waiting list and amount of time spent in office waiting for appointments are both related to reduced levels of compliance, especially for compliance with keeping subsequent appointments. Also, length of both the disease and of the therapeutic regimen, potential side effects of intervention, and the extent to which regimens require alterations in patient's lifestyle, all have a negative impact on compliance. Once again, these factors, while being relevant in terms of medical compliance, may be even more important in behavioral therapy where regimens are of a long-term nature aimed at creating substantial changes in lifestyle.

In medical compliance, factors relating to the effectiveness of communication between patient and therapist are positively related to rates of compliance (Hulka, 1979). Extension of this information to behavioral therapies is a logical step. One must keep in mind, however, that in behavioral therapy the assessment of patient-therapist interactions is as yet very unsophisticated (Gillum & Barsky, 1974; Gurman & Razin, 1977). Compliance research in the behavioral - especially the family - areas must wait for advances in the assessment of patient-therapist interaction.

The five categories of factors discussed so far in explaining compliance are overshadowed by the importance of the sociobehavioral characteristics of patients (Becker, 1976; Becker, Haefner et al., 1977; Becker, Maiman, Kirscht, Haefner, & Drachman, 1977; Becker et al., 1979; Haynes, 1976b). The sociobehavioral characteristics, as they apply to the pediatric

National Library
of Canada

Bibliothèque nationale
du Canada

Canadian Theses Service

Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

**THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED**

THÈSES CANADIENNES

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

**LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE**

An Investigation of Compliance in Parent Training Groups

Lorne D. Meginbir

A thesis submitted to the Faculty of Graduate
Studies and Research in partial fulfillment of the
requirement for the degree of

Doctor of Philosophy

Department of Psychology

Ottawa, Ontario

February 1986

(c) Copyright, 1986, Lorne D. Meginbir

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-29872-3

The undersigned hereby recommend to the Faculty of
Graduate Studies and Research acceptance of the thesis,
submitted by

Lorne Meginbir

in partial fulfilment of the requirements for
the degree of Doctor of Philosophy

.....
Chairman, Department of Psychology

.....
Thesis Supervisors

.....
External Examiner

Carleton University

February, 1986

Acknowledgements

I would like to express my thanks to Carleton University for the financial support received during my doctoral studies. My thesis supervisors, Drs. Bruce Ferguson and Pat McGrath, provided their support, encouragement, and direction throughout my studies and especially for the duration of this project. Thanks too, to the various members of my supervisory committee for their help. The assistance of various friends was also appreciated. In particular, Joan Hollett, Marjorie Coristine, David Robinson, and Dr. Sandra Elwood provided invaluable support and feedback.

To the Children's Hospital of Eastern Ontario, the Ottawa Board of Education, and the Children's Aid Society of Ottawa-Carleton, I express my gratitude for their cooperation in obtaining access to subjects. A special thanks to the parents who participated in the research.

Last - but not least - thanks to Norma Rankin for her efforts in typing various manuscripts.

Abstract

Compliance with medical regimens involving behavioral components has been examined in the past. This study provides a first step in examining compliance with behavioral regimens not involving medical (disease) consequences. The compliance of parents in behavioral parent training programs was studied. Attendance at group sessions and compliance of parents with the keeping of logs (diaries) of child behavior was studied as a function of parental characteristics and of an effort attribution intervention designed to raise compliance.

Family size and maternal age and level of education were predictive of attendance at group sessions. This corroborates findings in the literature and suggests a relationship between family characteristics and lowered levels of compliance. Social psychological variables and perceived severity of problem were not related to attendance. Reported parental self-efficacy regarding log use was related to compliance with the keeping of logs.

For subjects who attended both intervention sessions, effort attribution resulted in a substantial increase in compliance. Furthermore, having subjects participate in the effort attribution intervention early in the clinical process, appeared to result in a better maintenance of the gains made. Compliance for subjects receiving the effort attribution second decreased during the later group sessions. The variables mediating the changes in compliance were not clearly determined.

Table of Contents

	Page
Introduction	1
Compliance	4
Definition of Compliance	4
Methods of Assessing Compliance	5
Magnitude of Compliance	12
Modification of Compliance	17
Models for Explaining Compliance	21
Health Belief Model	22
Locus of Control	25
Self-Efficacy	27
Rationale for the Current Study	29
Methods	32
Definition of Terms	32
Procedures for Interventions	33
Variables	36
Measures	36
Dependent Variables	36
Background Information	37
Social Psychological Variables	37
Subjects	40
Subject Identification	40
Inclusion Criteria	40
Subject Involvement Before Parent Groups	41
Subject Characteristics	42
Procedure	46
Results	49
Psychometric Properties of the Parent Questionnaire	50
Reliability of the Theoretically Derived Scales	50
Principal Component Analyses of the Parent Questionnaire	51
Choice of Scales for Further Analyses	57
Baseline Scores on Parent Questionnaire	59
Relationship Between Social Psychological Variables	59
Comparison of Results of First and Second Administration of Parent Questionnaire	62
Compliance and Baseline Measures	67
Baseline Measures and Attendance at First Group Session	67
Prediction of Baseline Percentage of Log Completed	69
Subject Participation	70
Comparisons of Characteristics of Attenders, Irregular Attenders and Dropouts	71

Table of Contents cont'd.

	Page
Analysis of Compliance - Post Intervention	73
Attendance at Second Group Session	73
Percentage of Log Completed Following Intervention	75
Analysis of Compliance for Attenders	77
Comparison of Characteristics of Parents in Groups 1 and 2	77
Changes in Percentage of Log Completed During Experimental Interventions	78
Changes in Social Psychological Variables Following Experimental Procedures	80
Changes in Percentage of Log Completed During The Course of Group Sessions	82
Changes in Social Psychological Variables from Baseline to Termination	84
Summary of Findings	86
Discussion	89
Issues Important to Interpretation of Data	89
Interpretation of Findings	97
Characteristics Involved in the Prediction of Compliance	97
Evaluation of Intervention	99
Effect of Intervention on Percentage of Log Completed	99
Effect of Intervention on Social Psychological Variables	101
Future Research	103
References	106

Appendix	Description	Appendices	Page
A	i) Behavior Log ii) Instructions to Parents		118
B	Description of Content of Parent Group Sessions and of General Approach Taken in Conducting Sessions		121
C	Script for Effort Attribution Intervention		125
D	Description of Film Used in Attention Control Procedure		130
E	Conners Parent's Questionnaire		132
F	Rotter Internal-External Locus of Control Scale		136
G	i) Parent Questionnaire ii) Outline of Rationale for Inclusion of Items		139
H	Subjects: Inclusion/Exclusion Criteria		145
I	Samples of Parent Consent Forms		147
J	Principal Component Analysis of Parent Questionnaire: Factors Having Eigenvalues Greater Than One		151
K	Scree Test: Principal Component Analysis of Baseline Parent Questionnaire		154
L	Comparison of Overall Attendance with Attendance for First and Second Group Session		156
M	Points in Clinical Intervention at which Data were Collected		158

List of Figures

Figure	Description	Page
1	Mean Percentage of Logs Completed by Groups	79
2	Mean Percentage of Logs Completed by Groups Across All Parent Group Sessions	83

List of Tables

Table	Description	Page
1	Mean Baseline Scores on Conners Parent's Questionnaire for Recording Parents	44
2	Mean Baseline Scores on Conners Parent's Questionnaire for Nonrecording Parents	45
3	Theoretically Derived Scales from the Parent Questionnaire: Items and Alpha Coefficients	52
4	Five-Factor Principal Component Analysis Using Varimax Rotation on Baseline Data from Parent Questionnaire	54
5	Item Loadings on Factors Derived from Five-Factor Principal Component Analysis	55
6	Alpha Reliability Coefficients for Factors Derived from Five-Factor Principal Component Analysis	58
7	Baseline Scores on Parent Questionnaire for Recording Parents	60
8	Baseline Scores on Parent Questionnaire for Nonrecording Parents	61
9	Correlations Between Social Psychological Variables	63
10	Univariate t tests for Scales from Parent Questionnaire - First and Second Administration	65
11	Correlations Between Factors on First and Second Administration of Parent Questionnaire	66
12	ANOVA Results for Percentage of Log Completed at Baseline and Post-Experimental Intervention	76
13	Repeated Measures Analysis of Variance of Parent Questionnaire Scales for Second, Third, and Fourth Administrations	81
14	Repeated Measures Analysis of Variance of Parent Questionnaire Scales for Second and Fifth Administrations	85

Introduction

Concern about lack of compliance with therapeutic regimens is not a new phenomenon in the medical literature (Haynes, 1979; Maiman & Becker, 1974; Rosenstock, 1974). Such concern has been reflected in two main areas of scientific investigation. In the first area, the correlates of compliance have been examined (Becker, 1976; Haynes, 1976b; Sackett, 1976). In the second area, the emphasis has been on attempts to improve levels of compliance (Dunbar, Marshall, & Hovell, 1979; Green, 1979; Haynes, 1976a, 1979; Watts, 1980).

Investigations in both areas usually have involved the taking of medication; other medical procedures have been investigated only rarely. More recently, however, there have been attempts to apply findings of compliance research to more behaviorally oriented problems or to lifestyle analyses (Barofsky, 1976; Best & Bloch, 1979; Dunbar, 1983; Sellers, Cappell, & Marshman, 1979; Shelton & Levy, 1981; Watts, 1980).

Shifting the context of compliance issues from medically related problems to behavioral interventions such as parent training results in several problems. For example, compliance in situations where actual physical illness is not an issue may involve variables that are quite different than in medically threatening situations. In examining compliance with behavioral regimens, the usefulness of ~~the~~ models used in explaining compliance with medical regimens is untested. In addition, there has been so little research on compliance in

behavioral situations that the relevant variables have not yet been identified clearly (Gurman & Kniskern, 1981b; Haynes, Taylor, & Sackett, 1979). Finally, on a more general level of analysis, the models used for explaining medical compliance may not be applicable in behavioral situations. These issues have not yet been addressed empirically.

Another problem involved in shifting from medical to nonmedical compliance issues relates to the nature of measurement in the therapies in the respective situations. In medical regimens the main therapeutic agent involves a medication or procedure (including lifestyle change) which has actual physiological or physical implications. Compliance in these situations can be measured in several ways including pill counts, a variety of assay techniques, an examination of actual physical capabilities or adaptations, as well as patient and therapist reports of compliance (Gordis, 1979; Sackett, 1976, 1979). While there are many problems entailed in relying on any one of these measures (Fitzgerald, 1976; Haynes, 1979; Sackett, 1979), the variety of techniques available allows for an examination of the convergent validity of the measurements. In behavioral interventions, there are fewer types of assessment procedures which are appropriate and hence fewer cross-checks are available. Thus far, investigators have been dependent upon subject and therapist reports of compliance, despite all of the limitations involved with such reports (Haynes, 1976b; Sackett, 1979).

The importance of patient-therapist rapport and interaction is recognized as being relevant in medical compliance (Becker

et al., 1979; Haynes, 1979; Hulka, 1979; Sackett & Snow, 1979). Because of the more intense nature of the client-therapist relationship in behavioral situations, the relative importance of such factors is likely to be much greater (Di Matteo & Di Nicola, 1982). Furthermore, because of the intensity of the relationship, examinations of therapeutic outcome are more complicated. In family therapy, for example, where three - and often more - individuals are working toward changing the behavior of at least one of those individuals, there are multiple interactions and personal influences involved. In fact, the development of good measures for assessing the important variables in family therapy is still in its infancy (Gurman & Kniskern, 1981a; Gurman & Razin, 1977; Pinsof, 1981). This results in a lack of clarity concerning the factors involved in successful family therapy. This uncertainty in defining the factors relevant to therapeutic outcome presents an important confound to compliance research. Specifically, since the efficacy of various family therapy interventions has not yet been determined, separating compliance issues from therapeutic efficacy is problematic.

The purpose of this project is to examine the compliance of parents in behaviorally oriented parent training groups. Despite the problems of generalization, findings in the compliance research in medical interventions must still be used as the starting point for investigations in the behavioral therapies (Becker, 1976; Becker et al., 1977; Best & Bloch, 1979; Farley, Peterson, & Spanos, 1975; Haynes, 1979; Shelton &

Levy, 1981). What follows is a summary of the major findings from compliance research in medical interventions and a discussion of psychosocial models that might be useful in explaining compliance behavior.

Compliance

Definition of Compliance

Use of the term compliance for describing the behavior of individuals who either do not or are unable to follow prescribed therapeutic regimens is hotly debated (Best & Bloch, 1979; Davidson, 1976; Di Matteo & Di Nicola, 1982; Haynes, 1979; Sackett, 1979; Sackett & Haynes, 1976). There are at least two reasons for this debate. First, the term itself implies the existence of an hierarchical relationship between clinicians and their patients. This results in a tendency to attribute blame to those patients who do not comply. This is obviously inappropriate as evidenced by examples in the literature of situations either where patients - despite being well-intentioned - are unable to comply or where lack of compliance is actually in the patient's best interest. As Haynes (1979) and Becker (1974) point out this type of power relationship, at least in the ideal situation, is no longer acceptable. A clinician's reliance on such power relationships is sometimes justified as an attempt to ensure compliance with what the clinician knows or believes to be an effective intervention. What tends to be lost in this approach, however, is an understanding of mediating factors other than therapeutic efficacy which affect compliance in particular situations. A

variety of client characteristics and therapist-client interactions would be examples of these mediating factors.

A second problem has arisen because the term compliance is applied in a variety of situations. Compliance with the taking of pills to treat acute physical symptoms may well involve processes which are qualitatively different from compliance with a regimen that involves major lifestyle changes for individuals and their families. The use of the same term in a variety of contexts implies a degree of commonality between these situations which may not exist.

Despite the problems with the term compliance, it continues to be widely used (Di Matteo & Di Nicola, 1982; Haynes et al., 1979; Sackett & Haynes, 1976). This seems to be due both to the fact that alternate terms are fraught with even greater difficulties, and to the fact that a body of literature has already accumulated using this term. By default then, compliance has become the term of choice. For this project, compliance will be defined as "the extent to which a person's behavior (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice...The definition is intended to be nonjudgmental" (Haynes, 1979, pp. 1-2).

Methods of Assessing Compliance

As in most aspects of compliance research, assessment techniques were developed originally for purposes of measuring compliance to medication regimens. Gordis (1976, 1979) has pointed out that two main approaches have been used in the

assessment of medication compliance (see also Epstein & Gluss, 1982). The first approach uses direct measures such as blood and urine assays for determining levels either of medication in the system or of presence or absence of pathogenic factors. More relevant to the assessment of compliance in behavioral interventions is the second category of measures which Gordis (1976, 1979) has labelled indirect measures. Included here are pill counts and records of prescriptions being filled which again relate specifically to medication compliance. Pertinent to both medication and behavioral regimens are the following types of measures: i) therapeutic or preventive outcomes, ii) therapist or physician reports, and iii) patient reports. Research examining the use of these measures will be reviewed.

