Encopresis and Family Attitudes

Thesis submitted to the Faculty of Medicine, of
The University of Leicester
in fulfilment for the degree of Doctor in Clinical Psychology

By

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2004
Abstract

The current study investigated whether the provision of parent and child information booklets improved intervention outcome. It also explored the relationships between pre-intervention knowledge and family attitudes with intervention outcome. An independent samples design with correlational measures was used. Children were randomly allocated to a Standard Intervention Group (N = 10) or a Standard Intervention plus Group (N = 12). The Standard Intervention plus Group received parent and child information booklets in addition to the standard clinic intervention. A number of standardised and non-standardised measures were used to assess child and parent views. After ten appointments 77% of cases showed a reduction in soiling episodes and 59% of cases showed an increase in the frequency of motions passed in the toilet. Having two parents living at home, a young father, a father with a high socio-economic status and the use of bowel related medication all significantly correlated with outcome. Parent and child responses on shared Family Attitude Scales tended to have significant positive correlations. Parents were found to significantly underestimate the psychological impact of soiling on their child and children were found to be more likely to attribute their soiling to physical factors than their parents were. The provision of information booklets was associated with a significant improvement in intervention outcome. A positive non-significant correlation between pre-intervention parent and child knowledge and intervention outcome suggested that better knowledge was associated with better intervention outcome. The Family Attitude Scales used in the current study suggested that a low key, non-blaming response to soiling episodes was likely to be most helpful. The mutually beneficial interaction between medical and psychological interventions are discussed. The current study’s findings and their clinical and theoretical implications are considered. The limitations of the present study are acknowledged and ideas for future research are presented.
**Acknowledgements**

In the completion of this thesis I have been fortunate in having help and encouragement from a number of quarters.

Firstly I must acknowledge my debt to the children and parents without who this research would not have been possible.

My debt to the careful scholarship of others is well attested in the bibliography.

North Warwickshire NHS Trust for supporting this research, particularly my long suffering colleagues in The Child and Adolescent Clinical Psychology Sector of the Clinical Psychology Department.

My colleagues in Paediatrics at The George Eliot Hospital NHS Trust not only for their input at Outpatient Clinics, but also for their help and support in conducting this research.

My Supervisor, Dr. Keith Turner, University of Leicester and my line manager Victoria Gifford, Head of The Child and Adolescent Clinical Psychology Sector in The North Warwickshire NHS Trust, whose support and constructive comments have been much appreciated.

Dr. Helen Rostill and Dr Margaret Samson (my mother) for reading and commenting on the initial drafts of this thesis.

My department's secretaries for putting up with the seemingly endless administration that is inevitably required when conducting any research.

Finally, but very emphatically by no means least, my wife, Hilarie, and my two children, Amy and Daniel, for putting up with me while I was conducting this research.
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Preface

A personal note of introduction
The casual observer might ask why anyone might want to conduct research in such an unattractive and uncharismatic area as faecal soiling. However, over the course of a number of years working in the NHS I have become increasingly aware that if services for a socially unacceptable difficulty are to develop and improve we first have to overcome the inherent reluctance to talk about it. Hard working dedicated charities are often in the front line of battling against prejudice to try and raise public awareness and understanding about a particular issue. Recent examples would include child sexual abuse and the work of Childline, long term adult mental health difficulties and the work of SANE (which historically stood for Schizophrenia - A National Emergency) or NSF (National Schizophrenic Fellowship) or enuresis and the work of ERIC (Enuresis Resource and Information Centre). All too often facilitating change in service provision can be an agonisingly slow process, leaving avoidable distress and discomfort unaddressed. Professionals, however, also have a responsibility to challenge stereotypes and mistaken beliefs. One of the most effective ways for a professional to do this is by conducting research and using the results to educate and inform not only their colleagues but the wider public as well. In the past I was able to contribute to this process in a small way when researching the effectiveness of different ways of preparing children for elective surgery in hospital.

Having spent some years working with children who present with soiling difficulties I have become increasingly aware of the lack of published work on what remains a taboo subject in many settings. If this taboo is to be overcome services need to follow the example of ERIC and professionals working with children who present with enuresis. Fortunately ERIC is becoming increasingly active in addressing the needs of individuals who present with soiling difficulties. Professionals need to follow this lead and rise to the challenge of conducting research that builds on a good understanding of the physiology of defaecation, constipation and soiling, setting this knowledge in the wider context of family attitudes and knowledge about soiling difficulties. This in turn will help to inform evidence-based clinical practise and so not only lead to timely and effective interventions but also help to ensure the most efficient use of scarce NHS resources. Without this support frustrated and desperate carers may get drawn into using negative and coercive management strategies to try and resolve their child’s soiling difficulties. Sadly, this may only serve to compound their child’s suffering and isolation and entrench the very difficulties a family wishes to overcome.
Chapter 1 - Literature Review

1.1 Introduction

Children with faecal toileting difficulties and their families often experience considerable distress, all too often suffering in silence. These children show signs of medical and developmental problems, psychological and emotional disturbance and carers frequently report changes in their child’s personality, appetite and energy levels (Smith and Smith, 1987; Murphy and Carr, 2000). In addition, these children experience strained peer and family relationships, as well as educational and social difficulties (Buchanan, 1992). Soiling difficulties also have a significant impact on a family’s finances. Bonner and Dobson (2001) reported that having one child who soiled twice a day added £34.00 a week or £1,768 a year to a family’s outgoings. This additional expense can adversely effect a carer’s ability to manage soiling episodes appropriately. Both Buchanan (1992) and Schaefer (1979) cite persistent faecal soiling difficulties as a possible cause of physical abuse by parents. Conversely, it has been argued that the psychological distress caused by an abusive experience can precipitate faecal incontinence difficulties (Hobbs and Wynne, 1986; Walker, 1998; Murphy and Carr, 2000). This in turn helps to explain the positive correlation between child sexual abuse and faecal incontinence (Oliver and Buchanan, 1979; Kirsch, 1980; Boon, 1991). It is clear that if left unaddressed soiling difficulties can have a potentially devastating impact, not only on the individual, but also on the family.

Buchanan (1990) concluded that children or young people who suffer from faecal soiling difficulties are likely to develop into socially disadvantaged adults. A recent government survey found that 31% of children who presented with faecal soiling difficulties also presented with a mental disorder (Meltzer et al., 2000).

Despite the potentially high physical, psychological and environmental costs of this problem there is relatively little literature or research into soiling difficulties (Murphy and Carr, 2000). The psychological literature on intervention strategies has generally used single case studies to look at particular therapeutic approaches such as psychoanalytical, behavioural or cognitive-behavioural. The few group intervention studies that have been published tended to focus on the physical as opposed to the psychological aspects of the problem. Bellman (1966) was one of the few researchers to have tried to look more closely at soiling difficulties and the psychological experiences of the child and their family. In recent years the work of Buchanan (1990, 1992) has helped to redress this situation. The lack of reliable information on prevalence rates, aetiology or agreed definitions has also contributed to the uncertainty about how best to treat children who present with soiling difficulties.

This review of the literature, has drawn on Psycinfo. and Medline literature searches from January 1995 - January 2003, which used the term ‘Encopresis’ and its synonyms. It
summarises some of the key issues that have been associated with childhood soiling difficulties. First the vexed question of definition will be looked at. Then information on epidemiology and the physiology of bowel control will be presented. Finally, typical and atypical development will be considered from a physical, psychological and environmental point of view.

1.2 Definition
The terminology used in this area is very confused. The terms faecal incontinence, faecal soiling and encopresis have all been used at times to mean the same and different things (Gabel, 1981; Fritz and Armbrust, 1982; Dwivedi and Bell, 1993). A number of common factors can be identified in most definitions of soiling difficulties (see Table I.i, see below).

Table I.i - Factors used to help define soiling difficulties (adapted from Smith and Smith, 1987)

<table>
<thead>
<tr>
<th>Factor used to aid definition:</th>
<th>Used by:</th>
</tr>
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<tr>
<td>Is the problem organic or functional</td>
<td>Levine, (1975); Doleys et al, (1981); Gabel, (1981); Fritz and Armbrust, (1982);</td>
</tr>
<tr>
<td>Inappropriateness of the place where defaecation occurs</td>
<td>Schaefer, (1979); Doleys et al, (1981); Gabel, (1981); Fritz and Armbrust, (1982);</td>
</tr>
<tr>
<td>Is defaecation voluntary or involuntary</td>
<td>Schaefer, (1979); Gabel, (1981); Fritz and Armbrust, (1982);</td>
</tr>
<tr>
<td>Extent to which a child was constipated or the motion that they passed was normal</td>
<td>Doleys et al, (1981); Gabel, (1981); Fritz and Armbrust, (1982);</td>
</tr>
<tr>
<td>Age</td>
<td>Levine, (1975); Schaefer, (1979); Doleys et al, (1981); Gabel, (1981);</td>
</tr>
<tr>
<td>Frequency and/or duration</td>
<td>Levine, (1975); Schaefer, (1979);</td>
</tr>
<tr>
<td>Is presentation primary (never continent) or secondary (occurs after 6 - 12 months of continence)</td>
<td>Schaefer, (1979)</td>
</tr>
</tbody>
</table>

Paediatricians have tended to use 'Encopresis' to refer to the passage of normal formed stools in an inappropriate place and 'Soiling' to refer to the involuntary passage of stools (Smith and Smith, 1987). Other professionals have tended to use the terms interchangeably (Dwivedi and Bell, 1993). Levine (1975) argued for a broad definition of encopresis to include any child (four years old or more), who without any underlying organic aetiology, regularly soiled themselves. Levine's definition included individuals who presented with constipation with overflow, since he felt that in some cases the soiling continued inspite of them going through constipation free periods.

The points used to define Encopresis in The Diagnostic and Statistical Manual - IV (American Psychiatric Association, 1994) and ICD - 10 (World Health Organisation, 1996) are presented in Table I.ii and Table I.iii respectively (see below). There is a considerable amount of
agreement between these two definitions, except that ICD -10 does not attempt to subclassify soiling difficulties with different features, while DSM IV makes a distinction between presentations with or without constipation and constipation with overflow.

Table I ii - Criteria used by The Diagnostic and Statistical Manual - IV to define Encopresis

| A. | Repeated passage of faeces into inappropriate places (e.g. clothing or floor) whether involuntary or intentional. |
| B. | At least one such event a month for at least 3 months. |
| C. | Chronological age is at least 4 years (or equivalent developmental level). |
| D. | The behaviour is not due exclusively to the direct physiological effects of a substance (e.g., laxatives) or a general medical condition except through a mechanism involving constipation. |

Specify Type: Specify whether presentation is with or without constipation and constipation with overflow

Table I iii - Criteria used by the ICD -10 to define Non-Organic Encopresis

| A. | The child repeatedly passes faeces in places that are inappropriate for the purpose (e.g. clothing, floor), either involuntarily or intentionally. (The disorder may involve overflow incontinence secondary to functional faecal retention.) |
| B. | The child’s chronological and mental age is at least 4 years. |
| C. | There is at least one encopretic event per month. |
| D. | Duration of the disorder is at least 6 months. |
| E. | There is no organic condition that constitutes a sufficient cause for the encopretic events. |

Quay and Werry (1972) suggested that four years of age should be the minimum at which a judgement of abnormal bowel control can be made. Some workers have focused on the place of defaecation rather than the process itself (Davis et al, 1976; Webster and Gore; 1980). This may result in cases where constipation is a factor being largely excluded.

Cookson (1996) defined faecal incontinence as the inability to retain faeces until passing them was convenient. He pointed out that there were two main types of soiling: retentive and non-retentive. He suggested that retentive soiling occurred as a result of physical factors, such as anal fissures or poor gastro-intestinal motility; or as a result of psychological factors, such as performance pressure from carers. He also argued that in non-retentive soiling, where normal faeces were passed in inappropriate places, it was more likely to be related to psychological factors.
There is considerable variation from one definition to another as to how long a child needs to have been toilet trained as far as their bowel movements are concerned before their soiling difficulties are regarded as secondary as opposed to primary. A primary presentation indicates that there has never been a period of voluntary faecal continence (Schaefer, 1979). A secondary presentation indicates that there has been a period of voluntary faecal continence, usually at least 3 - 6 months. A secondary presentation generally allows any underlying organic factors that may be associated with an individual's presentation to be excluded with greater confidence. Unlike nocturnal enuresis secondary soiling difficulties have been found to be more common than primary soiling difficulties (Smith and Smith, 1987). Fritz and Armbrust (1982) reported that in 50 - 60% of cases the soiling problem was secondary.

Clayden and Agnarsson (1991) offered practical definitions of the terms constipation, soiling and encopresis (see Table l.iv).

Table l.iv - Definitions of Constipation, Soiling and Encopresis (Clayden and Agnarsson, 1991)

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Constipation</td>
<td>Difficulty or delay in the passage of stools (not a description of the hardness of the stool, although this is often but not always associated), implying that the lower rectum is usually full rather than empty.</td>
</tr>
<tr>
<td>Soiling</td>
<td>Involuntary passage of fluid or semi-solid stool into the clothing (usually as a result of overflow from a faecally loaded rectum), implying that sensation and control are not normal.</td>
</tr>
<tr>
<td>Encopresis</td>
<td>Passage of a normal stool into socially inappropriate places (including clothing), implying that there is normal sensation and control.</td>
</tr>
</tbody>
</table>

Buchanan (1992) has offered one of the most all encompassing definitions to date. She suggested that any child between the ages of four to sixteen, who regularly soiled their pants and/or bed should be regarded as presenting with soiling difficulties. This deliberately broad definition ensures that all children with soiling difficulties are included, regardless of whether their difficulties are due to physiological, psychological or environmental factors. Buchanan only excluded two groups; those children who in a fit of anger deliberately place their faeces in an offensive place (i.e. not an ongoing occurrence), and those children whose soiling is related to a neurological disorder (e.g. Hirschsprung's Disease) or severe learning disability.

1.2.1 Summary
There is considerable variation in the definitions used by different workers as to what constitutes a soiling difficulty. Obviously the rigour of the definition used will lead to variations in prevalence and incidence rates reported from one study to another, since different diagnostic definitions will include and exclude different presentations. This in turn will have significant
implications for interventions since soiling that is secondary to chronic constipation will require a different intervention to soiling that is not related to constipation. Both Clayden (1976) and Levine (1982) pointed out that children who soil do not neatly fall into separate and distinct groups. It is also interesting to note that none of the above definitions (Clayden and Agnarsson, 1991; Buchanan, 1992; Cookson, 1996; ICD - 10; DSM - IV) explicitly incorporate faecal smearing. Schaefer's (1979) primary and secondary distinction has also been omitted from these definitions. One consequence of this is that little research has been conducted on this distinction. As a result there is a lack of information about whether a primary or secondary presentation effects intervention outcomes.

In the following review of the literature Buchanan's broad definition of soiling difficulties will be used. This would include involuntary soiling associated with constipation, as well as the less common presentation of voluntary soiling, which has sometimes been referred to as encopresis (the passage of a normal stool into socially inappropriate places). The advantage of using such a broad definition is that it avoids prejudging issues of intentionality or the extent to which constipation or other factors are implicated in a child's presentation. The term "soiling difficulties" will be used to refer to both voluntary and involuntary soiling, that is primary or secondary in its nature.

Bearing in mind the limitations that the lack of an agreed definition causes, the epidemiology of soiling difficulties will now be considered.

1.3 The Epidemiology of soiling difficulties
Buchanan (1992) pointed out that 97% of all five year olds at primary school have achieved faecal continence. Estimates, however, of the incidence (the proportion of children who present within a stated period) of soiling vary, since epidemiological studies have used different definitions and survey methods. As a result individuals with voluntary as well as those with involuntary soiling difficulties have been included in some epidemiological studies but not in others. In any event children and young people with faecal continence difficulties have been estimated to make up a significant proportion of paediatric and child psychiatry caseloads. Studies of clinical populations have suggested that this client group accounts for 20% - 25% of paediatric gastroenterology cases, 10% of child psychiatry attendances and 3% of all paediatric outpatient contacts (Loening-Bauke and Younoszi, 1982; Molnar et al, 1983; Buchanan, 1990; Levine, 1991; Christophersen and Rapoff, 1992). The incidence of soiling difficulties persisting into adulthood is rare (Rex, Fitzgerald and Goulet, 1992), though individual cases have occasionally been reported in the literature (for example Fraser and Taylor, 1986). The number of boys and girls who soil is roughly equal in the first two years of life. The ratio shifts to more boys as children grow older.
Overall estimates of the occurrence of soiling difficulties range from 1.5 - 7.5 % of children in the general population (Doleys et al, 1981). This large variation can be accounted for partly by the age of the children being looked at, but also by the definition being used. For instance, Bellman (1966) defined soiling difficulties as the repeated, involuntary passage of stools into clothing without any identifiable organic cause, while more recent researchers who used DSM - IV or ICD - 10 definitions might identify different prevalence and incidence rates since they both include voluntary as well as involuntary soiling difficulties. Bellman's (1966) figures, which are frequently cited, could therefore be regarded as under estimating the occurrence of soiling difficulties. Reviews of the literature (Bellman, 1966; Rutter et al, 1970; Schaefer, 1979; Webster and Gore, 1980; Doleys et al, 1981; Gabel, 1981; Fritz and Armbrust, 1982) suggest prevalence rates (the proportion of children who present at a particular point in time) reduce with age for faecal incontinence (see Table 1.v).

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Children with faecal incontinence</th>
<th>Sex ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(taken from large scale studies of 3,500 or more individuals in the general population)</td>
<td>Male : Female</td>
</tr>
<tr>
<td>3</td>
<td>8.1% (Bellman, 1966)</td>
<td>2.1:1</td>
</tr>
<tr>
<td>4</td>
<td>2.8% (Bellman, 1966)</td>
<td>3.1:1</td>
</tr>
<tr>
<td>5</td>
<td>3.1% (Butler and Golding, 1986)</td>
<td>1.8:1</td>
</tr>
<tr>
<td>7</td>
<td>1.5% (Bellman, 1966)</td>
<td>3.5:1</td>
</tr>
<tr>
<td>10/11</td>
<td>0.8% (Rutter, 1975)</td>
<td>5:1</td>
</tr>
</tbody>
</table>

The majority of children are continent of faeces by the time they are four years of age (Stein and Susser, 1967) and faecal continence difficulties decline with age. Bellman's (1966) findings, indicated a similar decline with age and that girls seem to develop their continence skills roughly six months earlier than boys (see Figure 1.i, see below).

The occurrence of faecal smearing tended to be low (Smith and Smith, 1987) though embarrassment and social stigma will have contributed to this being under reported. A literature search of Psycinfo and Medline since 1995 identified no publications specifically on this topic.

1.3.1 Co-morbidity with enuresis

Soiling has been found to be less common than enuresis (Bellman, 1966; Rutter, 1975). Non-organic enuresis has been defined as the involuntary or intentional voiding of urine into bed or clothes by children who are at least five years old, in the absence of any structural abnormalities (Cooper, 1994). Doleys et al (1981) and Morgan (1981) suggested that soiling difficulties frequently occur in conjunction with diurnal and nocturnal enuresis. This view has been supported by studies of clinical populations that have reported significant rates of co-morbidity with enuresis. Loening-Baucke (1989) reported that diurnal enuresis was a problem.
for 20% of children who presented with soiling problems and that 33% of children who soiled experienced nocturnal enuresis difficulties. She went on to point out that recurrent urinary tract infections.

Figure 1.1 - Incidence of bowel and bladder control between the 2nd and 7th birthdays from Bellman (1966) who studied 8683 first year school children.

Incidence (per cent)

were a common complaint in 10% of girls who soiled. Clayden and Angarsson (1991) reported that in their clinical sample of constipated children aged six years old or more, 16% also
presented with enuresis. Fritz and Armbrust (1982) suggested a higher rate of approximately 25% of children who soil would also present with enuresis. In some cases the enuresis difficulties may be secondary to a child's presentation with constipation, due to the capacity of the bladder being restricted.

1.3.2 Summary
When considering prevalence or incidence rates for socially unacceptable behaviours like soiling difficulties it should be remembered that there will be a tendency to under-report. This, together with the lack of agreement over definitions, means that a degree of caution is warranted when considering prevalence rates. It is however reasonable to assume that 3% of five year olds and 1% of ten year olds will present with soiling difficulties. Clinical samples indicate that there is a degree of co-morbidity for soiling difficulties with enuresis. Individuals who experience soiling difficulties are more likely to be male and this likelihood increases with age. Schaefer (1979) argued that there was a spontaneous decline of 28% per year in the incidence of soiling difficulties. This is consistent with the developmental nature of some individual's soiling difficulties. Often families suffer in silence for some time unaware of just how many other children are struggling with a similar difficulty, before seeking help. The incidence of soiling difficulties makes a significant demand not only on a family's emotional and financial resources, but also on health care resources.

Before considering atypical development it is important to have an understanding of typical bowel physiology and bowel control. A brief summary of typical bowel physiology and the typical development of bowel control will therefore be presented.

1.4 Typical Physiology of bowel control
In most healthy individuals the rectum is normally empty. Peristaltic muscle contractions move food along the alimentary canal from the stomach to the rectum. This eventually results in faeces in the lower end of the descending colon being passed into the rectum. As a result the rectum walls become stretched which triggers stretch receptors and leads to the sensation of the urge to defaecate. This sensation is sometimes referred to as the 'call to stool' (Schaefer, 1979). Where faecal continence has been achieved this sensation will usually result in the individual going to the toilet and a stool being passed from the rectum down the anal canal into the toilet. This results in the 'call to stool' passing. When empty the walls of the rectum collapse together and the rectum remains empty until the next 'call to stool' is experienced. The potential capacity of the rectum is very large. If the 'call to stool' is ignored the faeces will normally move back into the lower end of the descending colon.

There is considerable individual variation in how frequently the urge to defaecate is experienced. Weaver and Steiner (1984) found that 85% of one to four year olds had their bowels open once or twice a day and 96% fell within the range of three times a day to every
other day. Hinton and Lennard-Jones (1968) reported that for adults five to seven bowel actions a week was typical and that 99% fell within the range of three times a day to three times a week. The sensory nerve endings in the lower bowel are very important in helping to maintain faecal continence. The sensory receptors in the anal canal and the anal mucosal folds (See Diagram 1.i below) enable an individual to distinguish between flatus (wind), fluid and faeces (Clayden and Agnarsson, 1991).

Diagram 1.i - Rectum and Anal Canal (from Shapiro, 1948)
Clayden and Agnarsson (1991) also point out that the speed with which the rectum fills depends on the motility in the colon. The slower the speed the greater the amount of water that can be reabsorbed. However many colonic waves may be non-propulsive since hypermotility of the colon can lead to constipation (Connell, 1962). Clayden and Agnarsson (1991) emphasise the inter-relationship of the physiological features (rectal filling, distension, sensation, anal relaxation) and the psychological features (sensation perception, voluntary relaxation, learned defaecation, social responses) of defaecation. Buchanan (1992) noted that an individual's emotional state may affect their bowel function, for example extreme fear can result in faecal incontinence. This inter-relationship would suggest that when difficulties occur a combination of physical and psychological interventions offers the best potential outcome, irrespective of the initial cause of the defaecation difficulties.

1.4.1 Typical Development of faecal continence
During the neonatal period meconium is usually passed within 48 hours of birth. In the first few weeks of life bowel actions occur after each feed as a reflex action (the gastrocolic reflex); by the time a child is toddling a degree of partial bowel control has usually been established and only one or two bowel actions are passed per day (Smith and Smith, 1987). Eventually full voluntary control of the muscles (the external anal sphincter) which prevent defaecation is established. It is interesting to note that in a cross cultural study Whiting (1963) observed that whatever toilet training method was used (be it modelling, punishment, steps to aid proficiency, self-training, verbal reinforcement, regular toileting, or praise and rewards) most children developed voluntary control of their bowels by two - three years of age, irrespective of their cultural background.

Usually bowel control emerges before bladder control (Walker, 1998), first by night and then by day (Smith and Smith, 1987). Largo and Stutzle (1977) found that the vast majority of six year olds had achieved faecal continence by three years of age. They also found that bowel continence consistently emerged earlier for girls than it did for boys and that it was unusual for children to develop full continence of their urine by day and by night without first having established bowel control. These findings were broadly consistent with earlier studies (e.g. Bellman, 1966).

A good balanced diet containing a reasonable amount of roughage has an important part to play in the development of normal faeces, normal bowel control and a regular bowel habit (Smith and Smith, 1987).

1.4.2 Summary
Children generally establish voluntary bowel control by two - three years of age, as voluntary control is developed over the gastrocolic reflex. For a child to develop faecal continence they must be able to recognise the sensation of rectal filling (via the stretch receptors in the rectum
wall) and realise that it is not socially acceptable to defaecate immediately. They must then slow the descent of the stool (by contracting the puboanal sling and external anal sphincter) and temporarily contain the stool in the (upper) rectum, in order to give themselves time to get to the toilet. The reinforcement of the contraction of the continence muscles each time the rectum contracts and the internal anal sphincter relaxes to allow the faeces to descend into the very sensitive upper anal canal, ensures that a motion is not passed until the child has got to the toilet. There is evidence to suggest that this inter-relationship of physiological and psychological factors in the development of faecal continence is affected not only by physiological but also psychological and environmental factors as well (Clayden and Agnarsson, 1991).

1.5 Atypical development of faecal continence - resulting in soiling difficulties
Many issues have been implicated as possible causal factors in the development of soiling difficulties. These have ranged from organic factors such as constipation, to premature and/or strict toilet training, lax toilet training with low expectations, a poor parent-child relationship, stress, family conflicts, personality factors, learning factors, genetic factors and developmental immaturity (Smith and Smith, 1987). Hobbs and Wynne (1986) were amongst the first to suggest that soiling may be an indicator of child sexual abuse. When considering these factors it is important to remember that they were based on clinical observations, rather than controlled experiments (Protinsky and Kersey, 1983).

When considering the aetiological factors, it should be remembered that there is a maturational component to such problems (similar to that for enuresis - Rutter and Rutter, 1992). Fielding (1982) proposed a model for children presenting with enuresis difficulties that highlighted the need to assess the problem within its developmental context. Building on this idea a model of bowel control at three different ages is presented in Figure 1.ii (see below). A maturational model for soiling difficulties would suggest that different aetiological factors may be significant at different ages. For instance, in a pre-school child, soiling accidents may be due to constipation or due to their being too immature to be reliably continent (unable to exercise any inhibitory control). For a ten year old on the other hand, soiling may be due to constipation or a secondary gain, such as avoiding lessons (deliberately choosing not to exercise inhibitory control).

Soiling may occur as a result of a medical disorder, a psychological disturbance or environmental factors; in many cases it may be a combination of all three (Walker, 1998). Rutter (1975) identified the consistency of the motion as being a key element in trying to unravel the factors underlying a child’s soiling. He suggested that motions of abnormal consistency may be due to either physical or psychological factors and as a result both physical and psychological factors warranted further investigation.
Figure 1.ii - A model of bowel control showing three developmental phases
(Birth - 6 months; 1 - 2 years and 4 years plus)

**Birth - 6 months**

- Emptying
- Filling
- RECTUM

**1 - 2 years**

- Emptying
- Filling
- RECTUM
- Self awareness
- Desire to defaecate
- Distension or filling signals

**4 years plus**

- Emptying
- Inhibitory control
- Self awareness. Desire to defaecate.
- Filling
- RECTUM
- Distension or filling signals
- Elimination of signals
Figure 1.i.iii (see below) draws together the inter-relationship of physical, psychological and environmental factors in the aetiology of soiling difficulties (Clayden, 1980). Both Levine (1975) and Buchanan (1990, 1992) pointed out that it may not always be possible to tease apart which of these was primarily responsible for a child’s soiling difficulties. Buchanan argued that these factors may lead to few significant differences in a child’s presentation. Children who soil generally do so as a result of a combination of factors, some of the more common aetiological factors are outlined below.

Given that the development of faecal continence can be disrupted by physical, psychological and environmental factors in isolation or more generally in combination, it is important to look more closely at each of these factors in turn.

1.5.1 Physical factors associated with soiling

It is beyond the scope of this literature review to present a detailed summary of all the physical factors associated with soiling. Acknowledgement of the more common physical conditions associated with soiling is however important since physical factors have often been implicated in the development of soiling difficulties (Levine, 1975).

Constipation

Constipation could be considered as a difficulty or delay in the passage of stools, thus implying that the lower rectum may usually be full rather than empty (Tripp and Candy, 1985). Gabel (1981) and Fielding and Doleys (1988) report that constipation and retention are factors in the majority of soiling cases. Some authors have estimated that between 80% and 90% of all childhood soiling is due to chronic constipation (Walker, 1998; Levine 1975; Fitzgerald; 1975); Buchanan (1990) gave a lower estimate of 60%. These estimates were based on clinical samples which may be unrepresentative of soiling in the general population. Soiling unrelated to constipation or other physical factors may be under represented due to embarrassment about seeking help.

If stools are retained and this remains untreated for a prolonged period the walls of the rectum become stretched and there is a risk that a megarectum will develop. As the rectum adjusts to the volume of retained faeces the urge to defaecate gradually passes. If this cycle is repeated, successively larger amounts of motion build up in the rectum. In severe cases the bowel may become partially blocked and the anal sphincter become distended, due to the sheer quantity of retained faecal matter. This may lead to some of the retained motions becoming liquefied and seeping passed the blockage, with the result that the individual presents with an involuntary soiling accident. This type of soiling is generally referred to as constipation or retention with overflow.
Figure l.iii - The interrelationship of organic, psychological and environmental factors in the development of soiling (from Clayden, 1980)

**Organic**
- Hirschsprung's Disease
- Congenital megarectum
- Large rectum
- Normal rectum
- Anal anomalies
- Anal stricture

**Environmental**
- Dietary:
  - Water deprivation
  - Fibre deprivation
  - Incorrect treatment
  - Poor lavatories

- Psychological:
  - Parental over-concern about their child's bowels
  - Coercive toilet training
  - Fear of defaecation

**Effects on defaecation**
- Infrequent defaecation
- Hard dry stools
- Faecal loading
- Dislike and avoidance

**Pathophysiological effects**
- Megarectum
- Faecal 'rocks'
- Overflow soiling
- Potty/lavatory refusal

**Secondary physiological effects**
- Internal and external sphincter hypertrophy
- Poor sensation of desire to defaecate
- Infrequent massive stools
- Parental and peer group scorn or coercion

**Results**
- Difficult obstructed defaecation
- Reduced urgency of need to defaecate
- Fissures, pain further development of megarectum
- Loss of self-esteem and confidence
A megarectum results in a thickening of the wall of the rectum and reduced rectal sensitivity. In extreme cases an individual may no longer be aware of how full their rectum is. This helps to explain why children with a previous long standing history of extreme constipation may find it difficult to respond appropriately to subtle changes in their rectal sensations. It also increases the likelihood that larger, drier and harder stools will be passed, since the longer a stool remains in the rectum the more water the body reabsorbs from it. This in turn increases the risk of pain on defaecation and the development of constipation with overflow. In some instances the accumulated faecal mass may be so large that the rectum is unable to move it through the anus.

Clayden and Angarsson (1991) found that pain on defaecating was reported in 74% of their clinical sample of chronically constipated children, with 55% of carers having noticed blood in their child's stools. They pointed out that the experience of pain on defaecation can result in a reflex contraction of the external anal sphincter. Unfortunately, this may intensify the experience of pain and may result in the development of an anal fissure. They suggested that a child's reluctance to defaecate increased in proportion to their rectal capacity, the hardness of their stools, the sensitivity of their anal canal (regardless of whether or not they have a history of anal fissures), and the inappropriate use of medication (e.g. suppositories or enemata).

Anal fissures may be one reason why an individual might experience pain on defaecation. Bellman (1966) found that 9.3% of the parents of children with soiling difficulties in her clinical sample said that their child found it painful to have their bowels open and that fresh blood had been seen on the faeces. This compared with 1.3% of the parents in her control group. The different definitions used by Agnarsson and Clayden (1991) and Bellman (1966) to identify their clinical cases may account for a lot of the difference in the reported incidence of pain on defaecation. This highlights the dangers of trying to draw comparisons and conclusions from studies that have used different definitions.

Kelly (1996) speculated that the development of chronic constipation and soiling may be related to significant life events. Loening-Baucke (1996a) pointed out that some medicines which contain codeine, (e.g. some anticonvulsants and cough medicines), may cause constipation. She and Iacano et al (1998) both noted that an intolerance of cow's milk may also be associated with constipation.

Chronic constipation contrasts markedly with constipation in babies which tends to be acute, short lived and is usually rapidly resolved by increasing a baby's fluid intake (Clayden and Agnarsson, 1991).

Whatever the reason for the development of constipation, motions become difficult to pass and may actively be withheld in order to try and avoid the distress of passing them. This may result
in frequent small compacted soiling accidents, less frequent large compacted soiling accidents, or continuous involuntary seepage of a watery motion around the impacted faeces (constipation with overflow). Two unfortunate compounding factors are that when a child becomes constipated it frequently goes undetected by the child or their carers (Walker, 1998), and that constipation with overflow may be mistaken for diarrhoea and so mistreated compounding a child’s presentation and distress.

Hirschsprung’s Disease
Hirschsprung’s disease occurs in about 1 in 5,000 live births (Clayden and Agnarsson, 1991). Ganglion cells fail to innervate the smooth muscles of the anus. This leads to a narrowing and obstruction of the bowel, which leads to constipation. The length of the aganglionic segment in Hirschsprung’s disease is variable. In cases of ultra-short segment Hirschprung’s disease a child’s toileting difficulties may wrongly be attributed to psychological factors (Clayden and Lawson, 1976). Carr (1999) cited that up to ten per cent of referrals with chronic constipation have Hirschspring’s disease.

Genetic Factors
While Doleys et al (1981) argued that genetic factors are not a major contributing factor to the development of soiling difficulties, an increased history of soiling has been found in the parents and other relatives of children who present with such problems (Bellman, 1966; Smith and Smith, 1987). Some individuals seem to have a genetic predisposition to constipation and soiling (Coekin and Gairdner, 1960; Petti and Davidson, 1991; Walker, 1998). It is however important to remember that environmental and genetic factors are notoriously difficult to disentangle.

Other physical factors
A number of other physical factors have been identified as being of significance and are listed as follows, intestinal obstruction, congenital abnormalities, hypothyroidism and gastrointestinal disease, brain injury/developmental factor and neurological disorders.

1.5.1.1 Summary of physical factors associated with Soiling
Various clinical studies have reported that constipation was a factor in the majority of childhood soiling difficulties (Gabel, 1981; Fielding and Doleys, 1988; Buchanan, 1992; Walker, 1998). Constipation may lead to an individual actively retaining their faeces in an attempt to avoid the distress and pain of passing a large compacted motion. It may also result in involuntary loose soiling difficulties due to constipation with overflow. Constipation with overflow can be mistaken for diarrhoea so a family’s understanding and knowledge of soiling difficulties clearly has a vital part to play in trying to ensure that a child’s presentation is not mismanaged. Some physical factors, such as Hirschspring’s Disease, will clearly effect the development of a child’s bowel
control. Chronic constipation might also be expected to delay the development of a child's bowel control, but further research is needed in this area to substantiate this view.

### 1.5.2 Psychological factors associated with Soiling

One of the earliest descriptions implicating psychological factors in the occurrence of soiling was made by Fowler (1882). He outlined a case history where a seven year old boy presented with secondary soiling difficulties, which appeared to be associated with parental pressure to do well at school. After Fowler recommended that the parents reduced this pressure their son's symptoms disappeared after three weeks.

**Early or strict toilet training**

There is enormous cultural variation as to when toilet training is started. In spite of these differences in when toilet training is started, the age at which children generally seem to achieve bowel continence is between two to three years of age (Buchanan, 1992). Early or strict toilet training has often been seen as a cause of soiling difficulties (Walker, 1998) and of secondary soiling difficulties in particular (Fritz and Armburst, 1982). Anthony (1957) argued that toilet training was the most important variable in the development of soiling. Carers may develop a pattern of placing their very young child on the potty after a feed. The gastrocolic reflex results in a motion being 'caught' in the potty. This may lead to carers mistakenly assuming that their child was toilet trained. This apparent success can breakdown when the child is about two years old and begins to gain a degree of voluntary control over their bowels. Carers may get drawn into toilet training battles and use inappropriate medication or negative management strategies to try and ensure that the child maintained the same degree of 'success'. If a child decided to try and retain their faeces this may lead to them becoming constipated and at risk of presenting with constipation with overflow. This in turn may leave the carers feeling bemused that their previously 'continent' child had suddenly begun to soil.

It has been argued that the mothers of children with soiling difficulties have used coercive training methods (e.g. prolonged toileting, use of laxatives and/or threats, or the withdrawal of love for the lack of success,) and expected their child to be continent sooner than the average child (Bellman, 1966; Schaefer, 1979; Doleys et al, 1981).

Unfortunately most of these claims are based on uncontrolled, retrospective studies. However, carers' attitudes to toilet training and any problems experienced will be very important, since a carer's attitude is likely to influence a child's toileting behaviour.

**Lax or inconsistent toilet training**

The lack of suitable reinforcement and encouragement means that the necessary stimulus-response links needed for the development of appropriate toileting behaviour fail to become established and strengthened (Kanner, 1953; Doleys et al, 1981). This situation may be
compounded as a result of children not having the prerequisite skills, such as being able to undress, to engage in the appropriate use of the toilet.

The parents of soiling children

In her clinical sample Bellman (1966) noted that the mothers of children who presented with soiling difficulties tended to be anxious, less reliable, vague, emotional and over-protective towards their child. When soiling accidents occurred mothers tended to use very negative management strategies, while fathers tended to demand a lot of discipline. These comments were based however, on around 120 semi structured interviews with parents, rather than on controlled observations. Bellman (1966) interviewed sixty seven control group families and sixty families which had a child who presented with soiling difficulties. She used two or three point scales to assess the interviews for a number of psychological characteristics (e.g. relaxed - anxious; rigid - flexible; ambitious - slack). No information was given on the reliability or validity of these characteristics or the assessment process. Indeed, as the interviewer and interview assessor were not blind to which group an interviewee was in, there was a risk that the resulting scores were not only unreliable but also not objective, being open to subjective distortion. Bemporad et al (1978) reported that mothers were often portrayed as rigid and harsh, while fathers were seen as weak, unaffectionate and uninvolved. Children deny soiling accidents and/or hide their soiled pants (Loening-Baucke, 1994); this may be in order to avoid a harsh parental reaction.

Buchanan (1992) reported that the majority of mothers (64%) in her clinical sample were very tense and that their tension was substantially reduced (17%) once their child's soiling difficulties had been treated successfully. It was however unclear how she assessed maternal anxiety, since no information is given about how these assessments were made. This inevitably calls into question the reliability and validity of what appears to be a highly significant finding. Care is needed when trying to determine whether any such tension was caused by the soiling difficulties, or predated it.

Psychological or personality characteristics

Bellman (1966) reported that the children in her clinical group presented with a greater number of nervous symptoms than those in her control group. It is, however, important to note that nervous symptoms in the clinical group may be a reaction to the soiling difficulties and should not therefore necessarily be seen as a causal factor (in the development of such difficulties). Bellman concluded that children with soiling difficulties were more likely to be excessively controlled and more dependent on their mothers. These observations were based on around 100 responses to three personality tests (Machover's Figure Drawing Test, Machover, 1961; The Sentence Completion Test and The Blacky Picture Test). Little normative data was available for some of these tests (Sentence Completion Test or the Blacky Picture Test) so it was unclear how different these results were from a sample taken from the general population.
Smith and Smith (1987) observed that children who present with soiling difficulties have a range of psychological or personality characteristics, such as excessive shyness and obedience, immaturity and depression. Doleys et al (1981) on the other hand argued that behaviour pathology was of little significance. Walker (1998) pointed out that much of the early literature on soiling difficulties assumed that these difficulties had a psychodynamic origin. He argued that children with soiling difficulties were seen as presenting with particular personality traits, such as immaturity, passive aggressiveness, anger, insecurity, anal fixation, anxiety, or low self-esteem. Psychoanalytic explanations of soiling difficulties have tended to argue that these difficulties occur due to the expression of unconscious conflicts associated with neglectful or coercive parental toilet training. These conclusions tend to have been drawn from individual case studies rather than systematic group evaluations.

A child’s general motor and language development might also be seen as important factors in the development of bowel control, since both may be important in helping a child not only to meet their own needs but also to express their needs clearly to others.

Clearly there are issues of cause and effect that need to be teased apart. An underlying psychopathology may lead to the development of soiling difficulties, or the stress arising from the soiling difficulties may lead to other psychological difficulties. Fritz and Armburst (1982) argued that the extent to which any soiling difficulties could be seen as being primary or secondary to a child’s psychopathology is often unclear. Carr (1999) highlighted that an improvement in soiling difficulties often coincided with improvement in other psychological difficulties, suggesting that the soiling difficulties were partially or completely responsible for these other problems.

Learning Factors
Seligman’s (1975) theory of ‘learned helplessness’ and depression has some relevance here. This would suggest that if a child was unable to find a solution to their soiling difficulties they start to view themselves as helpless and becomes depressed (Sluckin, 1981). Buchanan (1992) noted that soiling accidents occurred when an individual was in a frightening situation. She argued that since boys with soiling difficulties also seem to be prone to anxiety, and as their soiling tended to precipitate an aggressive reaction from their carer’s, then it was conceivable that their soiling may be conditioned to the anticipation of anger (a conditioned fear response).

Doleys et al (1981) suggested that secondary soiling difficulties may arise either from avoidance conditioning, where fear and/or pain lead to a cycle of retention, or from reinforcement of inappropriate toileting behaviours. Constipation, and as a result possible pain
on defaecation, can occur for a number of reasons (e.g. illness, anal fissures, avoidance or fear of toilets, or over involvement in an activity leading to retention). The pain associated with the passing of a large and/or hard stool can be a powerful learning experience for young children and may be enough to set up a cycle of avoidance and retention. There are fewer learning opportunities as far as defaecation is concerned, when compared with micturition. This may result in a painful episode of defaecation being more significant to the child than a painful episode of micturition, since it may take longer to accumulate enough evidence to refute the child’s assumption that defaecation will be painful. Recent work on the use of anorectal biofeedback (Leoning-Baucke, 1996a) may offer a way of trying to overcome issues of learned helplessness and avoidance of defaecation due to concerns that it may be painful. The utility of this approach will be addressed when different intervention strategies are considered.

Stress
A number of authors have noted a positive association between stressful life events and the occurrence of soiling difficulties (Bellman, 1966; Schaefer, 1979; Oliver and Buchanan, 1979; Smith and Smith, 1987). Possible stressful life events might include starting school, the loss of or separation from a parent, the birth of a sibling, bullying or child abuse. Great care is needed to determine whether the stressful life event or the soiling difficulty is the primary problem (Walker, 1998). When commenting on the positive correlation between soiling difficulties and all forms of child abuse (be it neglect, emotional, physical or sexual), Clayden and Agnarsson (1991) emphasised that an individual’s presentation may be related to their abusive experiences. In those cases where a child or young person is removed from their home, it will be vital for them to understand that this is not to punish them for their toileting difficulties; but rather to protect them from an abusive situation for which they are not responsible. Fortunately, current best practice is to remove the alleged perpetrator from the home, rather than the alleged victim (Children Act, 1989). This tendency to try and support a child within their own family home in recent years helps to avoid the emotional and financial costs of removing a child from their family home unless absolutely necessary.

Blackwell (1995) noted an association between the development of enuresis and the number of life events a child experienced. The development of chronic constipation and soiling difficulties might also follow significant life events, although this has yet to be systematically studied. Precise measurements of both bowel function, the timing, and the degree of personal meaning that a stressful life event contained, would be required to establish a cause and effect link. Whatever the nature of any association the family environment and the degree to which the carers are able to give nurture, respect and security are likely to have a big influence on the outcome for the child. Sadly, little systematic research into these issues and soiling difficulties is currently available.
Family Systems
It has been argued that the patterns of family interactions are an important factor in the development and/or maintenance of soiling difficulties (White, 1984; Kelly, 1996). A child's interactions with their carers may become triangulated in a very stressful way. For instance, one carer may be overprotective and have an intrusive manner, whilst another may be critical and more distant.

