannot be accepted. One free copy of the relevant issue will be distributed by the corresponding author to each co-author. Offprints may be purchased at prices determined by the Publisher by returning the form enclosed with page proofs.

The author should provide up to six keywords to aid indexing. Please note that 'intellectual disability', as used in JIDR, includes those conditions labelled mental deficiency, mental handicap, learning disability and mental retardation in some locales or disciplines.

Full reports of 1500–3000 words are suitable for major studies, integrative reviews and presentation of related research projects or longitudinal enquiry of major theoretical and/or empirical conditions. *Brief reports* of 500–1500 words are encouraged, especially for replication studies, methodological research and technical contributions.

A structured summary should be given at the beginning of each article, incorporating the following headings: Background, Method, Results, Conclusions. These should outline the questions investigated, the design, essential findings and main conclusions of the study.

The text should proceed through sections of Abstract, Introduction, Materials and Methods, Results and Discussion. Tables and figures should be submitted on separate sheets and referred to in the text together with an indication of their approximate position recorded in the text margin. The reference list should be in alphabetical order thus:

Giblett E.R. (1969) *Genetic markers in Human Blood*. Blackwell Scientific Publications, Oxford.

Moss T.J. & Austin G.E. (1980) Pre-atherosclerotic lesions in Down's syndrome. *Journal of Mental Deficiency Research* 24, 137–41.

Journal titles should be in full. References in text with more than two authors should be abbreviated to (Brown *et al.* 1977). Authors are responsible for the accuracy of their references.

Spelling should conform to *The Concise Oxford Dictionary of Current English* and units of measurements, symbols and abbreviations with those in *Units, Symbols and Abbreviations* (1977) published and supplied by the Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE. This specifies the use of S.I. units. Illustrations should be labelled with the figure number and author's name in soft pencil on the back identifying the top edge. Photographs should be glossy bromide prints of good contrast and well matched, preferably with a transparent overlay for protection. Colour photographs will be allowed only in special circumstances and the author will be asked to contribute towards the cost of reproduction. Line diagrams should be drawn with black ink on tracing paper or white card, or supplied as glossy prints. Papers may be judged to require extra-rapid publication by the Editor and referees.

The Journal welcomes the submission of accepted articles on 3.5″ disk. Do not justify the lines of text. All disks must be accompanied by a hard copy of the paper together with details of the type of computer used, the software employed and the disk system, if known. Particular attention should be taken to ensure that any articles submitted in this form adhere exactly to journal style. Please send us digital versions of your figures. Ideally these should be sent in native format or PICT if created on a Mac, or in native format or WMF if created in Windows. Files saved as PS, EPS, GIF and TIFF may also be used, but please note that it may not be possible to modify them. Avoid using tints if possible; if they are essential to the understanding of the figure, try to make them coarse. Always enclose a hardcopy of digitally supplied figures.

Appendix 2.1

Guidelines for submission based on the application for a mini project grant in Health Services Research.

Guidelines for submission based on the application for a mini project grant in Health Services Research.

Prepared in accordance with guidelines detailed within the Doctorate in Clinical Psychology Handbook. Guidelines based on the application for a mini-project grant in Health Services Research.

Appendix 3.1

Instructions to Authors "Journal of Intellectual Disability Research."

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A structured summary should be given at the beginning of each article, incorporating the following headings: Background, Method, Results, Conclusions. These should outline the questions investigated, the design, essential findings and main conclusions of the study.

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Appendix 3.2

Assessment measures derived from sleep diaries and analogue scales for all subjects

Outline of assessment measures derived from sleep diaries and from analogue scales.

Sleep Diary Measures :

Sleep onset latency (time from going to bed to falling asleep - minutes)

Total sleep time (time from falling asleep until wakening finally - minutes)

Number of daytime naps (total sum of daytime naps)

Number of nightime wakenings (total sum of wakenings during the sleep period)

Analogue Scale Measures :

Concentration	Attention	Mood
Morning sleepiness	Restedness after sleep	Carer's sleep
Daytime napping	Lethargy	

Other Measures :

Length of ritual behaviour (time spent on ritualised behaviour prior to bed - minutes)

Number of bed strips (total sum of bedlinen stripping incidents during sleep period)

Number of caffeine drinks (total sum of caffeinated drink consumption in four hours prior to bed - measured in glasses)

Seizure frequency (total sum of seizure frequency per day)

Total time spent daytime napping (total time per day - minutes)

Appendix 3.3

Letter and consent form for subjects/carers.

CLIENT ASSENT AND INFORMATION FORM

In conjunction with your Adult Training Centre, Arrol Park and Strathlea Resource Centres, the University of Glasgow is currently carrying out a research study on the subject of sleep problems amongst people with a learning disability.

The study will be carried out throughout Ayrshire and will initially involve a short questionnaire to be completed by carers in consultation with their son/daughter/client. This questionnaire has been included in this pack. We are interested in knowing if your son/daughter/client sleeps fine as well as if they don't ! Following the return of these questionnaires people who have significant sleeping problems will be invited to attend Arrol Park / Strathlea Resource Centres for an interview which will last around 60 minutes. People who are suitable for treatment of sleep problems will then be offered 4 x 60 minute treatment sessions aimed at improving their sleep pattern. This treatment will involve suggested changes to sleeping habits and routines but will not involve any medication. You will then be seen 1 month and 2 months after treatment to find out how things are progressing. Throughout treatment carers will be asked to fill in a short diary which asks about their son/daughter/clients sleep pattern the night previously. Although it is carers who are being asked about participation in this study the aim is to involve the person with a learning disability as much as possible, including gaining permission to take part in this study.

Through carrying out this study it is hoped that a better knowledge of sleeping problems in people with learning disabilities can be gained and that ways of treating these problems can be shown to be successful. This will allow the future use of psychological treatments of sleep problems to be available to people with a learning disability. If you and your son/daughter/client are happy to take part in this study please read and complete the slip below and return in the stamped addressed envelope. For further information contact your Adult Training Centre Manager or Michael Gunning , Department of Clinical Psychology, Arrol Park Resource Centre, Ayr, (01292) 610558.