Therapeutic outcome has been used as a measure of compliance in several lifestyle change regimens. For example, reductions in symptomatology in hypertension (Carnahan & Nugent, 1975; Haynes et al., 1976) and diabetes (Etzwiller & Robb, 1972; Hulka, Kupper, Cassel & Mayo, 1975; Watts, 1980) have been used as measures indicative both of medication compliance and of changing behavior patterns. Length of abstinence in both alcohol (Sellers et al., 1979) and nicotine (Best & Bloch, 1979) addictions also provides an outcome measure of compliance. Weight reduction in juvenile obesity (Becker et al., 1979) is yet another example of a compliance measure appropriate to a specific situation. One of the problems in this research is that it is not always possible to separate compliance to the medical and behavioral aspects of

particular regimens. For example, motivation for compliance with regimens for the treatment of obesity or of addictions arises partially out of medical concerns but is also affected by social considerations. Compliance with one component of treatment may mask a lack of compliance with other components. Furthermore, the use of outcome as a measure of compliance assumes a direct relationship between compliance with a regimen and therapeutic outcome. Indirect relationships, the effects of secondary variables, and side effects must also be taken into account. Successful therapeutic outcome then may indicate compliance with efficacious treatments although compliance to various components of the treatment may be impossible to determine. In addition, poor outcome may indicate a lack of compliance to some or all components of therapy or it may simply be that not all of the relevant variables have been considered in the particular situation.

In order to circumvent problems with direct and indirect measures, researchers have asked patients to report their compliance. Patient report measures are subject to a different set of biases (Bradburn & Sudman, 1979; Labaw, 1980; Mannheim, 1977). These biases may take the form of patients over- or underreporting their compliance in response to perceived demand characteristics.

Validation of self-report compliance measures involves comparisons of levels of compliance using different types of measures. For example, with adult neurotics, psychiatric outpatients, and heart patients, self-reports of the amount of

medication taken have been compared with pill counts (Gordis, 1979). As well, in pediatric clinics, the results of self- and parent reports of consumption of prophylactic medications have been compared with results of both pill counts and urine assays (Feinstein et al., 1959; Francis, Korsch & Morris, 1969). In all of these examples the level of compliance as determined by patient reports was significantly higher than comparable rates as determined by other methods. Furthermore, these differences in compliance results occur whether the information is analyzed using a percentage agreement format or whether comparisons are made of patients falling into either complying or noncomplying categories according to predetermined criteria.

While the above findings do not speak well for the validity of self-report compliance measures, they must be interpreted with caution. First, a certain degree of inaccuracy may be expected in self-reports simply because patients are not oriented toward keeping accurate records of their medication-taking behavior. In addition, it must be remembered that the results of the direct compliance measures are also subject to error. At least part of the discrepancy between results from the two types of measures may be due, therefore, to inaccuracies of the criterion-referenced measures against which the self-reports are being compared. Third, the assessment techniques (especially interviewing skills) of the caregiver may be inadequate for the task of obtaining accurate self-report information. For example, a concentration on the assessment of the medical problems of one individual in a

family may blind a clinician to important aspects of how a particular regimen fits into the family pattern of functioning. The last factor affecting the discrepancies between self-reports and other measures of compliance is that the usefulness of self-report measures may be situation specific. In instances where degree of interaction between therapist and patient is minimal, and where therapy consists of the application of an external agent, self-reports may be of limited usefulness. In therapies involving more intensive therapist-patient interactions, and when the focus of therapy is on aspects of the individual or family itself, self-reports may be more useful. Research examining such possibilities has not yet been carried out.

Therapist reports are frequently used in conjunction with patient reports of compliance. Research on therapist reports indicates that therapist predictions regarding patient compliance are very high in comparison to either patient reports or to direct measures of compliance (Gordis, 1979; Sackett, 1979). This inability of therapists to predict patient compliance may be due to two factors. First, it may indicate that some patients do not believe that the prescribed regimen is efficacious or that the regimen is relevant to their particular needs. Therapists may not be willing to accept this fact. Second, as mentioned previously, there may be an inability on the part of the therapist to recognize the implications of a medical regimen for a specific family or individual or to recognize those individuals who overreport levels of compliance

in order to present themselves in a favorable light to the therapist (Di Matteo & Di Nicola, 1982). These influences could well be deciding factors as to whether or not patients comply.

In summary, a review of the approaches used in assessing medical compliance points out two issues. First, the validity of any measure of compliance must be questioned. Second - and this is also related to validity - techniques of assessment must be chosen so as to take into account the nature of the specific situation in which they are to be used. This may necessitate the use of combinations of measures or the development of unique assessment techniques.

An additional issue in assessment of compliance concerns the form that compliance measures take (Gordis, 1976). For both indirect and direct measures of compliance, various ways of reporting the data are available. In fact, decisions as to whether or not compliance has been successfully achieved, may depend on the form in which the data are presented.

There are at least three ways in which compliance data are presented. First, a simple percentage score is often used to reflect compliance. This may occur, for example, in pill counts where number of pills actually remaining is compared to the number that should remain given prescribed dosages (Bergman & Werner, 1963, cited in Haynes et al., 1979; Feinstein et al., 1959). Similarly, percentage scores for amount of medication taken may be based on parent or self-reports (Feinstein et al., 1959), or on amount of medication present in urine samples (Bergman & Werner, 1963; Lowenthal et al., 1976 cited in Haynes

et al., 1979). Straight percentage reports, however, frequently mask compliance patterns (Green, 1977). For example, for a ten day antibiotic regimen, a rate of 30% compliance may be indicative of a patient who takes the medication on the first five days, the last five days, or on alternate days. The medical implications for each of these compliance patterns are, of course, quite different.

A frequently used alternative to percentage scores for compliance, involves the use of cutoff criteria. Instead of reporting percentage of medication taken (or reported taken, in urine, etc.), patients are classified as compliers or noncompliers according to whether or not they have consumed enough of the medication for it to be effective in changing symptomatology. For example, in a study such as that of Gordis, Markowitz, and Lilienfeld (1969 cited in Gordis, 1979), urine assays were used to analyze the compliance of children with rheumatic fever with oral prophylaxis. Because consumption of 75% of the medication resulted in the desired medical effect, it may well be important only to distinguish those who consume at least this amount from those who do not. Knowing whether an individual consumes 80% as opposed to 92% of their medication is a meaningless question if both represent clinically relevant levels of compliance. Once again, assessments as to whether or not criterion levels have been achieved may be made by using various types of compliance measures (in this case, pill counts, urine assays, or self-reports).

Formulation of a compliance index is a third way of

expressing rates of compliance (Gordis, 1976). For example, results from parent reports, pill counts, and urine assays could be combined to provide a single indicator of compliance. Many difficulties are inherent in this approach, however, in that what would constitute appropriate weighting of the various aspects of compliance is never clear-cut. What is typically done, instead of formulating such indices, is simply to determine if there is a convergence of results when one uses various measures.

Magnitude of Compliance

Determination of the magnitude of compliance for a specific clinical population is dependent on several factors. In addition to the type of measure used and the form in which the compliance rates are expressed, several components of the situation itself must be examined. Haynes (1976b) categorized the factors relating to compliance in the following manner: i) demographic features of patients; ii) features of the disease; iii) features of the therapeutic regimen; iv) features of the therapeutic source; v) features of the patient-therapist interaction; and vi) sociobehavioral features of patients. Findings, for each of these factors, from medical compliance research will be examined briefly. Issues relevant to compliance in behavioral situations will be emphasized.

Studies in which socioeconomic variables have been examined generally have shown either no relationship or an inconsistent one between the variables examined and compliance (Di Matteo & Di Nicola, 1982; Haynes, 1976b). This is true for variables

such as age, sex, marital status, income and ethnic background. As Haynes (1976b) points out, much of this evidence is inconclusive in that differential rates of utilization of services among groups with varying characteristics may bias the results obtained. The majority of compliance studies examine characteristics of patients upon request for, or entry into a, therapy program. If particular subgroups do not make requests for services, they will be underrepresented in noncompliant groups. If this is true for medical problems and regimens, it would be expected that research concerning behaviorally oriented regimens would suffer even more from these biases. For example, behavioral family therapy is utilized primarily by middle socioeconomic groups (Patterson, 1974; 1979). It would not be surprising then that lower socioeconomic groups are not particularly noticeable as noncompliers with this form of therapy. Despite this problem, one significant factor which emerges from compliance research in pediatrics is that compliance rates are lower for children whose parents are younger and have less education (Blechman et al., 1981; Firestone, 1982; Firestone & Witt, 1982; Haynes, 1976b).

Investigations of significant factors in the areas of the presenting problem (disease) itself, the therapeutic regimen, and the therapeutic source (i.e., who provides the therapy) have not yielded information that is more definitive than the socioeconomic studies (Cadman, Shurvell, Davies, & Bradfield, 1984; Gillum & Barsky, 1974; Haynes, 1976b, 1979; Jones & Caldwell, 1981; Shepard & Moseley, 1976). Length of time on a

waiting list and amount of time spent in office waiting for appointments are both related to reduced levels of compliance, especially for compliance with keeping subsequent appointments. Also, length of both the disease and of the therapeutic regimen, potential side effects of intervention, and the extent to which regimens require alterations in patient's lifestyle, all have a negative impact on compliance. Once again, these factors, while being relevant in terms of medical compliance, may be even more important in behavioral therapy where regimens are of a long-term nature aimed at creating substantial changes in lifestyle.

In medical compliance, factors relating to the effectiveness of communication between patient and therapist are positively related to rates of compliance (Hulka, 1979). Extension of this information to behavioral therapies is a logical step. One must keep in mind, however, that in behavioral therapy the assessment of patient-therapist interactions is as yet very unaophisticated (Gillum & Barsky, 1974; Gurman & Razin, 1977). Compliance research in the behavioral - especially the family - areas must wait for advances in the assessment of patient-therapist interaction.

The five categories of factors discussed so far in explaining compliance are overshadowed by the importance of the sociobehavioral characteristics of patients (Becker, 1976; Becker, Haefner et al., 1977; Becker, Maiman, Kirscht, Haefner, & Drachman, 1977; Becker et al., 1979; Haynes, 1976b). The sociobehavioral characteristics, as they apply to the pediatric

situation, may be subdivided into two components (Dunbar, 1983). First, family and individual characteristics which are relatively immutable have been examined. Included here are variables such as family size and stability. In addition, the effects of personality variables and intelligence of the parents have been researched. Findings concerning the relation of these variables to compliance are inconclusive. For example, in ensuring that hyperactive children take their medication and in implementing diets for the control of juvenile obesity, parental personality variables were found to be unrelated to compliance (Becker et al., 1979; Firestone, 1982; Jones & Caldwell, 1981). On the other hand, in a study investigating compliance to behavioral parent training programs, Firestone and Witt (1982) found several parental personality variables to be related to compliance. Once again, this is an area of research which currently adds little to an understanding of compliance.

More relevant to understanding compliance with medical regimens - and more amenable to change - is the second aspect of the sociobehavioral component. Included here are patient's perceptions of the seriousness of the disease, beliefs regarding their susceptibility to the disease, beliefs regarding the efficacy of therapy, knowledge about the disease, and motivation for complying (Becker, 1976; Becker et al., 1979; Haynes, 1976b; Hulka, 1979). Various models for explaining these attitudes and beliefs have been put forward; the most common of these is the health belief model. This model will presently be described in greater detail.

As mentioned previously, rate of compliance is dependent upon several factors. The type of compliance measure used will affect reported rates with therapist reports, for example, providing the most inflated rates. Also, the duration of the disease and the recommended therapeutic regimen, the severity of the symptoms experienced, and the degree to which lifestyle change is required as part of therapy, all have a negative effect on reported rates of compliance (Sackett, 1976; Sackett & Snow, 1979).

Procedures involved in preventive regimens tend to have the lowest reported rates of compliance. This varies somewhat, however, depending on the severity of the disease involved. Rates of compliance either with keeping appointments or with taking medications are higher when acute symptomatology is present or when the potential threat of a disease is serious. Problems of a more chronic nature involving longer-term regimens are associated with reduced rates of compliance. Those regimens involving more extensive lifestyle changes such as is required in the treatment of hypertension or diabetes result in rates of compliance somewhat lower than for regular medication regimens (Best & Block, 1979; Sackett, 1976; Sackett & Snow, 1979; Sellers et al., 1979). Interestingly enough, in studies involving compliance in pediatric populations (Becker, Maiman et al., 1977; Evans, Rozelle, Lasater, Dembroski, & Allen, 1970; Farley et al., 1975) where, in addition to all of the mediating factors already mentioned, parental attitudes and characteristics are relevant, rates of compliance are comparable

to rates in adult populations. Rates of compliance typically fall in the 40% to 60% range (Dunbar, 1983; Sackett, 1976; Sackett & Snow, 1979).

Modification of Compliance

In comparison to correlational studies which examine background factors relating to compliance, few attempts at improving levels of compliance have been made. Attempts to improve compliance have usually involved adult patients who are experiencing chronic problems such as hypertension (Carnahan & Nugent, 1975; Haynes et al., 1976), diabetes (Huika et al., 1975; Watts, 1980), or addictive behavior (Best & Bloch, 1979; Sellers et al., 1979). Initially, this research involved attempts to ensure compliance with the medical aspects of regimens for these long-term problems. One limitation of this research, however, is that it is not possible to separate factors concerning drug-taking behavior from the analyses of lifestyle changes that are also necessary for therapeutic benefits to occur. Recent research places more emphasis on aspects of lifestyle analysis (see, for example, Haynes et al., 1976). This emphasis has also been extended to analyses of compliance in pediatric populations. For example, programs for dental hygiene (Evans et al., 1970; Weisenberg, Kegales & Lund, 1980) and for juvenile obesity (Becker et al., 1979) have examined lifestyle variables in attempts to improve compliance with dependent populations.

In addressing questions about relevant factors involved in attempts to raise levels of compliance, three main approaches

have been taken (Barofsky, 1976; Dunbar et al., 1979; Fink, 1976; Gibson, 1979; Green, 1979; Neufeld, 1976; Rosenberg, 1976). These include educational, behavioral, and organizational approaches. What exactly is included in each of these approaches is, however, somewhat vague. For example, Dunbar et al. (1979) define educational techniques as relying exclusively on "transmission of information and instructions as a means of changing behavior" (p. 174). If one takes a broader perspective on education, not only information but attitudes and behaviors related to health education must also be included (Green, 1979; Rosenberg, 1976). Similarly with behavioral approaches, techniques such as self-monitoring or reinforcement of appropriate health related behaviors involve educational and motivational components. While neither educational nor behavioral approaches necessarily involve organizational changes (wait lists, waiting-room time, follow-up service), the organizational changes themselves may contain educational, behavioral, or motivational components.

Despite the overlap between the three approaches, research which investigates the individual merits of educational, behavioral, and organizational interventions has been conducted. Most frequently, the effectiveness of contingency management techniques has been evaluated in relation to improvements in attendance (Frankel & Hovell, 1978). Differential fee structures and the use of refundable fees have been studied in relation to pediatric dental regimens (Reiss, Piotrowski, & Bailey, 1976), to regimens for weight reduction

(Hogen, Foreyt, & Durham, 1976), to programs for parent effectiveness (Fleischman, 1979), and to regimens in a variety of marital and family (Anderson, Atilano, Bergen, Russell, & Jurich, 1985) and individual adult (Baekland & Lundwall, 1975) problem areas. Results of these studies indicate that attrition in treatment programs may be reduced by the manipulation of fees. Despite this displayed effectiveness, however, the question of the social validity of these approaches must be questioned (Albin, Lee, Dumas, Slater, & Witmer, 1985; Wolf, 1978). That is, because the manipulation of fees is not feasible within most current health care systems, the value of evaluating these programs in a purely research context must be questioned.