The importance of stressful life events has already been highlighted; the extent to which soiling difficulties are a primary contributor to, or secondary consequence of a high stress environment needs to be assessed on an individual basis. Inspite of this caution, not living with both natural parents, living with only one parent, being separated from their mother, having a somatic or mental illness in the biological parents, carers experiencing relationship problems, housing difficulties or financial hardship, the birth of a sibling, placement in institutional care or exposure to a natural disaster have all been found to have a positive association with the occurrence of soiling difficulties (Bellman, 1966; Butler and Golding, 1986; Carr, 1999). Whilst that which is stressful for one individual may not be a significant 'soiling related' stressor for another, Bellman (1966) suggested that children with soiling difficulties were more likely to have 'been exposed to potentially traumatic environmental factors' than children who do not present with such difficulties.

In their study of the general population Butler and Golding (1986), found no significant association between the occurrence of soiling difficulties and the social class of a child's family, whether a child's mother worked, or whether a child's parents smoked. Interestingly they also found no significant association with the number of siblings a child had or the number of house moves a child had experienced, since both these issues might be considered to be stressful.

Food refusal
Positive associations between soiling difficulties and a history of food refusal were first reported in the literature sometime ago (Fenichel, 1945; Bellman, 1966). These reports have tended to be based on subjective parental assessments rather than more rigorous assessments.

1.5.2.1 Summary of Psychological factors associated with soiling
A number of psychological factors have been identified as potentially playing a part in soiling difficulties. These include approaches to toilet training, parental and child characteristics as well as the general family context. To date very little systematic research has been carried out to assess these issues, inspite of them having a potentially crucial role to play in a child's experience.

Butler's (1994) work on assessing family attitudes to enuresis offers a useful model for how family attitudes and their association with soiling difficulties might be explored. Clearly the better
understanding there is of psychological factors within the child, the carer/child relationship and
the quality of the overall family environment, the more effective any intervention is likely to be.
As with enuresis it may be possible to identify family attitudes that are associated with better or
worse outcomes (Butler, 1994).

The third and last factor that will impact on a child's presentation with soiling difficulties is the
overall environmental context within which a child is functioning.

1.5.3 Environmental factors associated with soiling
Environmental factors have been difficult to isolate since they exert their effect through an
individual's physiological and psychological presentation. The importance of environmental
factors are however highlighted by studies such as Levine (1975) which reported that 44% of
cases studied presented with secondary soiling difficulties following a precipitating event. The
possible impact of stress and stressful life events has already been addressed. Two
environmental factors that have not yet been considered are the toilet facilities a child has
access to and a child's diet.

Toilet Facilities
Unhygienic and inadequate toilets at home may be a significant factor in the development of
soiling difficulties, since poor toilet facilities may contribute to a child retaining their motions in an
effort to avoid the toilet and so becoming constipated. Limited access or poor toilet facilities at
primary school may be a significant factor in the onset of secondary soiling difficulties, which
previously may have been attributed to the separation from carers and the general stress of
starting at school. A school aged child may try to retain their motions whilst at school and so risk
becoming constipated or developing constipation with overflow. For older pupils this situation
may be further compounded by restrictions on their access to the toilet across the school day.
More research is needed to help increase understanding of what is happening in these
situations.

Diet
Western highly refined diets which are low in fibre are a major contributory factor in the
development of constipation (Smith and Smith, 1987; Clayden and Agnarsson, 1991). One to
four year olds living in the western hemisphere have been found to have a particularly low fibre
diet (Clayden and Agnarsson, 1991). Buchanan (1992) pointed out that a diet high in protein
and/or fats may also lead to hard constipated stools that are difficult to pass. Cow's milk has
been implicated as a possible causal factor in the development of soiling difficulties due to its
of fluids may also contribute to the development of constipation, since the body will strive to
absorb more water from the lower bowel, increasing the risk that firmer motions develop. While
a poor diet on its own is unlikely to cause soiling difficulties, it can significantly undermine what
little bowel control may have been established. The ideal well balanced diet will include a good proportion of roughage, which will help an individual to have their bowels open regularly.

1.5.3.1 Summary of Environmental factors associated with soiling

It is beyond the remit of this review to explore all the environmental factors that might be associated with soiling difficulties. Two factors that are however likely to have an important part to play are the extent to which a child has access to hygienic and adequate toilets both at home and at school, and the quality of a child’s diet and fluid intake.

1.6 Literature review conclusions

There is a need for further research into the much neglected area of childhood soiling difficulties. Better epidemiological data is required. This will only be achieved once a definition has been agreed upon and applied to studies of the general population.

Physical, psychological and environmental factors have all been implicated in the development of soiling difficulties. Although there have been efforts to try and understand the multiple influences on the development, progress and outcome of soiling difficulties, there remain many unanswered questions. For instance chronic constipation has been implicated as a highly significant factor in soiling difficulties (Buchanan, 1992) and medical interventions would aim to address this. There have however been no studies that have looked at the role of family knowledge in soiling difficulties interventions. Similarly many workers have discussed the psychological factors associated with soiling difficulties, though few robust systematic studies are available to substantiate any claims. Further research is required to examine the complex influences of psychological factors within the child and the nature of the parent/child relationship that may impinge on a child’s presentation with soiling difficulties.

Table I.vi (see below) summarises some of the main theories that have been used to try and address the aetiology of soiling difficulties, together with some of the theoretical principles that underpin them. These theories are not mutually exclusive.

It is important for clinicians to be aware that the wrong medical and/or psychological formulation and its resulting intervention may not help to resolve the situation, and may in fact make things worse with potentially devastating consequences. Care needs to be taken to assess a child’s physical, psychological and environmental presentation to ensure that an accurate formulation is made and that the most appropriate intervention is implemented. The next chapter will review some of the intervention studies that have been carried out.
Table I. vi - The main theories and principles that have been offered as explanations for soiling difficulties.

<table>
<thead>
<tr>
<th>Theory Type</th>
<th>Theoretical Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Soiling difficulties are due to genetic factors or anorectal structural or functional abnormalities.</td>
</tr>
<tr>
<td>Developmental</td>
<td>Soiling difficulties are due to a specific or general developmental delay.</td>
</tr>
<tr>
<td>Psychopathological</td>
<td>Soiling difficulties are part of a wider set of psychological difficulties, which may cause or arise from the soiling.</td>
</tr>
<tr>
<td>Psychoanalytic</td>
<td>Soiling difficulties are due to the expression of unconscious conflicts associated with neglectful or coercive parental toilet training.</td>
</tr>
<tr>
<td>Behavioural</td>
<td>Soiling difficulties are due to the lack of positive reinforcement for appropriate toileting, or toileting becoming associated with aversive experiences, such as pain; both of which prevent the development or maintenance of appropriate toileting behaviour.</td>
</tr>
<tr>
<td>Family Systems</td>
<td>Primary soiling difficulties are due to living in a chaotic family environment. Secondary difficulties are due to acute stressful life events. Soiling difficulties may be maintained by coercive, intrusive, or triangulated patterns of interaction with carers.</td>
</tr>
</tbody>
</table>
Chapter 2 - Intervention

Having looked at some of the factors that have been identified as possibly impinging on soiling difficulties, this chapter will examine the wide range of interventions that have been used to try and help children resolve their soiling difficulties.

Interventions can range from health promotion initiatives that highlight the need for a healthy diet with plenty of fibre and fluids, to clinical interventions that focus on the use of particular strategies to address a child’s soiling difficulties. The effectiveness of any intervention can be judged from a number of points of view, the financial cost of implementation, its long term effectiveness and the financial cost versus the personal physical, emotional and financial costs of failing to act. Soiling difficulties can be prone to relapse so the length of follow-up is an important consideration when making judgements about the effectiveness of an intervention. It is beyond the remit of this thesis to provide a comprehensive overview of all the interventions that might try to address a child’s soiling difficulties. A child’s physical and psychological presentation will be two key factors in the development and maintenance of any soiling difficulties. In view of this two frequently used forms of clinical intervention are physical and psychological approaches. Physical interventions aim to address faecal retention and constipation issues, estimated as effecting up to 80% - 90% of children presenting with soiling difficulties (Walker, 1998). These tend to focus on the use of purgatives and dietary manipulations. Psychological interventions vary depending on the specific details of the case. They frequently focus on the use of positive behavioural management strategies to encourage appropriate toileting behaviours. Before any behavioural management strategies are used it is important to ensure that no retained faecal matter is disrupting normal bowel function.

A vital part of any intervention will be the explanation of both the physiological and psychological factors that may affect an individual’s presentation with soiling difficulties (Clayden and Agnarsson, 1991). The potential impact of any significant environmental factors, such as dirty or unsecure toilets, should also be explained. These assertions have however been based on subjective clinical judgements rather than systematic research findings.

2.1 Evaluating clinical intervention outcome studies

When assessing what weight the results of a particular study should be given it is important to consider the points presented in Table 2.i (see below).

As far as soiling difficulties are concerned studies of intervention outcome have largely been limited to single case designs or uncontrolled group studies. Bearing the above points in mind the strength of any conclusions that can be drawn from these studies need to be treated with
Table 2.1 - Points to consider when evaluating clinical outcome studies

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Was the assignment of subjects to treatment groups randomised? (This would obviously exclude any single case studies.)</td>
</tr>
<tr>
<td>2</td>
<td>Were all subjects who entered the trial properly accounted for at its conclusion?</td>
</tr>
<tr>
<td></td>
<td>Was follow-up complete?</td>
</tr>
<tr>
<td></td>
<td>Were subjects analysed in the groups to which they were randomised?</td>
</tr>
<tr>
<td>3</td>
<td>Were subjects 'blind' as to which treatment group they had been allocated to?</td>
</tr>
<tr>
<td>4</td>
<td>Were control and treatment groups similar at the start of the trial?</td>
</tr>
<tr>
<td>5</td>
<td>Aside from the experimental intervention, were the groups treated equally?</td>
</tr>
</tbody>
</table>

Some caution, since the reliability and validity of any conclusions may be uncertain. Some single case and uncontrolled group studies have however been included in the following discussion in order to help illustrate the wide range of interventions that have been used. The lack of any randomised controlled trials is a major weakness when trying to draw conclusions about the effectiveness of a particular intervention. There would however be major ethical questions about allocating individuals who were constipated to a no treatment control group.

2.2 Physical approaches to intervention

A primary aim of any physical intervention is to ensure that any issues related to constipation are adequately addressed. Loening-Baucke (1996a) identified four phases in the treatment of constipation, clearing compacted faecal matter out of the bowel; keeping the bowel empty; encouraging the development of a normal bowel habit and education about how the bowels work. While an acknowledgement of the importance of education is important, there has been no systematic research to substantiate its role in addressing soiling difficulties. A range of approaches have been used to try and resolve issues of constipation.

Surgical approaches

Surgical approaches include anoplasty, colectomy, anal dilatation and sphincterotomy. All these procedures are highly intrusive, both physically and emotionally. They are performed under general anaesthetic, which is inherently dangerous as well as costly in terms of administration. The decision to intervene surgically, while necessary in some cases, should only be taken when all appropriate non-surgical options have been exhausted.
The Use of prescribed medication
While the chronic misuse of enemata and laxatives by parents may be a contributory factor in the development of soiling difficulties, careful short term use may help to maintain a empty rectum and promote regular bowel habits (Gabel, 1981; Fritz and Armbrust, 1982; Doleys et al, 1981; Schaefer, 1979). Normal muscle tone and bowel continence do not immediately return once impacted faeces have been removed; a period of toilet training may be required (Doleys et al, 1981).

There are many different types of laxatives and enemata. Loening-Baucke (1996a) argued that compliance with the treatment regime was a key factor in the a successful outcome. Family knowledge and education about soiling difficulties might be expected to have a significant part to play in helping to ensure compliance and a good outcome, though this has yet to be researched systematically. Loening-Baucke (1996a) stressed that medicines should be used at a dose that ensured regular pain free motions were passed and that further faecal impaction did not occur. A bulking agent, such as Lactulose, will help to keep a child's stools soft. In view of the fact that a child may have learnt that defaecation is associated with the experience of anal pain it may take several months of passing non-painful motions, before this association is extinguished.

The gastrocolic reflex, which generally occurs 20 - 30 minutes after a meal, and an individual's natural bowel habit can be used to support the action of any medication that is used. Many authors recommend using medication to try and set up a regular cycle of rectal filling and defaecation (Morgan, 1981; Schaefer, 1979; Gabel,1981).

Medicines that are often used with children include bulking agents (Fibogel and Bran), osmotic laxatives (Lactulose and Movicol), faecal softeners (Docusate), stimulant laxatives (Senokot or Sodium Picosulphate) and enemata (Phosphate and microenemata).

Defaecation Posture
Kira (1976) pointed out that squatting to defaecate is very effective since it greatly reduces the capacity of the abdominal cavity, while at the same time increasing intra-abdominal pressure. Most western style toilets are too high for young children, since they do not let a child's feet rest firmly on the floor. This makes flexion of the thighs difficult, limiting the extent to which the accessory muscles can help with defaecation.

Kira (1976) concluded that children should not use an adult western style toilet until they are reliably toilet trained and only then with a firm foot rest. Blackwell (1998) pointed out that straining can be facilitated by asking a child to blow up a balloon while sitting on the toilet.
Exercise and Abdominal Massage

Many authors (Smith and Smith, 1987; Blackwell, 1998; Carr, 1999) have pointed out that bowel movements are facilitated by regular exercise. In the past abdominal massage also has been used as a treatment for constipation (Tidy, 1978). There are however no recent empirical studies that have examined its effectiveness.

2.2.1 Summary of physical approaches to intervention

Physical approaches to intervention have an important part to play in overcoming and avoiding the physical consequences of faecal retention. It is important to remember that most carers will be anxious to minimise the extent to which their child experiences any distressing invasive physical procedure, (be it the administration of an enema or a more involved surgical procedure), and limit both the dose and duration of oral medication. Education and family knowledge about soiling difficulties might be expected to play a part in helping to ensure that medicines are used appropriately. As far as soiling difficulties are concerned this has yet to be researched. The extent to which a paediatrician should intervene physically needs to be carefully considered, particularly before embarking on a traumatic and costly surgical intervention.

Fortunately cases can generally be managed non surgically. The most common forms of medication used are a combination of bulking agents and stimulant laxatives. The use of laxatives however may be needed for some months and doses should only be reduced slowly to avoid re-impaction (Drug and Therapeutic Bulletin, 2000). In view of the long term nature of their use, the cost of medication use may mount up over time.

An individual's posture while sitting on the toilet will also be important. Once a child is reliably continent they should use the toilet provided their feet are firmly supported.

Psychological approaches to interventions for children who present with soiling difficulties will be considered next.

2.3 Psychological approaches to intervention

Failure to assess accurately an individual's physical presentation may fundamentally undermine the effectiveness of any psychological intervention, since some of the complex interactions of physical and psychological factors may be overlooked. Carr (1999) stressed the need for a combined physical and psychological approach, pointing out that once any faecal mass that needed to be removed has been removed, a bowel retraining programme would be required. He went on to suggest that any programme should look not only at diet, exercise and laxative use, but also toileting and accident management issues. Clearly there is a need to consider the best way of addressing each of these issues from a psychological point of view.
The vast majority of the research that has been conducted from a psychological point of view has focused on different theoretical models of intervention, such as Behaviour Therapy, Cognitive Behavioural Therapy, Family Therapy, Psychodynamic approaches and Biofeedback. None of these studies have used a control group and many of them used a single case design, which limits the conclusions that can be drawn from them. In those group studies that have been conducted, participants were not always randomly allocated across the various intervention groups.

Emotional Issues

Many authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999) have referred to the importance of a child's and their family's emotional response to their soiling difficulties and their knowledge and understanding of these difficulties. There have however been few published studies that have tried to look at these issues in more detail.

Some of the related psychological issues that children with soiling difficulties may present with include a fear of anal pain when opening their bowels, confusion within the family as to why there is a bowel problem and the extent to which it is under voluntary control. They may feel not only embarrassed and socially isolated as a result of their problem, but also feel shame from a sense of disappointing their family. They may experience anger if they feel, pressurised to have their bowels open when this may be something they fear, or blamed for their failure to control their bowels. This in turn may result in them presenting with a degree of learned helplessness, which may be compounded if intervention regimes do not improve the situation. In some instances the individual may not associate their bowel sensations appropriately with their need to pass a motion, or they may abdicate responsibility for their soiling difficulties. The overall family attitude to the problem may therefore play a very important part in the development and maintenance of an individual's problem. Buchanan (1992) commented on many of these issues in her book “Children who soil.” More research is however required into these issues since there is a danger that interventions are based on subjective clinical impressions rather than systematic research.

Education

Again many authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999) have stressed that as much as possible needs to be done to increase both an individual’s and their carers’ understanding of their soiling difficulties. It has been suggested that this will help to reduce any feelings of shame, anger, revulsion and blame within the family, as well as improve intervention outcome. It will also help carers to understand that negative management strategies, such as rejecting, shaming or smacking, will not facilitate the development of appropriate independent faecal continence. While at face value these would seem to be legitimate assumptions they have yet to be investigated in a systematic way.
Management Issues
Several authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999) have emphasized that management should focus on the positive gains in appropriate toileting behaviour. Coercion to engage in appropriate toileting behaviours should be avoided, since it may only lead to a battle of wills which the carer is unlikely to win. Coercive and punishing strategies may also result in individuals presenting with a degree of performance anxiety as far as their use of the toilet is concerned. This in turn will further undermine their self confidence in their own toileting skills. The overall aim of any intervention is to help an individual develop a regular and independent bowel habit, that incorporates the appropriate use of the toilet. Where an individual's presentation with soiling difficulties is thought to be associated with or related to another presenting problem, it is important to ensure that the primary presenting problem is appropriately addressed (Dwivedi and Bell, 1993). Keats (1979) and Walker et al (1981) suggested that a psychological intervention was warranted where there was a manipulative or intentional element to the occurrence of soiling accidents. Loening-Baucke (1996a) asserted that adherence to a psychological intervention resulted in improvements in constipation and faecal incontinence in all children and young people. She argued that where there were secondary behaviour difficulties these improved as the primary toileting difficulties were addressed.

These issues have an important part to play in any intervention and warrant closer more systematic investigation.

2.3.1 Summary of psychological approaches to intervention
Carr (1999) stressed the importance of creating a "facilitative" family environment. This type of environment emphasises the love and respect that carers have for their child, as well as viewing the soiling as uncontrollable and unintentional. The focus is on the courage a child has shown to date in coping with their soiling accidents and their ability to learn to overcome their soiling problem is stressed. Criticism, or punishment for soiling accidents must be avoided (Carr, 1999) and praise and encouragement given for any progress, however small. If a carer has become drawn into a battle of wills over a child's bowel control, if feasible, they should be encouraged to 'disengage' since it is likely to be counter productive.

Carers need to be helped to understand the aetiology of their child's soiling difficulties. This will not only help them to accept that the soiling is not merely due to laziness, defiance, attention seeking or some psychological disorder, but will also alert them to the danger of relapses as greater bowel control develops. This in turn pre-empts relapse related demoralisation (Carr, 1999). For their part the child with the problem needs to be helped to separate their soiling difficulties from their own self image. White (1984) helps children to do this by externalising the problem, referring to the soiling difficulties as "Sneaky-Poo." This should help the child to see
their soiling difficulty as an external stress and so go some way to protect their potentially fragile self-esteem.

To date most psychological studies have focused on a range of different theoretical models of intervention, which will be looked at more closely in the second half of this chapter. While many authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999) acknowledge the importance of family knowledge and understanding and the overall family context within which soiling difficulties occur, systematic research has largely ignored these issues.

2.4 Environmental approaches to intervention

A number of authors (Eastwood et al, 1973; Blackwell, 1998; Carr, 1999) have commented on the importance of considering environmental factors that may impinge on a child's presentation with soiling difficulties. Two frequently mentioned environmental factors will be considered briefly.

Diet

Whilst there is no specific diet that will resolve a child's soiling difficulties, Blackwell (1998) pointed out that what a child has eaten may effect their bowel regularity and so contribute to their becoming constipated. She highlighted that large amounts of cheese, milk, butter, fatty meats, egg yolk, chocolate and biscuits all have a tendency to lead to constipation. Carr (1999) recommended that individuals should avoid consuming excessive amounts of milk based products. Blackwell (1998) argued that a pattern of regular meal times together with a reasonably consistent amount of overall food intake will help to establish a rhythm of digestion and defaecation.

Loening-Baucke (1996a) suggested that a switch from cow's milk to formula milk that contains whey protein may be all that is required to overcome any constipation difficulties in infants. Individuals prone to constipation should also be encouraged to drink plenty of water, since the intestine absorbs water and this will help to reduce the risk of their motions becoming compacted.

Lupson and Walton (1981) found that increases in the amount of fibre in an individual's diet can help to reduce the extent to which they present with constipation. This is due to the fact that dietary fibre increases water retention in stools (Loening-Baucke, 1996a). Zoppi et al (1982) and Clayden and Agnarsson (1991) however sounded a note of caution pointing out that if young children are given too much fibre this may have an adverse affect on their growth and general nutrition. In view of this individuals should be encouraged to eat high fibre foods such as fruit, vegetables and unrefined grain, and reduce their intake of foods with a high fat content. Blackwell (1998) emphasised the need for this to be linked to adequate fluid intake, Carr (1999) recommended six to eight glasses of water a day.
Burkitt (1976, 1979) pointed out that bacteria in the colon can act on the contents and produce potential carcinogens. Where constipation is a regular problem, faecal transit time is increased and these potential carcinogens have more time in which to act. In view of this anything that can be done to reduce intestinal transit time is to be welcomed. Eastwood et al (1973) provided one of the few controlled studies that is related to bowel control. They found that the effects of increased dietary fibre did not significantly reduce intestinal transit time. Burkitt (1976) pointed out that the average transit time for people eating fibre rich diets in under developed countries was just less than half the transit times for people eating highly refined western diets. While Burkitt (1976) argued that this difference was due to the level of fibre being eaten, it is important to remember that other factors, such as the level of exercise being taken, may also have a part to play.

Toilet Facilities
Retention difficulties may result from limited access to poor toilet facilities at home and/or at school. At school these difficulties may at least in part be overcome by negotiating open access to staff/visitor toilet facilities while a child is at school. This will ensure a child’s access to a discrete, secure setting with running water. It will however have the potential drawback of a child being stigmatised due to their using a different toilet to their peers.

2.4.1 Summary of environmental approaches to intervention
Environmental factors such as diet and access to good toilet facilities need to be considered when trying to overcome toileting difficulties. Once again however there is a lack of systematic research to support the clinical advice that is commonly given to individuals who present with soiling difficulties.

2.5 Intervention Studies
It has already been noted that there is a lack of research into the effects that family knowledge and the family context may have on childhood soiling difficulties. There have however been a number of studies which have looked at specific psychological and various combined psychological and physical approaches to intervention. These will now be examined in more detail.

Conditioning approaches to intervention
Behavioural interventions should aim to increase a child’s awareness of how their body feels just prior to defaecation, so that these feelings become discriminative stimuli. If a child has developed avoidance behaviours, a behavioural approach would identify the need to desensitise them to toileting situations. Normal toileting habits would be established / re-established by the positive reinforcement of successive approximations to appropriate toileting behaviour.
Most behavioural interventions apply the principle of operant conditioning to basic toilet training techniques (Smith and Smith, 1987). Reinforcement has focused on either rewarding bowel movements in the toilet, rewarding clean pants, or punishment for having had a soiling accident. Table 2.ii (see below) summarises some of the studies that have used various combinations of such conditioning techniques. The positive outcomes reported by all these studies would appear to support the use of conditioning techniques in the treatment of soiling difficulties. Many of these studies used a single case design and so require replication to lend their conclusions validity and reliability. None of the group studies used a randomised controlled trial design, which limits the conclusions that can be drawn from them.

Some clinicians (Kelly, 1996) have argued that the use of punishment for soiling or rewards for clean pants may increase the likelihood of a child retaining their faeces, and so increase the risk of them presenting with constipation. Other authors (Ferinden and Van Handel, 1970) have argued for the use of ‘correction’ procedures following soiling accidents. These procedures involve a child washing their soiled clothes and cleaning themselves up. Advocates of ‘correction’ and ‘overcorrection’ procedures argue that they are educative, while opponents (Buchanan, 1992; Carr, 1999) see them as punishing and fatiguing.

The use of any intervention that focused excessively on the use of punishment is worrying, since their use may increase the risk of retention, constipation and denial of soiling episodes without helping an individual to develop appropriate toileting behaviours. The use of punishment may merely serve to suppress undesired behaviours. From an ethical point of view La Vigna and Donnellan (1986) argued that an intervention should place greater stress on the use of non-aversive strategies as opposed to aversive ones. It could therefore be argued that the use of positive reinforcers (such as rewards for appropriate toilet behaviours) may be more ethically sound than the use of negative reinforcers (such as a soiling episode being linked to a punishment). (A positive reinforcer is a stimulus that, when presented following a response, increases the probability of that response recurring. A negative reinforcer is a stimulus that, when removed following a response, increases the probability of the response recurring. Punishment involves the delivery of a negative reinforcer every time a particular response is made in the hope that it will decrease the probability of that response occurring.) The use of positive reinforcers have the added advantages of engaging a child’s co-operation and increasing their self-esteem and sense of empowerment.

In enuresis, Butler (1994) has investigated a child’s view of a range of different management strategies and attitudes, but this research has yet to be conducted with children who present with soiling difficulties.
Table 2.ii- Studies that have used Conditioning Techniques to intervene with soiling difficulties

<table>
<thead>
<tr>
<th>Behavioural Approach:</th>
<th>Studied By:</th>
<th>Number in study:</th>
<th>Age range (years):</th>
<th>Reported effectiveness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive reinforcement (rewards) for bowel movements in the toilet.</td>
<td>Neale, (1963)</td>
<td>4</td>
<td>7½ - 10³/₄</td>
<td>75% successful at 1 - 2 months follow-up. Success at two months; no follow-up data available.</td>
</tr>
<tr>
<td></td>
<td>Keehn, (1965)</td>
<td>1</td>
<td>5</td>
<td>Successful. No follow-up data available.</td>
</tr>
<tr>
<td></td>
<td>Bach and Moylan, (1975)</td>
<td>1</td>
<td>6</td>
<td>89% successful after treatment, 100% successful at follow-up.</td>
</tr>
<tr>
<td></td>
<td>Stark et al, (1990)</td>
<td>18</td>
<td>4 - 11</td>
<td></td>
</tr>
<tr>
<td>Positive reinforcement (rewards) for bowel movements in the toilet and for clean pants.</td>
<td>Bornstein et al, (1983)</td>
<td>1</td>
<td>10</td>
<td>Success at 15 weeks, maintained at 1 year follow-up.</td>
</tr>
<tr>
<td>Positive reinforcement (rewards) for bowel movements in the toilet and for clean pants and punishment for soiling accidents.</td>
<td>Plachetta, (1976)</td>
<td>1</td>
<td>6</td>
<td>Success at 2 years follow-up.</td>
</tr>
<tr>
<td></td>
<td>Davis et al, (1976, 1977)</td>
<td>11</td>
<td>7 - 14</td>
<td>63% successful, maintained at 7 months follow-up.</td>
</tr>
<tr>
<td></td>
<td>Schakel, (1984)</td>
<td>1</td>
<td>8</td>
<td>Success maintained at 5 months follow-up.</td>
</tr>
<tr>
<td>Positive reinforcement (rewards) for clean pants and punishment for soiling accidents.</td>
<td>Allyon, Simon and Wildman (1975)</td>
<td>1</td>
<td>7</td>
<td>Success at 11 months follow-up.</td>
</tr>
<tr>
<td></td>
<td>Rolider and Van Houten, (1985)</td>
<td>1</td>
<td>12</td>
<td>Success at 14 months follow-up.</td>
</tr>
<tr>
<td></td>
<td>Webster and Gore, (1980)</td>
<td>6</td>
<td>10 - 16</td>
<td>83% successful at 6 - 12 months follow-up.</td>
</tr>
</tbody>
</table>
Conditioning Techniques combined with the use of medication

Thapar et al (1992) reviewed the literature and concluded that combined behaviour therapy and laxative use was the most effective form of treatment. Levine and Bakow (1976) reported a 75 - 80% success rate for a combined medical, bowel training and family education approach. The effectiveness of other studies that combined the use of conditioning techniques and medication are summarised in Table 2.iii (see below). The positive outcomes reported by these studies would seem to support this ‘combined’ approach to the treatment of soiling difficulties, but once again many of the studies were single case design and group studies did not always randomly allocate participants to the different intervention groups.

Gabel (1981) questioned the use of carer(s) as ‘therapists’ who are required to administer suppositories and enemata. One reason for these reservations was that it may be perceived as a punishment by the child. He recommended a behavioural intervention in situations where there are no complicating factors to an individual’s presentation such as retention, impaction, learning disabilities or emotional difficulties. In the absence of any systematic research to develop a better understanding of how a child might experience the management of their soiling difficulties Gabel’s view remains unsubstantiated. An additional difficulty in trying to assess a combined intervention is that it is more difficult to identify the relative importance of the different components parts.

Most studies that have examined ‘combined’ intervention approaches also emphasise the need to fade out the use of any medication, rather than stop them abruptly (Ferrell-Wright and Bunch, 1977; Wright and Walker, 1978).

Hospital or home based conditioning interventions

Most of the studies that have used behavioural interventions have used non-hospitalised children and looked at their functioning in their home/school environment, utilising carer(s) as the therapists. Clayden and Agnarsson (1991) argued that out-patient interventions may require a period of in-patient treatment to help consolidate their impact. Follow-up on an out-patient basis has been held to be an important part of any in-patient based intervention, since if the individual’s carers and family do not have a supportive attitude any gains made in hospital will be short lived. The studies in Table 2.iv (see below) all looked at inpatient hospital administered behavioural interventions. While all these studies reported a degree of success the results did not indicate a superior outcome to those achieved with home-based interventions. Rennie et al (1997) pointed out that home-based management may have the added advantage of allowing a child to feel more comfortable and confident, as well as giving them the privacy of their own bathroom. In addition to this home-based interventions will not only be considerably cheaper than in-patient based interventions but also will not incur the disruption and possible distress of having to leave home, albeit on a temporary basis.
<table>
<thead>
<tr>
<th>Combined treatment Approach:</th>
<th>Studied By:</th>
<th>Number in study:</th>
<th>Age range (years):</th>
<th>Reported effectiveness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operant conditioning (graded positive reinforcement for clean pants or motions in the toilet and mild punishment for soiling accidents) and suppositories.</td>
<td>Lal and Lindsley, (1968) Wright and Walker, (1978)</td>
<td>1 14</td>
<td>3 3 - 9</td>
<td>Success at 8 months follow-up. Success in a mean of 16.93 weeks. 100% successful, 1 case (7%) relapsed at 6 months follow-up.</td>
</tr>
<tr>
<td>Operant conditioning (positive reinforcement for bowel movements in the toilet) and sennokot.</td>
<td>Young (1973)</td>
<td>24</td>
<td>4 - 10</td>
<td>Programme successfully completed within a mean of 7 months. 75% success, 4 cases (22%) relapsed.</td>
</tr>
<tr>
<td>Operant conditioning (positive reinforcement for bowel movements in the toilet) and mineral oil.</td>
<td>Ferrell-Wright and Bunch (1977)</td>
<td>1 3</td>
<td>3</td>
<td>Programme successful. No relapse at 93 week follow-up.</td>
</tr>
<tr>
<td>Operant conditioning on its own, with sennokot and with a placebo.</td>
<td>Berg et al, (1983)</td>
<td>40</td>
<td>Mean 7.9 (S.D. = 2.3)</td>
<td>67% successful for reviewed cases at one year follow-up. Three treatment groups (Positive reinforcement with Senokot; with Placebo or with No medication.) No significant difference between treatment groups was found at outcome.</td>
</tr>
<tr>
<td>Group behaviour therapy and medical management.</td>
<td>Stark et al, (1997)</td>
<td>59</td>
<td>3 - 13 Mean 7.4</td>
<td>86% successful after treatment, 100% successful at follow-up.</td>
</tr>
</tbody>
</table>
Table 2 iv - Studies that have looked at Hospital based Conditioning Techniques to intervene with soiling difficulties

<table>
<thead>
<tr>
<th>Inpatient behavioural treatments used:</th>
<th>Studied By:</th>
<th>Number in study:</th>
<th>Age range (years):</th>
<th>Reported effectiveness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive reinforcement for sitting on the toilet and bowel movements in the toilet.</td>
<td>Neale (1963)</td>
<td>4</td>
<td>7 1/2 - 10 3/4</td>
<td>75% successful at 1 - 2 months follow-up.</td>
</tr>
<tr>
<td>Positive reinforcement for bowel movements in the toilet and clean pants, and punishment for soiling.</td>
<td>Gelber and Meyer (1965)</td>
<td>1</td>
<td>13</td>
<td>Only two soiling accidents at 6 months follow-up, both associated with a toilet being inaccessible.</td>
</tr>
<tr>
<td>Positive reinforcement for clean days, time out, punishment and correction procedures for soiling.</td>
<td>Webster and Gore (1980)</td>
<td>6</td>
<td>10 - 16</td>
<td>83% successful at follow-up.</td>
</tr>
</tbody>
</table>
It is not possible to tell whether the children in these in-patient behavioural intervention studies (Table 2.iv) presented with more severe soiling difficulties than the children in home-based intervention studies. In extreme cases where the individual child or young person improved steadily while in hospital, but relapsed on discharge and return home, it might be necessary to consider why the improvements in a child’s presentation have not generalised to their presentation at home.

Once again the robustness of any conclusions are undermined by the absence of large samples or control groups. The fact that studies used combinations of slightly different conditioning scenarios adds to the difficulty of trying to isolate the relative importance of the different components of any intervention. It is important to bear in mind that an inpatient based intervention may be traumatic for the child and their family as well as being very expensive, with little benefit in terms of outcome when compared to outpatient based interventions. In addition to this there is also the risk that a child may relapse on discharge.

**Cognitive Behavioural Therapy**

This approach is based on the principle that a social learning process is an inherent part of successful toilet training. Parental expectations, anxiety and pain can all interact to undermine this process and result in an individual trying to retain their motions.

In order to try and avoid issues of learned helplessness and a perceived external locus of control undermining an intervention, it is often helpful to give children some responsibility for their bowel function. Sluckin (1981) was one of the first workers to apply Seligman’s concept of learned helplessness to soiling difficulties. A child who retains to avoid soiling accidents is destined to soil as a result of the development of constipation with overflow. This in turn may result in a vicious circle of learned helplessness.

Ronen (1993) emphasised that cognitive interventions such as cognitive restructuring, self-monitoring and self-evaluation may also help to address issues of learned helplessness. Ronen (1993) reported a cognitive-behavioural intervention with a six year old boy who presented with primary soiling difficulties, that had proved intractable to previous interventions. The cognitive component of the intervention aimed to help the child regain responsibility for and control of his toileting behaviour. It involved cognitive restructuring, self-monitoring of internal stimuli, self-instruction and self-evaluation. These cognitive elements were combined with contingency management strategies, such as, removal of attention, positive reinforcement of appropriate toileting behaviour and social reinforcement. The final part of the intervention package involved a skills element where the child was encouraged to clean himself up after a soiling accident and to regularly practice using the toilet. Ronen (1993) reported complete success for this strategy within 8 weeks, as measured by the occurrence of soiling or retaining behaviour and the appropriate use of the toilet. These improvements were maintained at 6 months follow-up.
Ronen (1993) concluded that there is a need to address a family’s beliefs about soiling difficulties more directly. She argued that this may help to improve intervention outcomes. However, her study used a single case design and so requires replication ideally with a larger sample to substantiate her findings. In view of the fact that it used a number of strategies to address the child’s and the family’s experience of soiling, further research is needed to identify the relative merits of the different component parts of the intervention.

**Biofeedback**

This involves ano-rectal physiological responses being measured and feedback to the individual, along with operant conditioning procedures to encourage them to take more control of their physical responses. The aim of this procedure is to help the individual recognise sensations which indicate that a bowel action is imminent and so give them more time to get to the toilet. A number of authors (Kohlenberg, 1973; Engel et al, 1974; Engel, 1981; Thapar et al, 1992) have reported some success in using this approach with children. Olness et al (1980) report that in a group of 40 children (ranging in age from four to fifteen years of age), a biofeedback intervention resulted in 24 of the cases no longer presenting with any soiling accidents and 14 showing substantial improvements. Cox et al (1994) compared biofeedback with standard medical care. At sixteen months follow-up they found that 79% of cases in the biofeedback group reported no further soiling, as opposed to 49% of cases in the standard medical treatment group. In 1996 Cox et al added an additional behavioural therapy treatment group. They found that 71% of cases in the behavioural therapy group showed a clinically significant improvement in their presentation, compared with 64% in the biofeedback group and 19% in the standard medical treatment group. They concluded that biofeedback and behaviour therapy interventions did not differ in their effectiveness.

These studies would appear to suggest that biofeedback may be an effective adjunctive therapy, in the treatment of functional constipation and/or soiling difficulties in children and young people. However, in a recent review of controlled studies, Leoning-Baucke (1996b) argued that there was no evidence to support the use of biofeedback training where conventional interventions had been tried and failed.

In a separate paper Loening-Baucke (1996a) noted that between 25% to 53% of individuals who present with constipation have an abnormal contraction of the external anal sphincter and pelvic floor muscles during defaecation. Since these muscles are under voluntary control, biofeedback may offer an effective way of increasing an individual’s control over these muscles and in turn control over their constipation, which may be a factor in their presentation with soiling difficulties. The fact that not all individuals who present with soiling difficulties suffer from abnormal contractions of the external anal sphincter and the pelvic floor muscles would help to explain the ambiguous results for the effectiveness of biofeedback as a general treatment for individuals who present with soiling difficulties.
Whitehead (1992) concluded that the use of biofeedback may be indicated where there is an underlying organic aspect to a child's presentation. Griffiths and Livingstone (1998) reported the successful use of biofeedback with a six year old girl who presented with chronic faecal soiling and an imperforate anus, which required surgical correction. Clayden and Agnarsson (1991) however argued that the role of biofeedback for individuals who have had corrective surgery for Hirschsprung's disease was uncertain.

Biofeedback would seem to help improve defaecation dynamics (Leoning-Bauccke, 1990; van der Plas et al, 1996) and therefore hold out the hope of helping to address any issues of learned helplessness. It has however not resulted in any consistent increase in clinical recovery rates (Leoning-Bauccke, 1990, van der Plas et al, 1996 and Leoning-Bauccke, 1995). Carr (2000) concluded that biofeedback may have a place in helping individuals to learn sphincter control. There are however a number of drawbacks to the use of biofeedback. Ano-rectal biofeedback is very invasive, potentially aversive and it may be difficult for a child to tolerate. There is also a risk, as with any physical procedure, of unanticipated side effects such as physical and/or psychological trauma. Given that it requires repeated use of expensive specialist staff and equipment its routine use does not currently seem to be justified.

2.5.1 Summary of Intervention Studies that used medication and/or conditioning

Several individual case design and group studies have reported that operant conditioning techniques have been successful, including cases where previous treatment with enemata and/or laxatives alone have been unsuccessful (Rovetto, 1979). This would seem to support Doley's et al (1981) assertion that enemata and/or laxatives alone do not provide sufficient bowel retraining to overcome soiling difficulties. It would also suggest that soiling difficulties may require more than a physical intervention alone if an intervention is to be effective. One of the difficulties in making any comparisons about the effectiveness of any interventions that have used operant conditioning techniques is that they have all tended to focus on reinforcing slightly different behaviours. For example Stark et al (1997) reinforced appropriate toileting behaviours, while others (Webster and Gore, 1980) reinforced clean pants and punished any soiling episodes.

Hospital in-patient interventions seem to be no more effective than home-based interventions, but are likely to be considerably more expensive. Cognitive behavioural therapy has also been shown to be effective in intractable cases (Ronen, 1993). There is less strong evidence for the utility of biofeedback as an intervention strategy.

A combination of medication, psychoeducation about soiling difficulties and behaviour management techniques for appropriate toileting behaviours would seem to be one of the most effective forms of intervention (Stark et al, 1997). While the importance of the use of
medication in overcoming soiling difficulties, particularly where constipation is a factor, has already been discussed. No studies to date have looked at why a combined physical and psychoeducation intervention may be more successful than a physical intervention on its own. More research into a family's knowledge and understanding of soiling difficulties and the overall family context within which these difficulties occur is required if we are to develop a better understanding of what works for whom and why.

2.5.2 Other intervention studies
A number of other intervention approaches have been tried, in addition to those that have already been discussed.

Paradoxical Instruction
This involves suggesting (with appropriate humour) that the child who has presented with soiling difficulties should feel free to soil themselves as much as they like, or should sit on the toilet and strain but try to avoid having their bowels open while sitting on it. It is an approach that has been used with individuals where anxiety was thought to play a significant part in an individual's presentation. Strong (1984) pointed out that the way in which this intervention has its effect is not fully understood. Bornstein et al (1981) reported a single case study of a nine year old boy who presented with secondary soiling difficulties. They asked the child to sit on the toilet for five minutes every hour and to act as if he was having his bowels open, but at the same time not allowing this to occur. They reported a reduction in soiling accidents and an increase in successful bowel movements in the toilet. They found that this improvement had been maintained at one year follow-up. More research into how this intervention may work is required.

Pelvic Floor Exercises
Loening-Baucke (1996a) noted that many children who present with soiling difficulties have weak anal sphincters. Griffiths and Watson (1999) reported the successful use of pelvic floor exercises in the treatment of soiling difficulties that seemed to be associated with anal sphincter weakness. They suggest that the use of pelvic floor exercises may be a viable alternative to biofeedback, particularly if there is an intolerance of the biofeedback procedures. This intervention is likely to be less expensive than biofeedback, since it does not require so much equipment. However care would be needed to ensure that it was correctly targeted at children with weak anal sphincters. Some children may find the measurement of their anal sphincter strength aversive and/or traumatising.

Psychodynamic interventions with soiling difficulties
A psychoanalytical approach would regard soiling difficulties as a symptom of an unconscious conflict, which needs to be resolved before the toileting behaviour can be successfully
addressed. Freud (1924) argued that people pass through a number of stages in their psychosexual development. Freud (1924) suggested that a predisposition to anal fixation was largely due to neglectful or coercive toilet training. Neglectful parenting resulted in a child’s suppressed aggression being expressed through their soiling difficulties. Coercive parenting on the other hand may lead to anxiety about soiling and the development of constipation with overflow. Jones (1948) extended this to develop the concept of anal-erotic character traits, describing expulsive (individuals who freely express themselves) and retentive (individuals who hold back and hoard things) types. Some therapists (Doleys et al, 1981), refute the idea that unconscious conflicts are implicated in the development of soiling difficulties. They point out that psychoanalytical or psychotherapeutic approaches have been unproductive when applied clinically. Furthermore Halpern (1977) concluded that no single psychodynamic formulation could fully explain soiling difficulties.

Most studies of psychoanalytical or psychotherapeutic approaches are of individual cases with no organic pathology, but a history of significant psychosocial problems. Smith and Smith (1987) noted that many successful behavioural case studies indicated that previous unsuccessful treatments have included psychotherapy. Protinsky and Kersey (1983) reported success rates of less than 50 per cent for psychoanalytic interventions. These relatively low success rates may be due to psychoanalytic interventions being applied in isolation without the support of any other intervention approaches such as medication. Since there is no evidence of symptom substitution in successful behavioural interventions, lengthy and expensive psychotherapeutic interventions would not seem to be warranted. Walker (1998) concluded that there was currently insufficient data to justify the use of psychotherapy on its own. Clayden (1994) advocated the use of art-psychotherapy for children and young people who have difficulty expressing their feelings verbally. This raises the possibility that a psychotherapeutic intervention may be an appropriate addition to any specific soiling related intervention when behavioural and/or adjustment problems are also present.

**Family Therapy interventions and soiling difficulties**

These approaches focus on the whole family, assuming that the abnormal patterns of interaction between family members play a part in an individual’s presentation. Schaefer (1979) pointed out that there are a number of maladaptive parental behaviours and attitudes that are associated with childhood soiling difficulties. It has been argued that family relationships and dynamics can generate and maintain soiling behaviour (Kelly, 1996). Pinkerton (1958) reported that a poor prognosis seemed to be linked to excessively rigid and/or anxious carers; primary coercive toilet training; carer prejudices about constipation and carer over-involvement with their child. Soiling may become a significant part of day to day family life; for instance, soiling may unite conflicting parents in concern for their ‘sick’ child (Minuchin, 1974). Kraemer (1993) emphasised the need for children to perceive their carers as coping. Henggeler and Borduin
(1990) suggested that a family therapy approach offered a good forum for addressing the manipulative aspects of any soiling behaviour.