Thank you for your time.

I agree to participate in this study. I understand that I can withdraw from the study at any time and that all information will be kept strictly confidential. (Please sign your name if you are happy to take part in this study and obtain the permission of your son/daughter/client if possible).

Signed (Carer/s)

.....

Signed (son/daughter etc)

.....

Date .....

Appendix 3.4

Initial screening questionnaire.

SLEEP QUESTIONNAIRE

In order to understand your son/daughter/clients sleep pattern and any problems with their sleep, we would like you to collect some information on their sleep pattern and related subjects. For the purposes of this study this questionnaire will assess the sleep problems of an adult with a learning disability by asking his or her carer(s) to answer questions about his/her sleep pattern. Please read each question carefully and circle the appropriate response or fill in the spaces where required (all answer sections are marked in **bold**. Although it is carers whom we have asked to complete this questionnaire please consult with your son/daughter/client whenever possible. Please answer all questions and return using the stamped and addressed envelope provided. Thank you for your help.

1. (a) Does he/she have a problem with falling asleep?

YES / NO

How many nights a week does he/she have a problem with falling asleep?

_____ **NIGHTS**

(b) Does he/she have a problem with staying asleep? **YES / NO**

How many nights a week does he/she have a problem with staying asleep?

_____**NIGHTS**

How many times does he/she wake up on a typical night?

_____**TIMES**

(c) Does he/she hve a problem with waking up early in the morning?

YES / NO

How many mornings a week does he/she waken very early in the morning?

_____**MORNINGS**

(d) Does he/she have a problem with staying awake during the day?

YES / NO

How often does he/she take naps during the day?

_____**PER DAY**

(e) On a typical night (in the past month), how long does it take for him/her to fall asleep after going to bed?

_____**HOURS**_____**MINUTES**

(f) Does he/she find it hard to settle i.e. does he/she get out of bed one or more times before falling asleep?

YES / NO

On a typical night, how many times does he/she rise from bed before falling asleep?

_____**TIMES**

2.(a) What is his/her usual bedtime (during weekdays)?

_____**O'CLOCK**

(b) What time does he/she waken in the morning (during weekdays)?

_____**O'CLOCK**

(c) What time does he/she get out of bed (during weekdays)?

_____**O'CLOCK**

(d) Does he/she follow the same sleep pattern during weekends?

YES /NO

If **NO** please give details :

_____

_____

_____

3.(a) Does he/she generally keep in good health?

ALMOST ALWAYS	**MOST OF THE TIME**	**SOMETIMES**	**SELDOM**

(b) Has he/she attended a GP or Hospital Specialist for treatment in the past 12 months (apart from "routine" illnesses such as colds)?

YES / NO

(c) Please note health problem(s) here e.g. heart problems, epilepsy etc :

_____

_____

_____

(d) Has he/she experienced any major life events or changes in the past 12 months?

YES / NO

If **YES** please detail here :

_____

_____

_____

(e) Please list all medicines which he/she takes at the present time.

_____

_____

(f) Has he/she had any emotional or psychological problems of note in the past? **YES / NO**

If <u>YES</u> please detail here :

_____

_____

4.(a) Does he/she snore during sleep?

OFTEN **SOMETIMES** **HARDLY EVER** **NEVER**

(b) Does he/she experience shortness of breath in the night?

OFTEN **SOMETIMES** **HARDLY EVER** **NEVER**

(c) Does he/she seem very tired and sleepy during the day?

OFTEN **SOMETIMES** **HARDLY EVER** **NEVER**

(d) Does he/she actually fall asleep whilst doing things during the day?

OFTEN **SOMETIMES** **HARDLY EVER** **NEVER**

(e) Does his/her arms and/or legs twitch and jump repeatedly during the night?

OFTEN **SOMETIMES** **HARDLY EVER** **NEVER**

THANKYOU

Appendix 3.5

Assessment schedule.

ASSESSMENT SCHEDULE

"Psychological Treatment of Sleep Problems in Learning Disabled Adults a Multiple Baseline Design"

Name :

Date of Birth :

Sex :

Centre Attended :

EXPECTATIONS

1) What changes would you like to take place in terms of sleep pattern?

2) How would things be if he/she slept better?

3) Do you think that these changes are possible?

4) How would your sleep pattern change if he/she slept better?

PRESENTING PROBLEM

1) Could you give a brief description of his/her sleep problem?

2)Nature of sleep/wake problem (circle).

Does he/she have a problem with falling asleep?	No	Mild	Moderate	Severe
Does he/she have problem with staying asleep?	No	Mild	Moderate	Severe
Does he/she wake up too early in the morning?	No	Mild	Moderate	Severe
Does he/she have a problem staying awake during the day?	No	Mild	Moderate	Severe

3)Sleep - Wake schedule.

What is his/her usual bedtime on weekdays? o'clock

What time does he/she last waken in the morning? o'clock

What time does he/she get out of bed on weekdays? o'clock

Is this pattern the same at weekends? o'clock

Details :

Does he/she fall asleep during the day? YES / NO

How many naps does he/she take during the day?

How many nights a week does he/she have a problem with falling asleep?

How many nights a week does he/she have a problem with staying asleep?

How long does it take him/her to fall asleep after going to bed and turning the lights off?

How many times does he/she wake up during the night?

What wakes him/her up at night? (circle) heat pain noise children

fits spontaneous unknown

How long does he/she spend awake in the middle of the night?
minutes

How many hours of sleep does he/she get? hours

How many times does he get out of bed before going to sleep?

FUNCTIONAL ANALYSIS

Please describe his/her pre-bedtime routine -

Please describe his/her and your reactions to getting up in the morning -

What do you do if he/she falls asleep during the day? -

What does he/she or you do when he/she cannot fall asleep or return to sleep? -

What is the bedroom used for aside from sleep? e.g. TV, reading etc.