Manipulation of amount of therapist time with clients is a second area in which behavioral attempts to facilitate compliance has occurred. Work in the area of compliance in parent training has been conducted at the Oregon Social Learning Center (Eyberg & Johnson, 1974; Fleischman, 1981; Forehand & Atkeson, 1977; Forehand & King, 1977; Patterson, 1976; Patterson, Cobb, & Ray, 1973). Contact with therapists both in terms of clinical time and of telephone contact, were dependent on clients completing homework assignments. Research indicated that use of this contingency did improve rates of compliance. One limitation of this approach, however, was that it required extensive amounts of therapist time. Again, the practicability of this must be questioned.

Reinforcement through the use of mailed or telephone

reminders has been explored (Friman, Finney, Rapoff, & Christophersen, 1985; Morse, Coulter, Nazarian, & Napodano, 1981; Nazarian, Mechaber, Charney, & Coulter, 1974; Slaikeu, Lester, & Tulkin, 1973; Turner & Vernon, 1976). Mixed results have been reported in this area. The research question now being addressed is not if this approach works but under what circumstances and with which clients does it work. The role of cognitive variables as potential mediators is now being raised (Friman et al., 1985).

Compliance manipulations reflecting organizational factors have involved variables which relate to the ease with which clients are able to obtain services (Friman et al., 1985; Miller & Miller, 1970; Pearce, O'Shea, & Wessen, 1979). Reducing waiting-room time, ensuring continuity of care, and giving free parking passes or other material rewards have been used effectively in improving attendance. The social validity of these approaches can be questioned. Also, the overlap between these manipulations and behavioral manipulations is clear.

Attempts to facilitate compliance by use of educational interventions yield conflicting results (Dunbar et al., 1979; Patterson & Forgatch, 1985). As mentioned previously, problems in clearly defining what is involved in an educational intervention are likely involved in these inconsistencies.

Conducting research to examine the facilitation of compliance in terms of the application of only one of these approaches, is not a reasonable task. Much more relevant are questions concerning which components of an intervention

contribute - and to what degree - to improvements in compliance. For example, in the context of behavioral training for parents, the effect of the provision of information to parents concerning their problems and how these may be remedied would be expected to be as important as the actual behavioral manipulations used with the parents. At the same time, motivational issues must be addressed. In fact, compliance-improving strategies which contain only one type of intervention are not as effective as combined strategies (Dunbar et al., 1979; Green, 1979; Watts, 1980). Future research should not ask which compliance facilitating approaches should be used but should address the question of the relative impact of the various components of those approaches.

Models for Explaining Compliance

Concern about compliance initially focused on secondary and tertiary levels of medical treatment (Bergman & Werner, 1963; Hammell & Williams, 1964), and on primary prevention programs such as screening for tuberculosis or immunization programs (Green, 1979; Maiman & Becker, 1974; Rosenstock, 1974). The results of studies in both of these areas indicate that compliance is a substantial problem with levels of noncompliance generally being in the range of 40% to 60% (Sackett, 1976; Sackett & Snow, 1979). Investigations of the etiology of compliance and of attempts at reductions of noncompliance are of theoretical and of clinical importance. That is, the separation of issues regarding compliance from treatment efficacy are

important not only in terms of understanding the variables involved in compliance, but also in terms of program evaluation and of the provision of appropriate services to clients.

Health Belief Model

Research findings in the area of medical compliance may indicate which variables are relevant in the study of compliance in regimens requiring behavioral or lifestyle changes. At the same time the problems for which behavioral regimens are prescribed, as well as the treatment itself, are such that the available models for explaining medical compliance may not be applicable (Becker, 1974, 1976; Kasl, 1974). Specifically, it has been suggested that knowledge, attitudes, and motivations are even more important in an analysis of compliance with behavioral or lifestyle change regimens than in the examination of strictly medical regimens (Di Matteo & Di Nicola, 1982; Maiman & Becker, 1974; Rosenstock, 1974). The most commonly used model for explaining these variables is the health belief model (Sackett & Haynes, 1976). While this model was originally developed for use in analyzing compliance with participation in preventive programs, it has been extended to the analysis of regimens aimed at lifestyle change in both clinical adult (Best & Bloch, 1979; Hulka, 1979; Sellers et al., 1979; Taylor, 1979) and pediatric populations (Becker et al., 1979; Dunbar, 1983; Farley et al., 1975; Gordis, 1979; Weisenberg et al., 1980). What follows is a description of the health belief model as originally proposed, a review of some of the recent developments in the theory which have occurred because of compliance

research, and a discussion of some of the limitations of its usefulness.

The original formulation of the health belief model involved two main components with two aspects to each component (Becker, 1974; Kirscht, 1974a, 1974b). These are as follows:

- i) Perceived threat of disease including,
 - a) perceived susceptibility to a particular disease, and
 - b) perceived severity of consequence (physical or social) of that disease.
- ii) Likelihood of action including,
 - a) perceived benefits of the therapeutic regimen, and
 - b) perceived barriers to participating in that regimen.

Perceived susceptibility and severity involve concepts related to the Lewinian notion of valence (Lewin, 1951; Maiman & Becker, 1974; Rosenstock, 1974). Taken together, measures of these two features provide an indication of the degree to which individuals perceive themselves as being personally threatened by a particular disease. It is important also to evaluate the likelihood of engaging in some action to avoid or lessen the effect of this threat. Again, two issues are involved. First, there is the perceived benefit of engaging in remediation. This benefit may take the form, for example, either of a reduction of physical symptoms or of an increase in social acceptance because of the improvement in health (e.g., obesity). Perceived efficacy of the regimen recommended and the social implications of success both contribute to perceived benefit. Detracting

from these benefits, however, are perceived barriers to participating in a regimen. The barriers generally included in health belief model analysis include factors such as the financial costs involved in participation, or personal commitment in terms of time and energy expended on carrying out the regimen. The relative importance of these barriers in comparison to the perceived benefits, results in a residual belief in the efficacy of the therapeutic regimen. One component that seems to be missing at this level of analysis as outlined by the health belief model involves social psychological variables which assess not only the beliefs concerning regimen efficacy but also the individuals' feelings about their ability to successfully carry out the regimen. This will be discussed in greater detail below.

In addition to the four main variables are a series of modifying variables (Becker, 1976; Becker et al., 1979). These involve characteristics of patients that may be relevant to the compliance situation but which are not health beliefs per se. Demographic and socioeconomic variables as well as personality factors and structural variables such as knowledge or general information about the disease itself are included here. Most recently, characteristics of therapists and of therapist-patient relationships have been added to this list. Included as well is a motivational component which is sometimes called a cue to action (Becker et al., 1979). More research is needed, however, to examine the relationship of this variable to perceived threat and likelihood of action variables.

One problem with the health belief model is that reliance on the assessment of expressed attitudes for making inferences about actual compliance behavior is limiting (Bem & Allen, 1974; Fishbein & Ajzen, 1974). In fact, as Ajzen and Fishbein (1973) point out in their discussion of behavior-attitude discrepancies, there frequently is not a high correlation between a displayed behavior and the corresponding expressed attitude. Nor in many instances is there reason to expect a high degree of association. It is important in studying compliance then, to keep in mind the necessity of obtaining measures from both the attitudinal and the behavioral domains.

The major focus in the health belief model is on an overall assessment of the individual's belief in the efficacy of a prescribed regimen. While this is undoubtedly important, it does not allow for a detailed enough description of the attitudes and motivations that individuals have concerning their own role in carrying out a prescribed regimen. At least two variables are important here; these are locus of control and self-efficacy. Each of these will be described briefly and their use in compliance research discussed.

Locus of Control

Locus of control theory was formulated originally by Rotter (Lefcourt, 1976; Rotter, 1966, 1973). It is, however, best described not as a theory itself but as one element that may be used to help explain reinforcement principles arising out of social learning theory (Rotter, 1966, 1973). Consideration of locus of control may be important in understanding behavior by

providing an interpretation for the relationship between situational parameters and individual differences in response to those parameters (Rotter, 1975). The concept of locus of control may be used to help explain the cognitive processes which act as mediators between environmental stimuli and behaviors produced by individuals in response to the stimuli. For example, two parental responses to a particular child management situation may be very different because of the parent's interpretation of that situation.

Measures of locus of control are viewed as indicating that individuals are either internal or external in their locus of control (Best, 1975; Chabbliss & Murray, 1979; Collins, 1974; O'Leary, Rohsenow & Donovan, 1976). Individuals with internal locus of control believe that control over situations in which they are involved, is within themselves. Individuals having external locus of control, on the other hand, believe that they are controlled by environmental forces which are outside of themselves. For example, external locus of control parents may attribute their child's misbehavior to the fact that he/she "has problems" or "ate sugar" whereas internal locus of control parents may believe that the misbehavior was due to their own lack of establishing appropriate limits for behavior. In this context, both the parental expectations for change and what they do to remedy the situation may depend upon their interpretation of the causes of the misbehavior. Locus of control, which is generally considered to be a stable, personality trait (Lefcourt, 1976) has been used in attempts to explain behavior

in a variety of situations. These include explanations of assertiveness (McVicar & Herman, 1983), self-awareness (Donlan, 1983; Erickson, 1983), trust (Butler, 1983), and life satisfaction (Bugaighis, Schumm, Bollman, & Jurich, 1983; Gutek, Allen, Tyler, Lau, & Majchryzak, 1983).

While locus of control has typically been considered to be a general and stable personality characteristic, consideration has been given to the development of instruments which may be used in situations involving a higher degree of specificity. One such attempt involves the development of a measure of health locus of control (Lau, 1982; Lau & Ware, 1981; Ludenia & Donham, 1983; Wallston, Wallston, Kaplan & Maides, 1976). One limitation of this particular scale is that it is oriented very much toward an analysis of beliefs regarding regimens involving medical consequences. As such it is not useful in the context of the analysis of behavioral regimens.

In summary then, the general locus of control scale relates to the health belief model in the area of perceived barriers/benefits to compliance with a regimen. For example, parents who view their child's behavior as being outside of their control, may find the notion of altering their reinforcement patterns as unrelated to the behavior problem. Compliance with behavioral therapy may then be quite low because of the barrier imposed by parental beliefs.

Self-Efficacy

Locus of control focuses on outcome expectancies; that is, on the belief that certain behaviors may lead to particular

outcomes. While this is an important concept it addresses only one component of efficacy expectations (Bandura, 1977, 1982b; Bandura, Adams & Beyer, 1977). What locus of control theory misses, however, is the degree to which someone believes that they personally can control the processes leading to the desired outcomes. For example, parents experiencing difficulties with disciplining their children may believe that the eventual outcome of a particular technique of discipline would lead to the desired behavioral changes (locus of control). Despite this, if they do not believe that they have control over the process of implementing the technique, the likelihood of them being successful with the use of that technique may be reduced. Self-efficacy then is the belief that individuals have about the degree to which they feel competent to change events that affect them (Bandura, 1982a, 1982b; Bandura et al., 1977; Bandura, Reese & Adams, 1982). Individuals having high levels of self-efficacy believe strongly in their ability to control such processes. Those exhibiting low levels of self-efficacy believe they cannot change the processes leading to goals relevant in their lives. Self-efficacy has been used to explain behavior in a variety of therapeutic situations. For example, self-efficacy has been used to explain behavior in phobic reactions (Bandura, 1977; Bandura et al., 1977; Bandura, Adams, Hardy, & Howells, 1980), in the treatment of obesity (Chambliss & Murray, 1979), and in the treatment of heterosocial anxiety (Barrios, 1983). With children, the concept has been used both to explain and to remediate learning problems (Bandura & Schunk,

1981; Barling & Snipelesky, 1983; Schunk, 1981).

Self-efficacy is very situation specific (Bandura, 1983; Bandura et al., 1982b) whereas, despite some controversy, locus of control appears to be a more general and stable trait (Lefcourt, 1976). In terms of compliance research then, self-efficacy not only contributes additional information about perceived benefits/barriers to compliance, but it may also allow for a more precise assessment of the particular situation.

A final note concerning the inclusion of self-efficacy and locus of control within the framework of the health belief model in the study of compliance has to do with their importance in behavioral therapy. In current behavioral interpretations, traditional stimulus-response explanations have been replaced by cognitive behavioral explanations (Beck, 1978). Locus of control and self-efficacy are constructs which may be incorporated usefully into conceptions of this cognitive link in the stimulus-response chain.

Rationale for the Current Study

Investigations of compliance have typically involved regimens to ameliorate physical symptoms. Even in those cases in which compliance with lifestyle changes has been examined, lack of compliance has had a significant medical consequence (e.g., hypertension, diabetes mellitus, obesity, rheumatic fever). Compliance behavior has not been studied in situations in which the consequence is neither immediate nor in the physical realm. The purpose of this project was to examine compliance in such a situation.

Compliance was examined in the context of parent training groups. Within the past fifteen to twenty years, parent training groups have come to be used as the treatment of choice for a variety of child and family problems (Gordon & Davidson, 1981; Graziano, 1977). Specific target groups for which this approach appears particularly useful include autistic and mentally retarded children (Gardner, 1971; Lovaas, Freitag, Gold, & Kassorla, 1965) and children with a variety of school-related problems (Graziano, 1975). More generally, parent groups are useful in situations in which the parents are to act as the main agent of change for the child's behavior (O'Dell, 1974; Tavormina, 1974). The area in which the use of parent training groups seems most effective is in the area of management of problem child behavior (Gordon & Davidson, 1981; Patterson, 1979).

The specific purpose of the study was to examine compliance of parents with instructions to use behavior logs for collecting information about their child's behavior. The use of such logs is an integral part of many types of behavioral interventions. There were two components or goals in this project. The first involved the study of levels of compliance in relation to potential mediating variables. While the main emphasis here was on an examination of social psychological variables (health beliefs, self-efficacy and locus of control), family demographic variables were also included. The second- and main - goal of the study involved the examination of an effort attribution intervention in raising compliance.

Two specific hypotheses related to the main goal of the study are:

1. the effort attribution intervention will be followed by significant improvements in percentage of logs completed by parents for the week immediately following the intervention, and
2. changes in compliance will be accompanied by changes in the social psychological variables.

Methods

Definition of Terms

Compliance was defined as "the extent to which a person's behavior (in terms of taking medications, following diets, or executing lifestyle changes) coincided with medical or health advice" (Haynes, 1981, pp. 2-3). This definition was not interpreted in such a way that there was an attempt made to make no attribution of blame for a lack of compliance either to practitioners or to parents. Lack of compliance reflected a discrepancy between a prescribed therapeutic regimen (i.e., completing behavior logs and attending group sessions regularly) and the actual therapy-related behavior carried out by the parent.

In this study, behavior logs were used by parents to collect information about their child's behavior. These logs were used both for the collection of baseline information about child behavior and during the course of the parent group intervention. Appendix A contains a sample of the log that was used and a copy of "Instructions to Parents" that accompanied the log. For each of the logs, parents focused on one target behavior of their child. A target behavior was one of the child's behaviors which annoyed and/or concerned the parent(s), and which the parent(s) wanted to change. One of the parents, the recording parent, assumed the main responsibility for recording the target behaviors (i.e., for completing the logs).