As with a psychoanalytic approach, a family therapy intervention assumes that soiling difficulties cannot be successfully treated without first treating the underlying pathology, in this case within the family. However, it is important to remember that an association between soiling and maladaptive patterns of family behaviour does not necessarily imply a causal link; indeed in some instances soiling difficulties may cause family problems. It is equally important though to recognise the potential importance of family pathology when considering possible aetiological factors. Protinsky and Kersey (1983) argued that a failure to address family pathology sufficiently may explain why some behavioural interventions have been unsuccessful. In view of the high reported incidence of constipation in children who present with soiling difficulties (Buchanan, 1992), medication is likely to be a useful adjunct to a family intervention.

Table - 2.v (see below) summarises two family therapy studies that have been conducted. Both support the effectiveness of this approach. Family therapy interventions tend to incorporate interventions taken from a number of different models, often in combination with each other. Larger scale longitudinal studies are needed to increase our understanding of the effectiveness of Family Therapy with soiling difficulties.

**Group Interventions**

Clayden and Agnarsson (1991) argued that children's groups and separate carers' groups can be a valuable part of an intervention. In both instances they may help to reduce any sense of isolation and provide a forum to examine issues of shame, denial, rejection, blame, hostility, guilt and over-protectiveness (Dwivedi and Bell, 1993). However, it is also important to be aware that for participants, group interventions may produce an element of competition, resulting in feelings of failure for some. This in turn may lead to an even greater sense of helplessness and shame. Stark et al (1997) ran six focused group sessions separately for carers and children and reported impressive outcome figures of 89% success immediately after the intervention and 100% at follow-up. The group sessions focused on the use of positive reinforcement for bowel motions successfully passed in the toilet. As has been the case with a number of other studies no information was given about the relative importance of the different component parts of the intervention.

**2.6 Intervention Conclusions**

In his recent review of the literature (Carr, 2000) found no reports of randomised controlled intervention studies. Nor did he find any studies that looked at family knowledge or family attitudes to soiling difficulties.
Table - 2.5 - Studies that have looked at the use of Family Therapy when intervening with soiling difficulties

<table>
<thead>
<tr>
<th>Studied conducted by:</th>
<th>Sample size:</th>
<th>Age range (years):</th>
<th>Reported effectiveness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protinsky and Kersey (1983)</td>
<td>7</td>
<td>6 - 10</td>
<td>86% successful. 71% successful at 6 months follow-up.</td>
</tr>
<tr>
<td>Margolies and Gilstein (1983)</td>
<td>1</td>
<td>14</td>
<td>Successful at 8 months follow-up.</td>
</tr>
</tbody>
</table>
From the studies presented in this review it is clear that an integrated physiological, psychological and environmental approach to soiling difficulties is warranted. Buchanan (1992) referred to this as the 'whole child' approach. Levine and Bakow (1976), Buchanan (1992) and Carr (1999; 2000) all concluded that a family based multimodal / multidisciplinary approach to intervention was the best option, yielding improvements in 75 to 80% of cases. A recent study by Borowitz et al (2002) confirmed the view that a combined physical and psychological intervention was more effective than a physical intervention on its own. This multimodal / multidisciplinary approach has generally involved medical and environmental input (e.g. laxatives and increased dietary fibre) combined with psychological behavioural and cognitive-behavioural therapy to shape and maintain appropriate toileting routines, as well as family education about the problem. Effective education about both the individual's presentation and the intervention process, can also help to increase overall treatment compliance and so improve outcome (Levine, 1975). Buchanan (1992) stressed that education about their presentation helped individuals to understand an intervention and increased their sense of ownership of their own bodies.

Carr (1999) identified a number of key issues (Table 2.vi, see below) that he felt carers need to understand.

Table 2.vi - Factors that may influence a child's presentation with soiling difficulties that carers need to understand (adapted from Carr, 1999)

- A child may soil due to a delay in the maturation of the neural pathways that govern bowel control.
- If a child retains their stools their rectum may grow larger and develop strong walls, which do not relax easily. This in turn may result in the development of a 'faecal plug'.
- Constipation with overflow occurs when soft faecal matter leaks from the anus unnoticed due to the prolonged presence of a large faecal mass rendering the anus insensitive to the sensations that arise from soft stools.
- Large hard faeces are painful to pass and may result in anal fissures developing. This in turn may lead to a child avoiding defaecating. In some cases this avoidance may be involuntary.
- The anxiety, anger and stress often associated with soiling and conflicts around its management may in themselves lead to further soiling.
- The soiling difficulties may be compounded if a child eats a low-fibre diet and takes little physical exercise.
understand. If the psychological aspects of an individual's presentation are not adequately addressed it may undermine the effectiveness of an intervention. This in turn may exacerbate the individual's presentation since the underlying stressors in their life may be missed and inappropriate management strategies used inadvertently. In extreme cases, if due regard is not given to the psychological aspects of a case's presentation it is conceivable that Munchhausen by proxy situations may be overlooked (Clayden and Agnarsson, 1991). Conversely, since constipation is such an important aetiological factor, if a psychological intervention is pursued without due regard for the physical aspects of an individual's presentation, there is a danger that it may result in making the situation worse rather than better. Given the high incidence of constipation in individuals who present with soiling difficulties any intervention should include a medical opinion of a child's physical presentation, in order to assess the need for the use of any medication or other medical intervention.

Bellman (1966) suggested that soiling difficulties were a self-limiting condition. Schaefer (1979) cited a spontaneous annual remission rate of 28%. Smith and Smith (1987) reported a 50% spontaneous remission rate over a two year period. Loening-Baucke (1994) emphasised that soiling difficulties are often a complication of long-standing constipation and as a result will be involuntary. Kelly (1996) noted the lack of comprehensive long-term outcome studies. In one of the few long-term follow-up studies (6.9 ± 2.7 years) in this area, Loening-Baucke (1994) found that 63% of individuals who had been initially assessed and treated for constipation before they were 4 years old had recovered. In 1996 she (Loening-Baucke, 1996a) reported that 50% of treated cases who were more than 5 years old had recovered at twelve months follow-up. This figure increased to 70% when the follow-up period was extended to 2 years. One of the most common reasons for relapse has been found to be the premature discontinuance of laxatives (Clayden, 1992). It would be predicted that family knowledge and understanding of soiling difficulties would have a part to play in addressing this.

The literature indicates that interventions are unlikely to be quick, and that given the complex and multifaceted nature of the problem, interventions benefit from a multidisciplinary and multidimensional approach. Buchanan (1990) reported that in a sample of 66 children treated for soiling difficulties the average length of time from initial referral to last known appointment was three to five years. The management of children and young people who present with soiling difficulties therefore requires a lot of patience and effort on the part of the individual, their family and any involved professionals. Loening-Baucke (1996a) pointed out that in order to maintain treatment compliance frequent and regular follow-up is advisable. While interventions may be somewhat prolonged, Walker (1998) pointed out that the overall prognosis for a combined medical and behavioural intervention was very good. He suggested that behavioural interventions were less prone to relapse due to their greater emphasis on skills development as far as bowel control and toileting behaviours were concerned. This view lends weight to the merits of adopting a combined (physical and psychological) approach to any intervention. A
combined physical and psychological approach run on an out-patient basis not only offers the most effective way of intervening with soiling difficulties but is also more practical, cost effective and less intrusive than many other interventions such as biofeedback or an hospital inpatient intervention.

There are however a number of shortcomings with the research that has been conducted to date. It has tended to focus on a range of different theoretical models of intervention with little attention being given to the investigation of a family’s knowledge and understanding of soiling difficulties or the family context within which the difficulties occur. These issues would however seem to be important factors in increasing our understanding of soiling difficulties and so helping to ensure that the most appropriate intervention is used. As far back as 1958 Pinkerton identified a number of parental characteristics that seemed to characterise a poor prognosis. There has however been very little research since then to try and substantiate his claims; nor has there been any systematic research into the affects of soiling on a child and their family.

The findings of the studies that have been conducted to date are undermined by the lack of any randomised controlled trials, which might be ethically acceptable over a short period of time. However, given the usual length of an intervention that focuses on soiling difficulties there will inevitably be reservations about the ethical viability of long term randomised controlled trials. Many studies have used a single case design which will require replication to lend weight to their findings. Those studies that have used a group design have generally only had access to small numbers and allocation to intervention groups has rarely been random. A further problem when trying to interpret the research in this area is that it has looked at a number of combined intervention approaches. This has made it hard to identify the relative importance of the different component parts of an intervention. Different studies used slightly different operant conditioning regimes and this has made any comparisons difficult. This situation is further compounded by the fact that studies have used different definitions to define their sample, as well as different definitions of outcome. For instance some studies (Stark et al, 1990) did include children whose soiling may have been associated with a degree of constipation, while Davis et al (1976) excluded any child who presented with constipation from their study. Similarly some studies assessed outcome by looking at the reduction in the frequency of soiling episodes (Cox et al, 1996), while others looked not only at a reduction in soiling episodes but also at an increase in appropriate toileting behaviour (Stark et al, 1990).

It has been estimated that most childhood soiling is associated with chronic constipation (Walker, 1998). The prognosis for children with chronic constipation is however unclear. A review of the literature using both Psycinfo and Medline (January 2003) identified no controlled long term outcome studies. It is therefore difficult to draw any firm conclusions about what works best for cases where constipation has been a significant factor. These children may be subjected to a range of intrusive procedures without any guarantee of success. As a result of
repeated admissions to hospital, extensive investigations and expensive treatments these children can consume large amounts of health care resources.

There could potentially be considerable savings, both in terms of a child's and their family's global health as well as financially, if a better understanding of the significant factors in a child's presentation with soiling difficulties could be developed. Further research into the psychological factors within the child, the nature of the parent/child relationship, the quality of the family environment and the relationship of family knowledge and understanding of soiling difficulties to outcome is required. This situation is in marked contrast to the situation for children who present with enuresis. A number of randomised controlled trials of interventions with enuresis have been conducted (Carr, 2000). In addition to this Butler (1994) has developed some useful and innovative ways of looking at family attitudes within the family's of children who present with enuresis. This work has highlighted that family attitudes have an important part to play in a child's presentation with enuresis.
Chapter 3 - Research Questions and Hypotheses

3.1 Aims of the research and rationale for hypotheses

To date there has been relatively little research into the psychosocial aspects of children who soil and their families, while the physical aspects of a child's presentation have been comparatively well researched. The psychological research that has been conducted has tended to focus on the effectiveness of different therapeutic approaches rather than on the role of a family's knowledge and understanding of soiling difficulties or other psychological factors within the child and the parent/child relationship that might effect a child's presentation and an intervention's outcome.

The three main aims of the research and the rationale for the hypotheses will now be considered.

**Research Question 1**

*To investigate whether family knowledge is related to intervention outcome.*

Many clinical researchers (Gabel, 1981; Fielding and Doleys, 1988; Buchanan, 1992; Walker, 1998; Carr, 1999) have commented on constipation being a factor in the majority of childhood soiling difficulties. A good understanding of a child's physical presentation and the complexities of constipation and constipation with overflow are therefore likely to be important factors in determining if parents manage the soiling and help their child appropriately. Indeed Clayden (1992) argued that the premature withdrawal of laxatives was one of the most common reasons for relapse. It is not surprising therefore that a number of authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Leoning-Baucke, 1996a; Stark et al, 1997) have emphasised the importance of child and parent knowledge in an intervention that hopes to address a child's soiling difficulties.

No studies have however specifically looked at the issue of a family's knowledge and understanding of any soiling difficulties that a child might present with. The first research question for the current study (which was noted in Sections 1.5.1 and 1.5.1.1) was therefore to try and assess a child's and their parents' knowledge and understanding of any soiling difficulties and whether this pre-intervention knowledge was predictive of intervention outcome.

**Hypothesis 1**

*In the total sample of participants a higher pre-intervention knowledge about soiling difficulties will be positively associated with a better intervention outcome.*
Research Question 2

To assess whether information booklets about soiling difficulties affect intervention outcome. A number of core aspects have been identified within an intervention that aims to address childhood soiling. These include the possible need to use medication (Clayden, 1992; Buchanan, 1992; Carr, 2000); the use of conditioning techniques (Berg et al, 1983; Buchanan, 1992; Stark et al, 1990; 1997) and the need for a family to take a positive attitude (LaVigna and Donnellan, 1986; Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999). All these factors lend themselves to the use of written documentation. This written information may help to reinforce the face to face discussions clinicians have with children and their parents about soiling difficulties and their efforts to educate a family about these difficulties and how they might best be managed.

A second research question (which was noted in Sections 2.2.1 and 2.3.1) was therefore to try and assess whether the provision of adult and child information booklets about soiling difficulties have a positive effect on intervention outcome. Buchanan (1992) suggested that the more a child and their parents understand about soiling difficulties the better an intervention outcome will be.

Hypothesis 2

The provision of information booklets for both children who present with soiling difficulties and their parents will be associated with significantly better intervention outcome at follow up when compared with children and parents who did not receive information booklets.

Research Question 3

To explore how family attitudes may be related to intervention outcomes

Butler et al (1988) found that intolerant parents were more likely to withdraw their children, who presented with enuresis, prematurely from treatment. This study highlighted the powerful impact parental attitudes can have on an intervention’s outcome. Stark et al (1990) found evidence to suggest that a parent’s view, that their child who soils also had behaviour problems at home, may be a potential predictor of poor intervention outcomes. Gabel et al (1988) also identified some correlations between intervention outcomes and scores on the Child Behaviour Checklist (Achenbach, 1991). They found that either very high or low scores (on both externalising and internalising dimensions) were predictive of a poor outcome at follow-up, while moderate scores predicted a good outcome. Gabel et al speculated that a high score indicated a negative parental view and an inability to help their child constructively address their soiling difficulties; while a low score indicated insufficient parental pressure to
motivate the child to improve. This would be consistent with a positive and supportive parental attitude, which acknowledged the problem but supportively motivated a child to address their soiling difficulties, being important for an intervention's success.

Many authors (Clayden and Agnarsson, 1992; Buchanan, 1992; Carr, 1999) have referred to the importance of the emotional response to a child's soiling in both the child and their parent. Few studies to date have however looked at how the parent/child relationship may impinge on a child's presentation with soiling difficulties. Many interventions could be seen as having included some cognitive therapy in that they endeavour to help individuals to view themselves more positively. This attitudinal change may be a very potent component in the success of an intervention (Ronen, 1993). Buchanan (1992) and Kaplan and Busner (1993) reported that motivation and adherence to behavioural interventions are the best predictors of outcome. Carr (1999) argued that a supportive and facilitative environment would maximise the chances of any intervention being effective. Kelly (1996) found that a poor prognosis was associated with very coercive or intrusive parent-child interactions. The more we are able to understand the nature of the parent/child relationships and the quality of the family environment and how it may relate to intervention outcome the more effectively we will be able to tailor interventions to meet the specific needs of children who present with soiling difficulties.

A current research question (which was noted in Sections 1.5.2.1 and 2.3) is therefore to try and extend Butler's (1994) work with children who presented with enuresis that looked at their experiences and how this related to intervention outcomes. In a similar way the current research will try to look at how family attitudes to soiling difficulties may be related to intervention outcomes for children who present with soiling difficulties.

**Hypothesis 3**

In the total sample of participants a more positive pre-intervention family attitude towards a child's soiling difficulties will be positively associated with a better intervention outcome.
Chapter 4 - Methodology

4.1 Design

The aims of the research were to consider the impact that the provision of child and parental information booklets on soiling difficulties had as far as intervention outcome was concerned. The research was designed also to assess the extent to which family attitudes may be predictive of intervention outcome. In order to achieve this the study employed an independent samples design plus correlational measures, utilising self-administered questionnaires.

Due to the nature of soiling difficulties and the physical complications and risks associated with chronic constipation it would not be ethical to use a design that incorporated a 'no treatment' control group, since this would potentially result in individuals becoming chronically constipated, developing megarectums and presenting with even worse soiling difficulties. The lack of a control group inevitably limits the interpretation of any results that arise from the current study. This issue will be looked at in more detail in due course (see Chapter 6 - Discussion - Methodological limitations of the current study).

To consider the impact that the provision of child and adult information booklets on soiling difficulties had on intervention outcome participants were randomly allocated to one of two intervention groups. One was a Standard Intervention Group the other was a Standard Intervention plus Group with intervention outcomes for each group being compared. Participants in the Standard Intervention plus Group received not only the standard intervention but also parent and child information booklets on soiling difficulties. The independent variable was the provision of parent and child information booklets and the dependent variable was intervention outcome as measured after ten outpatient sessions.

Using the total sample of participants, from both the Standard Intervention Group and the Standard Intervention plus Group, correlation measures were used to assess the relationship between pre-intervention family attitudes and intervention outcome as assessed after ten outpatient appointments had been offered.

The effects of possible confounding variables, such as the participants' demographic characteristics and variation in clinical presentation with soiling difficulties were also measured and, where appropriate controlled for during data analysis.

4.2 Obtaining Ethical Approval

The research proposal was first submitted (September 1996) to the research sub-committee of the Centre for Applied Psychology (Clinical Section) at Leicester University outlining the proposed
study, including a consideration of ethical issues such as: gaining informed consent, ensuring confidentiality and the participants’ right to refuse and right to withdraw. The research sub-committee decided that the project was methodologically sound and ethical.

Confidentiality, anonymity and compliance with the Data Protection Act were ensured by allocating each participant a unique reference number that was the only means of identifying the data that related to them. Data was held on the researcher's home computer but was only identifiable by code and was password protected. A back-up copy was kept on a locked disc. Hard copies of data were kept in a locked file at the researcher's home to be shredded at the end of the study.

The next stage was to register the research with North Warwickshire NHS PCT and to submit a proposal to the Warwickshire Regional Health Authority Research Ethics Committee for ethical approval. The Ethics Committee asked for some minor changes (though the changes did not constitute grounds for withholding ethical approval) to be made to the consent form, which had some technical, grammatical and typographical errors on it.

Once these minor corrections had been made full ethical approval was obtained (April 1997) from the Ethics Committee (see Appendix VI), allowing the pilot study and main data collection to begin.

4.3 Participants
Participants for the current study were drawn from children referred to a joint Paediatric/Clinical Psychology Soiling Clinic. The following inclusion criteria were used to screen children before they and their parents were approached to give consent to participate in the current study included:

- the child currently presenting with one or more soiling accidents a month;
- the child being more than four years old but less than sixteen years old;
- the child not presenting with a disability
e.g. Spina bifida, Hemiplegia, Learning Disability;
- the child being a 'new' referral to the joint Paediatric/Clinical Psychology clinic; and
- the child having had no surgical intervention to their bowels.
Exclusion criteria that resulted in participants being excluded from the study included:

- their undergoing bowel surgery;
- their being admitted to hospital for a period of in-patient care;
- their experiencing a period of immobility, which might restrict their ability to get to the toilet independently;
- their acquiring a head injury;
- their taking any medication that did not have its primary effect on the bowels but which may none the less have an effect on bowel functioning (e.g. antibiotics); and
- their being accommodated by Social Services.

4.4 Offering an assessment and intervention service

North Warwickshire has developed a dedicated service for children who present with soiling difficulties. The service was set up to address a number of concerns about how the clinical needs of children who present with soiling difficulties were being met. Prior to the Joint Paediatric/Clinical Psychology Soiling Clinic coming on line it was apparent that a number of very expensive acute paediatric beds on the children’s ward at the George Elliot Hospital, Nuneaton, were routinely occupied by children who presented with constipation and its resulting complexities. All too frequently children seemed to be admitted to be ‘cleared out’ only to be readmitted a few weeks later due to their once again being constipated. From the child’s point of view these repeated hospital admissions were not only very disruptive of their home and school routines but also potentially physically and psychologically traumatic. Clinicians were also aware that children who presented with soiling difficulties were often referred concurrently to Paediatrics and Clinical Psychology. As noted in the literature review both disciplines inputs may well be warranted. Prior to the joint clinic it was more difficult to co-ordinate each discipline’s clinical contact with a referred child. Children and parents often had to attend two separate appointments on different days to see first one clinician and then the other. This inevitably resulted in a lot of disruption for the family. At times it also resulted in clinicians seeing markedly different clinical presentations for the same child; since during the intervening weeks between appointments a child who was thought to be constipated by one clinician may have managed to clear themselves out by the time they were seen by the other clinician. Conversely, the same process could happen in reverse with a child
becoming constipated in the intervening weeks between their two appointments. These changes would inevitably effect a child's clinical management.

A joint Paediatric/Clinical Psychology Soiling Clinic was established to improve the co-ordination of Paediatric and Clinical Psychology input to children who were referred to either service presenting with soiling difficulties. The joint clinic has also resulted in less disruption for a family, since a child would be able to be see both clinicians at one appointment; rather than having to attend two separate appointments generally on different days. The establishment of the joint clinic has also reduced the number of children repeatedly re-admitted into the paediatric ward with constipation.

The joint clinic is based at the George Eliot Hospital, Nuneaton and is organised around a monthly out patient clinic run jointly by a Paediatrician and a Clinical Psychologist (see Figure - 4.i, see below).

The joint Paediatric/Clinical Psychology Soiling Clinic is co-ordinated by the Clinical Psychologist. A wide range of health professionals refer children to this clinic from across North Warwickshire. Self referrals are generally asked to seek referral via their General Practitioner. Referrals are only accepted once a child was 4 or more years of age.

When a child encounters difficulties in developing faecal continence the general advice given at the joint clinic was broadly consistent with the 'whole child' approach as outlined by Buchanan (1992). This approach emphasised the need to address the physical, psychological and social/environmental aspects of an individual's presentation. Buchanan (1992) emphasised that the ethos underpinning this approach included:

- not blaming the child and an acknowledgement of the fact that soiling is a common problem with multiple causes;
- empowering the child, by helping them to resume responsibility for their own bowels;
- educating the child about their soiling difficulties and so addressing any learned helplessness issues that may be present;
- emphasising the strengths and positive achievements as well as having an awareness of individual needs; and
- acknowledging that relapses are common and so should be expected and not automatically seen as a sign of failure.
Referral to Soiling Clinic sent to Clinical Psychology by GP, Paediatrician, Health Visitor, etc.

Carer(s) contacted and asked to confirm that they would like an appointment (Opt in)

Referral not appropriate for joint Encopresis Clinic, case followed-up via general Clinical Psychology Outpatient Clinic or referred on.

Clinical Psychology Initial Assessment appointment offered.

Follow - up via Clinical Psychology Out-patient Clinic by Clinical Psychologist who inputted joint Encopresis Clinic

First available appointment at monthly Joint Paediatric / Clinical Psychology Soiling Clinic offered

Follow - up via Clinical Psychology Out-patient Clinic with option of Paediatric Outpatient and/or Inpatient contact as required.

Reviewed at joint Soiling Clinic as necessary.

Continue to present with soiling difficulties.

Follow - up via Clinical Psychology Outpatient Clinic

Do Not Respond on two consecutive appointments

Regular bowel actions in the toilet and no soiling difficulties for a minimum of one month.

Discharge.

Buchanan’s (1992) vision of the treatment process is summarised in Figure 4.ii (see below).
Figure 4.ii - The Treatment Process (from Buchanan, 1992)

Assessment

Treatment Ethos

Treatment Plan
What's priority/possible
What the child wants
What the carer wants

Physical Priorities
1. Rectal emptying
2. Enhancing defaecation sensation
3. Facilitating timing of defaecation

Psychological Priorities
1. Demystification
2. Specific fears
3. Cognitive restructuring
4. Behavioural programme with achievable goals
5. Reward for defaecation not cleanliness
6. Clean-up training
7. Listening to body
8. Maintaining an intervention
9. Family co-operation

Social Priorities
1. No initial focus on social factors unless indicated
2. Demystification for carers and siblings
3. Practical help

Implementation
Timing of contact roles/responsibilities

Review

Good response
Continue as before
Lengthen contacts
Assess psycho-social stresses.
Warn about probability of relapse.

Some response
Continue as before or adjust package

No response
Remain positive
Reassess: physical
Reassess: psycho-social incentive programme, schooling and family situation
All children who present with soiling difficulties receive a medical examination at the joint clinic to establish if there is a physical explanation for their soiling accidents, including whether there is any constipation or faecal loading. This assessment may result in the child requiring either no physical treatment, being prescribed medication, suppositories, enemata, and/or inpatient treatment/investigations. If inpatient treatment is necessary it is kept as short as possible since the length of inpatient treatment has been shown to have no impact on outcome (Buchanan, 1990) and may be experienced as traumatising and/or punishing by the child.

Over the course of the current research there have been a number of changes in the NHS at both a local and a national level. Some of the difficulties these changes have posed for the continuing viability of the joint clinic will be described in Chapter 6 - Discussion. The overall sample used in this study was quite small due to the low take up (27%) rate from referrals when their consent to take part in this research was requested. One factor that may have influenced referrals decision not to participate in the study were three NHS health care scandals that were widely covered in the media at the time individuals were being approached to give consent to participate in the current study. The first of these concerned a team of paediatric cardiac surgeons who had continued operating inspite of very poor outcome results and possibly insufficient specialist training. The second scandal concerned the lack of any apparent procedures in some hospitals to seek consent for children's organs to be kept by pathology departments after an autopsy had been performed. The third scandal related to Dr. Harold Shipman, a General Practitioner who was found guilty of having murdered a number of his patients. The combination of these three scandals may have contributed to some parents being less prepared to take part in any clinical research. This situation may have compounded the difficulty of identifying a sufficiently large clinical sample from an already small population. The recruitment of participants was also disrupted by the retirement of the Consultant Paediatrician who provided the paediatric input to the joint clinic. The joint clinic continued with input from locum consultant or staff grade paediatricians, but the recruitment of participants to the current study was delayed for eighteen months while a new Consultant Paediatrician was appointed.

4.5 Measures
In view of the small amount of research into family knowledge and family attitudes towards a child’s soiling difficulties there is a lack of established, reliable and valid measures in this area. This meant that the current research had to rely on adapting measures that had been developed originally for use in other areas, such as enuresis. In some instances measures had to be devised to try and gather the relevant information, since no suitable measure was available. This was particularly true of the parent and child knowledge questionnaires about soiling difficulties, the current presentation questionnaires and as a result the outcome measures.
The standardised measures used in the current study will be considered first, before the non-standardised measures are presented. The limitations of using non-standardised measures will be considered in Chapter 6 (Discussion).

**Standardised Measures**

Two parental measures were used to assess the extent to which a child was seen by their parents as presenting with behaviour problems. Stark et al (1990) found evidence to suggest that parents who viewed their child as having behaviour problems at home were more likely to have a poor intervention outcome. The use of the Parenting Stress Index (Abidin, 1995) and the Child Behaviour Checklist (Achenbach, 1991) would allow this issue to be looked at in the current study. These assessments would also provide an insight into the quality of the parent-child relationship.

**Parenting Stress Index**

The Parenting Stress Index (PSI) (Abidin, 1995) was selected to measure participant’s stress, as it provides a measure of the specific stress within the parent and child relationship. It measures a variety of contextual stressors associated with parent-child characteristics. The PSI was standardised for use with parents of children aged from 1 month to 12 years. Abidin (1995) has reported good content and construct validity. Alpha reliability coefficients are .89 for the Child domain and .93 for the Parent domain.

In this study the long form of the PSI was used. It is a 120 item questionnaire, consisting of three domains: Child Domain, Parent Domain and General Life Stress. The Child Domain contains six scales: Child Adaptability; Acceptability to the parent; Demandingness; Mood; Distractability/Hyperactivity; and Reinforcement to parent. High scores in the Child Domain indicate that the child’s characteristics are the main cause of stress, causing the parent to experience difficulty in their task of parenting. The Parent Domain consists of seven scales: Parent Depression; Attachment to child; Restrictiveness of the parent role; Sense of Competence; Social Isolation; Relationship with Spouse; and Health. High scores in the Parent Domain indicate that stress is more likely to be related to parental characteristics and functioning. The questionnaire also includes an additional nineteen optional General Life Stress items. This provides information regarding recent stressful situational circumstances experienced by the respondent. The PSI provides a score for the Child Domain, the Parent Domain, General Life Stress and a Total score. Parents scoring over 260 for the total PSI score are thought to be experiencing levels of stress which warrant referral to professional services (Abidin, 1995). T scores for the Child Domain, the Parent Domain and the Total score were used as measures of the stress within the parent/child relationship.
Child Behaviour Checklist
The parent version of the Child Behaviour Checklist (Achenbach, 1991) consists of twenty social competence and 118 behaviour problem items. Each checklist yields an overall behaviour problems score and broadband internalising and externalising behaviour problem subscale scores. Scores on eight narrow band subscales are also provided, however these were not used in the current study. T scores for total problem score and internalising and externalising behaviour problem scores were used as measures of child adjustment. Age appropriate questionnaires were used for children aged between 4 - 18 years. This instrument is well standardised and was scored up using a computer programme with age and sex based normative data.

Validation work on the Child Behaviour Checklist has been carried out to demonstrate its quality and strong psychometric properties as a measure of children's psychosocial behavioural adjustment (Edelbrock and Achenbach, 1980). Achenbach (1991) found that mother’s and father’s scores showed a high correlation ($r = 0.77$).

Empirically based scores on the Child Behaviour Checklist have been shown to reflect accurately DSM diagnostic categories (Kasius et al, 1997) which may reflect one of the reasons why this checklist is used widely in clinical practice. The normative data for the Child Behaviour Checklist uses an American sample and currently no UK norms are available.

The Child Behaviour Checklist was chosen as an appropriate measure for the current study because of its strong psychometric qualities and its ability to distinguish between reports of externalising and internalising behaviour difficulties (Edelbrock and Achenbach, 1980). Gabel et al (1988) found that a good outcome for an intervention that addressed children's soiling difficulties correlated with moderate behaviour difficulties on both internalising and externalising dimensions of the Child Behaviour Checklist, while a poor outcome correlated with either low or very high scores on both these dimensions. Gabel et al (1988) speculated that these findings may be related to parental reactions. The use of the Child Behaviour Checklist in the current study would allow this issue to be assessed more closely.

Non-standardised Measures

Current Presentation Questionnaires

There is currently a lack of reliable and standardised assessment measures to assess a child’s current clinical presentation with soiling difficulties. In order to try and overcome this difficulty the researcher drew up two questionnaires (Current Presentation Questionnaire I and Current Presentation Questionnaire II) from a combination of questionnaires that had previously been developed by Bernard-Bonnin (Bernard-Bonnin et al, 1993) and Turner (1997). Parents were
asked to complete these questionnaires in order to allow consistent basic clinical information about a child’s current presentation with soiling difficulties to be gathered. (Copies of both the Current Presentation Questionnaire I and the Current Presentation Questionnaire II are included in Appendix III.)

Current Presentation Questionnaire I
This used a tick box format where parents were asked to respond to forty nine questions, that were divided into eight different categories concerning their child’s presentation (Soiling, Retention, Toilet Training, Symptoms, Previous Management, Avoidance, Family and Consequences for child). Parents were asked to complete this questionnaire prior to their having any clinical contact with the researcher.

Current Presentation Questionnaire II
This was identical to the Current Presentation Questionnaire I, except that it omitted the historical background information sections. It was made up of twenty nine questions that were divided into four sections (Soiling, Retention, Avoidance and Consequences for child). Once again a tick box format was used to elicit parental views about their child’s current presentation with soiling difficulties, but this time the questionnaire was completed after ten clinical outpatient sessions had been offered.

Outcome Measure
As is the case in other areas when considering children’s presentation with soiling difficulties, there is a lack of standardised outcome measures for assessing a child’s soiling difficulties. Outcome in the current study was assessed by comparing some of the responses given to particular questions on the Current Presentation Questionnaires I and II. Questions 2 and 17 in the Current Presentation Questionnaire I related respectively to the frequency of soiling ‘accidents’ and bowel motions passed in the toilet. Questions 2 and 13 in the Current Presentation Questionnaire II also related respectively to the frequency of soiling and motions passed successfully in the toilet. An indication of any change in a child’s presentation, as far as any soiling difficulties are concerned, can therefore be obtained by comparing parent’s responses to question 2 on the Current Presentation Questionnaires I and II. A comparison of parental responses to question 17 on the Current Presentation Questionnaire I with their responses to question 13 on the Current Presentation Questionnaire II gave an indication of any change in the frequency with which a child was successfully having their bowels open in the toilet.

Knowledge Questionnaires
As has already been commented on there is a lack of reliable and valid standardised measures to assess parent’s and children’s knowledge about their bowels, appropriate toileting behaviour and
the management of soiling difficulties. In an attempt to assess these issues two questionnaires were developed, one for use with parents (Multiple Choice Knowledge Questionnaire), the other for use with children (Child Knowledge Quiz). Copies of these assessment measures are included in Appendix III. These measures would allow the relationship between pre-intervention knowledge and intervention outcome, as assessed after ten clinical sessions, to be investigated.

Parent's Multiple Choice Knowledge Questionnaire
This was an adapted version of a questionnaire originally developed by Bernard-Bonnin (Bernard-Bonnin, A.C., et al, 1993). The first page of this questionnaire gathered some basic demographic information such as a child’s age and sex, and a parent’s age, civil status and socioeconomic group. This would enable any effects from these variables to be measured and where appropriate controlled for in the analysis of the data.

The rest of the questionnaire consisted of sixteen questions and parents were asked to select the correct answer from three possible options for each question. Seven of the questions (question numbers 1, 3, 5, 9, 13, 14 and 15) related to physical aspects of bowel continence and its management. Six questions (question numbers 4, 7, 8, 10, 11 and 12) related to psychological aspects of bowel continence and its management. The remaining three questions (question numbers 2, 6 and 16) asked about dietary factors that are related to bowel continence. An individual parent’s score could range from 0 to 16. A copy of this questionnaire is included in Appendix III.

Child Knowledge Questionnaire.
This questionnaire was also based on a questionnaire originally drawn up by Bernard-Bonnin (Bernard-Bonnin, A.C., et al, 1993). The first four questions were open ended focusing on a child’s awareness of the call to stool and what happens depending on how they respond to it. The fifth question asked a child to rate how helpful they thought a number of different interventions might be in helping them to overcome their soiling difficulties.

Children’s responses to the first question (How do you know when you are ready to pass a motion/do a poo?) were assessed as being correct if they indicated that they experienced the call to stool. For answers to question two (What do you do if you get a tickle in your tummy?) to be seen as correct the child’s answer had to indicate that they would go to the toilet. For question three (What happens if you don’t pass a motion/do a poo when you get a tickle in your tummy?) a child’s answer was seen as correct if it indicated that they may have a soiling accident or that the motion was still there waiting to be passed, even if the call to stool was no longer being experienced. Answers to question four (What happens to the tickle in your tummy when you have passed a motion/done a poo in the toilet?) were assessed as correct if they indicated that the call
to stool had gone away. A child's total score on the first four questions of this questionnaire ranged from 0 to 4. A copy of this questionnaire is included in Appendix III.

**Family Attitude Measures**

Butler et al (1994) presented a number of measures he had developed and used to look at parent and child family attitudes and perceptions regarding enuresis. These measures included beliefs about aetiology, perceived impact on life style, self-image and estimates of parental intolerance. Dr Butler (personal communication, 14 October 1997) indicated that these measures originated from personal construct theory, which takes a non-psychometric perspective on validity and reliability. This has meant that to date only a limited amount of validation or reliability work has been undertaken on these measures (Butler et al, 1993). The current study adapted these measures so that they could be used to assess family attitudes and perspectives regarding a child who presents with soiling difficulties. In all, five different scales were used. Three were completed separately by both parents and children. These were the Family Attitude Scale, the Impact of Soiling Scale and the Reasons for Soiling Scale. The last two scales were the Feelings Scale, that was completed by parents only and the Self-Image Scale that only the child who presented with soiling difficulties was asked to complete. (Copies of each of these scales have been included in Appendix III.)

**Family Attitudes Scale**

Both the child and their parents were asked to fill in this scale separately. Both respondents were asked to identify all the people living at home along the top row of this questionnaire. They then had to indicate who, if anyone, responded to a soiling accident in the way indicated in any of ten statements. The first five statements represented a tolerant response, while the last five statements indicated an intolerant response. Each family member could therefore achieve a score ranging from 0 to 5 for their tolerance or intolerance of a child's soiling difficulties.

**Impact of Soiling Scale**

Again both the child with soiling difficulties and their parents were asked to complete this scale separately. Respondents were asked to indicate which of seventeen statements applied to them using a three point scale ('no' = 1, 'sometimes' = 2, or 'yes' = 3). The first nine statements addressed non psychological (physical consequence, hygiene or impact reduction strategies) issues, while statements 10 to 17 related to psychological (emotional reaction, fear of discovery, sense of difference or lack of socialisation) concerns. An individual's total score on the non-psychological statements could range from 9 to 27; while a total score on the psychological statements could range from 8 to 24.
Reason for Soiling Scale
This measure was also completed by parents and the child who presented with soiling difficulties separately. It was based on an enuresis questionnaire (Butler, 1994) ‘Beliefs about Bedwetting.’ Respondents were required to rate twenty one aetiological statements that related to the child’s soiling difficulties. The various statements were divided into three groups relating to physical beliefs (questions 1 - 7), psychological beliefs (questions 8 - 14, 16, 17 and 20) and dietary or other beliefs (questions 15, 18, 19 and 21) about what the respondent attributed the child’s soiling accidents to. Individuals were asked to respond to each statement using a 0 - 10 point scale where zero was ‘disagree with a lot’ and ten was ‘agree with a lot.’ The mid point of the scale, five, indicated ‘no strong opinion either way.’ Sub totals for physical beliefs (ranging from 0 to 70), psychological beliefs (ranging from 0 to 100) and other beliefs (ranging from 0 to 40) were calculated. The mid points of these ranges (for physical beliefs 35, for psychological beliefs 50 and for other beliefs 20) indicate no strong opinion either way about a particular set of beliefs. The closer the score for a particular set of beliefs was to the top or bottom of the range of scores for that set of beliefs the more the individual agreed or disagreed respectively with that set of beliefs.

Parent Feeling Scale
Parents were asked to indicate on a three point scale (‘no’ = 1, ‘sometimes’ = 2, or ‘yes’ = 3) how they felt about sixteen statements. The first seven statements (items 1 - 7) related to a positive or supportive attitude, while the remaining statements (items 8 - 16) related to a negative or intolerant attitude. Items lower down the scale represented an increasingly more intolerant attitude. Sub totals for a positive or supportive attitude (ranging from 7 to 21) and for a negative or intolerant attitude (ranging from 9 to 27) were calculated.

Child Self-Image Scale
This scale consisted of a list of twenty child generated self descriptions. Butler (1994) used it to assess how children who presented with nocturnal enuresis difficulties viewed themselves, but it was felt to be equally applicable for use in the current study. Children were asked to rate themselves (from 0 - 6) on each item. The higher the rating, the stronger the belief that the description characterised them accurately. The first seven descriptions (1 - 7) were positive, while the description in the second half of the profile (10 - 20) could be characterised as more negative. Sub totals for a positive self-image (ranging from 0 to 42) and a negative self-image (ranging from 0 to 66) were calculated.
4.6 Booklets

Two information booklets were written with a view to their supporting the face to face clinical contact with participants. One booklet was for parents while the other was for the child who presented with soiling difficulties.

Parent Information Booklet

In 1991 Clayden produced an information booklet (Clayden and Agnarsson, 1991) to try and help people understand some of the complexities of chronic constipation in children. This booklet tended to focus on the physical aspects of chronic constipation. Building on Clayden's work a booklet 'Going to the toilet...Positive Steps' (see Appendix I) was written by the researcher for use with the parents of children referred to the joint Paediatric/Clinical Psychology soiling clinic in North Warwickshire. This booklet not only presented information about the physical aspects of constipation, but also gave advice about behaviour management strategies to increase a child's appropriate use of the toilet and address any soiling difficulties they might present with. It was hoped that the booklet would act not only as a reference source for parents but would help to consolidate the information and advice they had been given in their face to face contacts with clinicians.

The booklet contained all the information necessary to respond correctly to all the questions on the Parent's Multiple Choice Knowledge Questionnaire. The Flesch Reading Ease (Person and Rose, 1995) score for this booklet was 68.8. The Flesch Reading Ease score provides a measure of readability based on the average number of syllables per word and the average number of words per sentence. Scores can range from 0 to 100. The average writing score is generally between 60 to 70 (Person and Rose, 1995). The higher the score, the greater the number of people who should be able to understand the document easily.

Child Information Booklet

Until recently, when ERIC (Enuresis Resource and Information Centre) published its Fact File for Children “All about Poo” (ERIC, 2003), there was very little published information available for children who presented with soiling difficulties. In order to try and redress this situation the researcher wrote a cartoon booklet 'Brock the Badger's Little Accidents' (see Appendix II). The booklet used a cartoon format in the hope that it would be appealing to children who presented with soiling difficulties and had been referred to the joint Paediatric/Clinical Psychology soiling clinic in North Warwickshire. The booklet focused on trying to help children understand the feelings they get in their body that might help them to predict when they need to open their bowels. The booklet also outlined the use of a star chart where stars are given, contingent on a child having their bowels open appropriately in the toilet. Again it was hoped that the booklet would
consolidate the information and advice the child had received when attending their clinic appointments.

The booklet contained all the information necessary to answer the first four questions of the Child Knowledge Questionnaire correctly. The Flesch Reading Ease score (Person and Rose, 1995) for this booklet was 89.0, indicating that it was written in a style that would be relatively easy to read.

4.7 Pilot Study

Once the two information booklets, one for parents and the other for children who presented with soiling difficulties, (see Appendix I and Appendix II) and the non standardised questionnaires (see Appendix III) that were to be used in the clinical phase of this research had been drafted, they needed to be piloted using a non-clinical population. This would help to ensure that both the booklets and the questionnaires were accessible and user friendly and that the knowledge questionnaires in particular did not suffer from any ceiling effects. The booklets were given to a local Consultant Paediatrician for comments. They suggested a number of amendments to improve the clarity of some of the statements in the booklets about the use and effects of particular medicines. These amendments were incorporated into the booklets.

Local schools were contacted seeking permission to write to pupils and their parents, asking for volunteers to help in this pilot study (see Appendix IV.i). In all two hundred and twenty one children and their parents were approached. A breakdown of the ages of the children contacted is presented in Table - 4.i (see below).

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 5</td>
<td>29</td>
</tr>
<tr>
<td>5 - 6</td>
<td>24</td>
</tr>
<tr>
<td>6 - 7</td>
<td>34</td>
</tr>
<tr>
<td>7 - 8</td>
<td>35</td>
</tr>
<tr>
<td>8 - 9</td>
<td>33</td>
</tr>
<tr>
<td>9 - 10</td>
<td>34</td>
</tr>
<tr>
<td>10 - 11</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>221</strong></td>
</tr>
</tbody>
</table>

Of the two hundred and twenty one children approached only four consented to take part in the pilot study. The ages of the four children who agreed to take part in the pilot study are presented in Table - 4.ii (see below).
Table 4.ii: Ages of pupils who consented to take part in Pilot Study

<table>
<thead>
<tr>
<th>Child</th>
<th>Age in years</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
</tr>
<tr>
<td>C</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
</tr>
</tbody>
</table>

The pilot study followed the protocol outlined in Figure 4.iii (see below).

Figure: 4.iii- Flow diagram of Pilot Study protocol

School Headteachers approached for permission to write to pupils and their parent(s) asking for volunteers to take part in the pilot study, (see Appendix IV.i for copy of letter)

Schools consent to take part in the Pilot Study.

Parent(s) and pupils contacted by post asking for volunteers to take part in the Pilot Study (see Appendix IV.ii for copy of letter).

Two pupils and their parent(s) from each year group selected at random from those who consented to take part in the Pilot Study

Selected pupils were sent copies of the non-standardised questionnaires to complete with a stamped addressed envelope for their return (see Appendix IV.iv for copy of letter).

If subjects did not return the questionnaires within the time limit they were sent a reminder, (see Appendix IV.v for copy of letter).

Completed questionnaires returned. Subjects sent parent's and child's information booklets to read, (see Appendix I and II respectively). Subjects also sent Pilot Study 'debriefing' appointment for 2 - 4 weeks after the date they were sent the information booklets, (see Appendix IV.vi for copy of letter).

At the Pilot Study 'debriefing' appointment: Child Knowledge Quiz and Parent's Multiple Choice Knowledge Questionnaire were re-administered. Subjects were asked for comments about the information booklets and the various questionnaires they had been asked to complete.