How is his/her sleep when away from home? Better Worse Same
How is his/her sleep at weekends? Better Worse Same

What makes his/her sleep worse? e.g. stress, coffee etc

What makes his/her sleep better?

What effects does his/her sleep problem have on daytime performance?

How concerned are you about his/her current sleep pattern?

How is your own sleep pattern?

PROBLEM HISTORY

How long has he/she been suffering from a sleep problem? years
months

Were there any stressful life events related to the start of the problem?

Did the problem develop quickly or gradually?

How has the problem changed over time? e.g. is it worst in the summer, did it go away for a while etc.

Any previous problems with his/her sleep pattern? YES / NO

OTHER SLEEP DISORDERS

1) Does he/she snore during his sleep (circle)?

Yes,often Yes,sometimes Hardly ever Never

2) Does he/she seem to hold his breath during sleep then breathe very loudly when he starts up again?

Yes,often Yes,sometimes Hardly ever Never

3) Does he/she experience shortness of breath during the night?

Yes,often Yes,sometimes Hardly ever Never

4) Does he/she seem very sleepy during the day?

Yes,often Yes,sometimes Hardly ever Never

5) Does he/she actually fall asleep whilst doing things during the daytime as if he/she cant help it?

Yes,often Yes,sometimes Hardly ever Never

6) Does he/she have a headache when he/she wakes up?

Yes,often Yes,sometimes Hardly ever Never

7) Is he/she overweight ? YES / NO
How much?

8) Does his/her arms or legs twitch and jump repeatedly after you go to bed?

Yes,often Yes,sometimes Hardly ever Never

9) Does his/her arms and legs become so restless that he/she has to keep them moving or get up and walk around t night?

Yes,often Yes,sometimes Hardly ever Never

10) Does he/she suffer from nightmares, sleep walking or sleep talking?

Yes,often Yes,sometimes Hardly ever Never

MEDICAL HISTORY

1) Does he/she generally keep in good health (circle)?

Almost Always Most of the Time Sometimes Seldom

2) Apart from routine illnesses, has he/she attended his GP for treatment of a health problem within the last year?

YES / NO

Details :

3) Has he/she attended a specialist for treatment in the last year? YES / NO

Details :

4) Please give details of all illnesses.

5) Does pain or physical discomfort interrupt his/her sleep at night?

Almost Always Most of the Time Sometimes Seldom

6) Does his/her epilepsy interrupt his/her sleep at night i.e. does he/she have seizures at night?

Almost Always Most of the Time Sometimes Seldom

7) Has he/she suffered from psychological problems in the past? YES / NO

Details:

8)Has he/she experienced any major life events? YES / NO

Details :

9) Please give details of all medications which he/she currently takes.

10) Does he/she or has he/she ever taken medication (including over the counter medicines) to improve his/her sleep pattern?

YES / NO

Details :

11) Does he/she smoke? YES / NO

Details:

12) Does he/she drink? YES / NO

Details :

THANK YOU FOR YOUR TIME

Appendix 3.6

Weekly sleep diary.

WEEK _____

	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
I woke up at ___ o'clock.							
I napped from ___ to ___ (Note times of all naps).							
I started to get ready for bed at ___ o'clock.							
I went to bed at ___ o'clock.							
I took ___ to settle. (Hours/Minutes)							
I went to sleep at ___ o'clock.							
I woke up __ times (Specify number of nighttime wakings).							
I woke up at ___ o'clock (Last awakening)							
I got out of bed at ___ o'clock							

Appendix 3.7

Individualised daily rating scale.

CLIENT F

WEEK NUMBER :

DAY NUMBER :

DATE :

Please rate how seems today on each of the following measures. Attempt to give your first impression as this will usually be correct. Circle the appropriate response using pen.

MOOD : How is mood today. Circle the appropriate response using pen.

Very Bad					Average					Very Good
0	1	2	3	4	5	6	7	8	9	10

ATTENTION : How is attention today i.e. is she able to maintain her attention on a task (TV programme, activity etc) until completion? Circle the appropriate response using pen.

Very Bad					Average					Very Good
0	1	2	3	4	5	6	7	8	9	10

CONCENTRATION : How is concentration today i.e. is he able to concentrate on a task or does he seem easily distracted? Circle the appropriate response using pen.

Very Bad					Average					Very Good
0	1	2	3	4	5	6	7	8	9	10

ANGER : How angry does seem today. Circle the appropriate response.

Very Angry					Average					Not Very Angry
0	1	2	3	4	5	6	7	8	9	10

SELF HARM : How often has been hitting himself today? Circle the appropriate response.

Very Often — Average — Not Very Often

0 1 2 3 4 5 6 7 8 9 10

DAYTIME SLEEPINESS : How sleepy does seem today. Circle the appropriate response.

Very Sleepy — Average — Not Very Sleepy

0 1 2 3 4 5 6 7 8 9 10

DAYTIME SLEEPINESS : How many naps has had today? Total and note number of naps below.

Total number of naps today = ☐

How long has he spent asleep today (minutes)? = ☐

Appendix 3.8

Single case example for subject F.

History

Client F was a 37 year old man with a severe learning disability. He lived at home with his parents and his nephew, for whom F's parents cared. F attended a local Adult Training Centre (ATC) on a daily basis where he was cared for within a special needs unit. F's parents were both retired on medical grounds although F's father worked on a voluntary basis at the ATC two afternoons a week. During this time he worked exclusively with his son to "give the staff a break". Client F was described by his parents as "very difficult to work with". He spent a great deal of the day asleep and was difficult to stimulate. Additionally, F displayed a number of challenging behaviours, most notably hitting himself and striking out at carers. Client F enjoyed going for walks with his family, colourful/noisy games at his ATC and watching his cousin and friends play computer games. F suffered from epilepsy and was maintained on Epilim and Tegretol.