Intervention referred to the experimental manipulation that

was carried out in the study. Thus the term intervention was not used to refer to the behavioral intervention - i.e., the parent groups. The parenting groups were simply referred to as parent groups. These groups involved behavioral training in child management techniques and communication skills (Dinkmeyer & McKay, 1976; Holland, 1977). Although data were collected from parents throughout the course of the parent groups, this information was used only to measure level of compliance. Evaluation of the clinical effectiveness of the parent groups in helping parents alter their children's behavior was not included in this study. Appendix B presents a brief description of the content of the parent group sessions as well as of the general approach taken in conducting the sessions.

Procedures for Interventions

Once baseline information about children's behavior was collected by parents, parents within each parent group were assigned randomly either to the effort attribution (experimental) or the attention control group.

The purpose of the effort attribution intervention (which involved a slide-tape presentation) was to facilitate compliance. There were two main elements in this intervention. These were the motivational and self-efficacy components. Although these two components are defined separately, they are actually overlapping in nature. They are described as follows:

1. The motivational component involved the provision of background information regarding the logs which was in addition to the basic information needed by parents to be able to

complete the logs effectively. This basic information was provided to all parents during the screening session before the baseline compliance information was collected. Included in the motivational component was information designed to attribute parental success at use of the logs to their own high level of effort. Also, information related to longer-term benefits of using the logs to better understand child behavior, parent-child interactions, and ways in which changes in parental behavior may facilitate desired changes in child behavior, was presented. In addition, parents were informed that many parents initially found the use of these logs quite novel and responded skeptically to the benefits to be gained. They were informed, however, that effective use of the logs had in fact proven to be a useful way for parents to get maximal benefits from the parent groups and that, with effort, most parents found use of the logs to be manageable.

2. In the self-efficacy component, it was emphasized that the recording parent was personally responsible for, and capable of, the successful use of the logs. Appropriate use of the logs was attributed to high level of parental effort while lack of effort or difficulty of the task was given as the explanation for inaccurate or incomplete logs. Difficulty of the task included, for example, hectic parent schedules which do not allow enough time for proper recordings or particularly difficult days with the children which might interfere with recording.

A script of the audio component of the effort attribution intervention is included in Appendix C. The slides accompanying

the audio component included a variety of adult-child interactions; they served the purpose of making the presentation more interesting for parents.

The self-efficacy and motivational components of the effort attribution intervention were overlapping. As well, an educational component was involved in both. In fact, the compliance literature indicates that such multi-faceted approaches to the facilitation of compliance are most effective in raising levels of compliance (Dunbar et al., 1979; Green, 1977, 1979; Haynes, 1979). In an intervention of this nature, it is not possible to separate these components into distinct entities. The approach adopted in this project, therefore, was to attempt to measure both self-efficacy and motivation (health beliefs) before and after the intervention and to examine changes that occurred in relation to rates of compliance.

The attention control procedure involved the presentation of a film to parents. The film contained information on cognitive and social development in children. Appendix D presents additional information on the film used for the attention control procedure. While it did not deal specifically with the use of behavior logs, the amount of time taken to show the film was approximately equal to that of the slide-tape presentation used for the effort attribution intervention. Thus the film provided a control for the added attention that parents in the attribution procedure received. What use of the film did not control for, however, was possible knowledge differences regarding log use. To determine whether or not there were

differences between the two groups in level of ability to use the logs, all parents were tested by using the logs to record video-taped examples of parent-child interactions. These sample logs were then rated on the accuracy of recorded information and the rates of the two groups compared.

Variables

The independent variable was order of participation in the effort attribution or attention control procedures. The first dependent variable involved the collection of nominal level data regarding attendance at group sessions. The primary dependent variable was a percentage score based on the number of recordings made on the behavior log relative to the number requested. The last category of variables included in the study are those involving background information (socioeconomic status and family demographic variables) and social psychological variables (health beliefs, locus of control, self-efficacy, and Connors Parent's Questionnaire).

Measures

Dependent Variables

1) Attendance at Sessions - This involved a three level categorization of whether or not the parents returned for scheduled group sessions. Level 1 was a return as scheduled category. Level 2 involved a missed appointment with reason given and level 3 was a missed appointment without a reason given.

11) Percentage of Logs Completed - During the screening session, parents were asked to collect information regarding

their children's behavior. They were asked to record three behaviors daily for a period of seven days subsequent to the screening session but prior to the commencement of the parent group sessions. This measure consisted of the number of behaviors actually recorded relative to the number of recordings requested. For example, parents were requested to complete logs three times daily for a period of one week (i.e., 21 recordings); if they completed only ten recordings, they obtained a score of 48%. Logs not returned were scored as 0% completed. During each group session, parents again were asked to keep weekly logs of their child's behavior. Percentage of logs completed was tabulated for the recordings each week.

Background Information

Background information about the subjects and their families was collected during a screening interview held before the group sessions started. Information collected included the following:

- i) age and sex of the target child,
- ii) age and sex of siblings of target child,
- iii) age and level of education of parents, and
- iv) information about family structure (i.e., intact, blended, or single parent families).

Social Psychological Variables

Information regarding health beliefs, attitudes with respect to parenting, self-efficacy, locus of control, and perceived severity of children's problems were obtained from parents during the screening session and at various points throughout the group sessions. The following instruments were used to

collect this information:

i) **Conners Parent's Questionnaire** (Conners, 1970; Guy, 1976) - This scale is a self-report instrument used to measure parent's perceptions of child behavior. Parents respond to individual items by indicating the degree to which they believe a particular behavior describes the behavior of their child. The scores on individual items are then combined into scales including ones to assess conduct problems, anxiety, impulsivity-hyperactivity, learning problems, psychosomatic complaints, perfectionism, anti-social behavior, muscular tension, and hyperactivity. Scale scores have been compared across groups of children including neurotics and hyperkinetics (Conners, 1970; Firestone, 1982). Use of the Conners scales in this study allows for a standard description of perceived severity of problem at the outset of the parent groups and for comparisons from pre- to post-intervention phases. Comparisons with normative data on the hyperactivity index are possible. A copy of the Conners Parent's Questionnaire is included in Appendix E.

ii) **Rotter Internal-External Locus of Control Scale** - The Internal-External Locus of Control Scale is a 23-item additive scale in which higher scores indicate a higher degree of externality (Lefcourt, 1976; Rotter, 1966). The scale has been used for predicting behavior in situations including assertiveness training and general psychotherapy as well as in addictions and in other health-related behaviors (Conrad & Eash, 1983; Donlan, 1983; Erickson, 1983; Lefcourt, 1976; McVicar &

Harman, 1983; Rotter, 1975). A copy of the scale is included in Appendix F.

iii) Parent Questionnaire - The Parent Questionnaire was developed specifically for use in this study. It was based on information relevant to compliance in family and pediatric situations (Becker, 1976; Becker et al., 1979; Dunbar et al., 1979; Farley et al., 1975; Fink, 1976; Haynes, 1976b) in terms of health beliefs and self-efficacy (see Appendix G). Included were background items covering general family satisfaction (based on Olson, McCubbin et al., 1982) and parental perception of their adequacy in the parenting role (based on Gordon & Davidson, 1981). Specific items included parental perceptions of the problems that the target child was currently experiencing. These were assessed via components of the health belief model. In addition, there was an assessment of the perceived severity of the child's problem, benefits and barriers to implementation of the therapeutic regimen, and parent's motivation to comply with therapeutic requirements. Efficacy expectations regarding parent's perceived ability to overcome their child's problems in the long-term were measured. The questionnaire concluded with several items measuring efficacy expectations about parent's ability to make effective use of the behavior logs.

Subjects

Subject Identification

Initial referrals for subjects for the parent group program were obtained from the Children's Hospital of Eastern Ontario. Because of the small numbers of appropriate subjects available from this source, the study was expanded to include subjects from the Ottawa Board of Education and the Children's Aid Society of Ottawa-Carleton, and from newspaper advertising. All parents participating in the groups were screened beforehand to determine the appropriateness of their involvement in the groups. In the screening interview, the nature of family interactions and the history of the child's problem was assessed so as to insure the usefulness of the parent group approach for particular families.

Inclusion Criteria

Subjects were parents who were concerned about the behavior/misbehavior of at least one of their children and who wanted to improve parent management of child behavior. Parents were required to focus on at least one target behavior as this approach was central to the actual running of the groups. In addition, families were not included if there were severe psychological or psychiatric problems, or if marital concerns or child abuse/neglect appeared to be the primary focus of concern. Families were not excluded because of the age or sex of the target child or because of the type of family constellation. Details of the screening inclusion/exclusion criteria are presented in Appendix H.

Subject Involvement Before Parent Groups

Step 1: Initial Contact - When names of potential subjects were obtained from the various sources, parents were contacted by telephone by the experimenter/group leader. During this interview further information regarding the nature of the groups was given to parents and any questions they had about the research component were answered briefly. If parents still were interested in participating in a parent group, a screening session was scheduled.

Step 2: Screening Session - a) For this meeting, parents were encouraged to bring the target child although this was not required. At this time, an assessment of the appropriateness of including the parents in the parent groups was made. Also, the nature of the group sessions was more fully explained. Appendix B outlines the type of information given to parents about the parent group sessions.

b) At the end of the screening session, the behavior logs were introduced to parents. Use of the logs was explained and parents were asked to define a target behavior. Parents were then asked to think of situations in which the target behavior had occurred and to practice using the logs by recording the remembered situation. Parents were asked to use the logs for a period of one week. They were also asked to bring the logs to the first parent group session and told that the logs would be used at that time in the group.

c) If parents were considered appropriate for the parent groups and expressed a wish to participate, the compliance

research project was described and parents were asked whether or not they would participate. Appendix I contains examples of parent consent forms that were used. Parents were informed at this time that research participation would involve the completion of five sets of questionnaires (about 10-15 minutes each) throughout the course of the group sessions. If parents agreed to participate in the research, they signed the appropriate consent form and were asked to complete the first set of questionnaires.

d) The referring agencies were contacted to inform them of the results of the screening procedure.

Subject Characteristics

Target children ranged in age from one to fifteen years with the mean age being seven years. Forty-nine of the target children were boys while 23 were girls. In addition to the target children, there was a mean of 1 ($M = 1.104$; $SD = 0.847$) child in these families. In twenty families the target child had no siblings, while in thirty-five families there was one sibling. Fourteen of the target children had two siblings; in only three cases were there three or more siblings.

Thirty-six of the seventy-two families in the study were intact. Of these intact families, there were twenty-five in which the mother was a full-time homemaker. In the remaining eleven intact families, both parents were employed outside the home. Twenty of the target children came from single parent families; in nineteen of these, only the mother was present. Sixteen of the twenty single parents were not employed outside

of the home. Fourteen families were blended. In forty of the fifty families in which two parents were present, both parents participated in the parent groups. The majority of recording parents in the study (mothers) had obtained some high school education ($n = 19$) or had completed high school ($n = 23$). Only two of the recording parents had no high school/education at all. Sixteen of these parents had some post-secondary education or training while six had completed one university degree or more. Nonrecording parents (fathers, $n = 41$) achieved higher educational status. The mean age of recording parents ($n = 66$) was 31.9 ($SD = 5.607$) years while for the nonrecording parents ($n = 40$) it was 36.9 ($SD = 6.756$) years.

The internal-external locus of control yields a maximum score of 23 with the higher scores being indicative of a greater degree of externality. The mean baseline locus of control score for recording parents ($n = 71$) was 9.817 ($SD = 4.1$). The baseline mean on locus of control for nonrecording parents ($n = 18$) was 7.1 ($SD = 2.805$). Normative information for females indicate levels of scores ranging from 8.34 ($SD = 3.85$) to 10.38 (SD not reported). For males the range is from 4.0 ($SD = 2.70$) to 9.76 (SD not reported) (Lefcourt, 1976). This indicates parents in this sample fall within a normal range for locus of control scores.

Mean baseline scores on the various scales of the Conners Parent's Questionnaire for recording ($n = 71$) and nonrecording ($n = 28$) parents are reported in Tables 1 and 2. Scores on the hyperactivity index for hyperactive children range from 18.88 ± 4.78 to 22.46 ± 5.52 (Firestone, 1982). This would suggest that

Table 1

Mean Baseline Scores on Conners Parent's Questionnaire for
Recording Parents*

Scale	Mean	SD	Maximum Possible Score
Conduct Problem	6.76	4.19	21
Anxiety	4.34	2.94	21
Impulsive-Hyperactive	8.34	5.53	24
Learning Problem	1.99	2.02	12
Psychosomatic	2.16	1.85	15
Perfectionism	1.99	2.50	9
Anti-social	.44	.94	12
Muscular Tension	1.96	2.11	12
Hyperactivity Index	13.80	6.36	30

* n = 71

Table 2

Mean Baseline Scores on Conners Parent's Questionnaire for
Nonrecording Parents

Scale	Mean	SD	Maximum Possible Score
Conduct Problem	6.32	4.12	21
Anxiety	4.61	3.72	21
Impulsive-Hyperactive	8.68	4.82	24
Learning Problem	2.57	2.57	12
Psychosomatic	1.75	1.40	15
Perfectionism	2.54	2.62	9
Anti-social	.86	1.46	12
Muscular Tension	1.57	1.91	12
Hyperactivity Index	6.60	3.89	30

* n = 28

(at least according to mother's perceptions) some of the target children in this study would fall into the hyperactive category.

Procedure

During the screening session, the appropriateness of particular parents participating in the groups was determined. In addition, the nature of the parenting groups and the use of the behavior logs was explained to parents. Following the screening procedure, parents discussed scheduling of the parent groups. At the end of the screening session, for those parents who agreed to participate in the research, the first set of questionnaires was completed (i.e., Parent Questionnaire, Locus of Control Scale, and Conners Parent's Questionnaire). At the end of this session parents were reminded to use the behavior logs for a period of one week; they were also reminded to bring the logs with them for the first group session.

Participants were assigned to parent groups that were at a time convenient to them. Groups began once five or six parent/parent pairs were scheduled for a particular time. In each parent group, both the effort attribution and the attention control procedures were carried out during the first group session. That is, the parents in the particular parent group were randomly assigned to either the effort attribution or to the attention control procedure so that one half of the parents received each condition. The two smaller groups were separated for the duration of the experimental procedure. When this was completed the two groups were recombined so that all other aspects of the session were the same for all subjects. At the

end of this first session, all parents practiced using the behavior logs by recording video-taped examples of parent-child interactions. This served as a measure of the parent's ability to use the logs. At the beginning of the second parent group session, parents were again divided into the same subgroups as in the previous session. This time they received the opposite intervention before forming one larger group. In this way, those subjects receiving the attention control procedure first had to wait one week before receiving the effort attribution intervention.

At the end of each group session, parents were reminded to use the logs during the following week. During each weekly session the experimenter/group leader collected the logs and noted which parents were in attendance. During the first, second, third and last group sessions parents again filled out the Parent Questionnaire. The Locus of Control Scale was completed again in the second and last group sessions while the Conners Parent's Questionnaire was completed again in the last session. Questionnaires were always completed at the beginning of the group sessions. Refer to Appendix M for a procedural chart which outlines the points, during the clinical intervention, at which experimental data were collected.

In the first group session, in addition to taking part in the experimental procedures, parents introduced themselves to the group and briefly described their parenting concerns. In each of the following group sessions, there was a brief presentation of information concerning child management

techniques (as outlined in Appendix B)... The remainder of each session involved discussions of specific concerns that parents had about their children's behavior. These discussions were carried out with reference to information collected on the logs.