Subjects thanked for taking part in the Pilot Study at the end of their Appointment
The families that had consented to take part in the pilot study completed the non-standardised questionnaires and were sent copies of both adult and child information booklets. All the families said they did not wish to attend the Pilot Study 'debriefing' appointment they were offered. They were asked to return the booklets together with any comments they might wish to make about their structure and content. Unfortunately, only one family returned their booklets, indicating that they had found them understandable and easy to read.

Two factors that may have contributed to the disappointing Pilot Study take up rate were firstly the anti-social and embarrassing nature of the topic being studied and secondly the fact that the start of the Pilot Study coincided with the end of the summer term. Both these factors may have contributed to carer(s) being reluctant to consent to their children participating in the Pilot Study.

As indicated in Figure 4.iii had more volunteers been forthcoming, they would have been divided up into year groups. Two pupils from each year group would have been selected at random to take part in the pilot study. Any volunteers already known to the researcher would have been excluded from the pilot study.

Following a review of the completed pilot study of the non-standardised questionnaires some changes were made to the formatting of some of the questionnaires to improve their clarity. For instance, the Reason for Soiling Scale was expanded from a seven point scale (0 - 6) to an eleven point scale (0 - 10). The points on the scale were also revised to run from 'Disagree with a lot' (0) to 'Agree with a lot' (10), with a mid point of 'No strong opinion either way' (5). This replaced the original scale that ran from 'Do not agree with at all' (0) to 'Agree with a lot' (6).

Neither the Parent nor the Child Knowledge Questionnaires seemed to suffer from 'ceiling' effects, albeit within a very small sample. All the parents (N = 4) who completed the Parent Multiple Choice Knowledge Questionnaire scored 10 out of a possible maximum score of 16. Scores for the children (N = 4) who completed the Child Knowledge Questionnaire ranged from 2 to 3 out of a possible maximum score of 4. It was disappointing that none of the volunteers for the pilot study were able to attend a debriefing appointment. This meant that it was not possible for the Parent and Child Knowledge Questionnaires to be readministered to check whether these measures suffered from any ceiling effects after the Parent and Child Information Booklets had been read. The Current Presentation Questionnaire II was not used in the pilot study since all the questions in it appeared in the Current Presentation Questionnaire I.

4.8 Procedure

Figure 4.iv (see below) summarises the research protocol that was used in the current study, outlining the various steps for participants from recruitment to discharge. Examples of the letters
Figure 4.iv - Research Protocol

Referral received by Joint Paediatric/Clinical Psychology Soiling Clinic

Routine Initial Interview offered. Initial Information Sheet and consent form sent (See Appendix V.i). From January 2001 consent request followed up by telephone.

Written consent given. The child and their parents were randomly allocated to one of two intervention groups

If consent was withheld routine intervention and follow-up was given.

Standard Intervention Group
Routine Intervention given

Standard Intervention plus Group
Routine Intervention given and Information Booklets (see Appendix I and II), one for the parents and one for the child given to the family at their first appointment.

The child and their parents were contacted by post and asked to complete the following questionnaires (See Appendix V.ii a):

Parents:
- Child Behaviour Checklist
- Multiple Choice Knowledge Questionnaire
- Parent Stress Index
- Parent - Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling

Child:
- Child Knowledge Quiz
- Self-image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling

Current Presentation Questionnaire I

Reminder letter sent with another set of questionnaires if original questionnaires not returned 2 weeks before appointment (see Appendix V.ii b and c)

Standard Intervention Group
Initial outpatient appointment offered
No written information given.

Standard Intervention plus Group
Initial outpatient appointment offered
Parent and Child information booklets given. (see Appendix I and II)

Follow up appointments offered at 4 week intervals

After ten outpatient appointments had been offered parents were asked to complete the Current Presentation Questionnaire II (See Appendix V.iii and iv):

Routine treatment continued, but data collection for research was complete (Reminder letter sent if repeated measure not returned within two weeks (see Appendix V.v a and b)

Child Discharged
used during the course of the study are included in Appendix V - Research Protocol Letters. This protocol would allow the possible effect of the provision of parent and child information booklets on intervention outcome to be assessed, by comparing clinical outcomes for the Standard Intervention Group with the outcomes achieved by the Standard Intervention plus Group. It would also enable any relationship between pre-intervention family attitudes and outcome to be investigated. In addition to this the protocol allowed for the ongoing use of bowel related medication, should this be required, by children during their participation in the current study.

Participants were asked to complete the questionnaires at home to avoid their responses being distorted by the presence of the researcher. It was also recognised that since there were a large number of pre-intervention questionnaires, individuals would probably prefer to complete them in a non pressured way at home. Butler (1994) suggested that most children who were more than eight years of age would be able to complete the family attitude scales he had developed independently. In the current study for younger children and any older children who might require help parents were asked to give any necessary support a child might need to complete their questionnaires, but to try and avoid answering a question on behalf of their child.

Recruitment of the clinical sample began in March 1999 when the first participants consented to take part in the study. Due to academic time constraints data collection was drawn to a close in March 2003. The length of time that it took to gather the clinical data was a reflection of the referral rate and the consent rate. Interventions that aim to address soiling difficulties may need to continue for some time. Buchanan (1992) found that interventions in this area (as measured from the point of initial referral to the point of the last known appointment) continued for three to five years on average. This is due in part to the fact that it may take some time to resolve the physiological changes that are associated with chronic constipation (Clayden and Agnarsson, 1991). Academic time constraints meant that it would be impractical to follow cases through to discharge. It was therefore decided that the progress and current presentation of participants would be reviewed after ten clinical outpatient appointments had been offered.

From January 2001, in an effort to increase consent rates, the carers of potential participants were sent an initial assessment appointment which included an Initial Encopresis Research Information Sheet and Consent Request Form; they were also contacted by telephone prior to their first clinical appointment. This telephone contact provided an opportunity to discuss a family's participation in the study and answer any questions they might have. Once written consent had been obtained a set of initial baseline questionnaires was sent out as indicated in Figure 4.iv for completion and return two weeks prior to the participants first clinical outpatient appointment. As from January 2001 the baseline questionnaires were sent out with a covering letter (see Appendix V.ii.c) which offered the option of a Psychology Assistant doing a home visit (again prior to their
first clinical appointment) in order to answer any outstanding questions that there might be about the study and facilitate the completion of the initial baseline questionnaires.

If a participant did not attend an appointment they would automatically be offered a further appointment. However, if they did not respond to two consecutive appointments they would be sent a letter asking them to contact the Clinical Psychology Department within the next two weeks if they wished to arrange a further appointment. This letter would also inform them that if they did not contact the department within two weeks it would be assumed that no further help was currently required and the case would be closed. If a participant was discharged prior to their having been offered ten appointments they were sent a final questionnaire, (Current Presentation Questionnaire II) together with a stamped addressed envelope for its return (see Appendix V.iv). As with the initial set of questionnaires if this final questionnaire had not been returned within two weeks subjects were sent a reminder prompting them to return the completed questionnaire (see Appendix V.v a). Once again as from January 2001 they were offered the option of an Assistant Psychologist doing a home visit should they require any help in completing this final set of questionnaires (see Appendix V.v b).

The offer of an Assistant Psychologist making a home visit to help families complete the questionnaires was not taken up by any of the families who took part in the study.

4.8.1 Clinical Procedure

In Figure 4.ii - The Treatment Process nine psychological priorities were identified. These issues were addressed during a child’s and their parents’ outpatient contact with the researcher in his capacity as the Clinical Psychologist inputing the Joint Paediatric/Clinical Psychology Soiling Clinic. Two core aims underpin these psychological priorities, firstly to motivate the child to understand their problem and take control of it and secondly to ensure that while a child is still experiencing soiling accidents they maintain a reasonable level of self-esteem. The order in which the points are addressed and the extent to which a particular issue needs to be focused on will be dependent to some degree on the nature of each child’s individual presentation. A brief description of how each psychological priority was addressed is presented below.

1) Demystification

This involved increasing an individual’s understanding of how their bowels work as well as increasing the motivation of the child to take some responsibility to help themselves. The aim was to empower the child and their family to overcome the soiling difficulties. This avoided the danger of the responsibility for a successful outcome being left solely with the professionals, with the related risk that they might be blamed for any failure to move forward. It also avoided the risk of compounding any sense of ‘learned helplessness’ (Seligman,1975) for the child.
Demystification also helps children and their carers to understand that any soiling accidents that do occur might not be deliberate. Walker (1998) highlighted that constipation might result in an enlarged colon, which in turn might result in the loss of the sensation of the call to stool and the development of constipation with overflow, which the child will have no control over. This understanding in turn helped to prevent a negative parental reaction and so reduced the risk of child abuse. A greater understanding of how and why soiling accidents might occur helped to shift the family focus from being clean, which might lead to difficulties of retention and constipation with overflow, to valuing the appropriate use of the toilet with an awareness that soiling relapses might occur. Talking a family through the way an individual's bowels work with the aid of a diagram helped all family members to develop a greater understanding of what might be going on for a child who presents with soiling difficulties.

2) Specific Fears
An intervention needs to be sensitive to any specific fears that a child might present with, regardless of whether these arose from previous unsuccessful treatments and/or from particular fears about having their bowels open. A desensitisation programme might be necessary if a child has developed a fear of the toilet or defaecation (Carr, 1999). For instance, rewarding a child for sitting on the toilet, regardless of whether or not they had had their bowels open while sitting on it, might be an important step in overcoming a fear of the toilet before trying to encourage a child to pass a motion in the toilet.

3) Cognitive Restructuring
Cognitive restructuring techniques were used to help address a child's low self esteem and motivate them to engage constructively in an intervention. For example, families were encouraged to refer to soiling episodes as 'accidents' as opposed to a child having soiled deliberately. This approach was also used to help a child and their family overcome any issues of learned helplessness.

4) Behavioural Approach
Following the child's initial assessment a behavioural approach was used to encourage and consolidate appropriate toileting behaviour. The use of a behavioural approach to try and establish the regular use of the toilet was implemented in conjunction with physical interventions that addressed issues of constipation.

When a behavioural programme was used to encourage the regular use of the toilet, care was taken to involve the child in identifying and agreeing the behavioural goals. Care was taken to ensure that these goals were achievable (and initially might be set well below what a child could
already achieve) over time the defaecation target behaviours were gradually increased. This resulted in a hierarchy of achievable target behaviours being worked through, which aimed to culminate in the child’s appropriate use of the toilet to have their bowels open independently. Care was also taken to try and link any behavioural record used by a child (such as a star chart) to that child’s interests. As in any behavioural programme the professionals’ and carers’ enthusiasm and encouragement had an important part to play in maximising a behavioural intervention’s effectiveness.

The intervention sought to emphasise a child’s appropriate and successful toileting behaviours rather than focus exclusively on instances of soiling accidents. This meant that in broad terms a solution focused (Berg, Insoo Kim, 1991) approach tended to underpin clinic interventions. Parents were asked to keep a toilet diary, recording their child’s appropriate and inappropriate toileting behaviours. If age appropriate carers were asked to keep a star chart with their child, this helps to ensure that the focus of any intervention from the child’s point of view would be positive.

Stars and small repeatable rewards were earned by the child for either successfully passing a motion in the toilet or if this was currently beyond a child’s ability for some other appropriate toileting behaviour, such as sitting on the toilet or telling a parent that they needed changing before the carer has noticed that their child had had a soiling accident. The use of large treats or rewards was discouraged, since their consistent use might be unsustainable and they might result in parents’ being ‘held to ransom’ for a large treat or reward before any appropriate toileting behaviour was engaged in. The target toileting behaviour was clearly defined to ensure that it was appropriate, observable and achievable. If used inappropriately this approach might cause more harm than good, for instance, positive reinforcement of clean underwear might encourage retention and constipation, rather than bowel motions being passed in the toilet (Carr, 1999).

Parents were encouraged to treat any instances of soiling or marking as “accidents.” A child was encouraged to tell if they soiled and needed to change. If they were reluctant to tell, once a parent had noticed that a child had soiled themselves, they were advised that whatever activity the child was involved in should stop until they had got changed. Once changed a child was free to return to their previous activity without any continuing cost. This meant that the only cost for a child having had an “accident” was that their current activity was interrupted until they were clean.

5) Following up a Behavioural programme
Care was taken to follow up on the success or otherwise of any behavioural programme that was used. A programme whose target behaviour was found to be beyond a child’s current ability level was changed to ensure that a child could successfully achieve the target behaviour.
6) Clean-up Training
This addressed the issue of how much children should be encouraged to be involved in cleaning themselves up. Children might experience any demands, such as cleaning themselves up or washing their soiled pants out, as punishing. Butler (1997) cautioned against asking children who presented with nocturnal enuresis to strip their wet bed in the morning, since they might experience this as a punishment. However parents were encouraged to strike a balance to ensure that a child did not avoid any acknowledgement of their soiling accidents. One of the key points here was the context within which a child was asked to help in the cleaning up process. For younger children this might merely require them to say when they have had a soiling accident; while for older children it might require a far greater involvement in cleaning themselves up and putting their soiled clothes in a bucket to soak. Parents were advised to take a 'change kit' to school and on any outings in order to reduce the adverse impact of any soiling accidents. A typical 'change kit' included a change of pants, trouser or skirt, a plastic bag to put any soiled clothes in and some 'wet wipes' (Carr, 1999).

7) Listening to body
The importance of "listening" to your body was stressed to children. This might involve helping them to understand where in their bodies they experienced "the call to stool." The need to avoid any delay in going to the toilet to have their bowels open, once they have identified that they needed to pass a motion, was also emphasised.

One strategy to help a child to strain effectively when they were on the toilet was to ask them to blow up a balloon, since this would help them to contract the appropriate muscles. One technique to help children understand what was going on in their bodies was the use of a "water game." This involved the use of cups of water, a tray and a jug to model what happened as a motion was passed and what happened if it was retained.

8) Maintaining an Intervention
As a child's appropriate toileting behaviours became more established the target behaviours of any behavioural programme and the criteria for these behaviours being rewarded were gradually increased until they were equivalent to the appropriate independent use of the toilet.

Once a child had started to use the toilet on a more regular basis the challenge was for an intervention to maintain this progress. Parents and children were warned that relapses were to be expected and should not precipitate a complete dismissal of any previous progress that had been made.
9) Family Co-operation

Parents were encouraged to aim for a response that left a child feeling that their best ally in dealing with any soiling accident was their parent; rather than a response that left a child feeling that they had two problems, firstly the fact that they have had a soiling accident and secondly their parents' reaction. It was assumed that the more that parents understood the theory that underpinned an intervention then the more likely they were to adhere to any advice, such as not being cross with or chastising their child for any soiling accidents. The more that a parent understood the mechanics of their child's soiling difficulties (demystification) then they would be more able to support their child appropriately and help them overcome their soiling difficulties. A failure to adequately engage a child's parents might result in an entire intervention being sabotaged or undermined. For example, the secondary gain of additional benefit payments might act as a disincentive for a carer to effectively engage in an intervention.

An awareness and understanding of the child's family and the dynamics within the family was another essential part of an intervention. The extent to which an intervention needed to formally address a family's dynamics varied from case to case. The extent to which a child with soiling difficulties might be scape-goated by other family members was also considered and if necessary addressed.

Addressing the above issues formed the basis of the Standard Intervention in the current research. As outlined in Figure 4.iv - Research Protocol the Standard Intervention plus Group also received two information booklets, one for children and one for parents. In order to try and minimise the extent to which the use of these booklets might distort the clinical contact with the two intervention groups once the booklets had been given out they were not referred to by the clinicians unless the families themselves mentioned them.
Chapter 5 - Results

5.1 Data Analysis

Prior to data collection beginning, a Statistical Psychologist was consulted, who advised that it would be reasonable to try and establish two independent intervention groups each made up of fifteen participants. Power calculations indicated that in order to achieve 80% power for detecting a one unit difference in the change in the frequency of soiling, a sample size of ten participants in each intervention group would be needed. However since a number of measures were used in the current study it is important to be aware of the potential reduction in power associated with these measures when used with a relatively limited sample size.

Before any analysis could proceed, the variables were examined to see if they met the conditions for parametric analysis. The recommended conditions that need to be fulfilled for parametric analysis are: that the dependent measures are at the interval/ratio level of scaling; that the distribution is normal; and that the variances of variables are homogeneous.

The data produced by the described measures were entered into the statistical computer package SPSS for Windows version 9.0. The final data set was examined for input errors and appropriate indicators were used for any missing values. Following this initial process, each of the variables was explored in order to establish whether or not the data set met the assumptions for parametric statistical analysis (Howell, 1997).

The main measures used in the current study produced ordinal data, ordering responses in increasing values. This did not meet the interval requirements of each unit being equivalent (Howell, 1997). Bryman and Cramer (1997) argued that parametric tests could be used on ordinal data, so long as other parametric assumptions were not violated.

The Levine test was used to explore the comparative variance of each group on a particular variable, whilst the Kolmogorov-Smirnov test was utilised to examine the assumption of normal distribution for each variable within the experimental groupings. The results of these tests provided evidence of significant departures from the assumptions of homogeneity of variance for a third of the critical variables. Given the relatively small number of participants this result was not surprising. Although parametric tests are considered to be robust when there are only modest departures from the assumptions that underpin these tests, their use is considered to be less justifiable when the groups are unequal (Howell, 1997). In view of this, in conjunction with a statistician, the decision was made to regard the data set as unsuitable for parametric analysis and to use alternative non-parametric statistics, thus accepting the more conservative position and reduced power of these distribution free tests (Howell, 1997).
The following tests were used in the analysis of the data set:

- Mann-Whitney U tests to examine the demographic data from the two intervention groups for differences.
- Mann-Whitney U tests to examine hypothesised group differences.
- Spearman's Rank Order Correlation Coefficient to examine hypothesised associations.
- Chi-Square tests of independence to examine the differences between variables that were made up of nominal data.

The significance value was set at \( p < 0.05 \) throughout the analysis, with appropriate value corrections when multiple statistical tests were carried out. In testing hypotheses where a direction was specified, one-tailed tests were used and in more exploratory analysis two-tailed tests were used.

5.2 Research Findings

5.2.1 Participants
In all 118 potential participants were approached with a request to consider taking part in this research. A total of 36 individual cases gave their consent to take part in the research. Four cases failed to return the initial set of questionnaires prior to their first appointment and as a result were withdrawn from the research sample. This left a total of 32 individual cases (16 for each intervention group) who had consented to take part in the research and completed an initial set of questionnaires. This represents a response rate of 27.12%. Unfortunately, due to academic time constraints a complete data set, where both initial and follow-up questionnaires had been completed, was only available for 22 individual cases (10 in the Standard Intervention Group and 12 in the Standard Intervention plus Group). Some of the difficulties encountered in trying to establish a clinical sample for this study, such as adverse media coverage concerning a number of national health care scandals, will be discussed in due course.

5.2.1.1 Demographic Data
Table 5.i (see below) presents the demographic data for the Standard Intervention Group and the Standard Intervention plus Group. Mann-Whitney U tests or Chi-square tests were carried out to determine if there was a significant difference between the two groups.
Table 5.i - Child Demographic Data

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test or χ²)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>8.23</td>
<td>7.29</td>
<td>ns*</td>
<td>7.73</td>
</tr>
<tr>
<td>Median</td>
<td>9.71</td>
<td>6.54</td>
<td></td>
<td>7.00</td>
</tr>
<tr>
<td>Range</td>
<td>4 to 12</td>
<td>4.33 to 12.67</td>
<td></td>
<td>4 to 12.67</td>
</tr>
<tr>
<td>SD</td>
<td>3.19</td>
<td>2.74</td>
<td></td>
<td>2.81</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male:Female</td>
<td>8:2</td>
<td>10:2</td>
<td>χ² = ns</td>
<td>18.4</td>
</tr>
<tr>
<td></td>
<td>(4:1)</td>
<td>(5:1)</td>
<td></td>
<td>(4.5:1)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>Number of children in Family</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.75</td>
<td>2</td>
<td>ns</td>
<td>2</td>
</tr>
<tr>
<td>Median</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 2</td>
<td>1 to 4</td>
<td></td>
<td>1 to 4</td>
</tr>
<tr>
<td>SD</td>
<td>0.46</td>
<td>0.85</td>
<td></td>
<td>0.76</td>
</tr>
<tr>
<td><strong>Position of child in family</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.75</td>
<td>1.25</td>
<td>U = 33.5**</td>
<td>1.59</td>
</tr>
<tr>
<td>Median</td>
<td>1.5</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 4</td>
<td>1 to 3</td>
<td></td>
<td>1 to 4</td>
</tr>
<tr>
<td>SD</td>
<td>1.04</td>
<td>0.62</td>
<td></td>
<td>0.91</td>
</tr>
</tbody>
</table>

*ns = not significant  
**p < 0.05

These tests indicated that for these demographic items the only significant finding was a child's position in their family. There was a significant difference between the two intervention groups on this item (U = 33.5, p < 0.05).

Table 5.ii provides a summary of parents demographic details. In view of the small numbers in each group parent civil status responses were combined to indicate whether the child with soiling difficulties was living with one or two carers. Parents socio-economic group was defined using the National Statistics Socio-economic Classification (NS-SEC) (Office for National Statistics, 1998). This used the following classifications Higher managerial and professional (1), Lower managerial and professional (2), Intermediate occupations (3), Small employers and own account workers (4), Lower supervisory, craft and related occupations (5), Semi-routine occupations (6), Routine occupations (7) and Long term unemployed (8). Again in view of the small numbers some of these response options were combined. Mann-Whitney U tests were performed on the parental demographic values to assess whether or not there were any significant differences between the two intervention groups.
### Table 5.ii - Parental Demographic Data

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents' Civil Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Cohabiting</td>
<td>6 (60%)</td>
<td>9 (75%)</td>
<td></td>
<td>15 (68%)</td>
</tr>
<tr>
<td>Single/Divorced/Separated</td>
<td>4 (40%)</td>
<td>3 (25%)</td>
<td></td>
<td>7 (32%)</td>
</tr>
<tr>
<td>Mother's Age years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>20 - 29</td>
<td>1 (10%)</td>
<td>3 (25%)</td>
<td>4 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>30 - 39</td>
<td>7 (70%)</td>
<td>7 (58.3%)</td>
<td>14 (63.6%)</td>
<td></td>
</tr>
<tr>
<td>40 and over</td>
<td>2 (20%)</td>
<td>2 (16.7%)</td>
<td>4 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>30 - 39</td>
<td>30 - 39</td>
<td>ns*</td>
<td>30 - 39</td>
</tr>
<tr>
<td>Mother's Socio-Economic Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1&amp; 2</td>
<td>1 (10%)</td>
<td>2 (16.7%)</td>
<td>7 (31.8%)</td>
<td></td>
</tr>
<tr>
<td>Group 3&amp; 4</td>
<td>3 (30%)</td>
<td>4 (33.3%)</td>
<td>7 (31.8%)</td>
<td></td>
</tr>
<tr>
<td>Group 5&amp; 6</td>
<td>0</td>
<td>2 (16.7%)</td>
<td>2 (9.1%)</td>
<td></td>
</tr>
<tr>
<td>Group 7</td>
<td>2 (20%)</td>
<td>1 (8.3%)</td>
<td>2 (9.1%)</td>
<td></td>
</tr>
<tr>
<td>Group 8</td>
<td>4 (40%)</td>
<td>3 (25%)</td>
<td>4 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>7</td>
<td>4.4</td>
<td>ns*</td>
<td>6</td>
</tr>
<tr>
<td>Father's Age years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20</td>
<td>0</td>
<td>0</td>
<td>4 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>20 - 29</td>
<td>2 (20%)</td>
<td>2 (16.7%)</td>
<td>12 (54.5%)</td>
<td></td>
</tr>
<tr>
<td>30 - 39</td>
<td>6 (60%)</td>
<td>6 (50%)</td>
<td>6 (27.3%)</td>
<td></td>
</tr>
<tr>
<td>40 and over</td>
<td>2 (20%)</td>
<td>4 (33.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>30 - 39</td>
<td>30 - 39</td>
<td>ns*</td>
<td>30 - 39</td>
</tr>
<tr>
<td>Father's Socio-Economic Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1&amp; 2</td>
<td>3 (30%)</td>
<td>3 (25%)</td>
<td>6 (27.3%)</td>
<td></td>
</tr>
<tr>
<td>Group 3&amp; 4</td>
<td>1 (10%)</td>
<td>4 (33.3%)</td>
<td>5 (22.7%)</td>
<td></td>
</tr>
<tr>
<td>Group 5&amp; 6</td>
<td>2 (20%)</td>
<td>5 (41.7%)</td>
<td>7 (31.8%)</td>
<td></td>
</tr>
<tr>
<td>Group 7</td>
<td>1 (10%)</td>
<td>0</td>
<td>1 (4.5%)</td>
<td></td>
</tr>
<tr>
<td>Group 8</td>
<td>1 (10%)</td>
<td>0</td>
<td>1 (4.5%)</td>
<td></td>
</tr>
<tr>
<td>Not Known</td>
<td>2 (20%)</td>
<td>0</td>
<td>2 (9.0%)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>3</td>
<td>ns*</td>
<td>3</td>
</tr>
</tbody>
</table>

*ns = not significant

The Mann-Whitney U test found no significant differences, indicating that the two intervention groups were reasonably well matched on parental demographic variables.

#### 5.2.2 Initial Clinical Data

Table 5.iii (see below) presents the clinical data relating to each child's initial presentation with soiling difficulties at the time of their referral. Mann-Whitney U tests or Chi-square tests were performed to see if there were any significant differences or associations for the two intervention groups on these variables.
The fact that no significant differences were identified, indicated that the two intervention groups could be regarded as similar in terms of a child's initial clinical presentation on these variables.

The frequency of bowel motions passed successfully in the toilet was assessed by using questions 17, from the Current Presentation Questionnaire I. This question asked parents to indicate on average how often they felt their child currently had their bowels open in the toilet. Parents were asked to choose from seven response options. These ranged from Never (scored as 1), Less than weekly (scored as 2), Once a week (scored as 3), Twice a week (scored as 4), Every two days (scored as 5), Once a day (scored as 6) to More than once a day (scored as 7).

In a similar way responses to question 2 on the Current Presentation Questionnaire I asked parents to indicate how often they felt their child presented with any soiling accidents. There

Table 5.iii - Child’s initial clinical data

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test or χ^2)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary:Secondary</td>
<td>4.6:1.5</td>
<td>6.6:1.1</td>
<td>χ^2 = ns*</td>
<td>10:12</td>
</tr>
<tr>
<td>History of Constipation</td>
<td>7.3:1.043</td>
<td>6.6:1.1</td>
<td>χ^2 = ns</td>
<td>13:9</td>
</tr>
<tr>
<td>Yes:No</td>
<td></td>
<td></td>
<td></td>
<td>1:0.69</td>
</tr>
<tr>
<td>Bowel related medication in use at referral</td>
<td>5.5:1.1</td>
<td>5.7:1.4</td>
<td>χ^2 = ns</td>
<td>10:12</td>
</tr>
<tr>
<td>Duration of soiling (Years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.5</td>
<td>3.83</td>
<td>ns</td>
<td>4.14</td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>3.5</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Range</td>
<td>3 to 7</td>
<td>1 to 7</td>
<td></td>
<td>1 to 7</td>
</tr>
<tr>
<td>SD</td>
<td>1.65</td>
<td>1.8</td>
<td></td>
<td>1.73</td>
</tr>
<tr>
<td>Toilet training first tried (Age in Years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.8</td>
<td>3.09</td>
<td>ns</td>
<td>2.95</td>
</tr>
<tr>
<td>Median</td>
<td>3.0</td>
<td>3.0</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 4</td>
<td>2 to 4</td>
<td></td>
<td>1 to 4</td>
</tr>
<tr>
<td>SD</td>
<td>1.03</td>
<td>0.94</td>
<td></td>
<td>0.97</td>
</tr>
<tr>
<td>Pre-intervention frequency of motions in the toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.2</td>
<td>4.25</td>
<td>ns</td>
<td>4.23</td>
</tr>
<tr>
<td>Median</td>
<td>4.5</td>
<td>5.0</td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td>Range</td>
<td>2 to 7</td>
<td>1 to 6</td>
<td></td>
<td>1 to 7</td>
</tr>
<tr>
<td>SD</td>
<td>2.1</td>
<td>1.54</td>
<td></td>
<td>1.77</td>
</tr>
<tr>
<td>Pre-intervention frequency of soiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.3</td>
<td>3.42</td>
<td>ns</td>
<td>3.36</td>
</tr>
<tr>
<td>Median</td>
<td>3.0</td>
<td>3.0</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 5</td>
<td>2 to 5</td>
<td></td>
<td>1 to 5</td>
</tr>
<tr>
<td>SD</td>
<td>1.34</td>
<td>1.00</td>
<td></td>
<td>1.14</td>
</tr>
</tbody>
</table>

*ns = not significant
were five response options to choose from. These ranged from Less than once a week (scored as 1), Once a week (scored as 2), 2 - 3 times a week (scored as 3), Once a day (scored as 4) to More than once a day (scored as 5).

This rating system meant that the higher the rating the more frequently the behaviour occurred, be it bowel motions successfully passed in the toilet or soiling accidents.

5.2.3 Clinical Outcome Data for the total sample (n = 22)
A child's presentation was assessed using the Current Presentation Questionnaire II after ten outpatient appointments had been offered. Questions 13 and 2 on this questionnaire were identical to questions 17 and 2 respectively on the Current Presentation Questionnaire I and gave information about a parent's view of the frequency with which their child currently passed a motion in the toilet or presented with soiling accidents respectively. If after ten outpatient appointments a child no longer presented with any soiling accidents parental responses to question 1 of the Current Presentation Questionnaires II (Does your child currently have soiling 'accidents'?) were used to identify this information. A negative response to this question was scored as 0, indicating that a child did not currently present with any soiling accidents.

A measure of change, both for the frequency of appropriately passing a motion in the toilet and for the frequency of soiling accidents, was calculated by comparing the answers given for questions 17 and 2 on the Current Presentation Questionnaire I with the answers given for questions 13 and 2 on the Current Presentation Questionnaire II. Subtracting the answers to question 17 (on the Current Presentation Questionnaire I) from the answers to question 13 (on the Current Presentation Questionnaire II) gave a measure of any change in the frequency of a child's appropriate use of the toilet in order to open their bowels (Frequency of motions in the toilet at follow up - Frequency of motions in the toilet at assessment = Change in frequency of motions in the toilet). The larger the positive answer to this calculation the greater the increase in the frequency with which a child was opening their bowels in the toilet. If this calculation gave a negative answer it indicated that the appropriate use of the toilet in order to pass a motion had deteriorated over the course of the intervention.

In a similar way subtracting the answers to question 2 (on the Current Presentation Questionnaire II) from the answers to question 2 (on the Current Presentation Questionnaire I) gave a measure of any change in the frequency of a child's soiling accidents (Soiling frequency at assessment - Soiling frequency at follow up = Change in soiling frequency). The larger the positive answer to this calculation the greater the reduction in the frequency of soiling accidents. If this calculation gave a negative answer it indicated that the frequency of soiling accidents had increased over the course of the intervention.
Figures 5.i and 5.ii provide visual frequency counts of this information, for the change in the frequency of motions passed in the toilet and soiling accidents respectively, over the intervention period.

**Figure 5.i - Change in respect to motions passed in the toilet for the total sample (n=22)**

![Graph showing the change in motions passed in the toilet](image)

**Direction of change for motions passed in the toilet (see Key)**

**Key for Direction of Change axis:**
- **Negative Score** = Reduction in motions passed in the toilet (Worse outcome)
- **Score of zero** = No change
- **Positive Score** = Increase in motions passed in the toilet (Improved outcome)

**Figure 5.ii - Change in respect to soiling accidents for the total sample (n=22)**

![Graph showing the change in soiling accidents](image)

**Direction of change for soiling accidents (see Key)**

**Key for Direction of Change axis:**
- **Negative Score** = Increase in soiling (Worse outcome)
- **Score of zero** = No change
- **Positive Score** = Reduction in soiling (Improved outcome)
Table 5.iv provides a summary of how the two different intervention outcome measures, namely the change in the frequency of motions passed in the toilet and the change in frequency of soiling accidents over the intervention period, were defined.

<table>
<thead>
<tr>
<th>'Improved'</th>
<th>The frequency of motions passed in the toilet increased by one or more unit or The frequency of soiling decreased by one or more unit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>'No Change'</td>
<td>The frequency of motions passed in the toilet or soiling remained unchanged.</td>
</tr>
<tr>
<td>'Worse'</td>
<td>The frequency of motions passed in the toilet decreased by one or more unit or The frequency of soiling increased by one or more unit.</td>
</tr>
</tbody>
</table>

From Table 5.iv it is apparent that an 'improved' outcome was indicated by an increase in the frequency of motions passed in the toilet, but a decrease in the frequency of soiling accidents over the intervention period. A 'worse' outcome was indicated by a decrease in the frequency of motions passed in the toilet, but an increase in the frequency of soiling accidents over the intervention period. 'No change' meant that the frequency of motions passed in the toilet or soiling accidents remained unchanged over the intervention period.

Table 5.v presents a summary of the clinical outcome data, as assessed by any change in the frequency of motions passed in the toilet or soiling accidents, after ten outpatient appointments had been offered, for the total sample (n = 22).

<table>
<thead>
<tr>
<th>Total Sample (n=22)</th>
<th>Frequency of motions in the toilet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Improved</td>
</tr>
<tr>
<td></td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Worse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of soiling</th>
<th>Improved</th>
<th>No change</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17 (77.3%)</td>
<td>4 (18.2%)</td>
<td>1 (4.5%)</td>
</tr>
</tbody>
</table>

Figures 5.iii and 5.iv (see below) provide visual representations of this information by looking at intervention outcome for the total sample as measured by the change in the frequency of bowel motions passed in the toilet (Figure 5.iii) and the change in the frequency of soiling accidents (Figure 5.iv).
Spearman's rank correlation coefficients were calculated to detect any associations between demographic and clinical information and intervention outcome as assessed after ten appointments had been offered. The results from these calculations are presented in Table 5.vi (see below).
Table 5.vi - Spearman's rank correlation coefficients for demographic and clinical information with outcome measures for the total sample (n=22)

<table>
<thead>
<tr>
<th></th>
<th>Change in frequency of soiling from assessment to session 10</th>
<th>Change in frequency of motions passed in the toilet from assessment to session 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child's Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.234 )</td>
<td>( r = -0.198 )</td>
</tr>
<tr>
<td>Child's Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.126 )</td>
<td>( r = 0.315 )</td>
</tr>
<tr>
<td>Primary or Secondary</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.128 )</td>
<td>( r = -0.222 )</td>
</tr>
<tr>
<td>Number of children in house</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.117 )</td>
<td>( r = -0.024 )</td>
</tr>
<tr>
<td>Position of child in family</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.095 )</td>
<td>( r = -0.259 )</td>
</tr>
<tr>
<td>Father's Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.605 ) **</td>
<td>( r = 0.136 )</td>
</tr>
<tr>
<td>Father's socio-economic group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.174 )</td>
<td>( r = -0.403 ) *</td>
</tr>
<tr>
<td>Mother's Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.342 )</td>
<td>( r = -0.201 )</td>
</tr>
<tr>
<td>Mother's socio-economic group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.142 )</td>
<td>( r = 0.088 )</td>
</tr>
<tr>
<td>Parents' Civil Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.137 )</td>
<td>( r = 0.561 ) **</td>
</tr>
<tr>
<td>Duration of soiling</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.005 )</td>
<td>( r = -0.217 )</td>
</tr>
<tr>
<td>Start of toilet training</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.167 )</td>
<td>( r = -0.085 )</td>
</tr>
<tr>
<td>History of Constipation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = -0.015 )</td>
<td>( r = 0.195 )</td>
</tr>
<tr>
<td>Bowel related medication in use at referral</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.339 )</td>
<td>( r = 0.444 ) *</td>
</tr>
<tr>
<td>Bowel related medication in use at follow-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r = 0.293 )</td>
<td>( r = 0.458 ) *</td>
</tr>
</tbody>
</table>

* \( p < 0.05 \)

** \( p < 0.01 \)

There were five statistically significant relationships, though three of these relationships were only significant at the \( p < 0.05 \) level. There was a significant relationship between the age of a child's father and intervention outcome as measured by the change in the frequency of soiling accidents (\( r = -0.605, p < 0.01 \)). A parents' civil status (\( r = 0.561, p < 0.01 \)), a father's socio-economic status (\( r = -0.403, p < 0.05 \)) and the use of bowel related medication when referred (\( r = 0.444, p < 0.05 \)) and after ten appointments (\( r = 0.458, p < 0.05 \)); all showed significant relationships with intervention outcome as measured by the change in the frequency of motions passed in the toilet. The risk of Type 1 error is increased by adopting a significance level of \( p < 0.05 \) as opposed to \( p < 0.01 \).
5.2.4 Hypothesis 1: In the total sample of participants a higher pre-intervention knowledge about soiling difficulties will be positively associated with a better intervention outcome.

Table 5.vii (see below) provides a summary of the parent and child knowledge questionnaires that were used to assess this hypothesis. The Mann-Whitney U test was used to examine any difference between the two intervention groups, with regard to these variables. No significant differences between the groups were found.

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child Knowledge Questionnaire</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.71</td>
<td>2.2</td>
<td>ns*</td>
<td>2.00</td>
</tr>
<tr>
<td>Median</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 3</td>
<td>1 to 3</td>
<td></td>
<td>1 to 3</td>
</tr>
<tr>
<td>SD</td>
<td>0.76</td>
<td>0.79</td>
<td></td>
<td>0.79</td>
</tr>
<tr>
<td><strong>Parent Knowledge Questionnaire</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>9.86</td>
<td>9.4</td>
<td>ns</td>
<td>9.59</td>
</tr>
<tr>
<td>Median</td>
<td>10</td>
<td>9.5</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Range</td>
<td>8 to 12</td>
<td>6 to 12</td>
<td></td>
<td>6 to 12</td>
</tr>
<tr>
<td>SD</td>
<td>1.35</td>
<td>1.78</td>
<td></td>
<td>1.58</td>
</tr>
</tbody>
</table>

*ns = not significant

The lack of any significant differences being found indicated that the two intervention groups could be regarded as not being significantly different as far as pre-intervention child and parent knowledge was concerned.

Spearman's rank correlation coefficients were computed to detect any associations between pre-intervention parent or child knowledge and intervention outcome as assessed after ten appointments had been offered. In order to avoid Type 1 error, a significance level of p < 0.01 was adopted. The results from these calculations are presented in Table 5.viii (see below).

<table>
<thead>
<tr>
<th></th>
<th>Change in frequency of soiling from assessment to session 10</th>
<th>Change in frequency of motions passed in the toilet from assessment to session 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parent Knowledge Questionnaire</strong> (n = 22)</td>
<td>r = 0.32 (p = 0.07)</td>
<td>r = 0.09 (p = 0.34)</td>
</tr>
<tr>
<td><strong>Child Knowledge Questionnaire</strong> (n = 17)</td>
<td>r = 0.33 (p = 0.09)</td>
<td>r = 0.23 (p = 0.18)</td>
</tr>
</tbody>
</table>
While no correlations reached significance, for both parents and children better pre-intervention knowledge came close to achieving a significant positive association with the decrease in soiling achieved over the first ten sessions of an intervention (Parent Knowledge $r = 0.32$, $p = 0.07$; Child Knowledge $r = 0.33$, $p = 0.09$). The change in frequency of motions passed in the toilet did not come as close to achieving significance (Parent Knowledge $r = 0.09$, $p = 0.34$; Child Knowledge $r = 0.23$, $p = 0.18$).

5.2.5 Hypothesis 2: The provision of information booklets for both children who present with soiling difficulties and their parents will be associated with significantly better intervention outcome at follow up when compared with children and parents who did not receive information booklets.

Figures 5.v and 5.vi (see below) provide visual representations of the change in the average frequency of bowel motions passed in the toilet and soiling accidents, respectively, over the course of the intervention.

**Figure 5.v - Change in average frequency of bowel motions passed in the toilet over the course of the intervention.**

<table>
<thead>
<tr>
<th>Frequency of motions in the toilet</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twice a week, Scored as 4</td>
<td>Standard</td>
</tr>
<tr>
<td>Every two days, Scored as 5</td>
<td>Standard</td>
</tr>
<tr>
<td>Once a day, Scored as 6</td>
<td>Standard plus</td>
</tr>
</tbody>
</table>
The average size of the change in the increased frequency of motions passed in the toilet over the intervention period was 0.7 for the Standard Intervention Group, while it was 1.33 for the Standard Intervention plus Group. The average size of the change in the reduced frequency of soiling accidents over the same period was 1.6 for the Standard Intervention Group and 2.08 for the Standard Intervention plus Group.

Table 5.ix provides a summary of children's initial presentation as well as their presentation after ten outpatient appointments had been offered. The size of the change in the frequency of motions passed in the toilet and soiling accidents is also presented. The Mann-Whitney U test or Chi-square test were used to assess the two intervention groups, with regard to these variables. No significant differences were found.
Table 5.ix - Children's clinical data

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test or $\chi^2$)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention frequency of motions in the toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.2</td>
<td>4.25</td>
<td>ns*</td>
<td>4.23</td>
</tr>
<tr>
<td>Median</td>
<td>4.5</td>
<td>5.0</td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td>Range</td>
<td>2 to 7</td>
<td>1 to 6</td>
<td></td>
<td>1 to 7</td>
</tr>
<tr>
<td>SD</td>
<td>2.1</td>
<td>1.54</td>
<td></td>
<td>1.77</td>
</tr>
<tr>
<td>Frequency of motions in the toilet after 10 appointments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.9</td>
<td>5.53</td>
<td>ns</td>
<td>5.27</td>
</tr>
<tr>
<td>Median</td>
<td>5</td>
<td>6</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Range</td>
<td>2 to 7</td>
<td>3 to 7</td>
<td></td>
<td>2 to 7</td>
</tr>
<tr>
<td>SD</td>
<td>1.24</td>
<td>1.08</td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td>Size of change in frequency of bowel motions in the toilet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.7</td>
<td>1.33</td>
<td>ns</td>
<td>1.05</td>
</tr>
<tr>
<td>Median</td>
<td>0.5</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Range</td>
<td>-2 to 5</td>
<td>0 to 5</td>
<td></td>
<td>-2 to 5</td>
</tr>
<tr>
<td>SD</td>
<td>2.21</td>
<td>1.61</td>
<td></td>
<td>1.89</td>
</tr>
<tr>
<td>Pre-intervention frequency of soiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.3</td>
<td>3.42</td>
<td>ns</td>
<td>3.36</td>
</tr>
<tr>
<td>Median</td>
<td>3.0</td>
<td>3.0</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Range</td>
<td>1 to 5</td>
<td>2 to 5</td>
<td></td>
<td>1 to 5</td>
</tr>
<tr>
<td>SD</td>
<td>1.34</td>
<td>1.00</td>
<td></td>
<td>1.14</td>
</tr>
<tr>
<td>Frequency of soiling after 10 appointments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.7</td>
<td>1.33</td>
<td>ns</td>
<td>1.5</td>
</tr>
<tr>
<td>Median</td>
<td>2.0</td>
<td>1.0</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>Range</td>
<td>0 to 4</td>
<td>0 to 3</td>
<td></td>
<td>0 to 4</td>
</tr>
<tr>
<td>SD</td>
<td>1.25</td>
<td>0.89</td>
<td></td>
<td>1.06</td>
</tr>
<tr>
<td>Size of change in frequency of soiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.6</td>
<td>2.08</td>
<td>ns</td>
<td>1.86</td>
</tr>
<tr>
<td>Median</td>
<td>2.5</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Range</td>
<td>-2 to 3</td>
<td>0 to 4</td>
<td></td>
<td>-2 to 4</td>
</tr>
<tr>
<td>SD</td>
<td>1.78</td>
<td>1.24</td>
<td></td>
<td>1.49</td>
</tr>
<tr>
<td>Time between repeated measures (months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>9</td>
<td>9.11</td>
<td>ns</td>
<td>9.1</td>
</tr>
<tr>
<td>Median</td>
<td>9</td>
<td>8</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Range</td>
<td>5 to 14</td>
<td>3 to 16</td>
<td></td>
<td>3 to 16</td>
</tr>
<tr>
<td>SD</td>
<td>2.71</td>
<td>4.01</td>
<td></td>
<td>3.31</td>
</tr>
<tr>
<td>Bowel related medication in use at follow up</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.6</td>
<td>8.4</td>
<td></td>
<td>12.10</td>
</tr>
<tr>
<td>Median</td>
<td>1.15</td>
<td>1.05</td>
<td></td>
<td>1.083</td>
</tr>
</tbody>
</table>

*ns = not significant
Figures 5.vii and 5.viii provide visual frequency counts, for both intervention groups, of the change in the frequency of motions passed in the toilet and soiling accidents respectively, over the course of the intervention period.