Assessment Details

Client F's parents replied to the initial screening questionnaire stating that their son had difficulty in falling asleep 3 or more nights per week with an average sleep onset of 120 minutes, woke during the night on at least 2 nights per week and had great difficulty in staying awake during the day. F reportedly napped during the day on 6 or more days per week. The clients parents gave consent for their son to enter the assessment phase of the study.

The client and his family were visited at their home three weeks after receipt of the initial screening questionnaire. A sleep diary was posted along with the appointment with instructions in its use. During the assessment interview F's parents highlighted that being able to stay awake and to be less sleepy and irritable in the morning were desirable targets for their son. They felt that F's angry outbursts/self injury might reduce, more quality time could be spent with him during the day and would have more time to themselves if F's sleep pattern improved. However, they highlighted that his medication could be a problem for treatment and were pessimistic about the potential efficacy of treatment due to the lifelong nature of the problem. F's parents reported that he "doesn't have a sleep pattern" with some days during which he sleeps for most of the day and is awake for most of the night, and the rest of the week he would sleep from early evening throughout the night but be lethargic during the day. During an average day F would sleep for around 180 minutes during the day in around six separate naps. They could not give an estimate of the length of an average nights sleep. The client had a set pre-bedtime routine but no set time for bed. He would be assisted into bed whenever he looked tired. The clients bedroom was shared with his cousin and a number of sleep incompatible activities were carried out including playing computer games, often when F was in bed. There were no other sleep hygiene problems. It was reported that the problem had been present from birth although F had become more prone to daytime napping in the past 5 - 6 years. F had no health problems aside from epilepsy which was fairly well controlled. F displayed a number of challenging behaviours including self-injury (punching of his thigh) and hitting/kicking out at carers. F's parents identified a link with periods of highly disturbed sleep although his behaviours were multifactorial.

The clients sleep diary accorded well with his parents reports and demonstrated variable sleep onset latencies with a mean of around 150 minutes and long periods of daytime napping with a mean total of around 100 minutes. Discussion with F's keyworker identified difficulty in stimulation as a major factor in his daytime napping at his ATC placement. Staff made attempts to keep F awake during the day but frequently gave in as they felt it was 'impossible'. The clients parents were contacted one week after assessment and provided consent for entry to the treatment phase of the study.

F was allocated randomly to the three week baseline group and a pre-treatment meeting was arranged with F's parents. During this meeting the purpose of the baseline phase was discussed, the daily measures to be used were explained and the potential benefits for F were outlined. F's father was to carry out all measures and treatment procedures as his mother suffered from poor health and no longer felt able to deal with her son's challenging behaviour.

Following three weeks of baseline measure collection treatment began with instruction in the treatment procedures and rationale for treatment. In consultation with F's parents sleep onset latency and total daytime napping were chosen as the main targets for change using optimal scheduling and stimulus control approaches. A threshold time of 2200 hours was set in order to monitor sleep readiness. Sleep incompatible behaviours in the two hours prior to this time were to be discouraged. F's established pre-bedtime routine was broadened to increase predictability for the client. When F

seemed 'sleepy tired' he was to be assisted to bed with the lights out. F's cousin moved to another bedroom prior to treatment. F's parents were instructed to check on F after 30 minutes and get him out of bed if not asleep. Relaxing activities such as massage, quiet music etc were to be carried out until F seemed 'sleepy tired' once again and the whole procedure was to be repeated until F was asleep in bed. Daytime napping was to be prevented whenever possible and strategies were discussed with F's father to reduce the likelihood of napping including walking with F and scheduling of activities over the day to reduce short, intense 'bursts' of activity. ATC staff were enlisted to monitor F's daytime functioning and reduce daytime napping. Strategies were discussed with staff to reduce napping within staffing restrictions. The importance of consistency was highlighted for all concerned, even over weekends. A weekly instruction sheet was provided for each treatment session.

During sessions 2 and 3 F's progress and his parents work with him was reinforced and the clear progress was detailed and praised. Small alterations were made to the treatment protocol in line with difficulties encountered by F and his parents e.g. a 2200 hours threshold time proved too late and was changed to 2130. ATC staff proved able to reduce F's daytime napping with increases in activity. In session 3 planning for a forthcoming respite period was carried out and staff within F's respite placement were informed of the treatment procedures and gave consent to continue the work during the seven day respite period.

In session 4 some difficulties were encountered as F's sleep pattern improvements which had taken place over the previous weeks (reduced sleep onset latency, reduced

daytime napping etc) worsened significantly to around baseline levels. This deterioration appears to have been due to staff involved in F's respite care, and their difficulty in implementing F's agreed strategies, particularly in the reduction of daytime napping. However, F's parents wished to continue with treatment and procedures were resumed. The majority of the session was spent examining changes that had taken place over the previous weeks as a means of increasing motivation. As this was to be the final treatment session the following four week period was carefully planned.

During the follow up meeting the clients target variables demonstrated some improvement although the improvements seen during treatment periods one and two were not regained. However, intervention with client F and his parents can be regarded as a success in a number of ways: levels of daytime napping and sleep onset latency were reduced from baseline levels at follow up, and the speed and magnitude of the treatment effects during the early stages of treatment provided a boost of confidence for F's carers who had been sceptical prior to treatment. F's carer intended to continue with the approach following termination of the study. A number of measures were carried out during the study. Full graphical representation of measures across treatment can be seen in Figures 1 to 8.

Figure 1: Graphical representation of sleep onset latency (minutes) across treatment periods.