Parents who missed group sessions without a reason were contacted once concerning nonattendance and encouraged to return to the groups. Percentage of logs completed for nonattenders was considered to be 0%. If they attended the next group session, and returned the log, the percentage of log completed was calculated as usual. If they continued to miss group sessions, the percentage of logs completed for all subsequent sessions was considered to be 0%. The percentage of log completed for parents who missed a group session with reason could not initially be computed. These parents were asked to return the log at the next group session they attended and if they did so, percentage of log completed was calculated as usual. If they did not return the log at the next session, the percentage of log completed was considered to be 0%. In instances where parents were unable to complete the logs (e.g., parent or child are not in the home during a particular week), the percentage of log completed was estimated by use of the mean of all other logs completed.

A total of eleven parent groups were completed. Each group was of six weeks duration. Subjects were debriefed at the end of the sixth session.

Results

Data analyses were conducted in five stages. First, the psychometric qualities of the Parent Questionnaire were assessed. The degree to which this instrument reflected the theoretical models (health beliefs and self-efficacy) on which it was based was evaluated. The relationships between the scales derived from the Parent Questionnaire, and between the various questionnaire scales and locus of control, were also examined. The second area of data analyses involved the prediction of baseline compliance (i.e., attendance at the first parent group session and baseline percentage of log completed) from characteristics measured during the screening session. Third, the characteristics of dropouts were examined.

Stages four and five of the data analyses involved an examination of the effects of the experimental intervention. In stage four, the compliance of subjects who attended the first group session - and who therefore took part in either the effort attribution or attention control procedure - was examined. That is, attendance at the second group session and percentage of log completed for the week immediately following the interventions were examined in light of parental characteristics as well as in light of the baseline percentage of log completed and of the interventions in which subjects participated.

The final stage of analysis involved those subjects who attended the first two group sessions and who therefore participated in both experimental procedures as scheduled.

For these subjects, compliance was studied in the short-term (i.e., immediately following the experimental procedures) and for the duration of the group sessions. In addition, the effects of the interventions on the social psychological variables (as measured by the Parent Questionnaire) were examined. Compliance was examined in the context of these changes.

Psychometric Properties of Parent Questionnaire

Evaluation of the psychometric properties of the Parent Questionnaire was carried out in two steps. The first step involved analyses based on theoretical considerations while the second was an empirically-based analysis. Initially, the reliability of a set of theoretically derived scales was examined. Subsequently, results of the Parent Questionnaire were factor analyzed and reliability analyses were conducted on these empirically derived factors. The extent to which the theoretically and empirically derived scales coincided with each other was then examined. It was on the basis of these analyses that decisions were made regarding the composition of scales to be used in the examination of compliance issues.

Reliability of Theoretically Derived Scales

The Parent Questionnaire was developed on the basis of theoretical considerations using the method of expert judges for scale construction (Edwards & Kenney, 1967; Thurstone, 1967). The questionnaire was developed to tap information regarding self-efficacy and health beliefs. The hypothetical scales and the corresponding questionnaire items developed for these scales

are summarized in Table 3. Refer to Appendix G for the actual items. Included in Table 3 is the Cronbach's Alpha for each of the scales. This coefficient provides a measure of the internal consistency of scales such as those found on the Parent Questionnaire (Cronbach, 1951). These reliability analyses were based on the first administration (i.e., baseline) of the questionnaire to recording parents (primarily mothers) ($n = 68$).

Examination of Table 3 indicates that the more general scales containing a greater number of items had moderate to good reliability (.72 - .87). On the other hand, the internal consistency for the majority of scales containing a smaller number of items was moderate to poor (.34 - .57).

Principal Component Analysis of the Parent Questionnaire

A principal component analysis using a varimax rotation (Norusis, 1985; SPSS Inc., 1983) was performed on the data from the baseline administration of the Parent Questionnaire to recording parents. This approach ensures that the factors derived are related as closely as possible to the original data (Harris, 1975), which in turn facilitates interpretation of derived factors. A listwise deletion of missing values resulted in a sample size of 68. Initially, only those factors having eigenvalues greater than one were extracted. Use of this technique resulted in the extraction of seven factors. Results of this analysis are reported in Appendix J; reliability coefficients for the factors derived are also included in this appendix.

An important aspect of any principal component analysis

Table 3

Theoretically Derived Scales from the Parent Questionnaire: Items and Alpha Coefficients

Theoretical Scale	Items Contributing to Scale	Cronbach's Alpha for Scale (n=68)
<u>I. Self efficacy:</u>		
overall self-efficacy	10,11,14,16,21 22,23,24	.782
self-efficacy re: use of behavior logs	14,15,21,22,23, 24	.867
self-efficacy re: child management skills	10,11	.337
<u>II. Health beliefs:</u>		
overall motivation	3,4,5,6,7,8,9, 12,13,15,17,18, 19,20	.789
motivation re: use of logs	20	NA
motivation re: making changes in approach to parenting	3,4,5,6,9	.723
perceived severity of problem with child	7,8	.712
perceived barrier (re: use of logs and improving child management situation)	12,17,18,19	.438
perceived benefits (of parent training and of log use)	13,15	.568

involves the decision concerning the number of factors to be extracted (Cattell, 1966). It has been recommended that the Scree Test provides a useful method for determining the number of factors that should be retained in a principal component analysis (Rumel, 1970). This method involves an examination of the plot of the total variance associated with each factor. The number of factors to be extracted corresponds to a distinct break between the steep slope of the large factors and the gradual trailing off of the remaining factors. In the present case, this break occurred after the addition of the fifth factor (see Appendix K). Corresponding with the results of the Scree Test, were the results of a "meaningfulness" test (see Appendix J). That is, it appeared that five of the factors resulting from the present principal component analysis were interpretable on the basis of theoretical considerations. Accordingly, the principal component analysis with varimax rotation was repeated limiting the number of factors extracted to five.

The eigenvalues and the amount of variance accounted for by the five factors extracted are reported in Table 4. Except for the addition of a few items, the first four factors were almost identical to the first four factors extracted in the previous analysis. Table 5 presents the loadings of the items on the various factors extracted.

As with the previous principal component analysis, all items loading on Factor 1 involved parent's perceived self-efficacy with regard to the use of the behavior logs. One item, Number

Table 4

Five-Factor Principal Component Analysis Using Varimax Rotation
on Baseline Data from Parent Questionnaire

Factor	Eigenvalue	Percent of Variance	Cumulative Variance
1	5.85	24.4	24.4
2	3.02	12.6	37.0
3	2.16	9.0	46.0
4	1.90	7.9	53.9
5	1.54	6.4	60.3

Table 5

Item Loadings on Factors Derived from Five-Factor Principal
Component Analysis

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Item 23	.87				
Item 22	.84				
Item 24	.81				
Item 21	.77				
Item 16	.66				
Item 14	.46				
Item 4		.81			
Item 7		.77			
Item 3		.74			
Item 5		.72			
Item 8		.62			
Item 6		.55			
Item 2			.74		
Item 17			.66		
Item 13			.64		
Item 15			.60		
Item 20			.51		
Item 10				.72	
Item 18				.69	
Item 1				.69	
Item 19				.52	
Item 9					.68
Item 11					.64
Item 12					.60

14, tapped parent's perception of how well they feel they understand the use of the logs. Factor 2 was identical for the two analyses; it reflected a motivational (health belief model) dimension. Motivation on this factor involved the extent to which parents perceived their child's behaviors as being problematic (and severe) in the long-term (Items 7, 8) as well as the extent to which they perceived these behaviors as being of concern on a day-to-day basis (Items 3, 4, 5, 6).

The third factor obtained contained the same three items (Items 13, 15, 17) as the third factor from the previous analysis. These items related to parent's perception that use of the behavior logs and participation in the parent groups would lead to improvements in their child's behavior. In addition to these items, Items 2 and 20 loaded on the third factor. Respectively, these items assessed parental feelings of closeness to the rest of their family and the degree of effort they were willing to make in order to complete the behavior logs. Thus, while both the second and third factors measured motivational aspects of the health belief model, the second involved the severity of the child's problem whereas the third involved an assessment of parent's willingness to work toward solving those problems.

Factor 4 was comprised of four items. Items 18 and 19 which made up Factor 4 in the previous analysis - and which assessed perceived barriers to use of the behavior logs - were included. Two additional items (Items 12, 17) which were hypothesized as being part of the barrier dimension of the health belief model

did not, however, load on this fourth factor. Items 1 and 10, which assessed parent's satisfaction with the current child management situation, also loaded on this factor; these two items loaded on Factor 7 of the previous analysis. This factor may be interpreted as parental satisfaction with the current child management situation. In this form it is almost an anti-motivational factor which encouraged parents to maintain the status quo with regard to child management. Factor 5 was not easily interpretable.

The reliability coefficients for the factors derived from this factor analysis are reported in Table 6. The alpha coefficients for the first two factors were good (.83 - .87), while for Factors 3 and 4 they were moderate (.62 - .70). The coefficient for Factor 5 was low (.51).

Choice of Scales for Further Analyses

Although results of the principal component analysis were not identical to the theoretical scales, they were nevertheless quite comparable. Analyses of compliance data were pursued by using the four interpretable empirically derived factors from the Parent Questionnaire. These were as follows:

Factor 1: self-efficacy re: use of logs (referred to as the self-efficacy scale),

Factor 2: motivation: i.e., severity of problem (health beliefs) (referred to as the perceived severity scale),

Factor 3: motivation: i.e., parental willingness to work on making changes (health beliefs) referred to as the willingness to change scale),

Table 6

Alpha Reliability Coefficients for Factors Derived from
Five-Factor Principal Component Analysis

Factor	Factor Name	Alpha Reliability Coefficient
1	self-efficacy	.87
2	perceived severity	.83
3	willingness to change	.70
4	current satisfaction	.62
5	uninterpretable	.51

Factor 4: anti-motivation: i.e., satisfaction with current child management situation (health beliefs - barriers) (referred to as the current satisfaction scale).

While the third and fourth of these factors were only moderately reliable, they were included in further analyses as they were expected to provide information important to an understanding of compliance. Because of problems with interpretation and low reliability, Factor 5 was not included in further investigations. Because the theoretically determined scales were reflected in the empirical scales, separate analyses of them were not pursued.

Baseline scores on Parent Questionnaire. The first administration of the Parent Questionnaire provided information about baseline levels of health beliefs and self-efficacy. Items contributing to the four factors which were derived from this questionnaire were scored on a continuum from 1 through 6 with the higher scores indicating, for example, a very serious problem as opposed to the problem being not serious at all. Mean scores on these scales for recording and nonrecording parents are reported in Tables 7 and 8 respectively. These scores indicated moderately high levels of self-efficacy regarding log use, of perceived severity of problem, and of willingness to change. Low levels of satisfaction regarding current child management techniques were expressed. These findings were true for both recording and nonrecording parents.

Relationship between social psychological variables. In order to examine the relationship between the four factors

Table 7.

Baseline Scores on Parent Questionnaire for Recording Parents

Scale	Mean Score
Self-efficacy re:	4.7
log use	($\bar{n}$ = 70)
Perceived severity	4.3
of problem	($\bar{n}$ = 69)
Willingness to	4.5
change	($\bar{n}$ = 69)
Current	2.7
satisfaction	($\bar{n}$ = 67)

Table 8

Baseline Scores on Parent Questionnaire for Nonrecording Parents

Scale	Mean Score
Self-efficacy re:	4.7
log use	(<u>n</u> = 18)
Perceived severity	4.0
of problem	(<u>n</u> = 20)
Willingness to	4.2
change	(<u>n</u> = 18)
Current	3.0
satisfaction	(<u>n</u> = 18)

derived from the Parent Questionnaire and locus of control, correlational analyses were conducted. Results of these analyses are presented in Table 9. Missing values for these analyses were deleted on an analysis-by-analysis basis resulting in a set of correlation coefficients based on a varying number of cases.

Three of the correlations examined reached statistical significance at the $p \leq .05$ level. The correlations reaching significance were between the self-efficacy and perceived severity factors, self-efficacy and willingness to change factors, and the perceived severity and willingness to change factors. This indicated a degree of overlap between self-efficacy regarding log use and motivation (health beliefs). While these correlations did reach statistical significance, they could not be considered to be predictive as only approximately ten percent of the variance was shared in each instance. The locus of control score was not significantly correlated with any of the factors from the Parent Questionnaire.

Comparison of results of first and second administration of Parent Questionnaire. A one-sample Hotelling's T^2 (with variables paired at times one and two) was used to compare the differences in results obtained from the Parent Questionnaire administered during the screening session and during the first group session (pre-experimental intervention, $n = 39$). Results indicated a significant time effect (Hotelling's $T^2 = .702$; approximate $F = 6.145$; $df = 4, 35$; $p = .001$). Bonferroni's

Table 9

Correlations Between Social Psychological Variables

	Locus of Control	Self-Efficacy	Perceived Severity	Willingness to Change	Current Satisfaction
Locus of Control		-.046 a (70) b p = .351c	.162 (69) p = .092	-.068 (69) p = .289	.163 (67) p = .094
Self-Efficacy			.353 (69) p = .001 +	.334 (69) p = .002 +	-.131 (67) p = .145
Perceived Severity				.294 (68) p = .008 +	.045 (67) p = .359
Willingness to Change					.040 (67) p = .373
Current Satisfaction					

a Pearson Correlation Coefficient

b Number of cases

c Level of significance of correlation

+ Correlations reaching statistical significance ($p \leq .05$)

procedure was used to control for inflated levels of alpha ($p \leq .05$) by setting significance levels at $p = .0125$ for follow-up univariate t tests. Results obtained by use of this procedure are reported in Table 10. Results from the two administrations of the self-efficacy factor reached significance ($p = .000$). Results on the willingness to change factor approached significance ($p = .016$); differences on the current satisfaction factor also approached significance ($p = .018$). The changes noted here reflected changes in parent's attitudes for the week during which they used the behavior logs to collect baseline information about the target child's behavior. Specifically, self-efficacy regarding log use fell from a mean of 30.308 (SD = 5.611) on the first administration of the Parent Questionnaire to a mean of 26.359 (SD = 6.413) for the second administration. Measures of willingness to change fell from a mean of 23.333 (SD = 4.847) to a mean of 22.026 (SD = 4.264). Measures of satisfaction with current child management situation increased from a mean of 10.692 (SD = 3.147) to a mean of 11.949 (SD = 2.743).

Pearson correlation coefficients between parallel factors derived from the two administrations of the Parent Questionnaire are reported in Table 11. The correlations were all highly significant. For the perceived severity of problem and willingness to change factors, the amount of variance shared was over 50%. For the two administrations of the self-efficacy scale the amount of variance shared was 24% while for the current satisfaction with child management factor it was 17%.

Table 10

Univariate t tests for Scales from Parent Questionnaire - First
and Second Administrations (Source of Variance: Time) 7

<u>Scale</u>	<u>t</u>	<u>Signif. of t</u>
Self-efficacy	16.943	.000
Severity of Problem	.268	.608
Willingness to Change	6.299	.016
Current Satisfaction	6.133	.018

Table 11

Correlations Between Factors on First and Second Administration
of Parent Questionnaire

Factor

Self-Efficacy

Pearson Correlation	.49
Number of Subjects	49
p	.000

Perceived Severity of Problem

Pearson Correlation	.73
Number of Subjects	48
p	.000

Willingness to Change

Pearson Correlation	.72
Number of Subjects	49
p	.000

Current Satisfaction with Child Management

Pearson Correlation	.42
Number of Subjects	46
p	.002

Compliance and Baseline Measures

Seventy-three potential subjects (i.e., recording parents) participated in the screening procedures. Of these, one refused to take part in the research. Information collected on the remaining 72 subjects was used to predict both attendance at the first group session and baseline percentage of log completed. For these analyses, examination of the independent variables was carried out in three blocks. The first block involved demographic information including the mother's age and level of education, the number of siblings in addition to the target child, and family structure. The social psychological variables constituted the second block (Parent Questionnaire factors and locus of control); the third involved parental perceptions of severity of problems with the identified child (scores from Conners Parent's Questionnaire).