Figure 5.vii - Change over the intervention period in respect of motions passed in the toilet for both intervention groups

Key for Direction of change axis:
- **Negative Score** = Reduction in motions passed in the toilet (Worse outcome)
- **Score of zero** = No change
- **Positive Score** = Increase in motions passed in the toilet (Improved outcome)

Figure 5.viii - Change over the intervention period in respect of soiling accidents for both intervention groups

Key for Direction of change axis:
- **Negative Score** = Increase in soiling (Worse outcome)
- **Score of zero** = No change
- **Positive Score** = Reduction in soiling (Improved outcome)
A summary of intervention outcomes as assessed by any change in the frequency of motions passed appropriately in the toilet and any change in the frequency of soiling accidents is presented in Table 5.x (see below). The same categories that were used to look at the outcome data for the total sample (N = 22) of 'Improved, No Change' and 'Worse' have been used again.

**Table 5.x - Intervention outcome summary**

<table>
<thead>
<tr>
<th></th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency of motions in the toilet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>5 (50%)</td>
<td>8 (66.7%)</td>
<td></td>
<td>13 (59.1%)</td>
</tr>
<tr>
<td>No change</td>
<td>2 (20%)</td>
<td>4 (33.3%)</td>
<td></td>
<td>6 (27.3%)</td>
</tr>
<tr>
<td>Worse</td>
<td>3 (30%)</td>
<td>0</td>
<td></td>
<td>3 (13.6%)</td>
</tr>
<tr>
<td><strong>Frequency of soiling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved</td>
<td>7 (70%)</td>
<td>10 (83.3%)</td>
<td></td>
<td>17 (77.3%)</td>
</tr>
<tr>
<td>No change</td>
<td>2 (20%)</td>
<td>2 (16.7%)</td>
<td></td>
<td>4 (18.2%)</td>
</tr>
<tr>
<td>Worse</td>
<td>1 (10%)</td>
<td>0</td>
<td></td>
<td>1 (4.5%)</td>
</tr>
</tbody>
</table>

*ns = not significant

Figures 5.ix and 5.x (see below) provide visual representations of this information by looking at the change in the frequency of bowel motions passed in the toilet (Figure 5.ix) and the change in the frequency of soiling accidents (Figure 5.x), over the course of the intervention period.
The outcomes 'Worse' and 'No change' can be combined to allow outcome to be divided into two categories 'Worse and No change' and 'Improved.' Summaries of the outcome data for changes in the frequency of motions passed in the toilet and soiling accidents using these two categories are presented in Table 5.xi and 5.xii respectively.

Table 5.xi - Intervention outcome for each group as measured by change in the frequency of motions passed in the toilet

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Standard Intervention Group</th>
<th>Standard Intervention plus Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>5</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>No change or Worse</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>12</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 5.xii - Intervention outcome for each group as measured by change in the frequency of soiling accidents

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Standard Intervention Group</th>
<th>Standard Intervention plus Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved</td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>No change or Worse</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>12</td>
<td>22</td>
</tr>
</tbody>
</table>

Chi-square tests were conducted on these summary outcome results. The results for the Chi-square test on the frequency of motions passed in the toilet showed no significant association between the two intervention groups using the outcome measures 'Improved' and 'No change or Worse.' The results for the Chi-square test on the frequency of soiling accidents between the two intervention groups using the outcome measures 'Improved' and 'No change or Worse' was significant ($\chi^2 = 6.545$, df 1, p < 0.05).

5.2.6 Hypothesis 3: In the total sample of participants a more positive pre-intervention family attitude towards a child's soiling difficulties will be positively associated with a better intervention outcome.

The relatively small total sample size meant that a question by question analysis of the various non-standardised family attitude scales was not statistically viable. Neither was the overall sample size large enough to allow a factor analysis to be carried out on the individual items of some of the non-standardised family attitude scales. A larger sample size would have allowed items that seemed to share a common factor to be identified. However on the basis of previous research (Butler, 1994) and clinical experience, items on some of these measures (Reason for Soiling Scale, Impact of Soiling Scale and Parent Feelings Scale and Child Self-Image Profile) were grouped together in what seemed to be meaningful clusters. Some of the limitations of this procedure will be looked at in more detail in Chapter 6 - Discussion.

Table 5.xiii (see below) provides a summary of the parent and child family attitude questionnaires and the sub-divisions (clusters of items) that were identified within them.
Table 5.xiii - Family Attitude Questionnaires and their sub-divisions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sub-divisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Behaviour Checklist (CBCL)</td>
<td>- Internalising Score</td>
</tr>
<tr>
<td></td>
<td>- Externalising Score</td>
</tr>
<tr>
<td></td>
<td>- Total Score</td>
</tr>
<tr>
<td>Parent Stress Index (PSI)</td>
<td>- Child Domain Total</td>
</tr>
<tr>
<td></td>
<td>- Adult Domain Total</td>
</tr>
<tr>
<td></td>
<td>- Total</td>
</tr>
<tr>
<td>Feeling Scale</td>
<td>- Supportive</td>
</tr>
<tr>
<td></td>
<td>- Intolerant</td>
</tr>
<tr>
<td>Family Attitudes Scale</td>
<td>- Mother Supportive</td>
</tr>
<tr>
<td></td>
<td>- Mother Unsupportive</td>
</tr>
<tr>
<td></td>
<td>- Father Supportive</td>
</tr>
<tr>
<td></td>
<td>- Father Unsupportive</td>
</tr>
<tr>
<td>Impact of Soiling Scale</td>
<td>- Non-psychological</td>
</tr>
<tr>
<td></td>
<td>- Psychological</td>
</tr>
<tr>
<td>Reason for Soiling Scale</td>
<td>- Physical</td>
</tr>
<tr>
<td></td>
<td>- Psychological</td>
</tr>
<tr>
<td></td>
<td>- Other</td>
</tr>
<tr>
<td>Self-Image Scale</td>
<td>- Positive</td>
</tr>
<tr>
<td></td>
<td>- Negative</td>
</tr>
<tr>
<td>Family Attitudes Scale</td>
<td>- Mother Supportive</td>
</tr>
<tr>
<td></td>
<td>- Mother Unsupportive</td>
</tr>
<tr>
<td></td>
<td>- Father Supportive</td>
</tr>
<tr>
<td></td>
<td>- Father Unsupportive</td>
</tr>
<tr>
<td>Impact of Soiling Scale</td>
<td>- Non-psychological</td>
</tr>
<tr>
<td></td>
<td>- Psychological</td>
</tr>
<tr>
<td>Reason for Soiling Scale</td>
<td>- Physical</td>
</tr>
<tr>
<td></td>
<td>- Psychological</td>
</tr>
<tr>
<td></td>
<td>- Other</td>
</tr>
</tbody>
</table>

The Mann-Whitney U test was used to determine if there was a significant difference between the two intervention groups and their scores on these measures. The only measure identified as showing a significant differences was the 'Child Self-Image Profile - Positive' (U = 27.0, p < 0.05). The details of the summary data for this variable are presented in Table 5.xiv (see below).

Table 5.xiv - 'Child Self-Image Profile - Positive' summary data

<table>
<thead>
<tr>
<th>Child Self-Image Profile - Positive</th>
<th>Standard Intervention Group (n=10)</th>
<th>Standard Intervention plus Group (n=12)</th>
<th>Significance (Mann-Whitney U test)</th>
<th>Total Sample (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>21.6</td>
<td>31.89</td>
<td>U = 27.0*</td>
<td>28.21</td>
</tr>
<tr>
<td>Median</td>
<td>23.0</td>
<td>32.0</td>
<td></td>
<td>28.5</td>
</tr>
<tr>
<td>Range</td>
<td>10 to 40</td>
<td>17 to 42</td>
<td></td>
<td>10 to 42</td>
</tr>
<tr>
<td>SD</td>
<td>12.18</td>
<td>9.52</td>
<td></td>
<td>11.29</td>
</tr>
</tbody>
</table>

*p < 0.05

Spearman's rank correlation coefficients were computed to detect any associations between parent or child family attitudes at the start of the intervention and intervention outcome as assessed after ten appointments had been offered. The results from these calculations are
presented in Table 5.xv, 5.xvi and 5.xvii (see below) for parents and children respectively. In order to avoid Type 1 error, a significance level of $p < 0.01$ was adopted.

### Table 5.xv - Spearman's rank correlation coefficients for parental pre-intervention behaviour scales with outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Change in frequency of soiling from assessment to session 10</th>
<th>Change in frequency of motions passed in the toilet from assessment to session 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL Internalising Score (n = 21)</td>
<td>$r = -0.009$</td>
<td>$r = -0.50^*$</td>
</tr>
<tr>
<td>CBCL Externalising Score (n = 21)</td>
<td>$r = -0.305$</td>
<td>$r = -0.094$</td>
</tr>
<tr>
<td>CBCL Total Score (n = 21)</td>
<td>$r = -0.333$</td>
<td>$r = -0.352$</td>
</tr>
<tr>
<td>PSI Child Domain Total (n = 22)</td>
<td>$r = -0.16$</td>
<td>$r = -0.254$</td>
</tr>
<tr>
<td>PSI Adult Domain Total (n = 22)</td>
<td>$r = -0.113$</td>
<td>$r = -0.24$</td>
</tr>
<tr>
<td>PSI Total (n = 22)</td>
<td>$r = -0.122$</td>
<td>$r = -0.303$</td>
</tr>
</tbody>
</table>

* $p < 0.01$

### Table 5.xvi - Spearman's rank correlation coefficients for parental pre-intervention family attitudes with outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Change in frequency of soiling from assessment to session 10</th>
<th>Change in frequency of motions passed in the toilet from assessment to session 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Feeling Scale - Supportive (n = 22)</td>
<td>$r = -0.082$</td>
<td>$r = -0.393$</td>
</tr>
<tr>
<td>Parent Feeling Scale - Intolerant (n = 22)</td>
<td>$r = -0.179$</td>
<td>$r = 0.109$</td>
</tr>
<tr>
<td>Parent Impact of Soiling Scale - Non-Psychological (n = 22)</td>
<td>$r = -0.29$</td>
<td>$r = -0.018$</td>
</tr>
<tr>
<td>Parent Impact of Soiling Scale - Psychological (n = 22)</td>
<td>$r = -0.297$</td>
<td>$r = -0.097$</td>
</tr>
<tr>
<td>Mother Family Attitude Scale - Supportive (n = 22)</td>
<td>$r = 0.24$</td>
<td>$r = -0.072$</td>
</tr>
<tr>
<td>Mother Family Attitude Scale - Unsupportive (n = 22)</td>
<td>$r = -0.291$</td>
<td>$r = 0.113$</td>
</tr>
<tr>
<td>Father Family Attitude Scale - Supportive (n = 22)</td>
<td>$r = 0.297$</td>
<td>$r = 0.246$</td>
</tr>
<tr>
<td>Father Family Attitude Scale - Unsupportive (n = 22)</td>
<td>$r = -0.034$</td>
<td>$r = -0.05$</td>
</tr>
<tr>
<td>Reason for Soiling Scale - Physical (n = 22)</td>
<td>$r = 0.122$</td>
<td>$r = -0.421$</td>
</tr>
<tr>
<td>Reason for Soiling Scale - Psychological (n = 22)</td>
<td>$r = -0.015$</td>
<td>$r = -0.35$</td>
</tr>
<tr>
<td>Reason for Soiling Scale - Other (n = 22)</td>
<td>$r = -0.056$</td>
<td>$r = -0.391$</td>
</tr>
</tbody>
</table>
Table 5.xvii - Spearman's rank correlation coefficients for child pre-intervention family attitude with outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Change in frequency of soiling from assessment to session 10</th>
<th>Change in frequency of motions passed in the toilet from assessment to session 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-Image Profile - Positive</strong> (n = 22)</td>
<td>r = -0.046</td>
<td>r = 0.131</td>
</tr>
<tr>
<td><strong>Self-Image Profile - Negative</strong> (n = 22)</td>
<td>r = -0.133</td>
<td>r = 0.360</td>
</tr>
<tr>
<td><strong>Child Impact of Soiling Scale - Non-Psychological</strong> (n = 20)</td>
<td>r = -0.014</td>
<td>r = -0.16</td>
</tr>
<tr>
<td><strong>Child Impact of Soiling Scale - Psychological</strong> (n = 20)</td>
<td>r = -0.227</td>
<td>r = -0.135</td>
</tr>
<tr>
<td><strong>Mother Family Attitude Scale - Supportive</strong> (n = 20)</td>
<td>r = 0.199</td>
<td>r = -0.119</td>
</tr>
<tr>
<td><strong>Mother Family Attitude Scale - Unsupportive</strong> (n = 20)</td>
<td>r = -0.275</td>
<td>r = 0.04</td>
</tr>
<tr>
<td><strong>Father Family Attitude Scale - Supportive</strong> (n = 16)</td>
<td>r = 0.11</td>
<td>r = 0.146</td>
</tr>
<tr>
<td><strong>Father Family Attitude Scale - Unsupportive</strong> (n = 16)</td>
<td>r = -0.2</td>
<td>r = 0.124</td>
</tr>
<tr>
<td><strong>Reason for Soiling Scale - Physical</strong> (n = 20)</td>
<td>r = 0.138</td>
<td>r = 0.368</td>
</tr>
<tr>
<td><strong>Reason for Soiling Scale - Psychological</strong> (n = 20)</td>
<td>r = -0.058</td>
<td>r = 0.022</td>
</tr>
<tr>
<td><strong>Reason for Soiling Scale - Other</strong> (n = 20)</td>
<td>r = -0.161</td>
<td>r = -0.381</td>
</tr>
</tbody>
</table>

As can be seen from Tables 5.xv, 5.xvi and 5.xvii, there was only one statistically significant relationship. This was between the Child Behaviour Checklist Internalising score and intervention outcome as measured by the change in the frequency of motions passed in the toilet (r = -0.50, p < 0.01).

Spearman's rank correlation coefficients were also calculated to look for any associations between parent and child responses on the family attitude measures that they had both completed. The results from these calculations are presented in Table 5.xviii.
Table 5.xviii - Spearman's rank correlation coefficients between parent and child ratings on shared Family Attitude Scales

<table>
<thead>
<tr>
<th>Family Attitude Measures</th>
<th>Correlation with equivalent Child Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother - Supportive</td>
<td>r = 0.373*</td>
</tr>
<tr>
<td>Mother - Unsupportive</td>
<td>r = 0.655**</td>
</tr>
<tr>
<td>Father - Supportive</td>
<td>r = 0.582**</td>
</tr>
<tr>
<td>Father - Unsupportive</td>
<td>r = 0.704**</td>
</tr>
<tr>
<td>Impact of Soiling - Non-psychological</td>
<td>r = 0.393*</td>
</tr>
<tr>
<td>Impact of Soiling - Psychological</td>
<td>r = 0.678**</td>
</tr>
<tr>
<td>Reason for Soiling - Physical</td>
<td>r = 0.135</td>
</tr>
<tr>
<td>Reason for Soiling - Psychological</td>
<td>r = 0.469*</td>
</tr>
<tr>
<td>Reason for Soiling - Other</td>
<td>r = 0.675**</td>
</tr>
</tbody>
</table>

* p < 0.05  
** p < 0.01

The shared parent and child family attitude scales were also assessed to see if there were any significant differences between parents' and children's responses. A summary of the significant results are presented in Table 5.xix.

Table 5.xix - Summary data for Parent verses Child scores on shared Family Attitude Scales

<table>
<thead>
<tr>
<th></th>
<th>Parent n=22</th>
<th>Children n=20</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of Soiling Scale - Psychological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>18.0</td>
<td>25.4</td>
<td>U = 143.0*</td>
</tr>
<tr>
<td>Median</td>
<td>13</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>7 - 20</td>
<td>2 - 20</td>
<td></td>
</tr>
<tr>
<td>Reason for Soiling - Physical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>17.3</td>
<td>26.1</td>
<td>U = 127.5*</td>
</tr>
<tr>
<td>Median</td>
<td>25</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>5 - 40</td>
<td>7 - 60</td>
<td></td>
</tr>
<tr>
<td>Reason for Soiling - Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>17.3</td>
<td>26.08</td>
<td>U = 128.55*</td>
</tr>
<tr>
<td>Median</td>
<td>10.5</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>4 - 29</td>
<td>4 - 27</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05
Spearman's rank correlation coefficients were calculated to assess any associations between Parent Child Behaviour Check List and Parenting Stress Index scores and Child Self-Image Scale scores. The results from these calculations are presented in Table 5.xx.

Table 5.xx - Spearman's rank correlation coefficients between Parent Child Behaviour Check List, Parenting Stress Index scores and Child Self-Image Scale scores

<table>
<thead>
<tr>
<th>Parent Behaviour Scale</th>
<th>Correlation with Child Self-Image Scale - Positive</th>
<th>Correlation with Child Self-Image Scale - Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL Internalising Score</td>
<td>$r = -0.197$</td>
<td>$r = 0.048$</td>
</tr>
<tr>
<td>CBCL Externalising Score</td>
<td>$r = -0.357$</td>
<td>$r = 0.506^{**}$</td>
</tr>
<tr>
<td>CBCL Total Score</td>
<td>$r = -0.261$</td>
<td>$r = 0.344$</td>
</tr>
<tr>
<td>PSI Child Domain Total</td>
<td>$r = -0.447^{*}$</td>
<td>$r = 0.272$</td>
</tr>
<tr>
<td>PSI Adult Domain Total</td>
<td>$r = -0.257$</td>
<td>$r = 0.164$</td>
</tr>
<tr>
<td>PSI Total</td>
<td>$r = -0.404^{*}$</td>
<td>$r = 0.262$</td>
</tr>
</tbody>
</table>

* = $p < 0.05$
** = $p < 0.01$

The family attitude scales were also scrutinised to see if there were any differences on a particular measure when individuals whose presentation had improved were compared with individuals whose presentation had deteriorated or not changed. The Mann-Whitney U test was used to determine if there was a significant difference between these two outcome groups and their scores on the behavioural and family attitude scales. The summary data for those measures that showed a significant difference, when the outcome measure was a change in the frequency of motions passed in the toilet are presented in Tables 5.xxi and 5.xxii.
Table 5.xxiii - Summary data for Improved verses No Change or Worse presentation for the change in the frequency of motions passed in the toilet on the Behavioural Scales

<table>
<thead>
<tr>
<th></th>
<th>Presentation Improved n=13</th>
<th>Presentation No Change or Worse n=9</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL Internalising Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>53.2</td>
<td>55.9</td>
<td>U = 25.5*</td>
</tr>
<tr>
<td>Median</td>
<td>57</td>
<td>67.5</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>43 - 71</td>
<td>51 - 84</td>
<td></td>
</tr>
</tbody>
</table>

* = p < 0.05

The summary data for those measures that showed a significant difference, when the outcome measure was a change in the frequency of soiling accidents are presented in Table 5.xxiii and 5.xxiv.

Table 5.xxiv - Summary data for Improved verses No Change or Worse presentation for the change in the frequency of soiling accidents on the Family Attitude Scales

<table>
<thead>
<tr>
<th></th>
<th>Presentation Improved n=13</th>
<th>Presentation No Change or Worse n=9</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Feeling Scale - Supportive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>16.1</td>
<td>18.2</td>
<td>U = 26.5*</td>
</tr>
<tr>
<td>Median</td>
<td>16.5</td>
<td>17.5</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>14 - 19</td>
<td>14 - 21</td>
<td></td>
</tr>
</tbody>
</table>

Parental - Father Family Attitude Scale - Supportive

<table>
<thead>
<tr>
<th></th>
<th>Presentation Improved n=13</th>
<th>Presentation No Change or Worse n=9</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.7</td>
<td>1</td>
<td>U = 14.5*</td>
</tr>
<tr>
<td>Median</td>
<td>2.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 - 5</td>
<td>0 - 3</td>
<td></td>
</tr>
</tbody>
</table>

Child Self-Image - Negative

<table>
<thead>
<tr>
<th></th>
<th>Presentation Improved n=13</th>
<th>Presentation No Change or Worse n=9</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>35.3</td>
<td>23.6</td>
<td>U = 28.5*</td>
</tr>
<tr>
<td>Median</td>
<td>29</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>5 - 53</td>
<td>4 - 34</td>
<td></td>
</tr>
</tbody>
</table>

* = p < 0.05
Table 5.xxiv - Summary data for Improved verses No Change or Worse presentation for the change in the frequency of soiling accidents on the Family Attitude Scales

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Improved n=17</th>
<th>Presentation No Change or Worse n=5</th>
<th>Significance (Mann-Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent - Mother Family Attitude - Unsupportive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.94</td>
<td>2.2</td>
<td>U = 15.0*</td>
</tr>
<tr>
<td>Median</td>
<td>1.5</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 - 3</td>
<td>1 - 4</td>
<td></td>
</tr>
<tr>
<td>Child - Mother Family Attitude - Unsupportive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.76</td>
<td>2.8</td>
<td>U = 15.0*</td>
</tr>
<tr>
<td>Median</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0 - 5</td>
<td>0 - 4</td>
<td></td>
</tr>
</tbody>
</table>

* = p < 0.05

5.2.7 Summary of Research Findings

There were no significant differences between the two intervention groups in terms of their clinical presentation. The only demographic variable for the two groups to show a significant difference was a child's position in their family. On this variable significantly more children in the Standard Intervention plus Group were the first born child in their family than was the case for children in the Standard Intervention Group.

Seventy seven percent of the total sample showed an improvement, in that the frequency of a child's soiling accidents reduced over the course of the intervention period (the first ten outpatient appointments offered). Three demographic variables achieved statistically significant associations with intervention outcomes for the total sample. One was a father's age with the reduction in the number of soiling accidents. The second was parent's civil status with the change in the frequency of motions passed in the toilet. The third was a father's socio-economic status with the change in frequency of motions passed in the toilet. The use of bowel related medication, both at the time of referral and after ten outpatient appointments, was significantly associated with an increase in the frequency of motions passed in the toilet.

There were non significant positive correlations between parents' and children's pre-intervention knowledge and intervention outcome, as measured by a reduction in the frequency of soiling accidents and an increase in the frequency of motions passed in the toilet. The directions of these associations were as predicted in hypothesis one.

The Standard Intervention plus Group, which received parent and child information booklets, achieved a statistically significant association with outcome, as measured by the reduction in the frequency of soiling over the course of the intervention ($\chi^2 = 6.545, df 1, p < 0.05$). The Standard Intervention Group, which received no information booklets, did not show a
significant association with outcome. The Standard Intervention plus Group also showed a superior outcome as measured by an increased frequency of motions passed in the toilet. However, this outcome did not achieve statistical significance. These results provided support for hypothesis two.

Only one family attitude or behaviour measure achieved a statistically significant correlation with either one of the outcome measures. This was the Internalising score on the Child Behaviour Checklist with the change in the frequency in the number of motions passed in the toilet. This was a negative correlation indicating that as the Internalising score fell the change in the frequency of motions passed in the toilet rose.

A statistically significant positive correlation was found between parent and child ratings on most of the Family Attitude Scales. However, significant differences were found between parent and child scores on the following items, the Impact of Soiling Scale - Psychological, the Reason for Soiling Scale - Physical Total and the Reason for Soiling Scale - Other Total.

Statistically significant correlations were also found between the Child Behaviour Check List - Externalising Score and a child's Self-Image Scale - Negative score, as well as between the Parenting Stress Index Child Domain Total and Total Scores and a child's Self-Image - Positive score.

A number of statistically significant differences on the family attitude and behavioural measures were found when an 'Improved' outcome was compared with 'No Change or Worse' outcome. When the outcome measure was a change in the frequency of motions passed in the toilet significant differences were found on the following measures, the Internalising score on the Child Behaviour Check List, the Parenting Feeling Scale - Supportive, the parent completed Father Family Attitude Scale - Supportive and the Child Self-Image Scale - Negative. When the outcome measure was a change in the frequency of soiling accidents significant differences were found on, the Externalising score on the Child Behaviour Check List, the parent completed Mother Family Attitude Scale - Unsupportive and the child completed Mother Family Attitude Scale - Unsupportive.
Chapter 6 - Discussion

The demographic and clinical profiles of the participants will be considered first, before the results from the current study are discussed in relation to clinical outcome and how this compares with some of the previous outcome studies that have been conducted in this area. The results will then be considered in relation to the research questions and hypotheses that were presented earlier. Following this, the methodological limitations of the present research, which highlight the need for caution in drawing any conclusions from the current study, will be presented, before going on to consider how the current research findings compare with those for enuresis, ideas for future research and finally the clinical implications of the present study.

6.1 Participants

The sample size (n = 22) for the current study was small in spite of 118 individuals having been approached to give consent to take part in the study. Clinical data were gathered over the course of a four year period from 1999 to 2003. A total of 227 individuals were referred to the clinic over the course of the data collection period. A number of these cases (109) were excluded from the study due to their falling outside of the inclusion criteria. This was generally due to their being referred before their fourth birthday. Table 5.ix indicates that it took an average of 9.1 months for a complete data set to be obtained on an individual participant. These points highlight the difficulty of establishing a clinical research sample when trying to conduct research into a clinical problem that has a low incidence. This situation was compounded by adverse media coverage of a number of health care scandals over the course of the current study.

The fact that there were only two significant differences between the two intervention groups as far as children's demographic information, initial clinical presentation and the family attitude measures were concerned, suggested that according to the measures used in the current study the two groups were reasonably similar. However, given the small sample size caution needs to be exercised before any firm conclusions are drawn. The only two variables where there were significant differences between the two groups concerned a child's position in their family (Table 5.i: $U = 33.5, p < 0.05$) and the Child Self-Image Scale - Positive (Table 5.xiv: $U = 27.0, p < 0.05$). The difference as far as the child's position in the family was concerned seemed to be related to a larger number of children in the Standard Intervention plus Group being the first born child in their family (83% of the group) than was the case for the Standard Intervention Group (40% of the group). The difference on the Child Self-Image Scale - Positive variable seemed to be related to the children in the Standard Intervention plus Group having a significantly more positive self image than the children in the Standard Intervention Group. It is important to bear these significant differences between the two intervention groups on these variables (the position of a child in the
family and the Child Self-Image Scale - Positive) in mind since they may be factors in any outcome differences between the two groups.

As regards the initial clinical presentation of participants there were no significant differences between the two intervention groups. The total sample (N = 22) seemed to be fairly representative of children who present with soiling difficulties. Given the average age of the total sample (7.73 years old) the sex ratio of 4.5:1 (male:female) is not that dissimilar from the ratio reported by Bellman (1966) of 3.5:1 (male:female). The current population's presentation was also very similar to Fritz and Armburst (1982) finding that soiling difficulties were secondary, as opposed to primary, in 50 - 60% of cases. In the current sample twelve cases (55%) presented with secondary soiling difficulties, indicating that the child had achieved a period of faecal continence before beginning to present with soiling difficulties. No association was found between a child's presentation being primary or secondary and intervention outcome as measured after ten appointments. The lack of an association here would seem to vindicate the absence of including any reference to whether a child's presentation was primary or secondary in more recent definitions of soiling difficulties.

In the current study thirteen cases (59% of the total sample) presented with a history of constipation. This was very similar to Buchanan's (1990) finding that 60% of her clinical sample presented with a history of constipation. A history of constipation did not however show a significant correlation with either of the outcome measures used in the current study; nor did it show a significant correlation with a child's presentation with soiling difficulties being primary or secondary.

Parents in the current study reported that on average they had started to try and toilet train their children just before their third birthday (2.95 years old). This would be consistent with Whiting's (1963) observation that the average age for the development of faecal continence internationally was two to three years. It is however interesting to note that thirteen parents (59% of the total sample) reported having started to try and toilet train their child before they were two years old. This would seem to lend some support to Walker's (1998) argument that harsh or early toilet training is correlated with the development of soiling difficulties.

Two demographic variables for the total sample (N = 22) that showed statistically significant associations with the intervention outcome after ten appointments at p < 0.01 level were a father's age and parents' civil status (see Table 5.vi). The correlation for a father's age with outcome as measured by the change in the frequency of soiling accidents was negative (r = -0.605, p < 0.01). This association suggested that the younger a father was the better their child's progress in terms of reduced soiling accidents. Further work is required to replicate this finding and to develop a
better understanding of what it relates to. If it was associated with older fathers being more intolerant a negative correlation between outcome and an unsupportive paternal attitude on the Family Attitudes Scales might be expected, but this was not the case.

The significant correlation between outcome, as measured by an increase in the frequency with which motions were passed in the toilet, and a parents’ civil status ($r = 0.561, p < 0.01$), suggested a positive association between outcome and children who lived with two carers as opposed to one. Indeed a closer inspection of the data revealed that only four children’s outcome measures showed a deterioration and each of these four children were living with only one parent. This finding would appear to build on Butler’s and Golding’s (1986) finding, that there was a strong positive association between single parents and the occurrence of soiling, since it suggested that a poor intervention outcome was associated with children who lived with a single parent. This may possibly be due to a single parent feeling more isolated and less supported in their efforts to try and address their child’s soiling difficulties. This finding should however be treated with caution since due to the small sample size civil categories were grouped together to indicate whether one or two carers were at home. This may have masked a particular association within one of the groupings, for instance with divorced parents. This methodological limitation and the difficulties of drawing conclusions from a small sample will be discussed in more detail in due course.

Three variables that showed a statistically significant association with outcome as measured by an increase in the frequency of motions being passed in the toilet at $p < 0.05$ level were a father’s socio-economic status ($r = -0.403, p < 0.05$), bowel related medication in use when a child was referred ($r = 0.444, p < 0.05$) and after ten outpatient appointments ($r = 0.458, p < 0.05$). It is important to bear in mind that the use of a significance level of $p < 0.05$ as opposed to $p < 0.01$, increases the risk of Type 1 error occurring. The negative correlation between a father’s socio-economic status and outcome indicated that as a father’s socio-economic status rose (coded by a lower number), their child was likely to show a corresponding improvement as far as outcome was concerned. This finding was consistent with the findings from a study by Taitz et al (1986), who found a positive correlation between social class and intervention outcome. They found that low socio-economic status was associated with non-compliance and poor intervention outcome. Buchanan (1990) found that for her small sample ($N = 30$) there was no association between socio-economic status and outcome. One reason for this marked difference between Buchanan’s (1990) findings and those of Taitz et al (1986) and the findings in the current study may be that Taitz et al (1986) and the current study were hospital based outpatient studies, while Buchanan’s study used home visits. It may therefore be more accurate to say that not having a car and not being able to afford a taxi to get to the hospital was related to a poor outcome rather than socio-economic background.
The positive correlation between bowel related medication being used when a child was referred \((r = 0.444, p < 0.05)\) and after ten appointments \((r = 0.458, p < 0.05)\) with an increase in the frequency of motions passed in the toilet, suggested that medication use was associated with an increase in the frequency of motions passed in the toilet over the intervention period. The use of bowel related medication at the time of referral \((r = 0.339, p = 0.062)\) and after ten appointments \((r = 0.293, p < 0.093)\) approached a significant association with a reduction in the frequency of soiling over the intervention period at the \(p < 0.05\) level. Again the fact that these correlations were positive suggested that medication was associated with a reduction in the frequency of soiling. The positive direction of the correlations between the use of medication and the two outcome measures lend support to the use of medication being associated with helping a child to overcome their soiling difficulties. It is interesting to note however that in the current study a history of constipation and the use of bowel related medication were not significantly associated. This is a somewhat unexpected result, since one of the primary aims of the use of medication is to address any constipation difficulties. Reviewing the format of the initial paediatric assessment may help to ensure that the use of medication is more closely linked with a child presenting with a history of constipation. This issue will be looked at more closely in due course.

6.2 Clinical outcomes for the total sample \((n = 22)\)

A number of authors (Buchanan, 1992; Carr, 2000) have concluded a family based multimodal / multidisciplinary approach to interventions that tried to help children address any soiling difficulties offered the best outcomes, yielding improvements in 75 to 80% of cases. It has already been noted that researchers in this area of work have used a variety of different criteria to assess an interventions effectiveness. Some researchers (Cox et al, 1996) have focused on a reduction in the frequency of soiling, while others (Stark et al, 1990) have used a combination of not only a reduction in the frequency of soiling but also an increase in the frequency of bowel motions being passed in the toilet.

In the current study outcome was assessed by parental reports about a child’s presentation, regarding both a reduction in soiling frequency and an increase in motions passed in the toilet, after ten outpatient appointments had been offered. The use of parental views to assess a child’s current presentation had the advantage of not asking clinicians to make a judgement about a child’s current presentation, since these might be regarded as less reliable; and subject to bias as the clinicians were aware of which intervention group a child had been allocated to.

The outcome results from the current study compare reasonably well with other studies, with 77% of the total sample \((n = 22)\) showing a reduction in the frequency of soiling accidents and 59% of the total sample showing an increase in the frequency of motions being passed in the toilet. The
difference in rates between these two measures of outcome is striking and highlights the differences that can arise from the use of different outcome measures.

One reason for the difference in the outcome rates for these two measures can be found in the scope for improvement that each measure gave over the course of the intervention. As far as the frequency of soiling was concerned the pre-intervention measures indicated that on average children in the total sample presented with soiling accidents between once a day and 2-3 times a week. When this measure was repeated at ‘follow-up’ the average frequency of soiling had fallen to once a week or less. The relatively high initial frequency of soiling meant that there was considerable scope for a reduction in the frequency of soiling over the course of the intervention. The scope for change as far as the frequency of motions passed in the toilet was concerned was somewhat different. The average pre-intervention frequency with which motions were passed in the toilet was already relatively high, being twice a week to once every two days. This meant that there was less scope for this measure to show an improvement. When this measure was repeated after ten appointments had been offered the average frequency of motions being passed in the toilet had risen to one every one to two days.

When comparing results from the current study with previous research it is important to remember that the current study assessed children’s progress after only ten outpatient appointments had been offered; so outcome was assessed by improvement as opposed to any judgement of outcome at discharged as was the case in most other studies. It has been the researcher’s clinical experience that in general once an individual’s presentation has begun to improve they go on eventually to have a good outcome. This view was recently supported by Borowitz et al (2002) who found that the initial response to an intervention was highly predictive of an intervention’s final outcome.

As noted earlier another factor that makes comparisons with other studies difficult is the fact that no two studies have used exactly the same definitions or reinforcement contingencies. Inspite of these differences the results from the current study compare favourably with previous research in this area, particularly when considering the reduction in soiling frequency.

Three studies (Young, 1973; Berg et al, 1983; Stark et al, 1997) were cited in Table 2.iii that combined medication with conditioning techniques and involved twenty or more subjects. Only one of these studies (Stark et al, 1997) achieved better outcome figures than the current study. Indeed Stark et al (1997) claimed a 100% success rate at follow-up. This impressive result was however only achieved by a weakening of the criteria they used to define ‘success.’ (Failure was initially defined as more than one soiling accident per week post intervention. This gave a ‘success’ rate of 86%. The ‘success’ rate rose to 100% when it was defined as a decrease in the
frequency of soiling over the intervention period.) It is interesting to note that both ICD - 10 and DSM - IV definitions of encopresis cite a frequency of at least one soiling episode a month. Stark et al (1997) do not offer any information about what their success rate would have been if this more robust criteria had been used. Another factor that may help to explain Stark et al’s (1997) outcome figures is the fact that subjects had all experienced previously unsuccessful interventions. This may have had the result of selecting out families who were likely to ‘drop out’ or be non-compliant, leaving a core of families who were committed to overcoming their child’s soiling difficulties.

Stark et al’s (1997) outcome figures are none the less impressive. They demonstrate the power of a combined medical and psychological intervention presented within a group context. Stark et al (1997) had an adjunct of ‘individual behaviour therapy’ for individuals who continued to present with soiling difficulties. This implicitly acknowledged the danger of individuals becoming disheartened if their presentation did not improve as markedly as others within the group context.

Buchanan (1992) found that the average length of clinical contact for children with soiling difficulties from initial referral to last known appointment was three to five years. One reason for the long clinical contact children with soiling difficulties have with services is related to their use of bowel related medication. Clayden and Agnarsson (1991) argued that prematurely stopping the use of bowel related medication was one of the main factors associated with relapse. In order to avoid this clinicians may maintain their contact with cases until they have gradually reduced their use of any bowel related medication, in order to avoid the risks of a child becoming constipated. The fact that twelve (55%) of the total sample of cases (n = 22) in the current study were using bowel related medication when the follow up measure was completed indicated the importance of maintaining clinical contact to ensure that the gradual reduction of this medication was monitored and supervised. Four of the children in the current study had stopped soiling by the time their parents were asked to complete the ‘follow-up’ measure (Current Presentation Questionnaire II), after only ten outpatient appointments had been offered. Prior to them receiving any clinical input all four of these children had presented with 2 - 3 soiling accidents a week. Only one of these four children had used and was continuing to use bowel related medication when the follow up measure was completed.

Over the course of the assessed intervention period one child’s presentation with soiling accidents deteriorated in that there was an increase in the frequency of soiling. Initially this child was reported to be soiling only once a week, but when the current presentation questionnaire was repeated the frequency of their soiling accidents had increased to once a day. It is unclear as to why this deterioration occurred, since no significant changes in the child’s circumstances were identified over this period. It is possible that the intervention led to a child’s presentation being
monitored more closely, which in turn resulted in the child’s parents being more aware of the extent of the child’s soiling difficulties than had previously been the case.

For three children when the current presentation questionnaire was repeated the frequency with which they were reported to be passing motions in the toilet had reduced. For all three of these individuals their parents initially reported that they were having their bowels open once a day or more than once a day in the toilet. The repeated measures for all three children indicated that the reported frequency with which they were having their bowels open in the toilet had fallen to once every two days. Again it is not possible to be certain about what may have lead to this reduction, but it is possible that the closer monitoring of a child’s presentation that the intervention required resulted in the child’s parents being more aware of the true extent of the child’s use of the toilet than had previously been the case.

A number of other factors may however also help to explain why some individuals’ presentation deteriorated. A child’s presentation may deteriorate due to a lack of motivation on their and/or their parents’ part. For instance parents may be reluctant to supervise their child closely enough. A lack of co-operation and compliance with the clinical advice being given may be related to some individual’s presentation getting worse over the course of the intervention. Issues of non-compliance may in turn be related to insufficient contact with the clinicians to try and support a family in following the therapeutic advice they have been given. An intervention needs to be alert to these issues, and open discussions which address parent and/or child non-compliance and review the completion or non-completion of ‘take home’ tasks as well as monitoring the frequency of appointments can all help to ensure the early detection of issues that might be associated with a child’s presentation deteriorating. The extent to which parents and children may be motivated to engage in an intervention can be assessed by routinely asking them to rate how big a problem they consider the soiling difficulties currently to be and what efforts have they made in the past to try and overcome the soiling difficulties. A child may also struggle to believe that they can really overcome their soiling difficulties. They may even feel threatened by the prospect of seeing themselves as continent as far as their bowels are concerned. Asking a child to consider their ‘Highest hopes... and Deepest fears...’ about overcoming their soiling difficulties may help to ensure that interventions identify and address these issues. There may be significant secondary gains for a child while they continue to present with soiling difficulties. For instance it may help a child to avoid ‘unwanted’ social engagements such as visits to relatives; or help them achieve a special status of having their own bedroom; or help them avoid growing up and becoming more mature by continuing to be dependent as far as some of their continence needs are concerned; or allow them to maintain particular relationships with their parents. Asking parents and children to consider openly any possible advantages associated with a child presenting with soiling accidents may help to ensure that these issues are addressed. All these factors may play a part in parents
and/or children being resistant to change and a child's presentation deteriorating as steps are taken to try and address their soiling difficulties.

6.3 Hypothesis 1 - In the total sample of participants a higher pre-intervention knowledge about soiling difficulties will be positively associated with a better intervention outcome.

A good understanding of the possible causes and cures associated with soiling might be expected to play an important part in helping to ensure that a child's presentation was managed appropriately and as a result showed a better response to an intervention. The results in Table 5.vii indicated that there were no significant differences between the two intervention groups as far as pre-intervention child and parent knowledge was concerned. The results presented in Table 5.viii show that for the current sample this hypothesis was not supported since no significant correlations between parental or child pre-intervention knowledge and either intervention outcome measures were found.

The fact that all the correlations, while not significant, were positive for the change in the frequency of soiling (Parent Knowledge r = 0.32, p = 0.07; Child Knowledge r = 0.33, p = 0.09) and for the change in the frequency of motions passed in the toilet (Parent Knowledge r = 0.09, p = 0.34; Child Knowledge r = 0.23, p = 0.18) indicated that the associations that did exist were in the direction predicted by the hypothesis. Namely, that higher pre-intervention knowledge was associated with a better intervention outcome. The association between pre-intervention knowledge and outcome as measured by a reduction in soiling was stronger than the association of pre-intervention knowledge with outcome as measured by an increase in the number of motions passed in the toilet for both children and their parents. As mentioned earlier this may be due to the fact that there was a greater scope for a reduction in the frequency of soiling than there was for an increase in the frequency of motions being passed in the toilet.

A Spearman's rank correlation coefficient was also computed to determine whether parental and child pre-intervention knowledge were significantly correlated with each other. This correlation was however not found to be significant. This may have been due to the fact that the child knowledge questionnaire was very short, consisting of only four items. This meant that it was not as effective as a questionnaire made up of more items might have been at detecting a range of knowledge across a number of individuals.

Over the course of the intervention four children stopped soiling altogether. It is interesting to note that for all but one of these children the pre-intervention parental knowledge questionnaire scores
were above average. While the numbers are too small to draw any firm conclusions this finding would support the above hypothesis, that good pre-intervention knowledge is positively associated with a better intervention outcome.

As has already been noted for some children their presentation deteriorated over the course of the intervention. For these individuals the picture is less clear and once again due to the small numbers it is difficult to draw any firm conclusions. For the one individual who presented with more soiling accidents after ten appointments than they did at the start of the intervention the parent’s pre-intervention knowledge score was above the average for the total sample. This outcome does not lend support to the above hypothesis. For the three children who showed a reduction in the frequency with which they had their bowels open in the toilet over the course of the intervention, pre-intervention parental knowledge scores were all below the average for the total sample. This finding would seem to be consistent with the above hypothesis.

6.3.1 Hypothesis 1 - Summary
The results from the current study, while not statistically significant, provide some support for this hypothesis, since child and parent pre-intervention knowledge was positively associated with both outcome measures.

6.4 Hypothesis 2 - The provision of information booklets for both children who present with soiling difficulties and their parents will be associated with significantly better intervention outcome at follow up when compared with children and parents who did not receive information booklets.

The results in Table 5.iii and 5.vii indicated that there were no significant differences between the two intervention groups as far as their initial clinical presentation and pre-intervention knowledge were concerned.

The results presented in Table 5.xii indicate that this hypothesis was supported since a significant association was found between group membership and outcome, as measured by an ‘Improved’ versus ‘No change or Worse’ frequency of soiling accidents, for the two intervention groups ($\chi^2 = 6.545$, df = 1, $p < 0.05$), over the intervention period.

A closer inspection of the results indicated that this significant finding was accounted for by a greater proportion of the Standard Intervention plus Group (N = 10 out of 12, 83%) having shown an improvement as measured by an ‘Improved’ reduction in the frequency of soiling accidents over the intervention period, than was the case for participants in the Standard Intervention Group.
These results suggest that the provision of child and parent information booklets to the Standard Intervention plus Group was associated with this group achieving a significantly better outcome than the Standard Intervention Group, whose members did not receive child and parent information booklets.

The results presented in Table 5.xi indicate that there was no significant association between group membership and outcome, when outcome was measured by an ‘Improved’ versus ‘No change or Worse’ frequency of motions passed in the toilet over the intervention period. While not significant, a greater proportion of the sample in the Standard Intervention plus Group (N = 8 out of 12, 66%) showed an improvement as measured by an ‘Improved’ frequency of motions passed in the toilet over the intervention period, than was the case for participants in the Standard Intervention Group (N = 5 out of 10, 50%). These results would also suggest that, while not statistically significant, the Standard Intervention plus Group that received the child and parent information booklets did show a better outcome than participants in the Standard Intervention Group, who did not receive the information booklets.