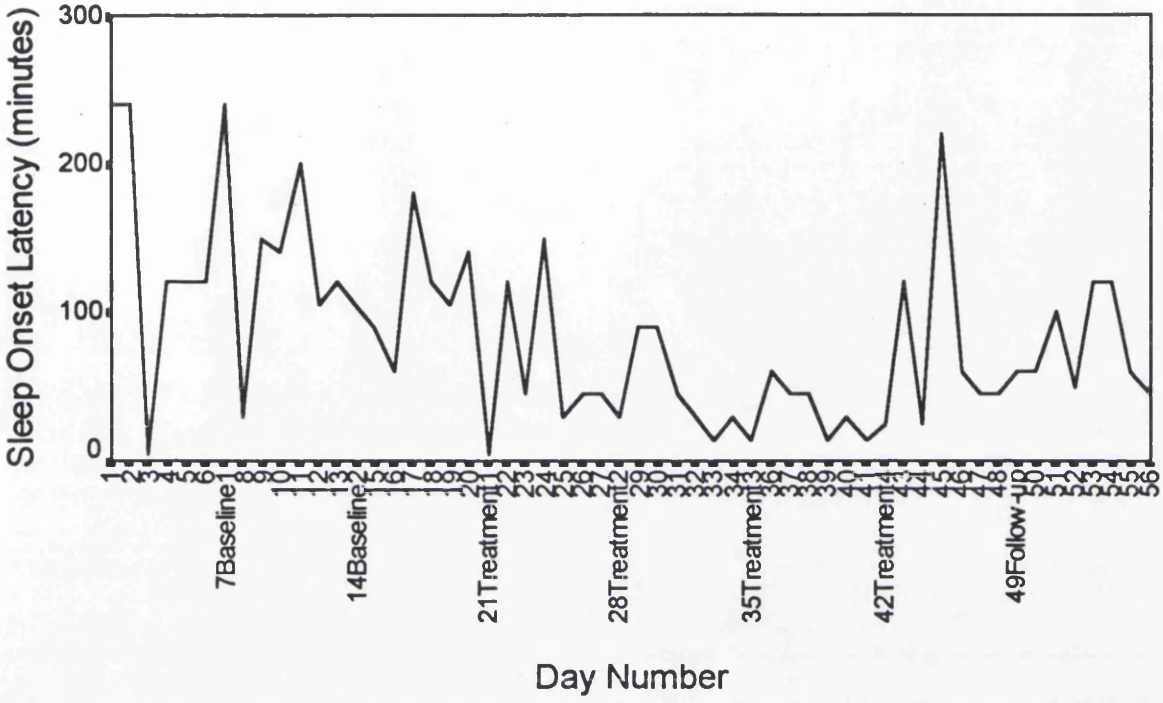


Figure 2: Graphical representation of total sleep time (minutes) across treatment periods.

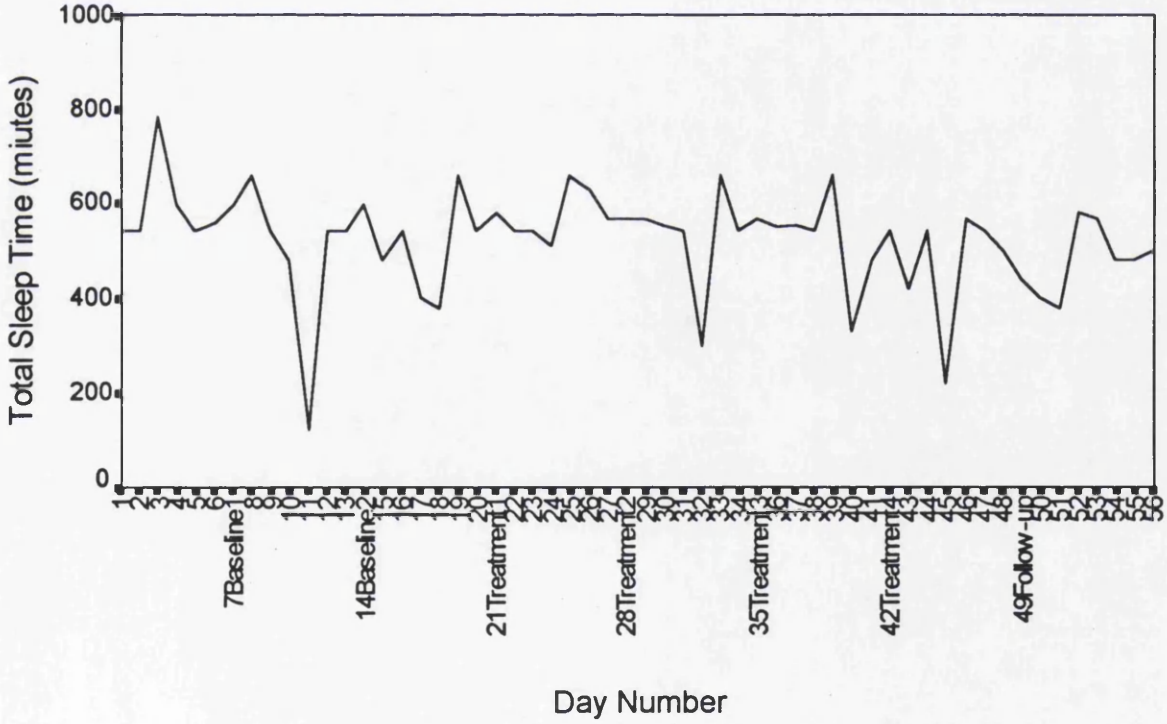


Figure 3: Graphical representation of total daytime napping (minutes) across treatment periods.