Baseline Measures and Attendance at First Group Session

Discriminant analyses were used to address two issues. First, analyses examined if those who attended the first group session could be distinguished from those who did not attend on the basis of characteristics measured at baseline. Second, the same characteristics were used to distinguish between those who did not attend but who gave a reason for not attending and those who gave no reason.

Demographic variables were the first block of variables examined in comparisons of attendance and nonattendance ($n = 65$). This analysis produced only one function that differentiated between the two groups (canonical correlation =

.328). The only variable involved in this function was number of siblings in addition to target child (Wilks' Lambda = .893; equivalent $F = 7.588$; $df = 1,63$; $p = .008$). The mean number of siblings in families from which parents attended was .81 ($SD = .73$). For those who did not attend the mean number of siblings was 1.41 ($SD = .87$). Application of the derived classification model to this sample resulted in 66.7% of cases being correctly classified. The family structure variable (intact, blended, or single parent families) was not entered into this analysis because of its categorical nature. Chi-square analysis of family structure in relation to first session attendance, however, showed no significant differences in attendance according to type of family.

Discriminant analysis for both the social psychological ($n = 67$) and the perceived severity of problems ($n = 71$) variables, yielded no significant results ($p \leq .05$). That is, these variables did not discriminate between attendance and nonattendance.

Three additional discriminant analyses were conducted using the same blocks of variables for the purpose of distinguishing between subjects who did not attend but who gave a reason for their nonattendance and those who gave no reason for nonattendance. No functions distinguished between these groups when either the demographic variables ($n = 17$) or the social psychological variables ($n = 19$) were used. For the perceived severity of problems variables ($n = 20$), one function did distinguish (canonical correlation = .694). The two variables

involved in this function were the anxiety (Wilks' Lambda = .786; equivalent $F = 4.913$; $df = 1,18$; $p = .04$) and psychosomatic (Wilks' Lambda = .518; equivalent $F = 7.914$; $df = 2,17$; $p = .004$) scores of the Conners Parent's Questionnaire. Together, these two variables successfully predicted 80% of cases. On the anxiety scale, parents who gave a reason for nonattendance perceived their child as less anxious ($M = 2.92$, $SD = 2.32$) than did parents who gave no reason ($M = 5.43$, $SD = 2.37$). The reverse was true on the psychosomatic scale with parents who gave reasons scoring a mean of 2.92 ($SD = 2.18$) and parents who gave no reasons scoring a mean of 1.71 ($SD = 2.06$).

Prediction of Baseline Percentage of Log Completed

A blockwise multiple regression analysis ($n = 60$) was conducted using percentage of log completed at baseline as the dependent variable. Demographic variables including mother's age and level of education, family structure (dummy coded), and number of siblings of the target child were entered in the first block. The second block of independent variables was composed of the social psychological variables including self-efficacy regarding use of the behavior logs, parent's perceived severity of child's problem, parental willingness to change, parental satisfaction with current child management techniques, and locus of control. Scores on the various scales of the Conners Parent's Questionnaire were entered in the third block.

In the first block of variables entered into the analysis, only the family structure variable was related to percentage of log completed at baseline ($F = 4.55$, $df = 1,58$, $p = .04$). The

family structure variable accounted for 7.27% of the variance. Application of a one-way analysis of variance ($n = 70$) to further investigate the relationship between the three types of family situation (intact, blended, single) and the baseline percentage of log completed, failed to reach statistical significance ($F = .294$, $df = 2,67$, $p = .75$). An examination of the mean values for percentage of log completed showed that recording parents in intact families completed more of the logs ($M = 23.31\%$, $SD = 30.73$) than either the single parent ($M = 18.0\%$, $SD = 26.08$) or the parent in the blended family ($M = 18.29\%$, $SD = 24.51$).

In the second block of variables, self-efficacy regarding log use was significantly related ($F = 7.14$, $df = 2,57$, $p = .002$) to percentage of log completed. Self-efficacy accounted for 20.03% of the variance in addition to that already accounted for by the family structure variable. The positive relationship between self-efficacy and baseline percentage of log completed was evident regardless of the order in which variables were entered into the regression analysis. There was no relation between Conners scores and percentage of log completed at baseline.

Subject Participation

Seventy-two parents or parent pairs participated in the screening procedure. Twenty-four of these parents participated in both the effort attribution intervention and attention control procedures as scheduled; nine of these subjects received the effort attribution intervention during the first parent

group session (Group 1) while the remaining fifteen took part in the attention control procedure during the first group session (Group 2). An additional ten parents (Group 3) took part in the effort attribution intervention during the first session but were absent for participation in the attention control. Eleven parents who received the attention control in group session one were absent in session two for the effort attribution intervention (Group 4). Twenty-one parents participated in neither the effort attribution intervention nor the attention control procedure (Group 5). Six parents missed the first group session but took part in the effort attribution intervention during group session two (Group 6).

Comparison of Characteristics of Attenders, Irregular Attenders and Dropouts

Attenders were defined as those subjects who were present for the first two parent group sessions and therefore took part in the active intervention and control procedures as scheduled ($n = 24$; Groups 1 and 2). Irregular attenders were those subjects who participated in only one of the experimental procedures ($n = 27$, Groups 3, 4 and 6) while dropouts were those who took part in neither procedure ($n = 21$; Group 5). Although these categorizations were based on attendance of subjects in the first two parent group sessions only, attendance during these sessions was reflective of attendance for the duration of the sessions (see Appendix L). Comparisons of the baseline characteristics of these groups of subjects were carried out using multivariate statistics; variables were examined in three

groupings including background variables (i.e., demographic information), social psychological variables, and Connors (perceived problem areas) variables.

A multivariate analysis of variance was conducted on three background variables including number of children in the family in addition to the target child, and mother's age and level of education ($n = 65$). The results of this analysis indicated that there was a significant difference (Wilks' Lambda = .75; approximate $F = 3.068$,; $df = 6, 120$; $p = .008$). Follow-up univariate F tests indicated that these differences occurred on the mother's age ($F = 4.80$, $df = 2, 62$, $p = .012$) and mother's level of education ($F = 6.343$, $df = 2, 62$, $p = .003$).

Examination of the mean values for these groups indicated that dropouts were younger ($M = 27.22$ years, $SD = 5.51$) than either regular attenders ($M = 33.73$, $SD = 4.89$) or irregular attenders ($M = 32.76$, $SD = 5.58$). In addition, dropouts had a lower level of formal education than either of the other groups. In addition, a chi-square analysis examining the relationship between family structure and participation was conducted ($n = 70$). Results approached significance (chi-square = 8.665; $df = 4$; $p = .07$) with a larger proportion of parents from intact families being among the regular attenders than either single parents or parents from blended families.

A multivariate analysis of variance was also conducted to examine differences between groups on social psychological variables. The results indicated that the null hypothesis of no differences between groups was rejected (Wilks' Lambda = .624,

approximate $F = 3.186$; $df = 10, 120$; $p = .001$). Follow-up univariate tests indicated that there were significant differences between groups on both the self-efficacy regarding log use ($F = 11.217$, $df = 2, 64$; $p = .000$) and the perceived severity of problem ($F = 7.089$, $df = 2, 64$; $p = .002$) factors. Post-hoc multiple comparisons (Student-Newman-Keuls, $p \leq .05$) indicate that on the self-efficacy factor irregular attenders scored significantly higher ($M = 31.962$, $SD = 3.493$) than either regular attenders ($M = 26.917$, $SD = 6.453$) or dropouts ($M = 24.450$, $SD = 6.126$). For perceived severity of problem, dropouts ($M = 22.050$, $SD = 6.245$) scored significantly lower than either regular ($M = 25.609$, $SD = 6.301$) or irregular attenders ($M = 28.769$, $SD = 4.528$). There were no significant differences between groups on scores on the Conners Parent Questionnaire.

Analysis of Compliance - Post Intervention

Forty-five of the 72 subjects in the study attended the first parent group session. These subjects were randomly assigned to either the effort attribution ($n = 19$) or to the attention control ($n = 26$) group. Attendance at the second parent group session and percentage of log completed for the second session were the dependent measures examined in these analyses. Information obtained from both the screening session (background information, locus of control, Conners scores) and the first group session (second administration of the Parent Questionnaire) were used in examining the two dependent measures.

Attendance at Second Group Session

Discriminant analyses were used to determine whether or not

attenders at the second group session could be distinguished from nonattenders. Mother's age, level of education, number of siblings in addition to the target child, and percentage of log completed at baseline were the first group of variables examined. The analysis produced no functions that differentiated between the two groups. In addition, chi-square analysis of the family structure variable and of the independent variable (i.e., participation in effort attribution or attention control procedure) in relation to second session attendance, failed to show significant differences in attendance.

Although discriminant analysis using the social psychological variables as measured by the second administration of the Parent Questionnaire produced no significant results ($p \leq .05$), one function approached significance ($p = .06$) (canonical correlation = .27). The only variable involved in this function was the perceived severity of problem factor (Wilks' Lambda = .927; equivalent $F = 3.628$; $df = 1,2$; $p = .06$). The mean level of concern expressed by parents in the attending group was 24.27 ($SD = 6.38$); for nonattenders the mean was 27.44 ($SD = 3.91$). Application of this model to the sample resulted in 54% of cases being correctly classified. Similarly, there were no significant functions produced ($p \leq .05$) when Conners scores were used as the independent variable. Again, however, one function did approach significance ($p = .077$) (canonical correlation = .211). The only variable included in this function was the anti-social scale (Wilks' Lambda = .955; equivalent $F = 3.23$; $df = 1,69$; $p = .077$). The mean score on the anti-social

scale (i.e., parent's perception of anti-social behavior on the part of the target child) for parents who attended the second group session was .268 ($SD = .742$); for nonattenders the mean score was .667 ($SD = 1.124$). Application of this model to the present sample resulted in 63.38% of cases being correctly classified.

Percentage of Log Completed Following Intervention

Rates of accuracy on use of the logs for recording video-taped examples of parent-child interactions were compared between subjects in the effort attribution and attention control groups. No differences were found as all subjects were able to complete recordings with 100% accuracy. This indicated that subjects in the intervention and control groups were comparable in their ability to use the behavior logs.

To determine the effectiveness of the experimental intervention on raising percentage of log completed, an analysis of variance was conducted ($n = 45$). One between subjects and one within subjects variable was included in this analysis. Type of intervention (effort attribution versus attention control) was the between subjects variable. Time (percentage of log completed at baseline versus percentage of log completed after the first group session) was the within subjects variable. The analysis included all subjects who took part in the interventions in the first group session whether or not they returned for the second group session. Subjects not returning their logs at later group sessions were considered to have completed 0% of the log for session two. The results of this analysis are summarized in Table 12.

Table 12

ANOVA Results for Percentage of Log Completed at Baseline (Time 1) and Post-Experimental Intervention (Time 2)

Source	M.S.	df	F	Significance of F
Group x Time	1019.95	1,43	1.626	.209
Time	1180.84	1,43	1.882	.177
Group	.632.28	2,43	.656	.422

Although none of the effects were statistically significant an examination of the mean percentage of log completed for the two groups is noteworthy. The mean percentage of log completed at baseline was 27.474 ($SD = 30.246$) for the effort attribution group ($n = 19$) and 28.923 ($SD = 31.482$) for the attention control group ($n = 26$). The mean percentage of log completed following intervention remained approximately the same for the effort attribution group ($M = 28.105$, $SD = 29.301$) whereas for the attention control group the mean dropped to 15.923 ($SD = 21.637$). The failure to reach statistical significance by use of ANOVA despite the substantial difference was due to the large standard deviations which in turn resulted from a large number of 0% score in both groups.

Analysis of Compliance for Attenders

Comparisons of Characteristics of Parents in Groups 1 and 2

Twenty-four subjects took part in the experimental procedure as scheduled. Nine of these subjects took part in the effort attribution intervention during the first group session and received the attention control during the second session (Group 1). The remaining fifteen subjects received the interventions in the reverse order (Group 2). Three Hotelling's T^2 analyses were conducted in order to determine if there were any differences in characteristics between the two groups. The first analysis examined background characteristics. A chi-square analysis was used to examine the family structure variable. Second, results from the second administration of the Parent Questionnaire were examined and third, the Connors'

scales were analyzed. None of the effects in the above analyses approached statistical significance indicating that the two groups were comparable.

Changes in Percentage of Log Completed During Experimental Interventions

A repeated measures analysis of variance was conducted in order to evaluate the effect of the interventions on percentage of log completed. The repeated measures factor was time (representing baseline percentage of log, percentage of log completed following the first intervention, and percentage of log completed following the second intervention). The between subjects factor was group (Group 1 versus Group 2).

Results indicated a significant interaction between group and time (Wilks' lambda = .655; approximate $F = 5.261$; $df = 2,20$, $p = .015$). The nature of this interaction is depicted in Figure 1; it is clear that changes in compliance occurred as expected. Paired t tests indicated that there was a significant increase in percentage of log completed from baseline to the second log ($t = -2.59$; $p = .02$ one-tailed) for Group 1 (i.e., for subjects who received the effort attribution intervention first). For Group 2 (subjects who received the attention control first) there was a significant increase in percentage of log completed from the second to the third measures ($t = -2.85$, $p = .01$ one-tailed). No other t tests reached significance. These results reflected increases in compliance immediately following the effort attribution interventions.

Although the multivariate analyses for neither group nor

Figure 1: Mean percentage of log completed by group

time reached statistical significance, the time effect approached significance (Wilks' lambda = .88; Approximate $F = 2.69$; $df = 2, 20$, $p = .09$). This, in conjunction with an examination of Figure 1 indicated a trend for increasing levels of compliance from baseline to post-intervention.

Changes in Social Psychological Variable Following Experimental Procedures

Repeated measures analyses of variance were used to examine changes on the four factors from the Parent Questionnaire following the two experimental procedures. A between subjects factor was the experimental group (i.e., Group 1 receiving the effort attribution intervention first and Group 2 receiving the attention control procedure first). The within subjects factor was time having three levels. The second administration of the Parent Questionnaire served as a baseline measure for the four factors. The third and fourth administrations of the questionnaire assessed the same factors following the experimental interventions. Results of these analyses are reported in Table 13.

Of the comparisons described, only the group by time interaction on the willingness to change scale approached significance. Examination of group means indicated that while the mean scores obtained by the group having the effort attribution intervention first increased from time 2 to time 3 ($M = 22.285$, $SD = 2.0588$ at time 2; $M = 23.857$, $SD = 2.67$ at time 3; $n = 7$), the opposite was true for the group receiving the attention control procedure first ($M = 22.333$, $SD = 3.427$ at time 2; $M = 21.778$, $SD = 3.866$ at time 3; $n = 9$).