As discussed earlier the choice of outcome measure has a striking impact on the overall assessment of the effectiveness of an intervention. The scope for improvement that the two intervention measures, (a change in the frequency of motions passed in the toilet or soiling accidents), gave would seem to be a key factor. In the current study monitoring the frequency of soiling accidents seemed to offer more scope for positive change than monitoring the frequency of motions passed in the toilet; since the average pre-intervention frequency with which motions were passed in the toilet was already relatively high. This factor may help to explain why monitoring the frequency of soiling over the intervention period elicited a significant association between group membership and outcome, while monitoring the frequency of motions passed in the toilet did not.

When considering those children whose presentation deteriorated over the course of the intervention, further evidence can be found in support of the Standard Intervention plus Group achieving a better outcome than the Standard Intervention Group. None of the four children whose presentation deteriorated over the course of the intervention (one whose frequency of soiling increased and three whose frequency of passing motions in the toilet decreased) were in the Standard Intervention plus Group. This meant that some of the children who along with their parents did not receive information booklets showed a deterioration in their presentation, while none of the children who received information booklets presented with a poorer presentation over the course of the intervention.
A note of caution does however need to be raised since the associations outlined above may be related to the two statistically significant differences between the two intervention groups (namely, the position of a child in their family or the child's positive self-image) rather than the provision of parent and child information booklets per se.

It is also important to consider the potentially confounding role the use of bowel related medication may have when comparing the outcomes for the two intervention groups. Tables 5.iii and 5.ix indicate that there were no significant differences between the two intervention groups as far as the use of any bowel related medication was concerned. This would suggest that any differences in outcome for the two intervention groups were not due to the use or absence of bowel related medication. It is however interesting to note that while the use of bowel related medication in the total sample (n=22) was significantly associated with an increase in the frequency of motions passed in the toilet (see Table 5.vi), the difference in outcome between the two intervention groups was associated with a reduction in the frequency of soiling. This raises the interesting possibility that while bowel related medication was associated with an increase in the frequency of motions passed in the toilet, parent and child information booklets and the knowledge they contained were associated with a reduction in soiling accidents. This issue will be considered in more detail in due course.

6.4.1 Hypothesis 2 - Summary
The results from the current study lend statistically significant support to this hypothesis. The provision of child and parent information booklets was significantly associated with a better intervention outcome as measured by a reduction in the frequency of soiling accidents over the intervention period.

6.5 Hypothesis 3 - In the total sample of participants a more positive pre-intervention family attitude towards a child's soiling difficulties will be positively associated with a better intervention outcome.

As was noted earlier few studies to date have looked at the nature of parents’ and children’s attitudes to soiling difficulties and the relationship of these attitudes to an intervention’s outcome. Many authors (Clayden and Agnarsson, 1991; Buchanan, 1992; Carr, 1999) have referred to the importance of the parent’s and the child’s emotional responses to any soiling difficulties. In general it seems to have been assumed that negative management strategies, such as rejecting, shaming and smacking will not be helpful. The few outcome studies that have been conducted in this area suffer from a number of difficulties, such as the use of a range of different definitions for the presenting problem and how outcome might best be measured. Ronen (1993) concluded that
interventions in this area needed to address family beliefs about soiling difficulties. This inevitably raises the question of what might be helpful and unhelpful attitudes and beliefs for a family to have about these difficulties. One of the primary aims of the current research was to try and look more closely at family attitudes and see how they might be related to intervention outcomes.

In the current study a parent's civil status, a father's age and socio-economic status and the use of bowel related medication have already been noted as having significant correlations with intervention outcomes for the total sample. As far as family attitudes were concerned the current study used a total of ten different questionnaires with each family to try and assess their attitudes towards soiling difficulties. Parents were asked to complete six of these, while the child who presented with the soiling difficulty was asked to complete the remaining four. Table 5.xiii provides a list of the individual questionnaires and how their scores were summarised.

The only measures to show a significant difference between the two intervention groups were the Child Self-Image Profile - Positive (see Table 5.xiv) and the position of the child in their family (see Table 5.i). Tables 5.vi and 5.xvii indicated that neither of these variables showed a statistically significant association with either of the outcome measures when the results for the total sample (N = 22) were assessed.

Table 5.xv, 5.xvi and 5.xvii present the Spearman’s rank correlation coefficients, using the total sample (N = 22), for the various family attitude measures and standardised behaviour scales with intervention outcome as measured by a change in the frequency of soiling or motions passed in the toilet over the intervention period. One of these measures achieved a significant level of association with intervention outcome. Tables 5.xxi, 5.xxii, 5.xxiii and 5.xxiv identify a number of these measures where there was a significant difference between individuals whose presentation improved and those whose presentation did not change or deteriorated on either of the intervention outcome measures.

The only measure to show a significant correlation with an intervention outcome was the Child Behaviour Checklist Internalising score. This measure showed a significant correlation with intervention outcome as measured by a change in the frequency of motions passed in the toilet ($r = -0.5, p < 0.01$). The fact that the correlation was negative indicated that a lower individual score on the Child Behaviour Checklist Internalising measure was associated with a larger increase in the frequency of motions passed in the toilet. Indeed individuals whose presentation improved were found to have a significantly lower score on the Child Behaviour Checklist - Internalising score than individuals whose presentation did not change or deteriorated as measured by the change in the number of motions they passed in the toilet (see Table 5.xxi). A low score on the Child Behaviour Checklist Internalising Scale indicated that a parent did not see
their child as excessively fearful, overcontrolled or inhibited (Gabel et al, 1988). When the Child Behaviour Check List - Externalising score and the change in the frequency of soiling accidents were looked at it was apparent that individuals whose presentation improved had significantly lower scores on the Child Behaviour Check List - Externalising scale than individuals whose presentation did not change or deteriorated (see Table 5.xxiii). A low score on the Child Behaviour Check List - Externalising Scale indicated that a parent did not see their child as excessively aggressive, antisocial or uncontrolled in their behaviour.

Gabel et al (1988) also found that ‘moderate’ scores on the Child Behaviour Check List (which they defined as falling between the 25th and 75th percentile) correlated with a good intervention outcome. All but one of the individual scores on the Child Behaviour Check List in the current study fell within Gabel et al’s (1988) definition of moderate scores. Gabel et al (1988) went on to argue that scores in the ‘extreme’ range (which they defined as falling below the 24th or above the 76th percentile) correlated with a poor intervention outcome. For the current study no scores fell below the 25th percentile, but the one individual who scored above the 75th percentile, in Gabel et al’s (1988) ‘extreme’ range, was one of the individuals whose presentation deteriorated over the course of the intervention as measured by a decrease in the frequency with which motions were passed in the toilet. The results in the current study would seem to lend some support to Gabel et al’s (1988) findings, that ‘moderate’ scores correlated with a good intervention outcome. Gabel et al (1988) went on to speculate that children whose parents’ ratings on this measure placed them in the ‘extreme’ range (below the 24th or above the 76th percentile) did less well because they were either not sufficiently motivated by their parents’ response to a soiling accident (scores below the 24th percentile) or their parents’ reaction was not effective in helping to motivate the child to address their soiling difficulties (above the 76th percentile).

It is apparent from Tables 5.xv, 5.xvi and 5.xvii that many of the measures used in the current study did not approach significant levels of correlations with either of the two outcome measures used. It is however instructive to look at those family attitude and behavioural measures that came close to achieving a significant correlation with either of the intervention outcome measures, since many of these were in the direction predicted by hypothesis three.

Further support, though not at a significant level, for Gabel et al’s (1988) findings was provided by the correlations of the Child Behaviour Checklist Total (r = -0.352, p = 0.059) score with the change in the frequency of motions passed in the toilet and Internalising (r = -0.009, p = 0.07), Externalising (r = -0.305, p = 0.09) and Total (r = -0.333, p = 0.07) scores with the change in the frequency in soiling over the intervention period. Once again all these correlations were negative indicating that lower scores on these measures correlated with an improvement in the child’s
presentation over the intervention period. A closer inspection of the scores on these measures revealed that the majority of them fell within Gabel et al's (1988) 'moderate' range.

The Parenting Stress Index total score also provided some support for the hypothesis, albeit at a non significant level, since its correlation with an increase in the frequency of motions passed in the toilet was negative ($r = -0.303, p = 0.085$). The negative direction of this correlation suggested that children responded better to an intervention, the less 'stressed' their parents were. This may in turn relate to a parent being more able to give a considered response to any soiling accidents. Buchanan (1990) also found a non significant association between a poor outcome and having a 'very tense' mother. These results are consistent with Carr's (1999) suggestion that a 'facilitative' family environment is most likely to lead to a successful intervention outcome.

The directions of the non significant correlations between the change in the frequency of soiling accidents and the Parent Impact of Soiling Scale - Non-psychological ($r = -0.29, p = 0.096$) and the Parent Impact of Soiling Scale - psychological ($r = -0.297, p = 0.09$) were interesting. They suggest that the less of an impact (be it non-psychological or psychological) that parents saw their child's soiling difficulties as having the better the child did over the intervention period. These findings need to be set against the fact that parents significantly underestimated the psychological impact that soiling accidents have on their child (see Table 5.xix). The findings would be consistent with the fact that children with soiling difficulties tended to respond better to an intervention if their parents took a low key management approach to their child's soiling difficulties.

The direction of the non significant correlation between the parent Mother's Family Attitude - Unsupportive Scale and the change in the frequency of soiling over the course of the intervention ($r = -0.291, p = 0.094$) is in the direction predicted by the hypothesis. It suggested that the more intolerant a mother was the worse their child did in terms of reducing the frequency of any soiling accidents. Indeed when individuals whose presentation improved (as measured by a reduction in the frequency of their soiling accidents) were compared with individuals whose presentation did not change or deteriorated a statistically significant difference was found for both the parent and child Mother's Family Attitude - Unsupportive Scale (Table 5.xxiv). In both cases individuals whose presentation improved had lower scores on this item than individuals whose presentation did not change or deteriorated. This would suggest that not having an unsupportive mother was an important factor in helping a child to overcome their soiling difficulties. Not having a critical or unsupportive mother might help to maintain a child's motivation to overcome their soiling difficulties as well as helping to protect a child's fragile self-esteem.

The direction of the non significant correlations between the change in the frequency of motions passed in the toilet and the parent Reason for Soiling Scale, be it physical ($r = -0.421, p = 0.025$)
or psychological ($r = -0.35, p = 0.055$) was interesting. These negative correlations indicated that a child seemed to respond less well to an intervention the stronger their parent’s beliefs about the reasons for their soiling difficulties. This may indicate that the greater a parent’s convictions about the reasons for their child’s soiling difficulties the worse the prospects are for an intervention being successful.

In contrast the child Reason for Soiling Scale - Physical showed a positive correlation with an increase in the number of motions passed in the toilet over the intervention period ($r = 0.368, p = 0.055$). The direction of this association indicated that children seemed to do better the more they saw their soiling difficulties as being associated with a physical factor. More research into this association is required to develop a better understanding of it.

Two unexpected non significant results were the correlations between the change in frequency of motions passed in the toilet and the Parent Feeling Scale - Supportive and ($r = -0.393, p = 0.035$) and the Child Self-Image Profile - Negative ($r = 0.36, p = 0.05$). The negative correlation for the Parent Feeling Scale is in the opposite direction to that predicted by hypothesis three, since it suggested that for the current sample having a supportive parent was associated with a child having a poorer outcome as measured by the change in the frequency of motions passed in the toilet. A closer inspection of the results on this measure revealed that the parents of the children whose presentation deteriorated over the course of the intervention (as measured by a decrease in the frequency of motions passed in the toilet or an increase in the frequency of soiling) had recorded some of the highest scores on this variable. This raised the interesting conclusion that a parent who was very supportive of their child may not in fact be giving the most effective response in trying to help the child overcome their soiling difficulties. Little support either way for this view was available from the parent and child Family Attitudes Scales - Supportive responses (see Tables 5.xvi and 5.xvii), due to the weakness of their correlations with either of the intervention outcome measures. However, individuals whose presentation improved scored significantly lower on the Parent Feeling Scale - Supportive than individuals whose presentation did not change or deteriorated, as measured by the change in the number of motions they passed in the toilet (see Table 5.xxii). This raises the possibility that having an excessively supportive parent is not the most effective way of motivating a child to change. If this was indeed the case it would seem to be consistent with the points Gabel et al (1988) made about moderate and extreme scores on the Child Behaviour Checklist.

The positive correlation for the Child Self-Image Profile - Negative was also in the opposite direction to that predicted by the hypothesis ($r = 0.36, p = 0.05$), since the hypothesis would predict that a high negative self-image would show a negative correlation with the intervention outcome. A closer examination of the responses to this scale revealed that the positive correlation
in the current study may be accounted for at least in part by one individual who responded well to the intervention, but had a particularly high negative self-image score, which was more than two standard deviations above the mean. This issue and other methodological limitations and difficulties in trying to draw conclusions from a small sample will be discussed in more detail in due course. It may however be that a high negative self-image is indeed positively associated with a better intervention outcome. Supporting evidence for this point of view comes from the fact that individuals whose presentation improved had significantly higher scores on the Child Self-Image - Negative Scale than individuals whose presentation did not change or deteriorated, as measured by the change in the frequency with which they had their bowels open in the toilet (see Table 5.xxii). It may be that a child's negative self-image is in some way associated with them being motivated to change. More research is required to explore this more fully.

Caution is needed when trying to interpret the results from the current study in relation to hypothesis three since they may be related to the significant correlations of some demographic variables (namely the parent's civil status, a father's age and socio-economic status) or clinical variables (such as the use of bowel related medication) with outcome rather than any underlying family attitudes.

The strong positive statistically significant correlations between the parent and child Family Attitude Scale scores (see Table 5.xviii) indicated that a higher parental score on most of these measures was associated with a higher child score. It is however interesting to note that there was no significant correlation between parent and child responses to the Reason for Soiling Scale - Physical.

The results in Table 5.xix, which summarised the Family Attitude Scales where parents' and children's scores were found to have a significant difference, helps to explain the lack of a significant correlation for parent and child responses on the Reason for Soiling Scale - Physical. Two significant differences in parent and child responses on these measures indicated that children tended to attribute their soiling accidents more to a physical cause or to an 'unknown cause beyond their control' than their parents did. For a child these views might be related to them offering a degree of 'protection or distancing' from seeing themselves as responsible for, or having any control over, their soiling difficulties. From a parents point of view these findings might be related to a child being seen as 'lazy' or as having some 'control' over their soiling accidents. This might be particularly true of cases where a child had presented with secondary soiling difficulties, which might result in a parent assuming that their child had no underlying physical difficulties that might be related to their soiling difficulties. The other significant difference between parent and child scores on the Family Attitude Scales suggested that parents under estimated the psychological impact that soiling accidents have on their child. From a child's point of view this
finding indicated that soiling difficulties have a far greater psychological impact than parents might initially be prepared to acknowledge. For parents this ‘minimising’ might help to reduce any sense of responsibility they might feel for their child’s soiling difficulties remaining unresolved.

The directions of the correlations of the Child Self-Image Scale Positive and Negative scores with the Child Behaviour Check List and the Parenting Stress Index sub-division scores (see Table 5.xx) suggest an association between a child’s self-esteem and a parent’s perceptions of their child’s behaviour. The positive direction of the Child Self-Image Scale - Negative scores with all the Child Behaviour Check List and Parenting Stress Index sub-division scores indicated that there was an association between a parent viewing their child’s behaviour as problematic and their child having a low self-esteem. Conversely, the negative direction of the Child Self-Image Scale - Positive scores with all the Child Behaviour Check List and Parenting Stress Index sub-division scores also indicated that there was an association between a parent viewing their child’s behaviour as problematic and their child having a low self-esteem. As indicated in Table 5.xx three of these correlations were statistically significant.

The negative correlation between the Parenting Stress Index Child Domain Total score with the Child Self-Image Scale - Positive score (r = -0.447, p < 0.05) suggested a fall in a child’s self-esteem was associated with a parent seeing their child as a source of stress. The negative correlation between the Parenting Stress Index Total score with the Child Self-Image Scale - Positive score (r = -0.404, p < 0.05) indicated that a fall in a child’s self-esteem was associated with their parents feeling more ‘stressed.’ The last of the three significant correlations was the positive relationship between the rise in the Child Behaviour Check List - Externalising score with the Child Self-Image - Negative score (r = 0.506, p < 0.01). This suggested that a fall in a child’s self-esteem was associated with their parents seeing their as child as aggressive and/or prone to delinquency.

Tables 5.xxi and 5.xxii presented the summary information about the behavioural and family attitude measures that elicited significant differences between individuals whose presentation improved as opposed to those whose presentation did not change or deteriorated, as measured by the change in the number of motions they passed in the toilet. The significant differences for presentations which ‘Improved’ verses ‘No Change or Worse’ have already been discussed as far as the Child Behaviour Check List Internalising score, the Parent Feeling Scale - Supportive and the Child Self-Image - Negative measures are concerned. The fourth significant difference concerned individuals whose presentation improved, scoring significantly higher on the Parental - Father Family Attitude Scale - Supportive measure than individuals whose presentation did not change or deteriorated. This finding suggested that having a father with a supportive attitude was related to a better intervention outcome. Having a supportive father might help to build up a child’s
self-esteem and motivate them to engage in an intervention that is trying to help them overcome their soiling difficulties.

6.5.1 Hypothesis 3 - Summary

Only one family attitude variable, (Child Behaviour Checklist Internalising Score) was significantly correlated with outcome as measured by a change in the frequency of motions passed in the toilet over the intervention period. This correlation provided some support for this hypothesis. A number of other family attitude variables showed non-significant correlations with the outcome measures in a direction predicted by this hypothesis. There was some evidence to suggest that an excessively supportive parental attitude may not be the most helpful response to give a child who presents with soiling difficulties. Evidence also emerged to support Gabel et al's (1988) view that having a 'moderate' score on the Child Behaviour Check List was associated with a better outcome. Having a supportive father (as identified by the Parental - Family Attitude Scale) and a low self-esteem (as measured by the Child Self-Image - Negative) were both significant factors in a child’s improved outcome as measured by the change in the number of motions they passed in the toilet.

When looking at the results for the change in the frequency of soiling accidents over the intervention period it was apparent that having an unsupportive mother was significantly associated with a poorer outcome.

The statistically significant positive correlations between most of the parent and child Family Attitude Scales indicated a high level of agreement between parents and children about the directions family attitudes towards a child’s soiling difficulties. Notwithstanding these strong correlations between child and parent scores on the family attitude scales some interesting significant differences between child and parent scores on these measures were also found. The significant differences between parent and child scores on some of the Family Attitude scales indicated that parents tend to under estimate the psychological impact that soiling difficulties have on a child and that children were more likely than their parents to attribute any soiling difficulties to physical or unknown causes beyond a child’s control.

The directions of the correlations between a child’s Self-Image Scale scores (positive and negative) with the Child Behaviour Check List and the Parenting Stress Index sub-division scores indicated a relationship where a child’s self esteem declined as the scores on the Child Behaviour Check List and the Parenting Stress Index increased. Three of these correlations achieved statistical significance.
6.6 How the current research findings on family attitudes compare with those for Enuresis

Given that most of the Family Attitude measures used in the current study were originally used with children who presented with enuresis, and soiling difficulty's frequent co-morbidity with enuresis it is interesting to see how the results from the current study compare with the findings for children who presented with enuresis. Each of the Family Attitude Scales will be looked at in turn.

6.6.1 Family Attitudes Scale

Butler (1994) reported that on this scale the mothers of children with nocturnal enuresis were viewed as more tolerant and intolerant when compared with the children's fathers. In the current study while mothers were more tolerant than fathers it was not the case that mothers were more intolerant than fathers. For instance the responses to item 3, a tolerant question on this scale 'Who tries to help me not to be upset' indicated that it was mothers 86% and fathers 47%. These outcomes were very similar to Butler's (1994) findings (mothers 86% and fathers 50%). For item 7, an intolerant question 'Who thinks it is a nuisance' responses in the current study indicated that it was mothers 33% and fathers 46%. Butler's (1994) findings were somewhat different being mothers 57% and fathers 34%. However the current study found, as Butler (1994) did, that mothers were viewed by their children as being more intolerant than they viewed themselves to be.

In the current study there were strong positive associations between parental ratings of both parents being seen as tolerant \(r = 0.567, p < 0.01\) or intolerant \(r = 0.72, p < 0.001\). Children's ratings of each parent's attitude were also correlated positively, tolerant \(r = 0.576, p < 0.01\), and intolerant \(r = 0.868, p < 0.001\). These results indicated that parents and children tended to agree about whether a parent was seen as tolerant or intolerant and that both parents tended to be tolerant or intolerant, rather than one being tolerant and the other being intolerant.

The fact that in the current study fathers were viewed as being more intolerant than mothers may be related to the significant negative correlation between a father's age and outcome as measured by a change in the frequency of soiling \(r = -0.605, p < 0.01\), though no significant associations between paternal intolerance and outcomes were found. In fact inspite of mothers being seen as less intolerant than fathers in the current study the results presented in Table 5.xvi indicate that it was maternal intolerance on the Family Attitudes Scale that came closest to achieving a significant association with the change in the frequency of soiling \(r = -0.291, p = 0.094\). The negative direction of this association lends further support to hypothesis three (In the total sample of participants a more positive pre-intervention family attitude towards a child's soiling...
difficulties will be positively associated with a better intervention outcome). It was noted earlier that for both parents and children the Mother Family Attitude - Unsupportive Scale scores were significantly lower for individuals whose presentation improved when compared with individuals whose presentation did not change or deteriorated, as measured by the change in the frequency of soiling accidents (see Table 5.xxiv). This would seem to suggest that as with enuresis the lack of maternal intolerance (Butler, 1994) may be an important factor that was associated with a better intervention outcome.

Butler (1994) highlighted that where there was a lack of support a child may feel isolated and rejected and where intolerance is suggested there was a pressing need to restructure the support systems for the child within the family.

6.6.2 Impact of Soiling Scale

The current study used a modified version of Butler's original scale to make it appropriate for use with children who presented with soiling difficulties so direct comparisons with Butler's (1994) findings were not possible. For his Impact of Bedwetting Scale Butler (1994) identified eight distinct factors that were subdivided into psychological and non-psychological concerns. The small sample in the current study meant that it was not possible to factor analyse the results from the Impact of Soiling Scale. Using the total sample the most frequently experienced impacts of soiling were identified by calculating the average responses for each question on the scale. Nine questions from the Impact of Soiling Scale, which are presented in Table 6.i, were identified as having an average response of one or more, indicating that the consequence was experienced at least sometimes. These consequences may provide important clues for how an intervention may be made relevant to a child who presents with soiling difficulties and their family.

Table 6.i - Most frequently experienced impacts of soiling

<table>
<thead>
<tr>
<th>Psychological</th>
<th>I'm afraid others might find out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I get upset about the soiling accidents</td>
</tr>
<tr>
<td>Non-psychological</td>
<td>My clothes smell</td>
</tr>
<tr>
<td></td>
<td>I have to go and have a bath or a shower</td>
</tr>
<tr>
<td></td>
<td>I feel uncomfortable when I have had a soiling accident</td>
</tr>
<tr>
<td></td>
<td>Mum has a lot of extra washing</td>
</tr>
<tr>
<td></td>
<td>I have to change myself straight away</td>
</tr>
<tr>
<td></td>
<td>I get sent to the toilet a lot</td>
</tr>
<tr>
<td></td>
<td>I have to change myself</td>
</tr>
</tbody>
</table>
6.6.3 **Reason for Soiling Scale**

Again Butler's original scale was modified to produce a scale that was appropriate to use with children who presented with soiling difficulties, so direct comparisons with Butler's (1994) findings were not appropriate.

The small numbers in the present study make any firm conclusions difficult, but an analysis of the average responses for the total sample (n = 22) gave an insight into children's beliefs about why they may experience soiling difficulties. Children's top five reasons for why they thought they experienced soiling accidents are presented in descending order in Table 6.ii.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unknown cause beyond my control</td>
</tr>
<tr>
<td>2</td>
<td>I can't hold onto my 'poo'</td>
</tr>
<tr>
<td>3</td>
<td>I leave it too long before I go to the toilet</td>
</tr>
<tr>
<td>4</td>
<td>I don't notice when my bowels are full</td>
</tr>
<tr>
<td>5</td>
<td>Something is wrong with my bowels</td>
</tr>
</tbody>
</table>

The list of reasons in Table 6.ii highlights the need for effective education in helping children to understand their soiling difficulties. Just as Butler's Child Reasons for Bedwetting Scale gave some useful indications of issues that may need to be addressed with a child who presented with enuresis, the Child Reasons for Soiling Scale would also seem to identify some key issues that an intervention may need to pick up on if it is to help a child overcome their soiling difficulties.

While parent's top five beliefs about why their child experienced soiling difficulties consisted of the same five items they ranked them in a different order. Table 6.iii presents the parents' top five beliefs about why their child has soiling difficulties in order.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>They leave it too long before going to the toilet</td>
</tr>
<tr>
<td>2</td>
<td>Something is wrong with their bowels</td>
</tr>
<tr>
<td>3</td>
<td>They can't hold onto their faecal matter/'poo'</td>
</tr>
<tr>
<td>4</td>
<td>They don't notice when their bowels are full</td>
</tr>
<tr>
<td>5</td>
<td>Unknown cause beyond child's control</td>
</tr>
</tbody>
</table>
It is interesting to note that for both children and parents a strong attribution for a child presenting with soiling difficulties was that a child left it too long before going to the toilet. This would seem to suggest that a child may be perceived as having some control over their soiling difficulties.

Again this scale would seem to have identified some important issues for an intervention to address with parents, if an intervention's success is to be maximised. For example, both parents and children seem to share strong beliefs that a child's soiling difficulties are related to there being something wrong with the child's bowels or there being an as yet unknown cause beyond a child's control. The joint Paediatric/Clinical Psychology Clinic provides an extremely useful forum to address these beliefs and reassure and educate parents and children that in the vast majority of cases, constipation was the only underlying physical cause associated with a child's soiling difficulties.

6.6.4 Parent Feeling Scale
In the current study the Parent Feeling Scale - Supportive correlated positively with a child's age ($r = 0.403, p < 0.05$), suggesting that parental support was positively associated with their child's age. This was in marked contrast to Butler's (1994) findings for children with enuresis, where he found that intolerant maternal attitudes were positively associated with older children.

There was some consistency between scores on this scale and the scores children gave their parents on the family attitude scale in that the Parent Feeling Scale - Intolerant score was positively correlated with unsupportive father ($r = 0.738, p < 0.01$) and mother ($r = 0.511, p < 0.05$) ratings on the family attitude scale. The Parent Feeling Scale - Supportive scores also showed a positive correlation with mothers who were seen as supportive on the Family Attitudes Scale ($r = 0.472, p < 0.05$).

Table 6.iv provides a breakdown of the percentage of parents in the current study who had used a particular intolerant management strategy to try and address their child's soiling difficulties, the corresponding rates for a particular item for mothers and the management of enuresis (Butler, 1994) have also been included.
Table 6.iv - Percentage of parents who used an intolerant management strategy

<table>
<thead>
<tr>
<th>Percentage of parents using this strategy in current sample</th>
<th>Percentage for mothers of children with enuresis (Butler, 1994)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try to make child realise unpleasantness it causes others</td>
<td>56%</td>
</tr>
<tr>
<td>Show Disappointment</td>
<td>38%</td>
</tr>
<tr>
<td>Feels its a nuisance</td>
<td>19%</td>
</tr>
<tr>
<td>Believe the child is not trying hard enough</td>
<td>13%</td>
</tr>
<tr>
<td>Resort to smacking</td>
<td>9%</td>
</tr>
<tr>
<td>Believe the soiling would stop if the child grew up a bit</td>
<td>6%</td>
</tr>
<tr>
<td>Punish their child for soiling</td>
<td>0%</td>
</tr>
</tbody>
</table>

It is concerning that in the current study no parents felt that they punished their child for soiling their pants, inspite of 9% of parents having admitted to having smacked their child following a soiling accident. Butler et al (1988) found that intolerant management strategies were associated with an increased incidence of drop out or early withdrawal from treatment. The current study did not find a similar outcome for children who soil, but the academic time constraints on the current study meant that cases were only followed up for their first ten outpatient appointments. More research over a longer follow up period is required to investigate whether there is a similar association for children who soil between intolerant management strategies and drop out as was the case for children with nocturnal enuresis. However, as has already been noted like Butler (1994) the current study found that maternal intolerance was significantly higher for individuals who had a poorer outcome, (as measured by the frequency of soiling accidents).

The current results indicate a need to try and address the use of intolerant management strategies, since as has been commented on earlier, the results from the current study have suggested that a positive attitude may be more helpful than a negative attitude when trying to help a child overcome their soiling difficulties. Leaving intolerant management strategies unaddressed increases the risk of them escalating and in extreme cases a child being at risk of experiencing physical abuse.

Morgan and Young (1975) reported an association between intolerant maternal attitudes towards children with nocturnal enuresis and less favourable socio-economic circumstances. In the current study there was also some evidence for a positive association between a child seeing their father as being more intolerant and unsupportive, the lower the father’s socio-economic circumstances.
were \((r = 0.447, p < 0.05)\). As mentioned earlier an association was also found between father's socio-economic circumstances and intervention outcome as measured by the increase in the number of motions passed in the toilet \((r = -0.403, p < 0.05)\). Taken together these results suggest that one factor in the association of a father's socio-economic circumstances with outcome may be that fathers with higher socio-economic circumstances were less likely to be intolerant and unsupportive of their child's soiling difficulties. It should however be remembered that a father's intolerance or lack of support for their child's soiling difficulties did not show an association with intervention outcome.

Butler (1994) outlined a model for a spiral of maternal intolerance for the mothers of children with nocturnal enuresis. While there was insufficient evidence from the current study to draw any firm conclusions there was some evidence to suggest that a similar spiral of parental intolerance for the parents of children who soil may be applicable. Figure 6.i. presents an outline of how parental intolerance of soiling difficulties might spiral into a punishing response.

![Figure 6.i - A model of a spiral of parental intolerance](adapted from Butler, 1994)

6.6.5 Child Self-Image Scale

Butler (1994) presented some comparative data on this self descriptive scale for a group of children with nocturnal enuresis and a control group that had been matched for age and sex. He found significant differences on the following items, frightened \((p < 0.001)\), feel different \((p < 0.01)\), worried \((p < 0.05)\), lively \((p < 0.05)\) and tidy \((p < 0.05)\). Table 6.vi presents a summary of these items together with their approximate scores. The results from the current study, using the total sample \((N = 22)\) have been included to allow comparisons to be made. It should be remembered though that the current study's participants were not matched with the Enuresis groups. The 'On
Own/Lonely' and 'Upset' items have been included since the average score on these items in the current study were noticeably raised when compared to Butler's results.

The results presented in Table 6.1 suggest that like children with nocturnal enuresis, children with soiling difficulties may see themselves as different from other children who do not present with soiling difficulties in a number of 'negative' ways.

<table>
<thead>
<tr>
<th>Item</th>
<th>Enuresis Control Group (approximate score)</th>
<th>Nocturnal Enuresis Group (approximate score)</th>
<th>Current sample Soiling Difficulties (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Own</td>
<td>2.35</td>
<td>2.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Upset</td>
<td>1.9</td>
<td>2.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Frightened</td>
<td>1.1</td>
<td>2.8***</td>
<td>1.9</td>
</tr>
<tr>
<td>Feel Different</td>
<td>2.3</td>
<td>3.5**</td>
<td>3.5</td>
</tr>
<tr>
<td>Worried</td>
<td>2.0</td>
<td>2.9*</td>
<td>3.8</td>
</tr>
<tr>
<td>Lively</td>
<td>5.2</td>
<td>4.5*</td>
<td>5.0</td>
</tr>
<tr>
<td>Tidy</td>
<td>2.5</td>
<td>3.5*</td>
<td>2.9</td>
</tr>
</tbody>
</table>

* p < 0.05  
** p < 0.01  
*** p < 0.001

Children in the current study seemed to feel more on their own, shy and worried, but less frightened than children in Butler's (1994) enuresis sample. Butler suggested that children's fear may be related to a concern about their bedwetting being discovered. Similarly children in the current sample may feel more on their own, shy and worried as they try to cope with their soiling difficulties and keep them secret.

A sense of isolation and shyness in the current sample may also be linked to a child with soiling difficulties feeling different from their peers. Butler (1994) also found that children with nocturnal enuresis felt different from their peers. This also seemed to be the case for children in the current study who presented with soiling difficulties when compared to Butler's control group. These results would seem to suggest that the impact of soiling difficulties on a child should not be underestimated.

Three brief case vignettes from the current study have been included in Appendix - VII. These cases have been chosen to represent some of the range of different presentations and family attitudes associated with soiling difficulties in the current study.
The first case (Case A) is a fairly typical example of a participant who seemed to respond quickly to the intervention with a good outcome. A number of the variables that were associated with a better outcome in the current study can be identified. For instance, the father had a high socio-economic status, was younger than some fathers in the sample and the child was living with both parents in an intact family. In addition to this any soiling difficulties were seen as having a small impact and there was very little intolerant management of any soiling difficulties.

The other two cases (Case B and Case C) provide examples of some of the factors that seemed to be associated with a poor intervention outcome. Inspite of Case B living in an intact family with both parents and his father having a high socio-economic status, the management of any soiling difficulties seemed to have been 'excessively supportive.' Indeed it could be argued that the parents efforts to protect their child from the consequences of any soiling accidents had removed any responsibility from the child to use the toilet in order to have their bowels open. The father in this case was also one of the older fathers, a variable which showed a negative correlation with outcome in the current study.

Case C was also one of the more intractable cases and a number of variables that correlated with a poor outcome can be identified. This child lived with only one parent, her father had a low socio-economic status, her mother had a high score on the Parenting Stress Index and sometimes responded to soiling accidents in an unsupportive or intolerant way.

6.6.6 Summary
It is apparent from the above comparison that just as enuresis difficulties have a major impact on a child and their family, soiling difficulties also have a devastating impact. It is important not to underestimate the psychological impact of either enuresis or soiling difficulties since both can leave children feeling different, frightened, worried, and alone. Families and professionals need to rise to the challenge of helping individual children to overcome their toileting difficulties without compounding a child's low self esteem.

6.7 Methodological Limitations of the current study
The current study has demonstrated just how difficult it is to conduct research into a condition that is relatively rare but requires a long follow up period, thus making significant demands on the individual child, their family and a number of different agencies such as health, education and social services. In the present study there are a number of methodological limitations which are likely to have impacted on the findings. These will be discussed under relevant headings.
6.7.1 Design
An independent samples, correlational design was used in order to allow the study to be completed within the academic time constraints. However, a longitudinal study would have enabled a better analysis of any relationships to have been conducted. Although some significant correlations were found, no inferences can be made on the basis of a relationship, since it may be the result of or influenced by other variables. This limits any conclusions that can be made from the present study. However, given the exploratory nature of the study it has highlighted areas that may be important and relevant for future research.

As noted earlier the lack of a control group, due to ethical considerations, also limits the extent to which any results can be interpreted or conclusions drawn, since it would have provided important information about how the variables looked at in the current study related to outcome in a no treatment control group. One way of overcoming this ethical difficulty would be to follow up the progress of cases that “dropped out” of contact with the joint clinic. There would however be potentially confounding variables relating to why individuals had “dropped out.”

Given that the researcher was also one of the clinicians involved in inputting the joint clinic and that the clinicians were not blind to which group a child had been randomly allocated to it is important to acknowledge the potential bias that this design may have introduced to any outcomes from the current research. A further source of potential bias came from the fact that the Intervention plus Group received booklets from the researcher while the Standard Intervention Group received no comparable documentation. With hindsight it would have been helpful to have given the Standard Intervention Group some documentation, possibly Clayden’s ‘Some Information about Chronic Constipation in Children’ (Clayden and Agnarsson, 1991), in an effort to try and control for the booklets that the Intervention plus Group received.

6.7.2 Sample
One of the main difficulties in conducting research into a relatively rare condition is identifying and maintaining a clinical sample. A broad definition that helps to maximise numbers is likely to be unhelpfully over inclusive, while too tight a definition may exclude a child’s presentation inappropriately as well as mean that it would take years to establish a clinical sample. In view of this Levine (1975) was right to argue for a broad definition that included both voluntary and involuntary soiling difficulties since as he pointed out individuals may still soil inspite of their going through constipation free periods.

The literature review highlighted the need for agreed definitions concerning the presenting problem. The current study emphasised the need for there also to be agreed definitions concerning outcome and how it can best be measured. The relatively small body of literature and
research into soiling difficulties has meant that a consensus about these definitions has been slow to emerge. This in turn has meant that it has been hard to draw comparisons between studies, since they may have used different definitions. Any definition of outcome for soiling difficulties will need not only to assess the frequency of soiling but also to monitor the frequency of motions passed in the toilet. This would help to ensure that an intervention is not judged as having been successful due to a reduction in soiling episodes, when this had been achieved by retention and an overall reduction in the frequency of bowel actions, with a related risk for the child that constipation might develop.

The low take up rate (27%) bears testimony to the fact that it was extremely difficult to establish a clinical sample to conduct the current research. The low take up rate may have been due to embarrassment about the nature of the presenting problem. As noted earlier, take up may also have been reduced as a result of three national health care scandals, relating to paediatric cardiac surgeons, Dr. Harold Shipman and pathology department procedures, that occurred over the course of this study. One consequence of these scandals may have been to leave people feeling less inclined to consent to take part in clinical research.

In addition to these national issues, there may be individual issues (such as poor parental literacy) that resulted in a family being reluctant to consent to participate in the current study. A further reason for consent being withheld might be that a family is already suffering from an acute sense of failure concerning their child’s toileting difficulties; which might have made it hard for them to seek any help or support in the first place. This sense of failure might result in these families being less inclined to volunteer to take part in the current research. In the literature review (Chapter 1) it was noted that the incidence of soiling difficulties and child abuse are positively correlated (Murphy and Carr, 2000). Parents who were abusing their children were unlikely to seek help for fear that their child might disclose what was happening to them. It was however conceivable that the non-abusing parent might seek help for their child who soiled. In these circumstances the abusing parent might be anxious to avoid the scrutiny of the current research and as a result persuade their partner to withhold their consent to participate in it.

While families who chose to withhold their consent to take part in the current study still had access to the standard intervention provided via the joint Paediatric/Clinical Psychology Soiling Clinic, it is important to consider how the reasons for a family withholding their consent might be identified. This could be achieved by the use of a brief questionnaire or structured interview, but great care would be needed to avoid the ethical dilemma of leaving families feeling criticised for exercising their right to withhold their consent. Trying to access this information would help not only to facilitate a better uptake in any future research, but also provide an opportunity to identify any more sinister reasons for consent being withheld.
The difficulty of recruiting a pilot study sample would seem to reflect the social embarrassment that surrounds such a taboo subject as soiling difficulties. With hindsight it may have been better to have approached friends and colleagues, known to the researcher, in order to have established a larger pilot study sample.

There were also a number of variables that could not be controlled for - such as the severity of any soiling difficulties or the length of time a child had presented with soiling difficulties. This meant that the groups were not homogeneous. As far as demographic variables were concerned the two groups were reasonably well matched. The only significant demographic difference between the two groups was 'the position of a child in a family.' This variable did not show any significant correlations with either of the outcome measures that were used. This was important with regard to the analysis of any differences between the outcomes for the two intervention groups. While the position of a child in the family did not show a significant correlation with outcome for either group it may have been a factor in the Standard Intervention plus Group doing significantly better than the Standard Intervention Group when outcomes as measured by the change in the frequency of soiling accidents were compared.

Given the small sample size in the current study it is difficult to be confident that it was truly representative of children who present with soiling difficulties. Participants in the current study were self-selecting from within the population of children who presented with soiling difficulties in two respects. Firstly they all had parents who had chosen to seek help in addressing their child's soiling difficulties. Secondly from within that group the participants were all volunteers. It was possible that there may have been unknown factors at work which compelled parents to volunteer and so distorted how representative the sample was. For instance, more tolerant families may have been more prepared to volunteer, due to their being less concerned about being scrutinised in a research study.

The relatively small sample size also had implications for the analyses, since it meant that the meaningfulness and generalisation of any results must be treated with care. For example, it was noted earlier in the discussion that the unexpected positive correlation between the Child Self-Image Profile-Negative and outcome seemed to be accounted for, at least in part, by one child who had a good outcome but had a particularly high negative self-image. The accuracy of this and the other results in the current study must therefore be treated with caution. The small non-homogeneous sample meant that less powerful non-parametric statistics were used, which were less likely to detect any statistically significant differences that may in fact have been present. As discussed earlier, children with soiling difficulties have not been researched with regard to these
variables before, but comparisons with the findings of studies that used comparable measures to study children who presented with nocturnal enuresis found some similar results.

The small sample size and the large number of statistical tests that have been performed on the data meant that there was a risk that statistically significant results may have been found by chance where no true significant relationship in fact existed. The adoption of $p < 0.01$ for some of the analyses was used in an effort to guard against this and reduce Type I errors.

A larger sample size would have helped to reduce the chances of there being two significant differences between the two intervention groups, namely one group having more children who were the first born in their family as well as children with a more positive self-image. While neither of these variables showed a significant correlation with intervention outcomes for the whole group, it was possible that they may have been a factor in the differences in outcome between the two groups, rather than any differences in outcome being related to the provision of parent and child information booklets.

6.7.3 Measures

While some standardised measures were used a number of non standardised assessments, which originated from personal construct theory, were also used. These non standardised measures had originally been used to study nocturnal enuresis. The current study adapted them for use with children who presented with soiling difficulties. One consequence of this was that their reliability and validity have not been extensively tested. Re-testing the same individuals might therefore produce different results.

The three non-standardised measures that were changed the most from their original enuresis formats were the Impact of Soiling Scale, the Reason for Soiling Scale and the Parent Feeling Scale. Unfortunately due to the small sample size it was not feasible to do a factor analysis of these scales to identify which items on a particular scale shared a common factor. The current study grouped items on a particular scale together into what seemed to be meaningful clusters. It was however possible that the significance of some items was masked due to their having been grouped with other non significant items or vice versa.

The small sample size also meant that it was not possible to do a multiple regression analysis on the variables. A larger sample, that would have made a multiple regression analysis viable, would also have allowed a model of the strengths of any associations between particular variables and outcomes to be developed.
While neither the Parent or the Child Knowledge Questionnaires seemed to suffer from ceiling effects the shortness of the Child Knowledge Questionnaire meant that it was not as sensitive as a longer questionnaire might have been.

Given the age of some of the participants, parents were asked to give their children any help they might need to complete their questionnaires. Parents were asked to try and avoid influencing their child’s answers. It was however possible that children’s answers may have been influenced by the help they received from their parents. This would help to account for some of the strong positive correlations between parent and child responses on those scales that they were both asked to complete.

The length of time it took to complete the full set of questionnaires may have been a factor in four families initially consenting to take part in the study, but failing to return their completed questionnaires prior to their first appointment. While the Family Attitude Scales and Knowledge Questionnaires could be completed relatively quickly, the Child Behaviour Checklist, the Parenting Stress Index and the Current Presentation Questionnaire I and II were more time consuming to complete.

6.7.4 Problems encountered in maintaining the Joint Soiling Clinic

Over the course of this study there have been a number of changes, at both a national level and a local level, which have lead to the clinic’s structure and organisation being questioned. At a national level General Practitioner Fund Holding (GPFH) was abolished and replaced by Primary Care Groups (PCG). These have in turn now been replaced by Primary Care Trusts (PCT).

At a local level the retirement of the Consultant Paediatrician who had an input to the clinic had a major impact, which resulted in the current research being suspended for fifteen months (from 1.10.97 - 31.12.98) while a replacement was found. Over this period the paediatric input to the clinic was provided by locum consultants and registrar or staff grade paediatricians. The lack of continuity of paediatric input made it impossible for the clinical phase of the research to begin.

One of the issues that made the identification of a replacement paediatrician for the clinic more difficult was the fact that soiling difficulties impact on both acute and community paediatric services. This had not been a problem for the retiring paediatrician since she was appointed to a split acute/community post. However, the new paediatrician was to be appointed to a full time acute post. When an appointment was made the new paediatrician immediately questioned whether the paediatric input for the clinic should more appropriately be provided by the community paediatric service. In view of the fact that the community paediatric service was not in a position to provide this input it was decided that the paediatric input to the clinic would be provided by a staff
grade paediatrician from acute paediatrics under the supervision of an acute consultant paediatrician. More recently (August 2002) an appointment was made to a new acute/community consultant paediatric post. This new consultant has taken on the paediatric input to the joint clinic.