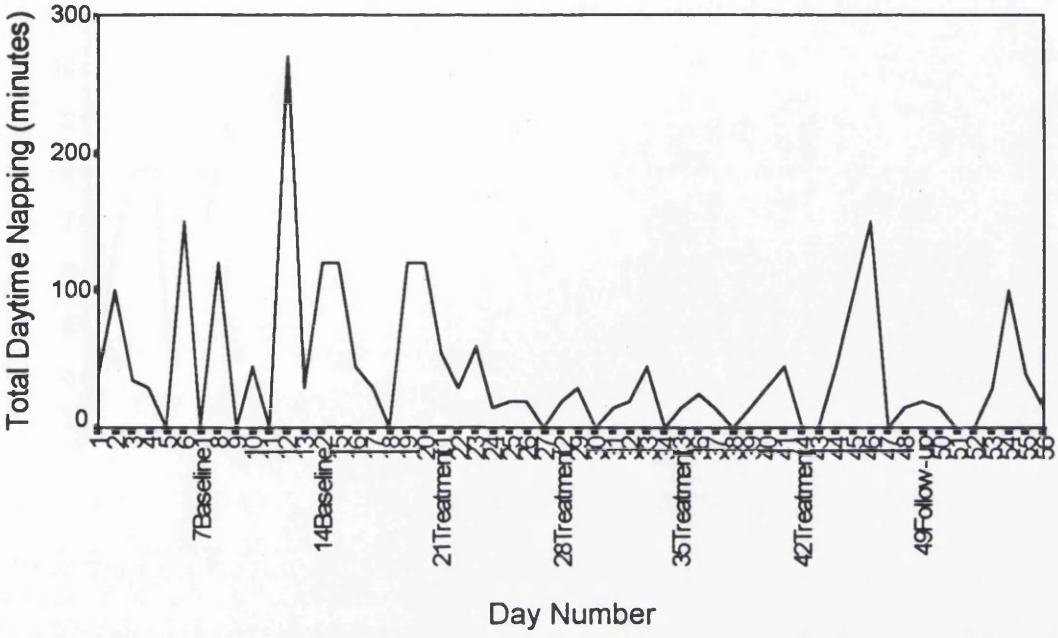


Figure 4: Graphical representation of carer rating of mood (0=Very Bad - 10=Very Good) across treatment periods.

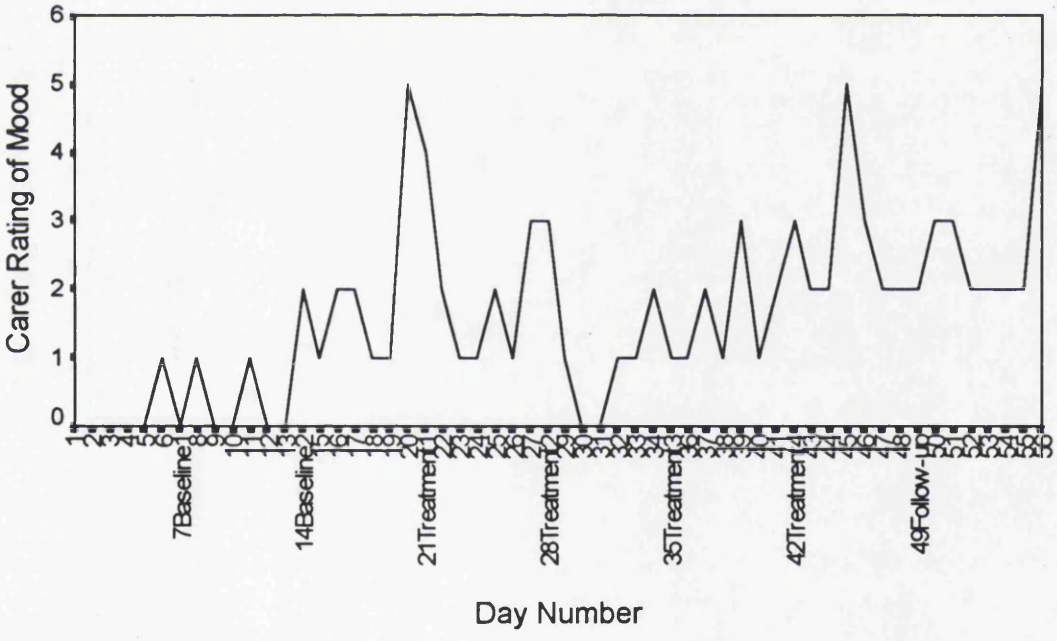


Figure 5: Graphical representation of carer rating of attention (0=Very Bad - 10=Very Good) across treatment periods.

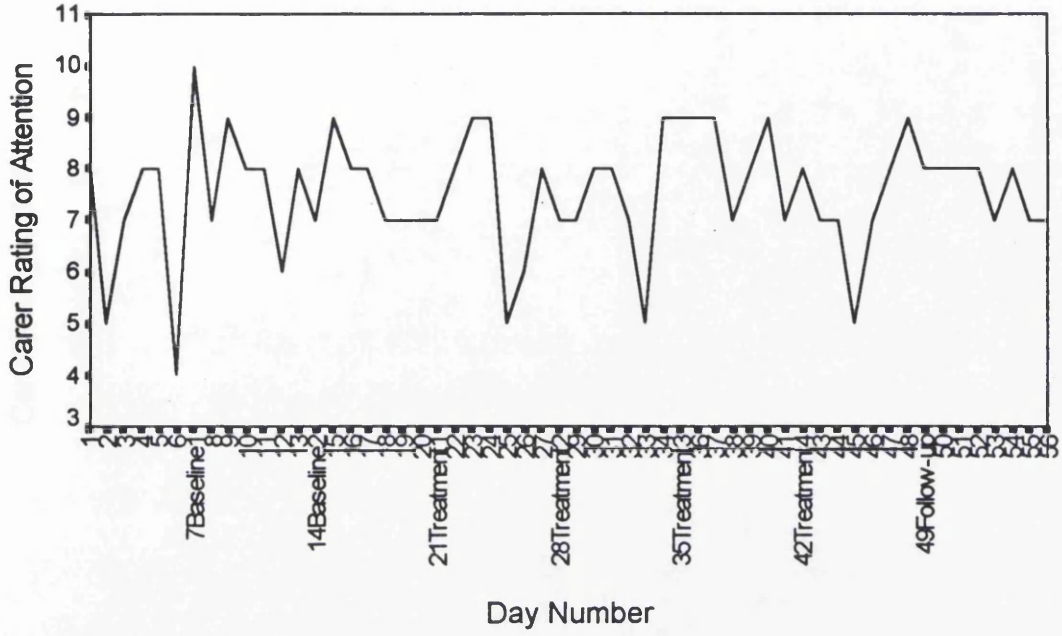


Figure 6 : Graphical representation of carer rating of concentration (0=Very Bad - 10=Very Good) across treatment periods.