Table 13

Repeated Measures Analysis of Variance of Parent Questionnaire
Scales for Second, Third and Fourth Administrations

Scale	Source of Variance	<u>MS/</u> Value	<u>df</u>	<u>F</u>	Sig. of <u>F</u>
Self- efficacy re: log use (<u>n</u> = 16)	Group by Time Interaction	Wilks=.95	2,13	.32	.73
	Group	<u>MS</u> =26.48	1,15	.30	.59
	Time	Wilks=.72	2,13	2.56	.12
Severity of Problem (<u>n</u> = 16)	Group by Time Interaction	Wilks=.92	2,13	.60	.56
	Group	<u>MS</u> =164.36	1,15	2.57	.13
	Time	Wilks=.85	2,13	1.17	.34
Willingness to Change (<u>n</u> = 16)	Group by Time Interaction	Wilks=.65	2,13	3.44	.06
	Group	<u>MS</u> =14.86	1,15	.55	.47
	Time	Wilks=.92	2,13	.55	.59
Current Satisfac- tion(<u>n</u> = 15)	Group by Time Interaction	Wilks=.92	2,12	.52	.61
	Group	<u>MS</u> =4.54	1,14	.33	.58
	Time	Wilks=.75	2,12	1.97	.183

Changes in Percentage of Log Completed During the Course of Group Sessions

A repeated measures analysis of variance was conducted to examine percentage of log completed by attending parents ($n = 24$) during the six group sessions. The between subjects factor with two levels was order of presentation of experimental interventions and the within subjects factor was time (six levels). The results of the analysis indicated that there was a significant group by time interaction (Wilks' Lambda = .512; approximate $F = 3.427$; $df = 5, 18$; $p = .024$). Neither the order of presenting the effort attribution intervention ($MS = 4406.123$, $F = 1.04$; $df = 1, 23$, $p = .319$) nor the time effect (Wilks' Lambda = .682; approximate $F = 1.68$, $df = 5, 18$; $p = .191$) reached statistical significance. The mean percentage of logs completed over the six sessions are presented in Figure 2. These means are presented separately for those subjects who received the effort attribution intervention first and those who received the attention control first. Percentage of log completed increased for both groups immediately following the effort attribution intervention. For the group receiving the attention control first, percent of log completed dropped off during the course of the group sessions. For those receiving the attribution intervention first, the increase in log completed was maintained throughout the remaining sessions.

Figure 2: Mean percentage of log completed by group across all parent sessions

Changes in Social Psychological Variables From Baseline to Termination

As reported earlier, no significant changes in the factors from the Parent Questionnaire occurred during the interventions. In addition, percentage of log completed following participation in the effort attribution intervention increased for both groups. Despite this, percentage of log completed for later sessions fell for the group receiving the attention control procedure first. In order to further explore possible mediating variables that could explain this drop in percentage of log completed, changes in the factors from the Parent Questionnaire were compared from baseline (second administration) to termination. Repeated measures analyses of variance with one between subject variable (group) and one within subjects variable (time - two levels) were used to examine these differences for each of the factors. The results are reported in Table 14.

For the self-efficacy regarding use of behavior logs factor, both the group and time effects were significant. Upon examination of the mean scale scores, however, it is clear that the main cause of these effects was due to a large decrease in measured self-efficacy from baseline to termination for subjects receiving the attention control first. That is, while the mean scores for subjects receiving the effort attribution intervention first ($n = 7$) fell from 27.86 ($SD = 5.08$) to 25.00 ($SD = 8.88$), they fell from a mean of 24.14 ($SD = 4.95$) to 17.00 ($SD = 3.92$) for subjects receiving the attention control first ($n = 7$). On this perceived severity of problem scale, the means scores for

Table 14

Repeated Measures Analysis of Variance of Parent Questionnaire Scales for Second and Fifth Administrations

Scale	Source of Variance	MS	df	F	Sig. of F
Self-efficacy re: log use ($n = 14$)	Group by Time Interaction	32.14	1,13	1.58	.23
	Group	240.14	1,13	4.63	.05
	Time	175.00	1,13	8.58	.01
Severity of Problem ($n = 15$)	Group by Time Interaction	19.72	1,14	1.12	.31
	Group	24.29	1,14	.58	.46
	Time	168.03	1,14	9.55	.01
Willingness to Change ($n = 14$)	Group by Time Interaction	22.32	1,13	4.23	.06
	Group	6.04	1,13	.62	.45
	Time	12.89	1,13	2.44	.14
Current Satisfaction ($n = 13$)	Group by Time Interaction	3.99	1,12	1.58	.24
	Group	38.11	1,12	2.17	.17
	Time	8.65	1,12	3.42	.09

both groups dropped over time. For subjects receiving the effort attribution intervention first ($n = 7$) this decrease was from 24.57 ($SD = 5.88$) to 21.57 ($SD = 6.34$) while for the subjects receiving the attention control first ($n = 8$) the mean dropped from 28.00 ($SD = 3.38$) to 21.75 ($SD = 5.87$). The interaction on the willingness to change scale reflected no change in subjects receiving the active intervention first ($n = 7$; $M = 22.89$, $SD = 2.06$ at baseline; $M = 22.71$, $SD = 3.25$ at termination) and a decrease for subjects receiving the attention control first ($n = 7$; $M = 23.14$, $SD = 2.27$ at baseline; $M = 20.00$, $SD = 3.16$ at termination).

Summary of Findings

The Parent Questionnaire provided four factors that were used to measure self-efficacy and motivation relevant to parent training groups. There was minimal overlap between the attitudes measured by these four factors as evidenced by the low correlations between them (.29 - .35). Split-half reliability for the self-efficacy and the perceived severity of problem factors was good (.87 - .83). There was moderate reliability for the willingness to change and the current satisfaction factors (.70 - .62). The self-efficacy factor and locus of control were distinct entities as was evidenced by the low correlation between the two (-.046).

Moderately accurate prediction of baseline compliance from various moderator variables was possible. The number of siblings in addition to the target child predicted attendance of parents at the first group session (canonical correlation = .328). The

parents who face more difficult situations with their children, find it more difficult to organize themselves so as to be able to follow through with their commitment to take part in the groups, they may be so overwhelmed by the problems that they give up, or they may be more reluctant to leave their children alone (or may have difficulty getting babysitters). The opposite, however, is true for the psychosomatic scale in that parents who gave reasons for attending rate their children higher than those parents who did not. This is difficult to interpret. Perhaps the parental perceptions of high anxiety in the child is more disruptive to family functioning than are psychosomatic problems. In addition, the small sample size involved here may result in findings that are not generalizable to the larger population.

The family structure variable and the self-efficacy factor from the Parent Questionnaire predict baseline percentage of log completed. While the findings regarding family structure (i.e., intact families have higher rates of compliance than blended or single parent families) are comparable to findings in the literature, this variable accounts for only a small percentage of the variance. Its usefulness for model building is therefore questionable. From a clinical point of view - as was the case with the number of children variable in predicting attendance - it is not possible to use family structure to predict individual cases of noncompliance. What would be possible, however, is for clinicians to become aware of potential stresses which may affect compliance and to help provide support services for

anxiety and psychosomatic scores from the Conners Parent's Questionnaire distinguished between nonattenders who gave a reason for nonattendance and those who gave no reason (canonical correlation = .694). Self-efficacy regarding log use was a moderately good predictor of baseline percentage of log completed (accounting for 20% of the variance). Family structure also significantly predicted baseline percentage of log completed but the effect was not strong (accounting for 7% of the variance). For those parents who attended the first group session, no variable was predictive of attendance at the second session although the perceived severity of problem factor from the Parent Questionnaire ($p = .06$) and the anti-social scale from the Conners Parent's Questionnaire ($p = .077$) approached significance.

Evaluation of the effectiveness of the effort attribution intervention in raising compliance in comparison to the attention control procedure, was carried out in two stages. At the first parent group session, subjects ($n = 45$) received either the effort attribution or the attention control procedure. The percentage of log completed by parents in these two groups was compared for the week immediately following the interventions. The difference in percentage of log completed by parents in the two groups did not reach statistical significance. Given that the distributions for percentage of log completed was skewed by the high number of 0% scores obtained, it is likely that the traditional parametric procedures were not sensitive to changes that did occur. That is, while mean percentage of log completed

by parents in the effort attribution group remained comparable to the baseline rate for that group, it fell from 29% to 16% for parents in the attention control group. The second aspect of the evaluation of the intervention involved only those subjects who attended the first two parent group sessions and who therefore received both the experimental intervention and the attention control procedure ($n = 24$). Percentage of log completed for subjects in both experimental groups was raised significantly, as predicted, for those weeks immediately following the effort attribution intervention. For those parents who received the effort attribution intervention first, the post-intervention levels of log completed were maintained for the duration of the parent group sessions. For those parents receiving the attention control procedure first, percentage of log completed for later group sessions dropped to levels below baseline (i.e., significant group $\times$ time interaction, $p = .024$).

Although the effort attribution intervention resulted in improved rates of percentage of log completed, it did not have the predicted effect on social psychological variables. There was evidence that the self-efficacy and willingness to change factors decreased from baseline to termination for those subjects who received the attention control procedure first. Scores at termination on these two factors remained at baseline levels for subjects who received the effort attribution intervention first.

Discussion

A discussion of three issues important to the interpretation of experimental data are presented first. This includes discussions of sampling issues, of measurement issues, and of statistical issues. Interpretations of the research findings are presented next. Characteristics involved in the prediction of compliance are discussed first. This is followed by considerations of the effects of the intervention. In the discussion of findings in each area, theoretical implications are presented. This is followed by a discussion of clinical implications and concerns. Trends to significance are discussed briefly at the end of each section. The concluding section presents considerations for future research arising out of the present study.

Issues Important to Interpretation of Data

Two sampling issues are relevant to the interpretation of data. The analyses of compliance involve an examination of the attitudes and behaviors of recording parents. In all but two cases, the recording parent was the mother. Information was collected about the nonrecording parents. However the lack of participation in the groups and irregular attendance by nonrecording parents, results in a great deal of missing data for these parents. Inclusion of information about the nonrecording parents might be useful both in predicting baseline compliance and in explaining the impact of the intervention both on percentage of log completed and on changes on the social

psychological variables. In order to use the information about nonrecording parents, the adoption of one of two approaches is necessary. First, cases with missing data could be deleted; this would result in very small samples. For example, inclusion of factor scales on the Parent Questionnaire for nonrecording parents in prediction of baseline percentage of log completed results in a reduction of the sample from sixty to eighteen. Alternatively, simple inclusion of the data available would bias results in that attitudes and beliefs about some target children are doubly represented. Because both of these approaches are problematic, information about nonrecording parents is not included in analyses. The possible mediating influence of nonrecording parents is, therefore, left unanalyzed in this study. Issues arising out of the mediating effect of characteristics of nonrecording parents would have to be examined in a study involving a larger sample.

The second sampling issue concerns the generalizability of results. The group of subjects who were screened for inclusion in the parent training groups ($N = 72$) is similar to parents who typically seek this kind of service (Davidson, 1981). They tend to be in their late twenties or early thirties and have young families. A larger percentage of target children are boys than girls. Reasons for seeking assistance typically involve aggressivity, hyperactivity, and other forms of behavior problems. Scores on the Internal-External Locus of Control Scale and on the Conners Parent's Questionnaire are within normal ranges although there is a tendency to rate the children

as slightly more hyperactive than normal on the Conners. Racial and ethnic subgroups, however, are not well represented in this sample. Although information concerning socioeconomic status was not collected, subjects appear to be from both lower and middle class groups. Baseline scores on factors from the Parent Questionnaire are also in the expected direction. That is, scores are high on the perceived severity of problem and willingness to change factors and low on expressed satisfaction with the current parenting situation. The generalizability of results obtained concerning baseline levels of compliance to people who seek parent training services in general is, therefore, likely to be quite good.

The characteristics of parents who were regular attenders, irregular attenders, or dropouts differ in the expected direction. Dropouts are younger and have less education than attending parents or than irregular attenders. In addition, dropouts score significantly lower than either of the other groups on the perceived severity of problem factor of the Parent Questionnaire. These findings, which seem to indicate lower levels of compliance in families where there are fewer support systems, are in keeping with previous results reported in the literature (Blechman et al., 1981; Firestone & Witt, 1982; Haynes, 1976b). Irregular attenders score higher on the self-efficacy factor of the Parent Questionnaire than either dropouts or regular attenders. While this finding was not expected, it is possible that a higher level of self-efficacy in conjunction with irregular attendance reflects either an

overconfident or a casual attitude concerning attempts to deal with child management problems. One additional finding approaches significance; parents from intact families are more likely to be regular attenders than either dropouts or irregular attenders. Again, it appears that intact families have more extensive support systems and are therefore more likely to comply.

It is possible that attenders, irregular attenders, and dropouts also differ on characteristics other than the social psychological and sociodemographic variables measured in this study. Parental mental health status and skill levels for general functioning may also be mediating factors (Baekland & Lundwall, 1975; Frankel & Hovell, 1978). These variables must be examined in future research.

Differing numbers of subjects are used in various analyses because of the high dropout rates during the study. The greatest number of subjects available at each stage in the research is used. This results in some lack of comparability of results at the various stages of analyses. The extra subjects are included wherever possible, however, because this study represents an initial attempt at understanding the mediating role of social psychological variables in compliance with a behavioral regimen. The information obtained from inclusion of the extra subjects is felt to outweigh any resulting lack of comparability.

Measurement issues involve questions concerning the reliability and validity of the Parent Questionnaire. This

questionnaire yields four empirically based factors that may be useful in measuring attitudes and beliefs in parent group training. Two of these empirical factors - self-efficacy regarding log use and perceived severity of child's problem - correspond with the theoretically determined scales for self-efficacy and motivation (perceived severity of problem - health belief). The two remaining factors are composed of items of different theoretical scales (health beliefs). What they appear to add, however, are facets of parental motivation that are not tapped by the perceived severity of problem factor. Thus, what the Parent Questionnaire is measuring in addition to self-efficacy is not health beliefs as outlined by the health belief model but is, instead, different aspects of motivation. This suggests that the factors as outlined by the health belief model may not be applicable in situations involving compliance with behavioral regimens. The emphasis in future research in this area should then be aimed at attempting to clarify motivational issues instead of pursuing the health belief model.

An alternative explanation for the failure of the theoretical scales to measure aspects of the health belief model is that the scales developed are not sensitive to the health belief variables. Face validity for items is evident in that there is agreement of expert judges as to the appropriateness of items for the various scales. Despite this face validity, the scales did not form empirically sound factors. Future research, while attempting to clarify the above mentioned motivational aspects could include aspects of the health belief model as

well. It is important to determine if this failure of the health belief model can be replicated in other compliance situations involving behavioral regimens.

The internal consistency of the self-efficacy and perceived severity of problem factors is good. For the willingness to change and current satisfaction factors the internal consistency is moderate. Use of the questionnaire in another study is, therefore, important in order to determine whether or not these latter two factors can be replicated. This replication may also help in the clarification of differences between the three motivational factors.

Support for the usefulness of the Parent Questionnaire is also obtained from the fact that the factors are sensitive to change. That is, in the period between the first and second administrations of the questionnaire, parents are involved in using the logs to collect information about their children's behavior. It would be expected that this process would have an effect on the attitudes measured by the Parent Questionnaire. That is, actually using the logs should affect parent's evaluations of their ability to use them (i.e., self-efficacy). In addition, it is often the case that simply having parents focus - in a systematic way - on some aspect of child behavior will in itself alter that behavior or will alter how that behavior is perceived. In turn, it would be expected that such changes would have an impact on parental motivation. Indeed change on the factors did occur between the first and second administrations of the Parent Questionnaire. Problems with

target children are reported as being less serious on the second administration of the questionnaire in comparison to the first.