All of the above changes have resulted in questions appropriately being asked about the evidence base for the continuation of a joint Paediatric/Clinical Psychology Soiling Clinic. The literature review for the current research, a fact finding visit to Dr. G. Clayden’s (Consultant Paediatrician, St. Thomas’ Hospital, London) outpatient clinic for children with soiling difficulties and the drafting of the children’s and carers’ information booklets have, not only confirmed that the evidence supports the current service model of running a joint clinic, but also ensured that this information was available and presented in a robust way when justifying this model of service provision.

6.8 Future Research

Further research with a larger sample using the scales employed in the current study holds out the hope of developing a better understanding of the key pre-intervention variables that may be related to a better intervention outcome. The replication of the current study with a larger sample would clarify whether the findings from the present study were representative of children who soil in general or were specific to this group of children and their parents.

Further research is needed into the Family Attitude Scales that were used in the current study. The use of these scales with a larger sample would allow factor analyses on each scale to be done in order to identify common factors within a scale. This would be particularly useful to do on the Impact of Soiling Scale, the Reason for Soiling Scale, the Parent Feeling Scale and the Parent Knowledge Questionnaire. This would help to ensure that the significance of a particular item on a scale was not masked due to it being grouped with unrelated non significant items. As mentioned earlier the use of these scales with a larger sample would also allow a multiple regression analysis to generate a model of the strengths of any associations between the variables and outcomes to be established.

The use of the Reason for Soiling Scale with a larger sample would also allow a better understanding of any differences between child and parent responses on this scale to be investigated more fully.

The extent to which a child’s positive self image was associated with a better intervention outcome may also become clearer from the replication of the current study with a larger sample. A more detailed understanding of a child’s overall self image would also seem to be warranted given their sense of isolation, distress, worry and feeling different from their peers.
6.9 Clinical Implications

The findings of the current study have a number of implications for clinical practice. A child’s positive self image was implicated as a possible factor which may help to account for the significant association between intervention group membership and outcome ($\chi^2 = 6.545$, df = 1, $p < 0.05$) in the current study. It follows from this that the management of any soiling difficulties needs to ensure that a child’s self esteem is not undermined. There is however a delicate balance to be struck here, since the results from the current study found that an excessively supportive parent had a negative correlation with intervention outcome. Families need to be given sufficient information to help them understand their child’s presentation with soiling difficulties more fully.

Children who soil seem to be more worried than their non soiling peers, so clear ‘clean up’ routines both for when they are at home and when they are away from home that are non punishing and non blaming (in order to avoid undermining a child’s self esteem) may be important in helping to reassure a child. Children who soil also felt different from their peers, so education about prevalence rates and how their bowels function may help a child to feel less stigmatised.

The current study did find a significant association between intervention group membership and outcome ($\chi^2 = 6.545$, df = 1, $p < 0.05$). The fact that the Intervention plus Group, that received the parent and child information booklets, did achieve better outcome results lends support to the parent and child information booklets being used routinely. The routine use of the information booklets would provide a useful way of trying to increase parent and child knowledge about soiling difficulties. The ongoing use of the booklets in the joint clinical setting is also supported by the positive correlation (at a non significant level) between knowledge and intervention outcome. The information booklets and the other psychoeducation strategies might also help families to develop a better shared understanding of why a child presented with soiling difficulties. This might in turn have helped children to overcome a tendency to see their soiling difficulties as having a physical cause or being due to an unknown cause beyond their control. The better the understanding a child has about their soiling difficulties the more likely they are to be able to begin to believe that they can exercise some control over their soiling difficulties. This self belief might help to motivate the child to take the first steps in trying to overcome their soiling difficulties.

The Family Attitude Scales and the Parent Knowledge Questionnaire provide a useful insight into the context of a child’s current presentation. Their ongoing use would help to provide clinicians with an indication of those areas where an intervention might need to focus.
An awareness of whether a child’s presentation with soiling difficulties was primary or secondary may help any underlying organic factors to be excluded, but the lack of a significant correlation between the use of bowel related medication and constipation in the current study is of concern. The implication of this is that some children who were constipated may not have been receiving the appropriate medication, while others who were not constipated were receiving bowel related medication when it may not have been warranted. The use of bowel related medication is not an exact science and the current study suggests that there is a need to try and ensure that its use is more closely targeted for use in cases where constipation is a factor. This would help to ensure that children’s experience of pain when having their bowels open was minimised. The comparatively high levels of ‘worry’ amongst the children in the current study (see Table 6.vi) may be related to a concern about pain on having their bowels open. The researchers’ clinical experience suggests that constipation can be related to an apparent predisposition from birth to be constipated, as well as occurring more intermittently possibly as a result of transitory factors such as a change in diet, or a child actively retaining for some reason such as a traumatic life event. Identifying the factors that may contribute to a child’s presentation with constipation will be important in helping to ensure that any bowel related medication is used as effectively as possible.

Thirteen children (59% of the total sample) presented with a history of constipation in the current study. This highlights once again the importance of ensuring that part of a child’s initial assessment needs to screen for constipation. Failure to address adequately this issue risks condemning a child with soiling difficulties to an endless cycle of potentially painful motions, continued soiling difficulties and increasing despondency that they will ever overcome their soiling difficulties.

Doleys et al (1981) concluded that bowel continence does not immediately return once any impacted faeces have been removed. This has been supported by the findings in the current study, since only one child prescribed bowel related medication had stopped soiling when the follow up measure was completed. This child was continuing to use bowel related medication at follow up. These findings emphasise the need for children’s physical presentation to be followed up for some time to try and ensure that they pass pain free motions and do not become constipated again. In the current study twelve children (55% of the total sample) were using bowel related medication when the follow up measure was completed. (There was no significant difference between the two intervention groups concerning the use of bowel related medication at follow up, see Table 5.ix.)

The results from the current study indicate that the use of bowel related medication was significantly associated with more motions being passed in the toilet. This is consistent with the action of this medication, which increases the frequency of bowel actions and softens the stools to
avoid the passage of painful stools. The provision of an information booklet was significantly associated with a reduction in soiling. These findings support the need for joint Paediatric and Clinical Psychology input if soiling difficulties are to be successfully addressed. They might give a clue as to why a combined Paediatric and Clinical Psychology intervention has been found to be more effective than an unidisciplinary intervention (Borowitz et al, 2002). The medical intervention and the use of bowel related medication was associated with an increase in the frequency of bowel actions, as would be expected. The psychological intervention with its education component might have resulted in an increase in an individual’s knowledge and understanding about how they should respond to the feelings they get from their bowels. This in turn would help to explain why the provision of information booklets was associated with a reduction in the frequency of soiling episodes. These findings also provide support for Ronen’s (1993) suggestions that a combination of cognitive interventions, contingency management and family education provide an effective intervention.

Clinical Psychology input needs to address the negative self image of children who present with soiling difficulties. Families need to understand they are not alone and that with the right support there is a good prospect that children who soil will overcome their soiling difficulties. The low self esteem that the current study identified in children with soiling difficulties supports Carr’s (1999) view that interventions should address the delicate issues of how soiling accidents and toilet use are managed to ensure that a child’s delicate self esteem is not further eroded. Care needs to be taken before parents or professionals embark on the use of enemata or rectal examinations, since both are highly intrusive and potentially aversive. The inappropriate use of either enemata or rectal examinations risks compounding a child’s already low self esteem. The results from the current study highlight the negative impact that soiling difficulties have on children’s life as well as their self esteem. In view of this, management strategies need to avoid criticism or punishment and focus on praise and encouragement for any progress. Parents need to be helped to appreciate the psychological impact that soiling episodes might have on a child. Parents also need to be aware that an intolerant maternal attitude to soiling difficulties might undermine the prospects of a good intervention outcome. Carr (1999) referred to the need for a ‘facilitative’ family environment. A child is encouraged to take some age appropriate responsibility for managing their soiling difficulties, since the current study produced some evidence to suggest that an excessively supportive parental response that left a child with little or no responsibility for managing their soiling was counter productive. This finding was consistent with previous findings that a poor intervention prognosis was linked to anxious or over-involved carers (Pinkerton, 1958) and intrusive parent-child interactions (Kelly, 1996). However, the management context is important since a child should not be left feeling they are being punished for having had a soiling accident.
The results from the current study provide significant evidence for the use of information booklets about bowel functioning and soiling difficulties. This supports the view that knowledge about, for instance, the aetiology of a child's soiling difficulties and an understanding that involuntary soiling accidents occur (Carr, 1999) is important in overcoming these difficulties. The booklets may facilitate a better understanding of the processes involved in a child's presentation with soiling difficulties, which in turn helps a better outcome to be achieved. This helps to explain why the provision of information booklets was associated significantly with a reduction in soiling as opposed to an increase in the frequency of motions passed in the toilet. The suggestion from this research is that psycho-education helps children to understand the signals they get from their bowels. The psycho-education component of an intervention should also emphasise the importance of adequate fluid intake and dietary fibre, as major factors that can help individuals overcome their soiling difficulties particularly where constipation is a factor.

Greater family understanding and awareness of a child's presentation would also be facilitated by Paediatricians sharing with parents how they can examine their children's abdomen to estimate the extent to which they may be constipated. This would help to ensure that bowel related medication was used in a timely way to avoid the build up of any faecal masses.

The overall family context needs to be looked at to ensure that a child is getting a supportive response, which nurtures and respects them within a secure setting, as opposed to a child receiving an angry, negative, blaming message about any soiling difficulties.

The results from the current study provide support, consistent with earlier studies (Stark et al, 1997), for the use of a combined Paediatric and Psychological intervention for children with soiling difficulties. Both the current study and Stark et al (1997) demonstrate the effectiveness of the combined use of medication and psychological interventions, such as behavioural management strategies, cognitive restructuring and education. The results from these studies suggest that a combined Paediatric and Psychological intervention enhanced unidisciplinary outcomes for a presenting problem that requires extensive and ongoing life style changes from both the child who presents with soiling difficulties and their family.

6.10 Conclusions
The current study gave rise to the conclusion that for a total sample (N = 22) two variables were significantly associated with a better intervention outcome. These variables were a child living at home with both parents (as measured by an increase in motions passed in the toilet) and having a young father (as measured by a reduction in soiling). Three variables showed weaker, though still significant associations with better intervention outcomes, as measured by an increase in the frequency of motions passed in the toilet. These were having a father with a high socio-economic
status and the use of bowel related medication at the time of referral and after ten appointments had been offered.

The provision of child and parent information booklets was associated with a significantly better outcome (as measured by a reduction in the frequency of soiling accidents) when compared with the intervention outcome achieved with children and parents who did not receive information booklets. This conclusion may however also be associated with a child being the first born in their family and/or the child having a positive self image, since there were significant differences between the two intervention groups for both these variables.

The results from the current study support the view that a combined Paediatric and Clinical Psychology intervention might be more effective than an unidisciplinary intervention, due to medication leading to more bowel actions being passed and the education component of a psychological intervention increasing an individual's knowledge and understanding about how they should respond to the feelings they get from their bowels. The combined interaction between these two factors would result in an increase in the number of motions passed in the toilet and a reduction in soiling episodes, as was found to be the case in the current research.

Within the total sample that was looked at in the current study, while not achieving statistical significance, greater child and parent pre-intervention knowledge about their bowels and how they work showed a positive correlation with intervention outcome measures. This suggested that having a better knowledge was associated with a child and their parents achieving a better intervention outcome.

The fact that the Internalising Total on the Child Behaviour Checklist showed a statistically significant negative correlation with the intervention outcome (as measured by the increase in the number of motions passed in the toilet) indicated that a parent giving their child a ‘moderate’ score on this item (i.e. not seeing their child as excessively fearful, overcontrolled or inhibited) was associated with a child achieving a better outcome. This view was supported by the fact that children whose presentation improved had parents who gave significantly lower scores on a number of Child Behaviour Check List sub-divisions than the parents of children whose presentation did not change or deteriorated.

While other measures of family attitudes to soiling difficulties did not achieve statistically significant correlations with outcome measures, a number of them did show correlations with outcome measures that were in a direction that suggested that a low key positive family attitude to soiling difficulties was associated with a better intervention outcome. There was some evidence to suggest that having an excessively supportive parental response was not the most helpful
response for a child who presented with soiling difficulties. A closer examination of the findings in the current study indicated that children did better if they had supportive fathers and did not have unsupportive mothers. The results also suggested that children with a poor self-image might respond better to an intervention.

The current study also highlighted the difference that the choice of outcome measure can make to the judgements of a study's overall results.

Chronic soiling difficulties are acutely uncomfortable and embarrassing for a child and their family. The chronic nature of these difficulties means that they will not only impact on a family's domestic finances but will also make a significant financial impact on the resources of the NHS, due to years of outpatient intervention, admissions to hospital or attendance at Accident and Emergency Departments. More effective and efficient interventions have a number of benefits, not only for children and their families, but also for Education services and the NHS. The results from the current study suggest that the provision of information booklets led to a more efficient intervention, possibly as a result of families developing a fuller understanding of a child's presentation. This will have significant cost implications for families and service managers alike. The better the understanding that a family has of a child's presentation the more able parents will be to appreciate the psychological impact that soiling accidents have on their child. A better understanding will also help children to believe that they might be able to take some control over their soiling difficulties.

The overall results from the current study indicate that interventions that aim to help children overcome their soiling difficulties should not just focus on physical issues but should also address psychological issues since these clearly have a large impact on a child's and their family's presentation and an intervention's outcome.
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GOING TO THE TOILET

.... POSITIVE STEPS

INFORMATION GUIDE
FOR PARENTS AND
CARERS IN UNDERSTANDING
THEIR CHILD’S
SOILING DIFFICULTIES

NORTH WALESMIND RTC TRUST
INTRODUCTION

There may be many questions and concerns that you and your child want answered with regard to the difficulties they are experiencing in going to the toilet.

This booklet will help you and your child to understand why your child has soiling difficulties. We hope that the help and support you receive from the Clinical Psychology and Paediatric Departments and their joint Clinic (The Encopresis Clinic) will help both you and your child to understand and overcome their toileting difficulties.

THIS BOOKLET AIMS TO:

♦ Briefly outline how our bowels work.
♦ Help you to understand why your child is experiencing difficulties in using the toilet.
♦ Offer a step by step guide to help you teach and encourage your child to use the toilet more appropriately.

You may wish to go through this booklet with your child in order to increase their understanding of how their body works.
♦ When food is swallowed it goes through the stomach into a long tube called the intestine which winds around and around in the abdomen.

♦ Most of the food is needed for growth and to keep us strong and healthy.

♦ Food, when swallowed, is mixed with juices (called enzymes). This helps the body absorb the nutrients it needs.

♦ From the stomach a "soup like" mixture is passed along the small intestine by waves of muscle contractions.

♦ The large intestine absorbs a lot of the moisture from the "soup-like" mixture. This leads to motions being formed from the left over bits of food that the body does not need.

♦ When the motion gets to the end of the large intestine there is a feeling in the rectum or abdomen that a motion is ready to come out.

♦ This results in a message being sent to the brain telling it that there is a motion in the rectum waiting to be passed.

♦ If a child doesn't go to the toilet when they get the feeling that a motion is ready to come out, more and more faeces will collect in the rectum and these may become difficult to pass.

In order to avoid this happening it is important to go to the toilet as soon as there is the feeling in the rectum or abdomen that a motion is ready to come out.
WHY DOES MY CHILD HAVE DIFFICULTY USING THE TOILET?

More boys than girls tend to have soiling difficulties. There may be one or a combination of reasons why your child may have difficulty using the toilet.

1  AGE

Your child may not yet have developed adequate muscular control of their bowels and/or have reduced sensitivity to the feelings of fullness associated with the need to go to the toilet to pass a motion.

This feeling of fullness is sometimes referred to as "the call to stool".

As your child grows up these skills will develop and over time your child will learn that these feelings mean that they need to go to the toilet to pass a motion. Most children will have developed these skills by the time they are 5 years old.

2  SCARED

Your child may have had a frightening experience in the past which they associate with having their bowels open or using the toilet. This may result in them trying to avoid the toilet as much as possible.

3  RETENTION

Your child may have difficulties going to the toilet to pass a motion because in the past it may have hurt them when they pushed their motions out. This may lead to your child trying to "hold onto" their motions in order to avoid having a further painful motion.

This RETENTION results in your child's motion remaining in their rectum for longer. If faeces are in the rectum for a long time they can get very hard and dry (constipated). This occurs as a result of the body absorbing liquid from the faeces while they are held in the rectum. This, in turn, may make it more likely to be painful for your child when they try to push their motions out.
If your child retains their motions for long enough the 'call to stool' (the feeling that tells them they need to pass a motion) will go away in spite of there still being a motion in their rectum that they need to pass.

If they retain their motions for even longer their rectum can become stretched, due to the amount of motion they are retaining. Their rectum may become so stretched that it is no longer able to send the 'call to stool' signal to the brain telling your child that they need to go to the toilet. This stretching may also lead to your child being unable to keep their bottom (anus) closed. When this happens liquid waste finds its way out around the solid mass of motion in their rectum and leads to them presenting with very loose soiling accidents in their pants. This is known as RETENTION WITH OVERFLOW. The loose soiling accidents may lead to you thinking that your child has diarrhoea. In fact they have retention with overflow and they are constipated.

NB This type of soiling can not be controlled by your child and is not being done deliberately by your child. It will not lead to any lasting damage if corrected quickly.

What happens when your child gets Retention with Overflow

- Pain in bottom (anus) on passing motion
- Retention of motion
  - Harder motions
    - continued retention leads to build up of faecal matter in rectum
  - Stretching of rectum
    - Longer motions remain in rectum, harder they will become
      - "Call to stool" signal may no longer occur as the rectum becomes more stretched
        - Build up of motion in rectum leads to the anus being stretched.
          - Liquid motion seeps around solid mass of motions in rectum
            - Very loose soiling accidents in pants
MANAGEMENT CONFUSIONS

Cleaning up your child's soiling accidents is not a pleasant job. Understandably it is very easy to get frustrated and angry, particularly if your child does not tell you that they have had a soiling accident. If this happens your child may feel confused and muddled, thinking that they have been shouted at, ridiculed or told off for soiling their pants. Your child may not understand the distinction that you are cross with them for not telling you that they have had a soiling accident as opposed to you being cross with them for the soiling accident itself.

In an attempt to stay clean your child may try to retain their motions. This may lead to them getting constipated and/or having retention with overflow and soiling accidents.

Some children may try to hide their soiled clothes. This may be due to their feelings of shame about having had a soiling accident and/or fear of a negative parental reaction, e.g. being shouted at.

SOME KEY POINTS TO REMEMBER

1) It is usually possible to help your child establish a pattern or routine of appropriate toilet use.

2) There is nothing mysterious about our bowels and it is important for you and your child to understand how our bowels work. The 'Brock the Badger' booklet may help you to explain this to your child.

3) Your child's toileting difficulties are NOT usually deliberate. Your child's use of the toilet may be affected by strained or unsettled family relationships at home. This is because their bowel function will be affected by their emotional state.

4) Your child's toileting difficulties may be due to inadequate muscular control and/or reduced sensitivity to the call to stool.

5) Toileting difficulties are quite common in childhood:

10% of all 5 year olds still wet the bed
3% of all 5 year olds experience soiling difficulties
6) Negative management strategies such as shaming, smacking or rejecting your child are not the most effective way of helping your child if they soil their pants. In fact they may make the situation worse since they may increase the child’s feelings of anxiety and shame and make them reluctant to come and tell you that they have soiled their pants.

7) Your child’s learning to use the toilet appropriately will be encouraged by praise and hindered by punishment.

HOW DO I HELP MY CHILD TO PASS THEIR MOTIONS IN THE TOILET?

1) **LOW KEY - SUPPORTIVE RESPONSE**

   The most important aspect of managing your child’s soiling accidents is to give a low key and supportive response, so feelings of pressure are reduced for the child and their self-esteem and confidence are raised. This will also make it easier for them to seek help when they need it.

2) **PRAISE**

   Most children love praise. If you praise your child for doing a motion in the toilet this will encourage them to do it again. Make sure you give your child a clear message that you think they have done well if they do pass a motion in the toilet.

   **NB** If your child is not currently passing their motion in the toilet then you can praise them for any appropriate toileting behaviour.

   For example:

   ♦ coming to tell you they have had a soiling accident.
   
   ♦ sitting on the toilet and trying to have their bowels open.
3) KEEPING RECORDS TO MONITOR PROGRESS

♦ When your child does a motion on the toilet you can compliment your verbal praise by giving them a star to stick on a picture (a star chart). This helps your child to see how well they are doing.

♦ Help your child to stick their star on the chart so they can see how pleased you are with the stars they are getting. This will encourage them to try and get even more stars.

Your child should have a small reward that is linked to the stars they earn.

For example: Buy a bag of pick 'n' mix sweets. Let your child choose the sweet they want but make sure that they only get these sweets as a reward for passing a motion in the toilet (one sweet per motion in the toilet).

♦ You may be asked to keep a toileting diary to record when your child uses the toilet to have their bowels open in the toilet (BT), soils (S) or marks (M) their pants. This is important information to help monitor how well your child is doing.

♦ Please bring completed charts to appointments for monitoring and discussion.

4) MEDICINE

In some cases a period of toilet training on its own may not be sufficient to overcome your child’s toileting difficulties. There are a number of different types of medicines that doctors may suggest you use to help your child overcome their toileting difficulties. There are two main type of medicine, laxatives and enemas.

There are three main types of laxatives, osmotic laxatives, stimulant laxatives and bulk laxatives. Osmotic laxatives, such as lactulose, soften your child’s motions because they help more water to be retained in their stools. In view of this you should try to ensure that your child is drinking well, when using these types of laxatives. Stimulant laxatives, such as Sennokot, make the bowel contract and so encourage your child to pass motions more regularly. Sennokot is generally used together with a osmotic laxative. This helps to reduce the risk of a child passing hard motions which may be painful. Bulk laxatives are used rarely in children, they add non digestible substance to motions making them softer.

If a doctor has suggested that your child have some medicine to help them overcome their soiling difficulties it is important that they take it regularly as prescribed. This will help your child’s body get into a rhythm of having their bowels open regularly.

If your child’s rectum is full of large compacted motions a doctor may suggest that they have a suppository or enema. A suppository involves a small torpedo-like capsule being inserted up your child’s anus (bottom). This capsule softens the compacted motions and lubricates the anal passage.
Phosphate and micro enemas are most commonly used with children where the faecal matter has become very impacted. In some cases it may also be necessary to administer a retention enema over night to soften the faeces. This can then be followed by a phosphate enema in the morning.

5. DIET

Everyone benefits from a varied diet and the child with constipation is no exception. A balanced diet is based on the following food groups (see page 20).

1. Cereals, bread, potatoes, chapattis, pasta and rice.
2. Fruit and vegetables.
3. Milk and dairy produce.
5. Foods containing fat and foods containing sugar.

Children who are constipated often have poor appetites, due to the sensation of 'feeling full' and may drink in excess of 600 ml (often 2 litres) of milk per day.

Therefore, it is advisable to:-

1. Base the child's diet on the food groups. Encourage plenty of variety. You may need to alter your eating habits to support your children.

2. Encourage small frequent meals, up to 6 per day, rather than 3 large meals.

3. Slowly increase the quantity of fibre in the diet, this will help the bowel adjust and add bulk and volume to the stool.

4. Limit milk intake to between $\frac{1}{2}$ - 1 pint of milk a day. Milk is important for healthy teeth and the prevention of brittle bones. If a child drinks too much milk (more than 1 pint per day) there is a chance that their appetite for meals will decrease. Milk contains no fibre, therefore a high milk intake may contribute to constipation.

5. Ensure adequate fluid from alternative drinks to milk, at least 6-8 cups per day, this will help to keep the stool soft.

6. Do not add bran to foods, i.e. bakers bran. Breakfast cereals based on bran are supplemented with additional vitamin and minerals, so your child will be getting some of the vitamins and minerals they need from their bran breakfast cereals.

It will take time for your child's bowels to adjust to change in dietary intake. If you would like further advice on diet, ask your GP or doctor for a referral to the dietitians.

One of the best signs that your child is beginning to overcome their toileting difficulties is a progressive gain in weight.
**IMPORTANT POINTS**

When you start trying to encourage your child to use the toilet, it is important to remember:

**A)** Rewards are for appropriate toileting behaviour **NOT** for being clean, (which may encourage your child to hold onto their motions to try and keep themselves clean).

**B)** Rewards should be small and repeatable. They can be activities (e.g. reading a story together, going out on a picnic) or items (e.g. sweets or small toys). Above all they should be something that is valued by your child.

**C)** Try to ensure your words and actions are consistent.

**D)** Don’t get drawn into negotiating with your child about what is being rewarded.

**E)** Once given, rewards should not be taken away.

**F)** Try to ensure that your child gets some rewards, i.e.: that they can achieve the “target” behaviour. If your child is not able to achieve the “target” behaviour they may feel that they are failing and so become disheartened.

**H)** Try to avoid continually checking your child’s pants or asking them if they need the toilet.

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**WHAT SHOULD I DO IF MY CHILD SOILS?**

1) **AT HOME:**

Your child will learn faster and be more confident in managing the soiling if everyone reacts in the same way using a **CONSISTENT APPROACH**

As soon as you know that your child has soiled you should:

i) **Remain calm and try not to get upset or angry as this might result in your child not coming to ask for help when they need it.**

ii) **Get your child to stop the activity they are doing as soon as you notice that they have had a soiling accident. They can return to the activity as soon as they are clean.**

iii) **Help your child to get washed so that they are comfortable and clean. (Your child may need some help at first but with encouragement and over time they will increase their confidence and ability to clean themselves up independently).**
iv) If your child is independently cleaning themselves up then they should be encouraged to put any soiled clothes into a bucket with a water-tight lid containing a mild solution of disinfectant.

NB Make sure your child has some rubber gloves to make the job of cleaning themselves up an easier task.

2) AT SCHOOL

If your child is at school then their teachers need to be aware of the difficulties so that your child can have free access to the toilets whenever they need to.

If your child does have a soiling accident while they are at school, then they need to be equipped with the right "kit" to do a good job of cleaning themselves up, e.g. wet wipes, rubber gloves, clean pants, trousers/skirt, plastic bag to put dirty clothes in, etc.

3) AWAY FROM HOME

Having the right "kit" with you is important. You will feel more confident that you and your child can cope with a soiling accident, should one occur, if you have taken a well equipped 'change bag' with you.

HELPFUL HINTS

Try to make going to the toilet fun:

♦ Allow your child to take their favourite toy into the toilet.

♦ Listening to music or reading a book while on the toilet will help your child to remain relaxed.

♦ If your child's feet don't reach the floor when they are sitting on the toilet, put a toilet step or a box under their feet. This will help to make them feel more stable.

♦ A small 'trainer' toilet seat may also help to make your child feel safe and secure when they are sitting on the toilet.

♦ You may like to ask your child to blow up a balloon, while they are trying to pass a motion on the toilet. This uses some of the same muscles that they need to use to have their bowels open.
Eat a wide variety of foods each day. Eating a wide variety of foods is the best way to make sure your child is having a balanced diet.

**Fruit & Vegetables**
All fruit and vegetables are excellent sources of fibre. Try to encourage 2-3 servings per day (fresh or frozen). These foods are rich in Vitamin C which helps iron absorption.

**Protein Foods**
Foods high in protein are essential for growth and good health. Most protein foods are good sources of iron. Aim to have 2-3 servings per day (try to keep to main meals only). Beans, lentils, pulses, are also excellent sources of protein - your child may prefer these to animal sources and these will help your child’s iron intake.

**Foods Containing Fat**
These foods should be used sparingly, try not to eat too often and keep as treats. They are high in energy and do not contain many other nutrients.

**Bread, Other Cereals & Potatoes**
Make these foods the main part of your meals. Include some wholemeal varieties as these are useful to prevent constipation.

**Milk and Dairy**
Encourage 1 pint of milk a day or alternative e.g. 1/3 pint of milk = 1 yoghurt = 1 oz of cheese. Milk is a good source of calcium essential for healthy teeth and prevention of brittle bones.
This booklet was written and produced by:

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We would like to acknowledge the help and support we received from the Paediatricians and Dietitians at the George Eliot Hospital in writing the Medicine and Diet sections of this booklet.

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Appendix II - Child Information Booklet
Brock the Badger's little accidents

Written by Wendy Coetzee
Artwork by Laurence Dingley
Brock lives in Tanglewood and is quite a happy badger apart from one thing ....

"...Brock has a little problem. Brock does not always get to the toilet in time to do a poo."
Brock doesn’t like having accidents with his poos. When Brock has an accident, mummy or daddy help Brock to get cleaned up and put his pants in the wash.

Brock is a bit worried his friends will find out about his accidents. Mummy says to Brock “We must go to see the wise owls. They will know what to do.” One day mummy took Brock to see the wise owls at Tanglewood Badger Clinic.

Brock meets the two wise owls. They are very nice.

They tell Brock that lots of badgers who have accidents with their poos come to see them. "We can help you to stop having accidents" they say. The owls ask Brock “Do you ever get a tickle in your tummy before you have an accident?” “Yes, I do” replied Brock.

The owls tell Brock “When you get a tickle in your tummy you must go and try to do a poo in the toilet”. They gave Brock a special picture and said “Brock, you can put a special star or sticker on the picture every time you do a poo in the toilet”. Brock liked this idea.
This is what happens when Brock has something to eat

When Brock eats food it goes down a long tube to Brock's tummy.

As it goes down the tube, Brock's body takes all the goodness it needs.

The left over bits of food that Brock's body does not need go all the way down the long tube to his bottom.

Soon his bottom gets full up of left over bits of food.

How does Brock know when his bottom is full?

Brock knows when his bottom is full because he gets a tickle in his tummy.

Sometimes Brock ignores the tickle in his tummy and he does not go and do a poo.

When Brock gets a tickle in his tummy, this means that he needs to go and do a poo in the toilet.

When Brock gets a tickle in his tummy, this means that he needs to go and do a poo in the toilet.

The more tickles in Brock's tummy that Brock ignores, the more poo there is in his bottom. This is when Brock may start to have an accident.
Brock decides "I will be a brave badger and try to do all my poos in the toilet." The wise owls told Brock "You must tell mummy or daddy if it is ever difficult to do a poo". Brock replied "I promise I will".

The wise owls told mummy she was sensible not to get cross with Brock for having an accident. They also told mummy and daddy to help Brock to clean up and change his clothes as soon as an accident has happened.

Brock and mummy went home very excited about Brock's picture. The wise owls said Brock could colour them in when they got home. Every time Brock did a poo on the toilet Brock's mummy and daddy gave him a star for Brock's starchart. They were very pleased with him.
Brock went to see the wise owls a few times after that, with the special pictures. Brock's pictures had lots of stars on them. Do you know why?

Yes! Because when Brock feels a tickle in his tummy he goes straight to the toilet and does a poo. Mummy and daddy are very pleased with Brock. They said “Brock, you are a very special badger”. The wise owls tell Brock. “If you always do a poo as soon as you get a tickle in your tummy, you will soon stop having accidents”.

**QUIZ TIME**

1. How do you know when a poo is ready to come out?

2. What do you do if you get a tickle in your tummy?

3. What happens if you don’t push a poo out when you get a tickle in your tummy?

4. What do you get if you do a poo in the toilet?
## Appendix III - Assessment Measures

### Appendix III.i Completed by Carers:

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Choice Knowledge Questionnaire</td>
<td>184</td>
</tr>
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<td>Carer - Feeling Scale</td>
<td>189</td>
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<td>- Impact of Soiling</td>
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<td>- Reason for soiling</td>
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<tr>
<td>Current Presentation Questionnaire I</td>
<td>197</td>
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<tr>
<td>Current Presentation Questionnaire II</td>
<td>210</td>
</tr>
</tbody>
</table>

### Appendix III.ii Completed by Child:

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Page</th>
</tr>
</thead>
<tbody>
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<td>218</td>
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<td>Child: - Self-image Profile</td>
<td>221</td>
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<tr>
<td>- Family Attitudes Scale</td>
<td>223</td>
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<tr>
<td>- Impact of Soiling</td>
<td>225</td>
</tr>
<tr>
<td>- Reason for soiling</td>
<td>227</td>
</tr>
</tbody>
</table>
Appendix III.i Completed by Carers

Multiple Choice Knowledge Questionnaire
- Carer - Feeling Scale
  - Family Attitudes Scale
  - Impact of Soiling
  - Reason for soiling
Current Presentation Questionnaire I
Current Presentation Questionnaire II
Multiple Choice Knowledge Questionnaire.
ENCOPRESIS RESEARCH

Multiple Choice Knowledge Questionnaire

Please answer the following questions as honestly as possible.
Family Background Information

FATHER'S AGE:
- Less than 20 yrs. old □
- 20 - 29 yrs. □
- 30 - 39 yrs. □
- 40 and over □

PROFESSION: (father)

MOTHER'S AGE:
- Less than 20 yrs. old □
- 20 - 29 yrs. □
- 30 - 39 yrs. □
- 40 and over □

PROFESSION: (mother)

CHILD'S NAME:

CHILD'S DATE OF BIRTH:

NUMBER OF CHILDREN IN THE CURRENT FAMILY HOME:

POSITION OF CHILD IN FAMILY (e.g. first, second, etc.):

PARENT'S CURRENT MARITAL STATUS:
- Single □
- Married □
- Cohabiting □
- Separated □
- Divorced □

QUESTIONNAIRE COMPLETED BY:
- Mother □
- Father □
- Jointly by Mother and Father □

DATE: .........................................................

2 of 4
**Multiple Choice Questionnaire**

Please answer the following questions selecting only one response for each question.

<table>
<thead>
<tr>
<th>Question</th>
<th>Boys</th>
<th>Girls</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Soiling difficulties are more common in:</strong></td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Boys</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Girls</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Are equally common in boys and girls</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>2. Drinking 6 - 8 cups of fluid each day will help to lead to a child</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Diarrhoea</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Constipation</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ A normal soft and formed motion</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>3. As a result of taking Sennokot:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Motions become softer</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Motions are more difficult to retain</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ Motions are neither more difficult to retain nor softened</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>4. If a carer gets cross with their child when they discover that they have soiled themselves, this will:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ make the child more likely to tell when they soil themselves</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ make the child less likely to tell when they soil themselves</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ make no difference as to whether a child tells when they have soiled themselves</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>5. If a child retains their faeces, this will:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ make it more likely that they present with constipation</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ make it more likely that they present with diarrhoea</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ not change the consistency of their stools/motions</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>6. Fibre in a child's diet will help to make them:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ have their bowels open more regularly</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ have their bowels open less regularly</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ not effect the frequency with which they have their bowels open</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>7. If a carer gives rewards to their child when they pass a motion appropriately in the toilet, this will:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ make the child more likely to tell when they soil themselves</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ make the child more likely to do this again</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ make no difference at all to a child’s toileting behaviour</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td><strong>8. If a child experiences pain when they have their bowels open, this is likely to make:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ them retain their motions and delay having their bowels open for as long as possible</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ them have their bowels open more frequently as soon as they need to do</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
<tr>
<td>□ no difference to the frequency with which they have their bowels open</td>
<td>☐</td>
<td>☐</td>
<td>☑</td>
</tr>
</tbody>
</table>
9. When a child presents with soiling accidents due to “overflow,” this is due to:
   the anatomy of their bowels □
   them having diarrhoea □
   them being constipation □

10. Asking a child to blow up a balloon while they are sitting on the toilet will:
    not make any difference as to whether they have their bowels open or not □
    help them to learn which muscles to use to have their bowels open □
    give them something to do while they are waiting to have their bowels open □

11. If a child has a soiling accident their carers should:
    wait for their child to come and tell them that they need changing □
    let their child finish their current activity and then help them to change □
    ensure that their child gets changed as soon as possible □

12. If a child has been prescribed some medicine to help them pass a motion, they should:
    only be given it on those days that they remember to come and ask for it □
    only take it if they have not had their bowels open that day □
    take it regularly as directed by the doctor to help their body get into a rhythm □

13. One of the best indicators that a child is beginning to overcome their soiling difficulties is when:
    they start to put on weight □
    they stop telling their carers that they have been to the toilet to have their bowels open □
    they start to tell their carers that they have had a soiling accident □

14. The longer a child retains their motions in their rectum the more the body is able to:
    absorb nutrients from the motions □
    absorb water from the motions □
    absorb both water and nutrients from the motions □

15. As a result of taking Lactulose:
    Motions are more difficult to retain □
    Motions are neither more difficult to retain nor softened □
    Motions become softer □

16. Why should a child not exclusively drink large amounts of cow’s milk.
    The high level of fat in it may contribute to the development of diarrhoea □
    The low level of roughage in it may contribute to the development of constipation □
    The amount of milk a child drinks will not affect their bowel function □
Carer Feeling Scale
Parent/Carer Scale

Feelings Scale

Child's Name:....................................... Date:........................

Carer's Name:..........................................

Please read each of the following statements and circle one response (NO, SOMETIMES, YES) depending on how true you currently feel each statement is for you.

1. I feel sorry for any child who soils their pants NO SOMETIMES YES
2. I try to help him/her not to be upset NO SOMETIMES YES
3. It's a pity the soiling accidents stops him/her doing so many things NO SOMETIMES YES
4. It's embarrassing for him/her to have soiling accidents in their pants NO SOMETIMES YES
5. I don't mind the washing because he/she can't help it NO SOMETIMES YES
6. I tell him/her it doesn't matter NO SOMETIMES YES
7. Children who have soiling accidents in their pants usually get better on their own, if given enough time NO SOMETIMES YES
8. I find it difficult to get used to my child having soiling accidents in their pants NO SOMETIMES YES
9. After a soiling accident I show him/her I am disappointed. NO SOMETIMES YES
10. I try to make him/her realise the unpleasantness that their soiling accidents causes for others NO SOMETIMES YES
11. The soiling accidents are a nuisance to the rest of us NO SOMETIMES YES
12. I don't see why my child can't be clean when other children can NO SOMETIMES YES
13. Children could stop soiling their pant if they tried hard enough NO SOMETIMES YES
14. If he/she grew up a bit we wouldn't have all the trouble with soiling accidents NO SOMETIMES YES
15. I punish my child for soiling their pants NO SOMETIMES YES
16. A smack following a soiling accident never did any harm NO SOMETIMES YES
Carer Family Attitudes Scale
Parent/Carer Scale

Family Attitudes Scale

Name: ........................................... Date: ..........................

Child's Name: ...........................................

Please fill in the names of the people who live with your child at home.

Put a tick (✓) in the box under those names, if anyone, who responds to any soiling accident that might occur in the way indicated in each of the statements (1 - 10).

### After a soiling accident:

<table>
<thead>
<tr>
<th></th>
<th>Family Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Who feels sorry for your child who soils</td>
</tr>
<tr>
<td>2.</td>
<td>Who thinks it's a pity it stops your child who soils from doing so many things</td>
</tr>
<tr>
<td>3.</td>
<td>Who tries to help your child who soils not to be upset about their soiling accidents</td>
</tr>
<tr>
<td>4.</td>
<td>Who recognises that your child who soils may not be able to help it</td>
</tr>
<tr>
<td>5.</td>
<td>Who says the soiling behaviour does not matter</td>
</tr>
<tr>
<td>6.</td>
<td>Who shows their disappointment</td>
</tr>
<tr>
<td>7.</td>
<td>Who thinks it is a nuisance</td>
</tr>
<tr>
<td>8.</td>
<td>Who feels that the child who soils does not try hard enough</td>
</tr>
<tr>
<td>9.</td>
<td>Who thinks that the child who soils should grow up a bit</td>
</tr>
<tr>
<td>10.</td>
<td>Who punishes/teases the child who soils about their soiling accidents</td>
</tr>
</tbody>
</table>
Carer Impact of Soiling
# Parent/Carer Scale

## Impact of Soiling

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> ..................................................</td>
<td><strong>Date:</strong> .........................</td>
<td></td>
</tr>
<tr>
<td><strong>Child's Name:</strong> ........................................</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please read each of the following statements and indicate how much you think it currently applies to your child who soils by circling one response (No, Sometimes, Yes) for each statement.

1. They create a lot of extra washing | NO | SOMETHINES | YES |
2. They feel uncomfortable when they have had a soiling accident | NO | SOMETHINES | YES |
3. Their clothes smell | NO | SOMETHINES | YES |
4. They have to go and have a bath or shower | NO | SOMETHINES | YES |
5. They have to keep their friends out of their room | NO | SOMETHINES | YES |
6. They have to be careful about what they eat | NO | SOMETHINES | YES |
7. They have to change themselves | NO | SOMETHINES | YES |
8. I send them to the toilet alot | NO | SOMETHINES | YES |
9. They have to change themselves straight away | NO | SOMETHINES | YES |
10. I get upset with them | NO | SOMETHINES | YES |
11. Brothers/Sisters/Friends tease them | NO | SOMETHINES | YES |
12. They get upset about the soiling accidents | NO | SOMETHINES | YES |
13. They worry that others might find out | NO | SOMETHINES | YES |
14. They feel different to their friends | NO | SOMETHINES | YES |
15. Going round to their friend's house to play is impossible | NO | SOMETHINES | YES |
16. Having friends to play at their house is difficult | NO | SOMETHINES | YES |
17. School trips are out | NO | SOMETHINES | YES |
Carer Reason for Soiling
Parent/Carer Scale

Reasons for Soiling

Name: .............................................. Date: ............... 
Child's Name: .................................... 

Please read each of the following statements and indicate how much you agree or disagree with them by circling the number along the scale that best describes the reason you think your child has soiling accidents. The more you agree with the statement then the higher your rating will be.

The reason my child has soiling accidents is:

<table>
<thead>
<tr>
<th></th>
<th>Disagree with alot</th>
<th>No strong opinion either way</th>
<th>Agree with alot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Something is wrong with their bowels</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. They often get tummy bugs</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. They make too much faecal matter/poo</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. They can't hold onto their faecal matter/poo</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Their bowels empty before they are full</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Having soiling accidents runs in the family</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Their bowels are not fully developed yet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. They don't like using the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. They don't notice when their bowels are full</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Soiling accidents occur when they get upset or worried</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. They are afraid to use the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. It's too much effort for them to try and stay clean</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. They can't be bothered to use the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. They leave it too long before they go to the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. When they eat certain foods</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. They do it to get attention</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. They do it to make me angry</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Unknown cause beyond my child's control</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. They are hyperactive</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. They are reluctant to &quot;grow up&quot;</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Some other reason Please specify: ..................................</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Current Presentation Questionnaire I
Encopresis Research

Current Presentation Questionnaire I

Please answer the following questions as honestly as possible.

The questions refer to how your child has been over the last three months.

Child's Name:..........................

Questionnaire completed by:..........................

Date:..................................
Section A - Soiling

1. Does your child currently have soiling 'accidents'?  
   - Yes □
   - No □
   *If no go to Section B on next page*

2. On average how frequently does your child have soiling 'accidents'?  
   - Less than once a week □
   - Once a week □
   - 2 - 3 times a week □
   - Once a day □
   - More than once a day □

3. What is the most common time of the day or night for your child to have a soiling 'accident'? (Tick one box only)
   - Morning □
   - Noon - 3 pm □
   - 3 - 6 pm □
   - 6 - 9 pm □
   - During sleep □
   - Randomly across day □

4. Does your child have any soiling 'accidents' when they are asleep at night? □ □ □

5. Does your child have any soiling 'accidents' at school? □ □ □

6. Does your child have any soiling 'accidents' in a car or bus? □ □ □

7. Does your child have any soiling 'accidents' while in the bath? □ □ □

8. What is your child usually doing when they have a soiling 'accident'? (e.g. playing, watching television - please specify)  
   .................................................................
9. Which terms best describe(d) your child's soiling accidents? (tick as many boxes as apply)

- Just a stain or mark
- Small and loose
- Large and loose
- Small pellets
- 'Hard Rocks'
- Full Bowel movement
- Very variable
- Mixed with urine
- Other - please specify

10. Has your child ever had any periods in their life where they have gone for two weeks or more, without having any soiling 'accidents'?  

   Yes   ☐  
   No    ☐

If yes, what is the longest period of time that your child has gone for without having any soiling 'accidents'?  

- Less than 2 weeks
- 2 - 4 weeks
- 4 - 6 weeks
- 6 - 8 weeks
- 8 - 12 weeks
- 12 - 16 weeks
- 16 - 20 weeks
- More than 20 weeks please specify:............