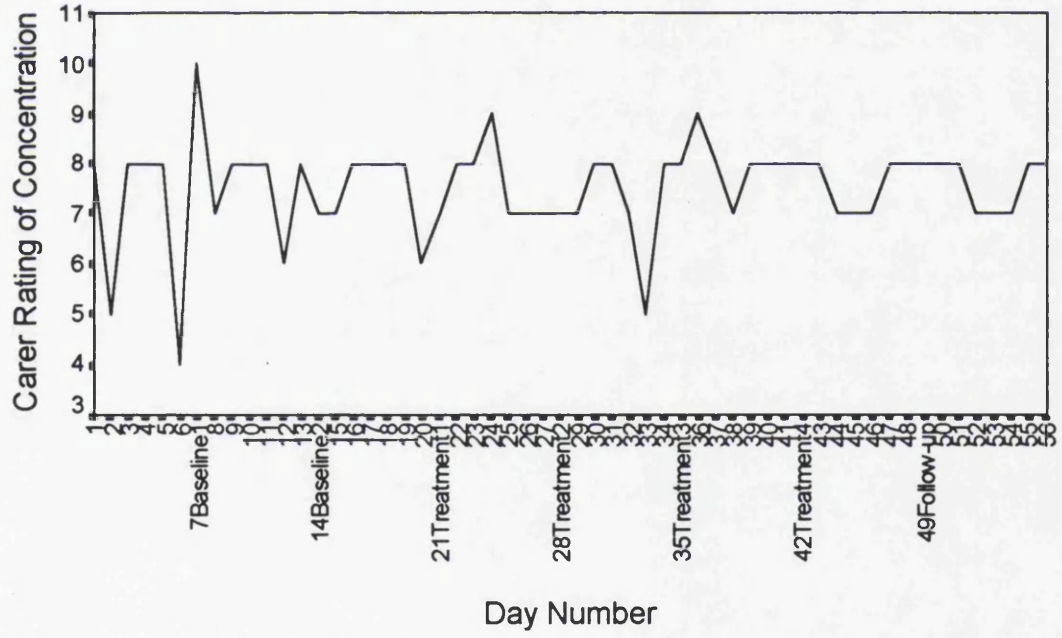


Figure 7 : Graphical representation of carer rating of self injurious behaviour (0=Very Often - 10= Not Very Often) across treatment periods.

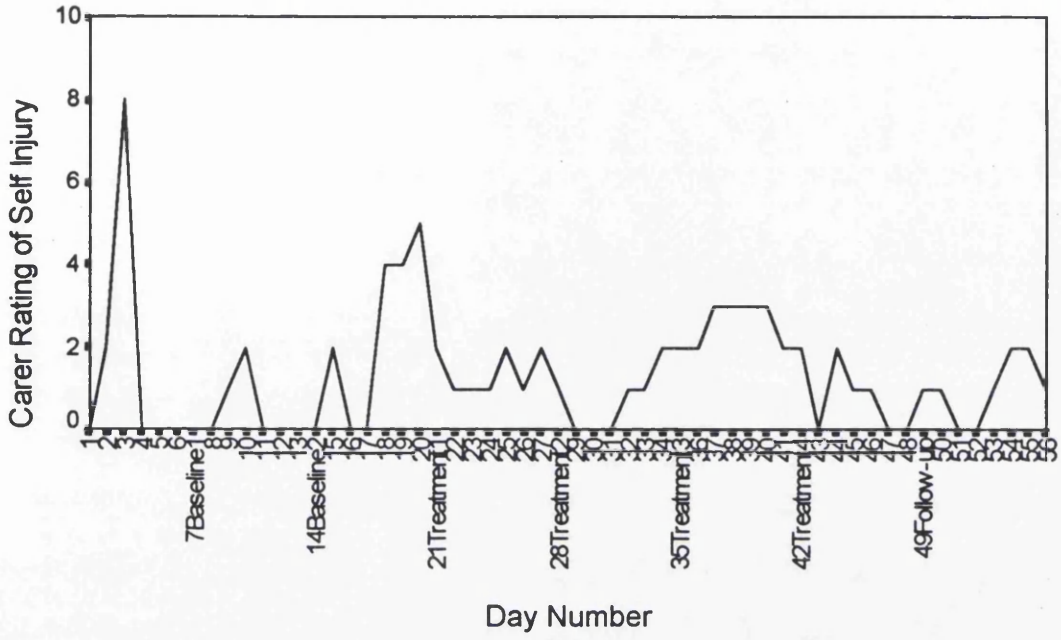
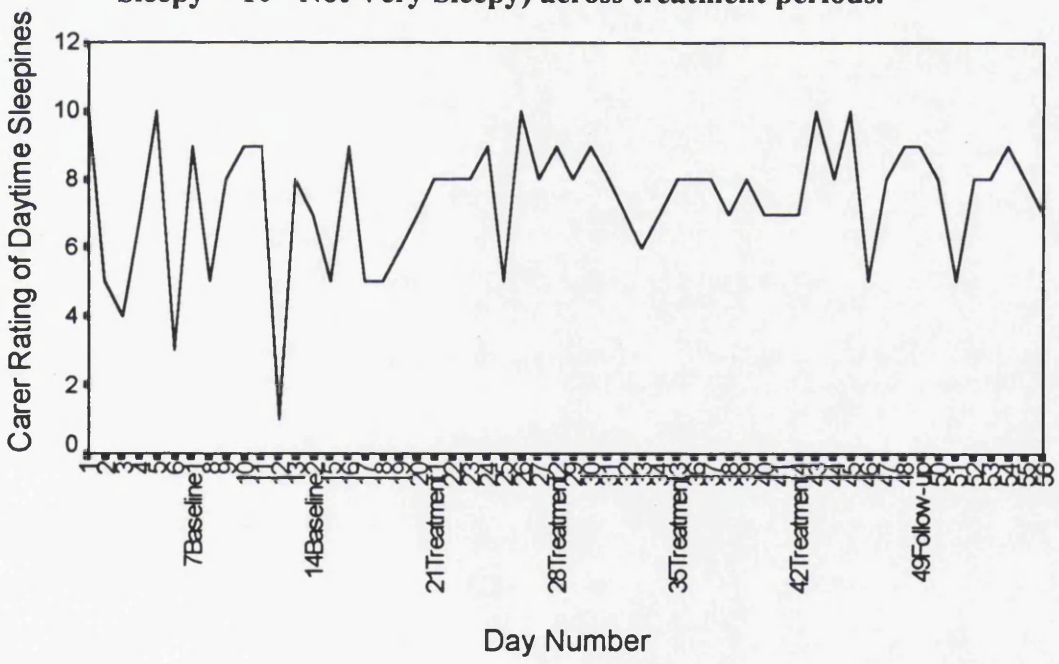