11. At what age was your child toilet trained as far as their bowels are concerned?  (Please tick one box only)

   Never   ☐  
   By 18 months   ☐  
   18 months - 2 years   ☐  
   2 years - 2½ years   ☐  
   2½ years - 3 years   ☐  
   3 years - 4 years   ☐  
   4 years - 5 years   ☐  
   After 5 years   ☐
12. How long has your child been presenting with soiling 'accidents'? (Please tick one box only)

- All their life
- Less than 6 months
- 6 - 12 months
- 1 - 3 years
- 3 - 5 years
- 5 - 7 years
- More than 7 years

13. Where did you get your information on toilet training from?

- Child's Grandparents
- Other relatives
- Friends
- Health Professionals (GP, Health Visitor etc.)
- Books
- Magazines
- Other - please specify: ........................................

14. What were your initial expectations as to when your child would be toilet trained as far as their bowels were concerned? (Please tick one box only)

- Not sure
- By 18 months
- 18 months - 2 years
- 2 years - 2½ years
- 2½ years - 3 years
- 3 years - 4 years
- 4 years - 5 years
- After 5 years
SPECIAL NOTE

THE FOLLOWING IMAGE IS OF POOR QUALITY DUE TO THE ORIGINAL DOCUMENT.

THE BEST AVAILABLE IMAGE HAS BEEN ACHIEVED.
15. What are your current expectations as to how long it will be before your child is toilet trained as far as their bowels are concerned? (Please tick one box only)

- Not sure □
- In 6 months □
- 6 - 12 months □
- 12 - 18 months □
- 18 - 24 months □
- 2 - 3 years □
- More than 3 years □
- Never □

**Section B - Retention**

16. On average how often does your child have their bowels open? (Please tick one box only)

- More than once a day □
- Once a day □
- Every 2 days □
- Twice a week □
- Once a week □
- Less than weekly □

17. On average how often does your child have their bowels open in the toilet? (Please tick one box only)

- More than once a day □
- Once a day □
- Every 2 days □
- Twice a week □
- Once a week □
- Less than weekly □
- Never □
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.</td>
<td>Does your child ever get constipated?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>19.</td>
<td>Are there motions hard?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>20.</td>
<td>Have their motions ever blocked the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>21.</td>
<td>Does your child ever need to strain a lot to pass a motion (have their bowels open)?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>22.</td>
<td>Does your child ever say that it is painful to pass a motion?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>23.</td>
<td>Has your child ever passed motions with bright red blood on them?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>24.</td>
<td>Does your child ever pass loose or watery motions?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

**Section C - Toilet Training**

25. At what age did you start to toilet train your child as far as their bowels were concerned? (Please tick one box only)

- Under 1 year
- 12 - 18 months
- 18 - 24 months
- 2 - 3 years
- 3 - 4 years
- 4 - 5 years
- Over 5 years

26. How long did it take to complete your child’s toilet training as far as their bowels were concerned? (Please tick one box only)

- Less than a week
- 1 - 4 weeks
- 1 - 6 months
- 6 - 9 months
- 9 - 12 months
- More than a year
- Still not completed
27. How difficult did you find it to toilet train your child as far as their bowels were concerned? (Please tick one box only)

Surprisingly easy □
Not too difficult □
Difficult □
'Impossible' □

28. When you were trying to toilet train your child as far as their bowels were concerned, did you ever punish them as a result of any difficulties you encountered? (Please tick one box only)

Never □
Sometimes □
Often □

29. Did you reward or praise your child for doing well when you were trying to toilet train your child as far as their bowels were concerned?

Often □
Sometimes □
Never □

30. Where were any domestic difficulties at home during the period that you were trying to toilet train your child as far as their bowels were concerned?

No □
Moderate □
Severe □

31. During the period that you were trying to toilet train your child as far as their bowels were concerned:

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>
a) Was there any change in the adult carers looking after your child? □ □
b) Was a brother or sister born? □ □
c) Did you have to stop and restart the training process at any point? □ □
d) Was your child having any difficulties with constipation? □ □
e) Did your child complain of frequent ‘tummyaches’? □ □
f) Was a potty chair used? □ □
g) Did your child ever sit on a normal toilet with their feet suspended in the air? □ □
32. Did your child ever express any fear of the toilet while they were being toilet trained?
   - No □
   - Sometimes □
   - Often □

33. When was your child dry by night (out of nappies at night)?
   - Under 18 months □
   - 18 - 24 months □
   - 2 - 4 years □
   - 4 - 5 years □
   - Over 5 years □
   - Still wet by night (still in nappies) □

**Section D - Symptoms**

34. Did your child present with any of the following symptoms during the first two years of their life? (Please tick as many as apply)
   - Hard motions □
   - Colic □
   - Difficulty having their bowels open □
   - Excessive crying □
   - Trouble sleeping □
   - Blood on their motions □
   - Severe diarrhoea □
   - Bad nappy rash □
   - Feeding difficulties □

35. Did your child have any of the following ‘treatment’ for stomach or bowel difficulties during the first two years of their life? (Please tick as many as apply and write in the details of the treatment your child received.)
   - Mineral Oil (e.g. Liquid Paraffin) □
   - Laxatives □
   - Suppositories □
   - Enemas □
   - Surgery □
   - Hospital admission □
   - Special diet(s) □
   - Stretching of the rectum □
SPECIAL NOTE

THE FOLLOWING IMAGE IS OF POOR QUALITY DUE TO THE ORIGINAL DOCUMENT.

THE BEST AVAILABLE IMAGE HAS BEEN ACHIEVED.
Section E - Previous Management

36. Has your child had any of the following interventions in order to try and overcome their soiling difficulties? (Please tick as many as apply and write in the dates they occurred if you can recall them.)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Doctor's medical 'Check-up'</td>
<td></td>
</tr>
<tr>
<td>Hospital admission</td>
<td></td>
</tr>
<tr>
<td>Barium enema</td>
<td></td>
</tr>
<tr>
<td>Psychological tests</td>
<td></td>
</tr>
<tr>
<td>Psychiatric assessment</td>
<td></td>
</tr>
<tr>
<td>Rectal pressure test</td>
<td></td>
</tr>
</tbody>
</table>

37. Which of the following 'treatments' has your child received in order to try and help them overcome their soiling difficulties? (Please tick as many as apply giving dates they occurred if you can recall them.)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Hospital admission</td>
<td></td>
</tr>
<tr>
<td>Mineral Oil (e.g. Liquid Paraffin)</td>
<td></td>
</tr>
<tr>
<td>Laxatives</td>
<td></td>
</tr>
<tr>
<td>Suppositories</td>
<td></td>
</tr>
<tr>
<td>Enemas at home</td>
<td></td>
</tr>
<tr>
<td>Regular prompting to use the toilet</td>
<td></td>
</tr>
<tr>
<td>Monitor weight</td>
<td></td>
</tr>
<tr>
<td>Monitor appetite</td>
<td></td>
</tr>
<tr>
<td>Special diet(s)</td>
<td></td>
</tr>
<tr>
<td>- High fibre diet (increased fruit and/or Bran)</td>
<td></td>
</tr>
<tr>
<td>- Increased fluid intake</td>
<td></td>
</tr>
<tr>
<td>- Cows' milk free diet</td>
<td></td>
</tr>
<tr>
<td>Medicine to slow bowel functioning</td>
<td></td>
</tr>
<tr>
<td>Clinical Psychology input</td>
<td></td>
</tr>
</tbody>
</table>
38. Which of the following 'coping strategies' have you tried? (Please tick as many boxes as necessary.)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Ticked</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>□</td>
</tr>
<tr>
<td>Make child wash out their soiled underwear</td>
<td>□</td>
</tr>
<tr>
<td>Punishment for soiling accidents</td>
<td>□</td>
</tr>
<tr>
<td>Rewards for appropriate toileting behaviour</td>
<td>□</td>
</tr>
<tr>
<td>Make child wash their own body after soiling accidents</td>
<td>□</td>
</tr>
<tr>
<td>Showing my child that I am cross and angry with them for having had a soiling accident</td>
<td>□</td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td>□</td>
</tr>
</tbody>
</table>

**Section F - Avoidance**

39. Which of the following is true of your child's use of the toilet over the last 3 months?

<table>
<thead>
<tr>
<th>Concern</th>
<th>Never true</th>
<th>Used to be true</th>
<th>True now</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Does not like to sit on the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b) Does not like to use the toilet at school?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c) Tends to rush in and out of the toilet (spending very little time on the toilet)?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d) Avoids / refuses to use toilet away from home?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e) Does not like to flush the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f) Expresses fear of the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g) Waits until the last minute to urinate?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h) Sometimes wets underwear during the day?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i) Other concern or apparent reluctance to use the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
SPECIAL NOTE

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**Section G - Family**

40. Do bowel problems run in your family?
   - Yes □
   - No □

41. Are there any other members of your family who have had difficulty in gaining bowel or bladder control?
   - Yes □
   - No □

If yes please give details:

**Section H - Consequences for child**

42. Does your child get teased about their soiling accidents?
   - Never □
   - Occasionally □
   - Often □

43. Do your child's toileting difficulties cause disagreement or conflict in your family?
   - Yes □
   - No □
   - Don't Know □

44. Does your child know any other children who have similar difficulties?
   - Yes □
   - No □
   - Don't Know □

45. Do you know any other children who have similar difficulties?
   - □

46. Which of the following best describes your child's own way of coping with their soiling 'accidents'?
   - False □
   - True □
   - Don't know □
   a) Denies it is a problem?
   b) Sometimes hides soiled underwear?
   c) Does not want to change soiled underwear after a soiling 'accident'?
   d) Gets upset after a soiling 'accident'?
   e) They say that they do not know when they need to go to the toilet?

47. How much fluid does your child drink each day?
   - Less than 1 pint (½ litre) □
   - 1 - 2 pints (½ - 1 litre) □
   - 2 - 3 pints (1 - 1½ litres) □
   - 3 - 4 pints (1½ - 2 litres) □
   - More than 4 pints (2 litres) □
SPECIAL NOTE

THE FOLLOWING IMAGE IS OF POOR QUALITY DUE TO THE ORIGINAL DOCUMENT. THE BEST AVAILABLE IMAGE HAS BEEN ACHIEVED.
48. Has your child's appetite changed at all compared to what it was three months ago:

- a) the amount that they drink each day? □ □ □
- b) the amount that they eat? □ □ □
- c) the amount of dietary roughage/fibre that they eat? □ □ □

49. Does your child's day to day activity level seem to have changed over the last three months □ □ □

THANK-YOU FOR YOUR HELP AND CO-OPERATION IN COMPLETING THIS QUESTIONNAIRE.
Current Presentation Questionnaire II
Encopresis Research

Current Presentation Questionnaire II

Please answer the following questions as honestly as possible.
The questions refer to how your child has been over the last three months.

Child's Name:.............................

Questionnaire completed by:..............................

Date:........................................

Office use only:
Section A - Soiling

1. Does your child currently have soiling 'accidents'? Yes □ No □ If no go to Section B on next page

2. On average how frequently does your child have soiling 'accidents'?
   - Less than once a week □
   - Once a week □
   - 2 - 3 times a week □
   - Once a day □
   - More than once a day □

3. What is the most common time of the day or night for your child to have an soiling 'accident'? (Tick one box only)
   - Morning □
   - Noon - 3 pm □
   - 3 - 6 pm □
   - 6 - 9 pm □
   - During sleep □
   - Randomly across day □

4. Does your child have any soiling 'accidents' when they are asleep at night? Never □ Sometimes □ Often □
5. Does your child have any soiling 'accidents' at school? Never □ Sometimes □ Often □
6. Does your child have any soiling 'accidents' in a car or bus? Never □ Sometimes □ Often □
7. Does your child have any soiling 'accidents' while in the bath? Never □ Sometimes □ Often □
8. What is your child usually doing when they have a soiling 'accident'? (e.g. playing, watching television - please specify)
9. Which terms best describe(d) your child's soiling accidents? (tick as many boxes as apply)
   - Just a stain or mark
   - Small and loose
   - Large and loose
   - Small pellets
   - 'Hard Rocks'
   - Full Bowel movement
   - Very variable
   - Mixed with urine
   - Other - please specify

10. Has your child ever had any periods in their life where they have gone for two weeks or more, without having any soiling 'accidents'?
   - Yes
   - No
   If yes, what is the longest period of time that your child has gone for without having any soiling 'accidents'?
   - Less than 2 weeks
   - 2 - 4 Weeks
   - 4 - 6 weeks
   - 6 - 8 weeks
   - 8 - 12 weeks
   - 12 - 16 weeks
   - 16 - 20 weeks
   - More than 20 weeks
   - please specify: .......... 

11. What are your current expectations as to how long it will be before your child is toilet trained as far as their bowels are concerned? (Please tick one box only)
   - Not sure
   - In 6 months
   - 6 - 12 months
   - 12 - 18 months
   - 18 - 24 months
   - 2 - 3 years
   - More than 3 years
   - Never
Section B - Retention

12. On average how often does your child have their bowels open? (Please tick one box only)

   More than once a day □
   Once a day □
   Every 2 days □
   Twice a week □
   Once a week □
   Less than weekly □

13. On average how often does your child have their bowels open in the toilet? (Please tick one box only)

   More than once a day □
   Once a day □
   Every 2 days □
   Twice a week □
   Once a week □
   Less than weekly □
   Never □

   Never Rarely Sometimes Often Frequently

14. Does your child ever get constipated? □ □ □ □ □

15. Are there motions hard? □ □ □ □ □

16. Have their motions ever blocked the toilet? □ □ □ □ □

17. Does your child ever need to stain a lot to pass a motion (have their bowels open)? □ □ □ □ □

18. Does your child ever say that it is painful to pass a motion? □ □ □ □ □

19. Has your child ever passed motions with bright red blood on them? □ □ □ □ □

20. Does your child ever pass loose or watery motions? □ □ □ □ □
Section F - Avoidance

21. Which of the following is true of your child's use of the toilet over the last 3 months?

<table>
<thead>
<tr>
<th></th>
<th>Never true</th>
<th>Used to be true</th>
<th>True now</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Does not like to sit on the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b) Does not like to use the toilet at school?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c) Tends to rush in and out of the toilet (spending very little time on the toilet)?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d) Avoids / refuses to use toilet away from home?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e) Does not like to flush the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f) Expresses fear of the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g) Waits until the last minute to urinate?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h) Sometimes wets underwear during the day?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i) Other concern or apparent reluctance to use the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Section H - Consequences for child

22. Does your child get teased about their soiling accidents?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Occasionally</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

23. Do your child's toileting difficulties cause disagreement or conflict in your family?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

24. Does your child know any other children who have similar difficulties?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

25. Do you know any other children who have similar difficulties?

<table>
<thead>
<tr>
<th></th>
<th>False</th>
<th>True</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

26. Which of the following best describes your child's own way of coping with their soiling 'accidents'?

<table>
<thead>
<tr>
<th></th>
<th>False</th>
<th>True</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Denies it is a problem?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b) Sometimes hides soiled underwear?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c) Does not want to change soiled underwear after a soiling 'accident'?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d) Gets upset after a soiling 'accident'?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e) They say that they do not know when they need to go to the toilet?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
27. How much fluid does your child drink each day?

- Less than 1 pint (½ litre) □
- 1 - 2 pints (½ - 1 litre) □
- 2 - 3 pints (1 - 1½ litres) □
- 3 - 4 pints (1½ - 2 litres) □
- More than 4 pints (2 litres) □

28. Has your child’s appetite changed at all compared to what it was three months ago:

<table>
<thead>
<tr>
<th></th>
<th>Less</th>
<th>Unchanged</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) the amount that they drink each day?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b) the amount that they eat?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c) the amount of dietary roughage /fibre that they eat?</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

29. Does your child’s day to day activity level seem to have changed over the last three months □ □ □

THANK-YOU FOR YOUR HELP AND CO-OPERATION IN COMPLETING THIS QUESTIONNAIRE.
Appendix III.ii

Child Knowledge Questionnaire
Child: - Self-image Profile
      - Family Attitudes Scale
      - Impact of Soiling
      - Reason for soiling
Child Knowledge Questionnaire
Soiling Research

Child Knowledge Questionnaire

Please answer the following questions as honestly as possible.

The questions refer to your child’s current understanding of their toileting difficulties.

Questionnaire completed by: ............................................................... Child’s Name:

Date: .....................................................................................................
1. How do you know when you are ready to pass a motion/do a poo?

2. What do you do if you get a tickle in your tummy?

3. What happens if you don't pass a motion/do a poo when you get a tickle in your tummy?

4. What happens to the tickle in your tummy when you have passed a motion/have done a poo?

5. How much do you think each of the following things might help you to have fewer accidents? (In each case please tick how much the treatment/advice might help.)

<table>
<thead>
<tr>
<th>I don't know</th>
<th>No help at all</th>
<th>Of little help</th>
<th>Of some help</th>
<th>Very helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

a) Changes in your diet:
   e.g. - eating more fibre
   - eating fewer sweets and/or not drinking
   more than a pint of milk a day
   - drinking more water

b) trying to do a poo/motion after a meal

c) using a star chart to encourage you to pass a motion/do a poo in the toilet

d) using any special medicine
   If yes, what..................................................

e) using other medicines or foods
   (please explain): ..........................................

f) talking to the Doctor

g) talking to the Clinical Psychologist

h) talking to your parents

i) Other treatment or advice
   (please explain): ..........................................

THANK-YOU FOR YOUR HELP AND CO-OPERATION
IN COMPLETING THIS QUESTIONNAIRE.
Child Self-image Profile
**Child Scale**

**Self-image Profile**

Name:......................................... Date:..........................

There are no right or wrong answers to this quiz.

Please rate how you currently feel about yourself by shading one of the seven boxes next to each word. The more that you feel that a word correctly describes how you currently feel about yourself then the higher your rating will be.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1. Kind</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Friendly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Confident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Happy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Lively</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Helpful</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Honest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Tidy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Feel different from others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Lazy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Lonely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Stubborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Moody</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Worrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Nervous</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Shy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Easily upset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Frightened</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Bad tempered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Angry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Child Family Attitudes Scale
**Child Scale**

**Family Attitudes Scale**

Name:.............................................................. Date:.........................

Please fill in the names of the people who live in your home.

Put a tick (✓) in the box under those names, if anyone, who responds to any soiling accident you might have in the way indicated in each of the statements (1 - 10).

### After a soiling accident:

<table>
<thead>
<tr>
<th></th>
<th>Family Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Who feels sorry for me</td>
</tr>
<tr>
<td>2.</td>
<td>Who thinks it's a pity it stops me from doing so many things</td>
</tr>
<tr>
<td>3.</td>
<td>Who tries to help me not to be upset</td>
</tr>
<tr>
<td>4.</td>
<td>Who recognises I may not be able to help it</td>
</tr>
<tr>
<td>5.</td>
<td>Who says it does not matter</td>
</tr>
<tr>
<td>6.</td>
<td>Who shows their disappointment</td>
</tr>
<tr>
<td>7.</td>
<td>Who thinks it is a nuisance</td>
</tr>
<tr>
<td>8.</td>
<td>Who feels I do not try hard enough</td>
</tr>
<tr>
<td>9.</td>
<td>Who thinks I should grow up a bit</td>
</tr>
<tr>
<td>10.</td>
<td>Who punishes/teases me</td>
</tr>
</tbody>
</table>
Child Impact of Soiling
Child Scale

Impact of Soiling

Name: ............................................ Date: ..........................

Please read each of the following statements and indicate how much you think it currently applies to you by circling one response (No, Sometimes, Yes) for each statement.

1. Mum has a lot of extra washing
   - No
   - Sometimes
   - Yes

2. I feel uncomfortable when I have had a soiling accident
   - No
   - Sometimes
   - Yes

3. My clothes smell
   - No
   - Sometimes
   - Yes

4. I have to go and have a bath or shower
   - No
   - Sometimes
   - Yes

5. I have to keep my friends out of my room
   - No
   - Sometimes
   - Yes

6. I have to be careful about what I eat
   - No
   - Sometimes
   - Yes

7. I have to change myself
   - No
   - Sometimes
   - Yes

8. I get sent to the toilet a lot
   - No
   - Sometimes
   - Yes

9. I have to change myself straight away
   - No
   - Sometimes
   - Yes

10. Mum/Dad get upset with me
    - No
    - Sometimes
    - Yes

11. Brothers/Sisters/Friends tease me
    - No
    - Sometimes
    - Yes

12. I get upset about the soiling accidents
    - No
    - Sometimes
    - Yes

13. I’m afraid others might find out
    - No
    - Sometimes
    - Yes

14. I feel different to my friends
    - No
    - Sometimes
    - Yes

15. Going round to my friend’s house to play is impossible
    - No
    - Sometimes
    - Yes

16. Having friends to play at my house is difficult
    - No
    - Sometimes
    - Yes

17. School trips are out
    - No
    - Sometimes
    - Yes
Child Reason for Soiling
SPECIAL NOTE

THE FOLLOWING IMAGE IS OF POOR QUALITY DUE TO THE ORIGINAL DOCUMENT.

THE BEST AVAILABLE IMAGE HAS BEEN ACHIEVED.
**Child Scale**

**Reasons for Soiling**

Name:............................... Date:..................

Please read each of the following statements and indicate how much you agree or disagree with them by colouring the number along the scale that best describes the reason you have soiling accidents. The more you agree with the statement then the higher your rating will be.

The reason my child has soiling accidents is:

<table>
<thead>
<tr>
<th></th>
<th>Disagree with alot</th>
<th>No strong opinion either way</th>
<th>Agree with alot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Something is wrong with my bowels</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I often get tummy bugs</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I make too much 'poo'</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I can't hold onto my 'poo'</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>My bowels empty before they are full</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Having soiling accidents runs in the family</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>My bowels are not fully developed yet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I don't like using the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I don't notice when my bowels are full</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>When I get upset or worried</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I'm afraid to use the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>It's too much effort to try and stay clean</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I can't be bothered to use the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I leave it too long before I go to the toilet</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>When I eat certain foods</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I do it to get attention</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I do it to make people angry</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Unknown cause beyond my control</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I am hyperactive</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I am reluctant to &quot;grow up&quot;</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Some other reason Please specify:..........................</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
</tr>
</tbody>
</table>
Appendix IV - Pilot Study Letters

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Appendix IV.i - Initial Letter to Schools
Dear Mr./Mrs. Other,

Re: Encopresis (Soiling) Research

I am writing to you to ask for your help with some research I am currently carrying out as part of my work for North Warwickshire N.H.S. Trust. I am a Chartered Clinical Psychologist who works on a full-time basis in the Child and Adolescent Sector of the District Psychology Department.

Part of my responsibilities are to provide a service to children and young people who are referred to our department with soiling difficulties. Given the prevalence of soiling difficulties in children (2% of five year olds, 1.5% of seven year olds and 1% of ten year olds) I suspect that you may well have some first hand experience from some of your present or former pupils of the challenges of trying to cope with the needs of a child with soiling difficulties.

In order to try and meet the needs of children with soiling difficulties I run a joint clinic with one of the Consultant Paediatricians at the George Eliot Hospital, Nuneaton. I recently drafted two booklets, one for children the other for adults, which give some basic information about soiling and its management. Before I start to use these booklets as a routine part of the joint clinic I would like to evaluate their effectiveness; hence my current research project. Before evaluating the booklets with a “clinical” population I would like to pilot them and the questionnaires I am proposing to use with a “non-clinical” population.

I should point out that this research has full ethical approval from Warwickshire Health Authority and that all responses will be treated in the strictest confidence. The research is being conducted as part of my continuing professional development and is supervised by The University of Leicester, where I am currently registered as a postgraduate student (on a part-time basis) studying for a Doctorate in Clinical Psychology. When completed the research will be written up, but no individual subjects will be identifiable from this write-up.

My reason for writing to you is to ask whether or not you would be willing for me to approach the carers of pupils who currently attend your school to ask if they and their child would be willing to help me pilot my booklets and questionnaires? If you are prepared to consider supporting this research I would be extremely grateful and would suggest that I arrange to meet you in order to discuss the mechanics of exactly how carers are approached.

Many thanks for taking the trouble to read this letter and I look forward to hearing from you as to whether or not you feel you might be able to help me.

Yours sincerely,

David Samson
Chartered Clinical Psychologist
Appendix IV.ii - Pilot Study Information Sheet and Consent Form
Encopresis (Soiling) Research Pilot Study
Initial Information Sheet

Dear Carer(s),

Mr./Mrs. Other (Headteacher) has kindly given permission for me to write to you concerning some research that I am currently conducting.

The Paediatrics and Clinical Psychology Departments at the George Eliot Hospital, Nuneaton in conjunction with the University of Leicester are currently assessing different ways of managing the treatment of children's soiling difficulties. The research aims to evaluate the impact of using information booklets in addition to the standard treatment that children with soiling difficulties currently receive. Two booklets have been drafted one for children and one for carers.

Before using these booklets in the clinical setting I would like to hear what children and carers (who have not been referred for help with toileting difficulties,) think about the booklets and questionnaires that I intend to use. This will help me to assess how attractive and easy to read the booklets are. With this in mind I am writing to ask whether you would be willing to participate in a pilot study of the booklets and questionnaires. This pilot study would involve you and your child reading two brief information booklets and completing a number of questionnaires, both before and after you have read the booklets. You would also be invited to a one off appointment to pick up on any questions you might have.

All the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only. This will ensure that no individual participants are identifiable.

I would be grateful if you would indicate on the enclosed consent form whether or not you are happy to take part in this pilot study. Only families returning completed consent forms indicating that they are happy to take part in this study will be approached.

Thank-you for taking the time to read this information sheet. If you would like more information about this research please let me know. I can be contacted on the above number.

Yours sincerely,

David Samson
Chartered Clinical Psychologist
Dear Carer(s),

Re: Encopresis (Soiling) Research

I am writing to ask whether you would be happy for your child to take part in the initial pilot study for this research project. Both your and your child’s participation would be entirely voluntary and if you should decide at anytime that you do not wish to take part in this study, you are free to withdraw at any time.

All the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only. This will ensure that no individual participants are identifiable.

Please would you indicate below whether or not you are happy for you and your child to take part in this study.

Thank-you for your help and co-operation.

Yours sincerely,

David Samson
Chartered Clinical Psychologist

Encopresis Research Consent Form

Child’s Name: ........................................... D.o.B.: ...............
Address: ..................................................
..................................................
..................................................

I have read the Initial Information Sheet that outlines the nature of this research.

I do /do not * wish to take part in this study. Date: ..............

Carer’s signature: ...........................................

Carer’s Name: ...........................................

Child’s signature or tick: ........................................... ........................

* = please delete as appropriate
Please return using the envelope provided by 7th July 1998.
Appendix IV.iii - Consent given but not selected
Dear [Personalise to Child and Carer(s)]

**Re: Encopresis (Soiling) Research - Pilot Study**

I am writing to thank you for volunteering to take part in this research.

Due to the number of people who were kind enough to volunteer, a process of random selection was used to select individuals to take part in the Pilot Study. This process did not result in your names being selected. In view of this, provided that none of the existing volunteers withdraw from the study, I will not be contacting you to take any further part in this study. I would however like to take this opportunity to thank-you once again for volunteering, your willingness to help was much appreciated.

If you have any questions about this research please let me know.

Yours sincerely,

David Samson
Chartered Clinical Psychologist
Appendix IV.iv - Consent given and selected
Dear Personalise to Child and Carer(s)

Re: Encopresis (Soiling) Research - Pilot Study

I am writing to thank you for volunteering to take part in this research.

Due to the number of people who were kind enough to volunteer, a process of random selection was used to select individuals to take part in the Pilot Study. This process resulted in your names being selected. I would be grateful if you would complete the enclosed questionnaires and return them to me in the stamped addressed envelope provided. If possible please would you return the completed questionnaires within two weeks of receiving them. Please highlight anything that you find confusing on the questionnaires as you complete them.

Once the completed questionnaires have been returned I will send you the child and carer information booklets and an appointment date to complete two brief multiple choice questionnaires, seek any comments you might have about the information booklets and answer any questions you might have.

I would like to take this opportunity to thank-you once again for volunteering, your willingness to help is much appreciated. I look forward to meeting you in due course.

If you have any questions about this research please let me know.

Yours sincerely,

David Samson
Chartered Clinical Psychologist

Enclosures: Carers' Questionnaires:
- Multiple Choice Knowledge Questionnaire
- Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling
- Current Presentation Questionnaire I

Child's Questionnaires:
- Child Knowledge Quiz
- Self-image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling
Appendix IV.v - Reminder to return Questionnaires
Dear Personalise to Child and Carer(s)

Re: Encopresis (Soiling) Research - Pilot Study

Further to your volunteering to take part in this Pilot Study I am writing to remind you that the questionnaires I sent to you recently need to be returned as soon as possible. I am enclosing a further set of questionnaires for your use should you need them. Please use the enclosed envelope to return your completed questionnaires.

If you do not return the questionnaires within the next two weeks I will assume that you no longer wish to continue your involvement in this pilot study. If this is the case can I take this opportunity to thank-you for your help to date and reassure you that I will not contact you again about this project.

If you have any questions about this research please let me know.

Yours sincerely,

David Samson
Chartered Clinical Psychologist

Enclosures: Carers' Questionnaires:
- Multiple Choice Knowledge Questionnaire
- Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling
- Current Presentation Questionnaire I

Child's Questionnaires:
- Child Knowledge Quiz
- Self-image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for soiling
Appendix IV.vi - Information Booklets and Appointment letter
Dear Personalise to Child and Carer(s)

Re: Encopresis (Soiling) Research - Pilot Study

Thank-you for returning the questionnaires that I sent to you.

I am enclosing two information booklets, one for children, the other for carers. Please read these booklets, highlighting in them anything that you find confusing.

I would also like to invite you to a ‘debriefing’ appointment to see me on (date to be 2-4 weeks after date this letter sent) at (insert time) at Combe House, on the George Eliot Hospital site (see enclosed map). This appointment will run for about an hour and will involve you both completing a short questionnaire and briefly discussing the questionnaires and booklets you have been sent. Please bring both the child and adult information booklets with you to this appointment so that any confusing points that you may have noted in them can be addressed and clarified.

Your ‘debriefing’ appointment marks the end of your involvement in this pilot study and I would like to take this opportunity to thank-you in advance for your help in agreeing to take part in this research. Please let me know as soon as possible if you are not able to keep the above appointment so that alternative arrangements can be made.

If you have any questions about this research please let me know.

Yours sincerely,

David Samson
Chartered Clinical Psychologist

Enclosures: Carers’ Information Booklet
Children’s Information Booklet
Map
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Appendix V.i:

Initial Information and Consent Form
Dear

As you know your child has been referred to the Clinical Psychology Department at the George Eliot Hospital for help with their soiling difficulties. I have offered you an initial assessment appointment to see me on at at Combe House.

The Paediatrics and Clinical Psychology Departments at the George Eliot Hospital, Nuneaton, in conjunction with the University of Leicester are currently assessing different ways of managing the treatment of your child's condition. The study aims to evaluate a variety of different ways of presenting information and will not in any way change the treatment your child actually receives. In order to help us look at this question we are approaching the carers of all the children referred to the Clinical Psychology Department for help with soiling difficulties to see if they would be prepared to participate in this study. As part of this study, participating families will be asked to complete a set of questionnaires before their initial assessment appointment and after their first ten appointments. All the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only.

Should you decide that you do not want to take part in this study your child's current treatment will not be affected in any way. We would be grateful if you would indicate on the enclosed consent form whether or not you are happy to take part in this study. Only families returning completed consent forms indicating that they are happy to take part in this study will be included in it.

Thank you for taking the time to read this information sheet. If you have any questions concerning this research that you would like to ask before making a decision about whether or not you wish to participate in it, please contact me.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist
Dear

Re: Encopresis Research

I am writing to ask whether you would be happy for your child to take part in this research project. You and your child’s participation would be entirely voluntary and if you should decide at any time that you do not wish to take part in this study, this will not affect the treatment you and your child receive in any way.

All the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only.

Please would you indicate below whether or not you are happy for you and your child to take part in the study. If you are prepared to take part in this research please return your completed consent form (in the enclosed stamped addressed envelope) as soon as possible. If you could respond within two weeks of receipt of this letter, this will help to ensure that there is sufficient time for the initial questionnaires to be sent out to you. These questionnaires should be completed and returned in the stamped addressed envelope that will be provided.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist
Encopresis Research Consent Form

Child's Name: ________________________________
D.o.B: ________________________________

Address: ________________________________

I have read the Initial Information Sheet that outlines the nature of this research.

I do / do not * wish to take part in this study.

Date: ________________________________

Carer's signature: ________________________________

Carer's name: ________________________________

Child's signature or tick: ________________________________

* = please delete as appropriate.

Please return to David Samson, Psychology Department, Combe House,
George Eliot Hospital, College Street, Nuneaton, CV10 7DJ
Appendix V.ii:

a) Pre contact Questionnaires Letter

b) Pre contact Questionnaires Letter Reminder

c) Pre contact Questionnaires Letter - Offering assistance
a) Pre contact Questionnaires Letter
Dear

Re: Encopresis (Soiling) Research

Thank you for consenting to take part in this research project.

As part of this research project I would be grateful if you and your child would complete the enclosed questionnaires. I am interested in trying to gather accurate information about both your own and your child's current views of their toileting difficulties. The eight questionnaires for carer(s) to fill in are listed below.

Carer(s) Questionnaires:
- Child Behaviour Checklist
- Multiple Choice Knowledge Questionnaire
- Parent Stress Index
- Parent/Carer - Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling
- Current Presentation Questionnaire I.

The five questionnaires that I would like your child to complete are as follows:

Child Questionnaires:
- Child Knowledge Quiz
- Self image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling.

Please feel free to offer your child whatever help they might require to complete any of their questionnaires. You should, however, avoid answering any of the questions on behalf of your child.

Please return the completed questionnaires to me in the enclosed stamped addressed envelope. If you could return them within the next two weeks it would help to ensure that they have been completed before your initial assessment appointment to see me on (date) at (time) at Combe House.

If you have any questions concerning your participation in this research project please let me know.
Finally, may I take this opportunity to thank you for your help and co-operation in supporting this research project.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enc
b) Pre contact Questionnaires Letter - Reminder
Dear

Re: Encopresis (Soiling) Research

Further to your volunteering to take part in this research, I am writing to remind you of the questionnaires I sent to you recently. I would be very grateful if you could return them to me as soon as possible (within the next two weeks) in order to ensure that they have been completed before your initial assessment appointment to see me on (date) at Combe House.

I have enclosed a further set of questionnaires together with a stamped addressed envelope for you to return the completed questionnaires in. If a completed set of questionnaires are already on their way back to me please accept my apologies for having sent you this letter needlessly. (I would be grateful if any unused questionnaires could be returned to me at the above address.)

If you have any questions concerning your participation in this research project, please let me know.

Finally, may I take this opportunity to thank you once again for your help and co-operation in supporting this research project.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enclosures:

Carer(s) Questionnaires:
- Child Behaviour Checklist
- Multiple Choice Knowledge Questionnaire
- Parent Stress Index
- Parent - Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling

Child Questionnaires:
- Child Knowledge Quiz
- Self image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling.
c) Pre contact Questionnaires Letter - Offering assistance
Dear

Re: Encopresis (Soiling) Research

Thank you for consenting to take part in this research project.

As part of this research project I would be grateful if you and your child would complete the enclosed questionnaires. I am interested in trying to gather accurate information about both your own and your child’s current views of their toileting difficulties. The eight questionnaires for carer(s) to fill in are listed below.

Carer(s) Questionnaires:
- Child Behaviour Checklist
- Multiple Choice Knowledge Questionnaire
- Parent Stress Index
- Parent/Carer - Feeling Scale
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling
- Family Attitudes Scale
- Impact of Soiling

The five questionnaires that I would like your child to complete are as follows:

Child Questionnaires:
- Child Knowledge Quiz
- Self image Profile
- Family Attitudes Scale
- Impact of Soiling
- Reason for Soiling.

Please feel free to offer your child whatever help they might require to complete any of their questionnaires. You should, however, avoid answering any of the questions on behalf of your child.

Please return the completed questionnaires to me in the enclosed stamped addressed envelope. If the questionnaires have not been returned by (two weeks) a Psychologist will contact you to offer you and (child’s name) an appointment to visit you at home in order to ensure that the questionnaires are completed prior to your assessment appointment to see me on (date) at (time) at Combe House.
If you have any questions concerning your participation in this research project please let me know.

Finally, may I take this opportunity to thank you for your help and co-operation in supporting this research project.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enc
Appendix V.iii:

Repeat Questionnaires Letter
Dear

Re: Encopresis (Soiling) Research

Further to your volunteering to take part in this research, I am writing to ask you to complete a final questionnaire. As before, I am interested in gathering accurate information about your views of your child’s current toileting behaviour.

I would be grateful if you could return the completed questionnaire to me as soon as possible (either within the next two weeks using the enclosed stamped addressed envelope, or at your next appointment).

The completion of this final questionnaire marks the formal end of your participation in this research project. May I take this opportunity formally to thank you and your child for your help in participating in this research. If you have any questions concerning this research project and your participation in it, please let me know. I would once again like to assure you that all the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enc Current Presentation Questionnaire II
Appendix V.iv:

Discharged Repeat Questionnaires Letter
Dear

Further to my letter of (date) you will be aware that (child's name) has now been discharged from my current caseload and their case has been closed. Should you wish me to renew my contact with (child's name), I would be very happy to see (child's name) again, and I can be contacted via your Family Doctor.

Please accept my apologies for writing to you again, but I would be very grateful if you would complete the enclosed questionnaire as the final part of your participation in the research project that you kindly consented to take part in. Please let me know if you have any questions concerning this. I would like to assure you that all the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only. The completed questionnaire can be returned to me in the enclosed stamped, addressed envelope.

Once again, I would like to take this opportunity to thank you for your help and co-operation in consenting to take part in this research project.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enclosures: Current Presentation Questionnaire II
Appendix V.v:

a) Repeat Questionnaires Letter - Reminder

b) Repeat Questionnaires Letter - Offering assistance
a) Repeat Questionnaires Letter - Reminder
Dear

**Re: Encopresis (Soiling) Research**

Further to your volunteering to take part in this research, I am writing to remind you of the questionnaire I sent to you recently. I would be very grateful if you could return it to me as soon as possible, within the next two weeks or at your next outpatient appointment, as the final part of your participation in the research project that you kindly consented to take part in.

I have enclosed a further questionnaire together with a stamped addressed envelope for you to return the completed questionnaire in. If a completed questionnaire is already on its way back to me please accept my apologies for having sent you this letter needlessly. (I would be grateful if the unused questionnaire could be returned to me at the above address.)

If you have any questions concerning your participation in this research project, please let me know. I would like to assure you that all the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only.

Finally, may I take this opportunity to thank you once again for your help and co-operation in supporting this research project.

Yours sincerely

DAVID SAMSON  
Chartered Clinical Psychologist

Enclosures: Current Presentation Questionnaire II.
b) Repeat Questionnaires Letter - Offering assistance
Dear

Re: Encopresis (Soiling) Research

Please accept my apologies for writing to you again. Further to your volunteering to take part in this research, I am writing to remind you about the questionnaire I sent to you recently. I would be very grateful if you could return it to me as soon as possible, within the next two weeks.

I have enclosed a further questionnaire together with a stamped addressed envelope for you to return the completed questionnaire in. If a completed questionnaire is already on its way back to me please accept my apologies for having sent you this letter needlessly. (I would be grateful if the unused questionnaire could be returned to me at the above address.)

If the questionnaire has not been returned by (two weeks) a Psychology Assistant will contact you to offer you an appointment to visit you at home in order to ensure that the questionnaire is completed prior to your next appointment to see me on (date) at (time) at Combe House.

If you have any questions concerning your participation in this research project, please let me know. I would like to assure you that all the information gathered during this research will be treated in the strictest confidence and any analysis of this information will be undertaken on a group basis only.

Finally, may I take this opportunity to thank you once again for your help and co-operation in supporting this research project.

Yours sincerely

DAVID SAMSON
Chartered Clinical Psychologist

Enclosures: Current Presentation Questionnaire II.
Appendix VI - Warwickshire Health Authority Ethical Approval
ORIENTATION OF PAGE IS AS PER THE ORIGINAL IN THE BOOK.
15 April 1997

Dr D Samson,
Chartered Clinical Psychologist,
Psychology Department,
Combe House,
George Eliot Hospital,
College Street,
Nuneaton

Dear Dr. Samson,

Encopresis Research RE280

Thank you for your letter dated 11th March 1997 enclosing copies of the revised Consent Form and Initial Information Sheet for the above research project.

I confirm that these are acceptable and that this research can now proceed with full ethical approval.

With Kind Regards,

Yours sincerely,

[Signature]

Pat Horwell
Secretary to the
Warwickshire Research Ethics Committee
Appendix VII - Case Vignettes

Appendix VII.i:  
Case A  
Page 269

Appendix VII.ii:  
Case B  
Page 270

Appendix VII.iii:  
Case C  
Page 271
Case A

Sex: Female

Age: 7 years 10 Months at time of referral

Referred by: Health Visitor

Presentation: Secondary soiling difficulties with continuous soiling. At the time of referral no motions were being passed in the toilet. Initially the child had been clean and dry at 2 years 4 months. The onset of soiling difficulties seemed to be related to a very difficult episode of constipation when she was three years old. She was reported to have experienced considerable pain on passing large compacted stools. At the time of referral she was refusing to sit on the toilet and was retaining for up to eight days. This resulted in her presenting with continuous soiling difficulties. When soiled the child would not say anything if the motion was unformed. At these times if she was challenged she would tend to deny that she had had a soiling accident.

Home Situation: The child lived at home in an intact family with both parents and a younger brother. Her mother did not work, but her father was a teacher, (a high socio-economic status job). Her mother was 42 years old and her father was 35 years old.

Management: At the time of her referral the family reports and the various assessment measures indicated that a low key, non-judgemental management approach was taken. No sanctions were imposed for any soiling accidents and the child was changed as soon as she were known to have soiled.

Outcome: No soiling and a motion passed in the toilet independently every two days.
Case B

Sex: Male

Age: 5 years 3 Months at time of referral

Referred by: Health Visitor

Presentation: Primary soiling difficulties with continuous soiling. First tried toilet training at 2 1/2 - 3 years old. Micturating independently in the toilet without a problem. The child was distressed when having their bowels open saying it hurt his bottom. At times when he needed to have his bowels open his parents reported that he would retain and go rigid hiding behind the furniture. He was described as regularly retaining for up to 5 days and as soiling more than once a day. He was however also described as passing motion in the toilet once a week. When he had soiled he would not tell anyone and would deny that he had soiled himself if he was challenged.

Home Situation: The child lived at home in an intact family with both parents and an older brother. His mother did not work, but his father was an engineer, (a higher socio-economic status job). Her mother was 40 years old and her father was 43 years old.

Management: He preferred to wear pants but his parents would put him in a nappy as soon as they saw him retaining. Enemata and stimulant laxatives had been used intermittently over a number of years. The child had also been prompted to sit on the toilet inspite of his being distressed by this. When in a nappy this was changed as soon as it had been soiled. His parents also tended to keep him off school for a number of days at a time it they felt that he was in danger of having any soiling accidents. At the time of his referral the family reports and the various assessment measures indicated his parents saw themselves as being very supportive of their child protecting him from the consequences of any soiling accidents.

Outcome: Continued to soil more than once a day and continued to pass a motion in the toilet once a week.
Case C

Sex: Female

Age: 9 years 2 Months at time of referral

Referred by: GP

Presentation: Primary soiling difficulties as well as primary nocturnal and diurnal enuresis. She was described as being out of nappies at 2½ years of age, but was reported to have never gone for more than two weeks without a soiling accident. At the time of referral she was described as soiling herself more than once a day and passing two motions a week in the toilet, but only when prompted to do so. If she was challenged about having soiled herself she would deny having done anything. Her mother described her as tending to 'blank out' any discussions about the use of the toilet.

Home Situation: The child lived at home with her mother and her older brother. Her parents had separated two years before she was referred. Her mother was 37 years old and her father who she had irregular contact with was 39 years old. Neither of her parents were in employment.

Management: At times her soiling difficulties led to frequent heated arguments between the child and her mother. Her mother would threaten to send her to live with her father or put her into foster care if she continued to present with soiling accidents. Her mother would impose sanctions if her daughter presented with any soiling accidents, such as being 'grounded' and not allowing her to sit on the sofa or other upholstered furniture at home. The child was not always given help to get changed after a soiling episode.

Outcome: Continued to soil more than once a day and continued to pass a motion in the toilet twice a week.