Figure 8 : Graphical representation of carer rating of daytime sleepiness (0=Very Sleepy - 10= Not Very Sleepy) across treatment periods.



Appendix 4.1

Instructions to Authors "British Journal of Addiction."

Notes for Contributors

The *British Journal of Addiction* welcomes original communications and research articles in the fields of dependence on alcohol and other drugs. Papers are accepted on the understanding that they are subject to editorial revision, and that their contents have not been published in whole or in part elsewhere. Short communications, if not more than 500 words in length (including case reports of particular interest) will be published. Material for inclusion in the News and Notes section will be welcomed. Books and major reports may be submitted for review.

Manuscripts *and books for review* should be sent to the Editor, Griffith Edwards, Addiction Research Unit, Institute of Psychiatry, De Crespigny Park, London SE5 8AF, United Kingdom.

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

References may be submitted in either the Harvard or Vancouver systems. When following the Harvard system references should be indicated in the typescript by giving the author's names, with the year of publication in parentheses, e.g. Smith (1984); or if there are more than three authors—Smith et al. (1984). If several papers from the same authors and from the same year are cited, (a), (b), (c), etc. should be put after the year of publication.

When following the Vancouver system references should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by arabic numerals (in parentheses). References cited *only* in tables or in legends to figures should be numbered in accordance with a sequence established by the first mention in the text of the particular table or illustration.

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

Ogborne, A. C. & Smart, R. G. (1982) Reactions to research: the case of the evaluation of Ontario's Detoxification Centres, *British Journal of Addiction*, 77, pp. 275–282.

Institute for the Study of Drug Dependence (1983) *Surveys and Statistics on Drug Taking in Britain* (London, Institute for the Study of Drug Dependence).

Popham, R., Schmidt, W. & Delint, J. (1978) Government control measures to prevent hazardous drinking, in: Ewing, J. A. & Rouse, B. A. (Eds) *Drinking: Alcohol in American Society—Issues and Current Research*, pp. 239–266 (Chicago, Nelson-Hall).

Titles of journals should **not** be abbreviated. Unnecessary referencing should be avoided.

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

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

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

Offprints. Fifty offprints of each paper are supplied free. Additional copies may be purchased and should be ordered when the proofs are returned. Offprints, together with a complete copy of the relevant journal issue, are sent about three weeks after publication.

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Appendix 5.1

Instructions to Authors "Behavioural and Cognitive Psychotherapy."

Instructions to Authors

1. **Submission.** Articles written in English and not submitted for publication elsewhere, should be sent to Paul Salkovskis, Editor, *Behavioural and Cognitive Psychotherapy*, Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford OX3 7JX, UK.

2. **Manuscript preparation.** Four complete copies of the manuscript must be submitted. Original figures should be supplied at the time of submission. Articles must be typed double-spaced throughout on standard sized paper (preferably A4) allowing wide margins all round. Where unpublished material, e.g. behaviour rating scales, therapy manuals, etc. is referred to in an article, copies should be submitted to facilitate review.

Manuscripts will be sent out for review exactly as submitted. Authors who want a blind review should mark two copies of their article "review copy" omitting from these copies details of authorship.

Abbreviations where used must be standard. The Système International (SI) should be used for all units; where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistical values and degrees of freedom [e.g. $F(1,34) = 123.07$, $p<.001$], but such information may be included in tables rather than the main text.

Spelling must be consistent within an article, either using British usage (*The shorter Oxford English dictionary*), or American usage (*Webster's new collegiate dictionary*). However, spelling in the list of references must be literal to each original publication.

Details of style not specified here may be determined by reference to the *Publication manual of the American Psychological Association* or the style manual of the British Psychological Society.

Articles should conform to the following scheme:

(a) *Title page*. The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated.

(b) *Summary*. This should summarize the article in no more than 200 words.

(c) *Text*. This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. *Attention should be paid to the Editorial Statement which appears in the January and July issues at the back of the Journal.* References within the text should be given in the form Jones and Smith (1973) or (Jones & Smith, 1973). When there are three or up to and including five authors the first citation should include all authors; subsequent citations should be given as Williams et al. (1973). Authors with the same surname should be distinguished by their initials. The approximate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible.

(d) *Reference note(s)*. A list of all cited unpublished or limited circulation material, numbered in order of appearance in the text, giving as much information as possible about extant manuscripts.

(e) *References*. All citations in the text should be listed in strict alphabetical order according to surnames. Multiple references to the same author(s) should be listed chronologically, using a, b, etc., for entries within the same year. Formats for journal articles, books and chapters should follow these examples:

BECKER, M. R., & GREEN, L. W. (1975). A family approach to compliance with medical treatment: A selective review of the literature. *International Journal of Health Education, 18*, 173–182.

THORP, R. G., & WETZEL, R. J. (1969). *Behaviour modification in the natural environment.* New York: Academic Press.

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