Clear evidence of criterion-related validity of the factors on the Parent Questionnaire is not available. The intervention was designed assuming that changes in compliance would be mediated by changes in self-efficacy and motivation. While the changes in percentage of log completed did occur as expected, the corresponding changes in measured attitudes did not. It should be kept in mind that this may reflect either an inability of the questionnaire to measure subtle changes in these attitudes, or the fact that the intervention itself is not strong enough to have the expected effect on attitudes.

In summary, the Parent Questionnaire provides four factors that measure self-efficacy and motivation relevant to parent training. Self-efficacy concerning use of logs and perceived severity of problems appear to represent theoretically and empirically sound variables. Replication would be important for establishing the stability of the willingness to change and the current satisfaction factors.

While the self-efficacy, perceived severity of problem, and willingness to change factors are significantly related, the amount of shared variance is small (approximately 10%). This indicates that the four factors assessed by the Parent Questionnaire are in fact distinct. In addition, there is no relationship between self-efficacy regarding log use and locus of control. Self-efficacy then may be considered to be measuring an attitude that is distinct from locus of control.

While measured self-efficacy fluctuated during the course of the experimental intervention, locus of control scores did not.

This lends support to the notion that while locus of control involves a stable trait-like characteristic, self-efficacy is ~~more~~ situation specific.

One statistical issue is important in the interpretation of results in this study. This issue involves the problem of inflated Type I error that occurs when a large number of statistical comparisons are made on one data set (Harris, 1975; Pedhazur, 1982). The trade-off between possible Type I errors and adequately sifting the data in exploratory studies represents a common conflict for researchers. The position taken in this study is to extensively examine the data in an attempt to detect all possible leads to be pursued in future research. However, given the number of analyses actually carried out, the data must be interpreted with the reservation that replication will be essential to establishing any relationships uncovered here. If significant results are obtained by the use of analysis of variance or multivariate techniques, these are followed by appropriate post hoc comparisons and univariate analyses which are based on theoretical considerations. Where it is applicable, Bonferroni's technique is used to maintain overall levels of Type I error at $p = .05$.

Despite the above mentioned efforts to guard against spurious findings, several results reported only approach statistical significance. While keeping in mind the danger

inherent in interpreting these trends, it is nevertheless considered important to note them. Given that this study represents an exploratory effort at understanding compliance with behavioral regimens, such trends may point to important areas where further research would be useful.

Interpretation of Findings

Characteristics Involved in the Prediction of Compliance

Two variables are involved in predicting attendance of parents at the first group session. The first of these is the number of siblings in a family in addition to the target child. Parents with fewer children are more likely to attend the first session. While this is in keeping with findings in the literature (Firestone, 1982; Haynes, 1976b), it is doubtful that this information could be used either in building theoretical models for predicting compliance or in organising clinical interventions. The average number of children in families from which parents attended the first session in comparison to those from which parents did not attend - although statistically significantly higher - is not a large enough difference to be useful in predicting individual cases of noncompliance upon screening. Two scores (anxiety and psychosomatic) of the Conners Parent's Questionnaire distinguish between parents who gave a reason for their nonattendance at the first session and those who gave no reason. The meaning of these differences is unclear. Parents who gave no reason for their nonattendance rate their children higher on anxiety than parents who gave a reason. This could be interpreted as a situation in which

parents who face more difficult situations with their children, find it more difficult to organize themselves so as to be able to follow through with their commitment to take part in the groups, they may be so overwhelmed by the problems that they give up, or they may be more reluctant to leave their children alone (or may have difficulty getting babysitters). The opposite, however, is true for the psychosomatic scale in that parents who gave reasons for attending rate their children higher than those parents who did not. This is difficult to interpret. Perhaps the parental perceptions of high anxiety in the child is more disruptive to family functioning than are psychosomatic problems. In addition, the small sample size involved here may result in findings that are not generalizable to the larger population.

The family structure variable and the self-efficacy factor from the Parent Questionnaire predict baseline percentage of log completed. While the findings regarding family structure (i.e., intact families have higher rates of compliance than blended or single parent families) are comparable to findings in the literature, this variable accounts for only a small percentage of the variance. Its usefulness for model building is therefore questionable. From a clinical point of view - as was the case with the number of children variable in predicting attendance - it is not possible to use family structure to predict individual cases of noncompliance. What would be possible, however, is for clinicians to become aware of potential stresses which may affect compliance and to help provide support services for

parents who are less likely to comply. Research examining the effect of provision of support systems on compliance would help determine the importance of this variable.

The self-efficacy variable accounts for 20% of the variance involved in baseline percentage of log completed. Of the social psychological variables examined, self-efficacy is the only one having predictive value at baseline. Examination of this variable in greater detail may be important in coming to understand the factors underlying compliance. This is also a clinically useful finding since self-efficacy is relatively easy to assess during a screening interview. The clinician's awareness of the importance of the variable may alert him to potential noncompliers. This knowledge also would provide the clinician with the opportunity to intervene so as to overcome compliance problems.

Evaluation of Intervention

Effect of intervention on percentage of log completed. The first aspect of the evaluation of the experimental intervention involves a comparison of percentage of logs completed immediately following the first administration of the effort attribution and the attention control procedures ($n = 45$). There are no significant changes in percentage of log completed immediately following the interventions. However, the percentage of log completed by subjects in the attention control group fell substantially (from 23% to 14%). During the same period of time (i.e., baseline to post-intervention), percentage of log completed by subjects in the effort attribution group

remains at baseline levels. This may indicate that, while the effort attribution may not raise the level of compliance initially, it prevents the deterioration in compliance that often occurs during the initial phases of a clinical intervention.

Findings concerning percentage of log completed by subjects who received both the effort attribution and attention control procedures ($n = 24$) provide support for the effectiveness of the effort attribution intervention. Following the first group session - during which parents take part in one of the procedures - there is a significant difference on percentage of log completed by subjects in the two groups. This difference occurs because of a significant improvement in percentage of log completed by subjects who just received the effort attribution. Furthermore, percentage of log completed by subjects who receive the attention control first, increases significantly once they too receive the effort attribution intervention. Upon completion of both procedures, percentage of log completed by the two groups are at comparable levels. Although there is no significant time effect, there is a trend over time for an increase in percentage of log completed. All of this information points toward the effectiveness of the effort attribution intervention in raising compliance. What is not yet clear, however, is which variables are involved in mediating these changes in compliance.

Even though the rate of logs completed for subjects receiving the effort attribution intervention first and those

receiving the attention control first, are comparable following the experimental interventions, the percentage of log completed by those who receive the attention control first, drops significantly during the remaining group sessions. This suggests the importance - from a clinical point of view - of presenting compliance-raising strategies as early as possible in the clinical intervention. Given the small number of subjects in this sample, as well as the fact that possible mediating variables are not controlled following the interventions, it would be important that this finding be replicated.

Percentage of log completed by attenders was raised from approximately 20% to 40% as a result of the effort attribution intervention. This represents a clinically relevant effect from two points of view. First, mean level of compliance is doubled. This may have an important impact on parental motivation in that parents who experience successes in the groups are more likely to obtain benefits from the training groups than those who are less active participants. Second, much of the increase in percentage of log completed involves changes from 0% completed. That is, parents who initially did not use the logs at all were completing 20% to 30% of the logs following intervention. Again, benefits - in terms of changes in motivation - to be derived from work completed, are likely to accrue.

Effect of intervention on social psychological variables.

Although the experimental intervention had the hypothesized effect on percentage of log completed, the mediating variables underlying this change are not yet defined. Although there are

no significant changes on factors from the Parent Questionnaire following the interventions, there are some trends in the data. On the perceived severity of problem factor, there is a tendency for scores to drop following the effort attribution intervention. One possible explanation is that exposure to the effort attribution intervention helps provide parents with the perspective that other parents may have similar problems with their children or it may help parents gain confidence in their ability to eventually deal with the problems.

The lack of positive results concerning changes in social psychological variables could mean one of two things. First, it is possible that the measures used are not sensitive enough to detect subtle changes that occur. For example, instead of repeating the same questions as was done on the Parent Questionnaire, parents could be asked to make relative judgements about their own attitudes. Instead of repeating the self-efficacy question "How confident do you feel in your ability to complete all of the recording requested?", parents might be asked "In comparison to a week ago - before you had a chance to use the logs - how confident do you feel in your ability to complete the logs?". With self-efficacy, which is frequently described as a variable which changes slowly (Bandura, 1977), it is possible that more than one or two sessions are needed for an effect to become manifest.

A second possibility for explaining the lack of change in the social psychological variables might be that the attitudes measured in fact did not change but that some other variables

act as mediators. The evidence, however, does not point in this direction. That is, there are differences between baseline and termination measures on Parent Questionnaire factors. Also, subjects receiving the effort attribution intervention first show greater improvements on self-efficacy and motivation than do those receiving the attention control first. Changes in the social psychological variables may then occur but, again, they may be very subtle and may take place over a longer period of time. In addition, the differences in attitudes that occur between the two groups from baseline to termination parallel the previously mentioned drop in compliance for subjects receiving the attention control intervention first. This seems to indicate that, in fact, the Parent Questionnaire is not sensitive enough to measure the changes that may occur immediately following the experimental intervention.

Future Research

The present study presents a first step in the examination of compliance with a behavioral regimen. The findings point to the necessity of research in several areas.

First, research examining compliance with behavioral regimens must take into account therapeutic outcome. In order to examine the issue of compliance and therapeutic outcome, the present study could be expanded in two ways. First, alternate forms of assessment of outcome could be used. For example, the results of parent questionnaires could be compared to the results of observations of child behavior and/or of parent-child

interactions. Second, the effects of therapeutic benefits across situations (e.g., play-school and at home) could be examined. Such a cross-situational approach would provide information concerning the concurrent validity of the measures and concerning the usefulness of the intervention. The relationship between compliance and outcome could then be explored.

The samples obtained for the proposed studies of therapeutic outcome are important. The use of a more homogenous sample (i.e., a more homogenous sample of target children) would result in a greater ease of definition of therapeutic gain. The generalizability of results from the use of such samples would, however, be quite limited. In studying compliance in parent training groups, the continued use of heterogenous samples is recommended. The more heterogenous samples are more representative of the population who makes use of such groups.

Continued exploration of the mediators of compliance is necessary. Part of this research involves work on the validation of assessment instruments used to measure potential moderating variables. For example, developing the Parent Questionnaire so that parents are required to make comparative judgments about their attitudes may provide an instrument that is more sensitive to changes that occur. Furthermore, clarification of motivational and self-efficacy factors is important. For example, if - as suggested - there are several aspects of motivation relevant to compliance, an instrument must be developed to measure these. Part of this development will

involve a focus on specifics regarding behavioral regimens instead of relying on information obtained from findings regarding medical compliance. The role of self-efficacy in compliance might be better defined if parent training groups in which aspects of parental self-efficacy became a major component of the clinical focus throughout the sessions, are studied. This is important both in that the single self-efficacy intervention used in this study may simply not be sufficient to result in lasting changes, and in that no assessment of durability of changes has been made.

Before a general model to explain compliance with behavioral regimens can be developed, the current study must be replicated and extended in ways such as those outlined above. In addition, parallel research in behavioral areas other than parent groups must be conducted. In this way, findings may be compared across situations and the general issues identified and defined.

References

- Ajzen, I., & Fishbein, M. (1973). Attitudinal and normative variables as predictors of specific behaviors. Journal of Personality and Social Psychology, 27, 41-57.
- Albin, J. B., Lee, B., Dumas, J., Slater, J., & Witmer, J. (1985). Parent training with Canadian families. Canada's Mental Health, 33(4), 20-24.
- Anderson, S. A., Atilano, R. B., Bergen, L. P., Russell, C. S., & Jurich, A. P. (1985). Dropping out of marriage and family therapy: Intervention strategies and spouses' perceptions. The American Journal of Family Therapy, 13, 39-54.
- Baekland, F., & Lundwall, L. (1975). Dropping out of treatment: A critical review. Psychological Bulletin, 82, 738-783.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.
- Bandura, A. (1982a). The assessment and predictive generality of self-percepts of efficacy. Journal of Behavior Therapy and Experimental Psychiatry, 13, 195-199.
- Bandura, A. (1982b). Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.
- Bandura, A. (1983). Self-efficacy determinants of anticipated fears and calamities. Journal of Personality and Social Psychology, 45, 464-469.
- Bandura, A., Adams, N. E., & Beyer, J. (1977). Cognitive processes mediating behavioral change. Journal of Personality and Social Psychology, 35, 125-139.
- Bandura, A., Adams, N. E., Hardy, A. B., & Howells, G. N. (1980). Tests of the generality of self-efficacy theory. Cognitive Therapy and Research, 4, 39-66.
- Bandura, A., Reese, L., & Adams, N. E. (1982). Microanalysis of action and fear arousal as a function of differential levels of perceived self-efficacy. Journal of Personality and Social Psychology, 43, 5-21.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. Journal of Personality and Social Psychology, 41, 586-598.
- Barling, J., & Snipelisky, B. (1983). Assessing the determinants of children's academic self-efficacy beliefs: A replication. Cognitive Therapy and Research, 7, 371-376.

- Barofsky, I. (1976). Behavioral therapeutics and the management of therapeutic regimens. In D. L. Sackett & R. B. Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Barrios, B. A. (1983). The role of cognitive mediators in heterosocial anxiety: A test of self-efficacy theory. Cognitive Therapy and Research, 7, 543-554.
- Beck, A. T. (1978). Cognitive therapy and the emotional disorders. New York: International Universities Press, Inc.
- Becker, M. H. (1974). The health belief model and sick role behavior. Health Education Monographs, 2, 409-432.
- Becker, M. H. (1976). Sociobehavioral determinants of compliance. In D. L. Sackett & R. B. Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Becker, M. H., Haefner, D. P., Kasl, S. V., Kirscht, J. P., Maiman, L. A. & Rosenstock, I. M. (1977). Selected psychosocial models and correlates of individual health-related behaviors. Medical Care, (Supplement), 15, 27-46.
- Becker, M. H., Maiman, L. A., Kirscht, J. P., Haefner, D. P., & Drachman, R. H. (1977). The health belief model and prediction of dietary compliance: A field experiment. Journal of Health and Social Behavior, 18, 348-366.
- Becker, M. H., Maiman, L. A., Kirscht, J. P., Haefner, D. P., Drachman, R. H., & Taylor, D. W. (1979). Patient perceptions and compliance: Recent studies of the health belief model. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.
- Bea, D. J., & Allen, A. (1974). On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. Psychological Review, 81, 506-520.
- Bergman, A. B., & Werner, R. J. (1963). Failure of children to receive penicillin by mouth. New England Journal of Medicine, 268, 1334-1338.
- Best, J. A. (1975). Tailoring smoking withdrawal procedures to personality and motivational differences. Journal of Consulting and Clinical Psychology, 43, 1-8.
- Best, J. A., & Bloch, M. (1979). Compliance in the control of cigarette smoking. In R. B. Haynes, D. W. Taylor, & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.

- Blechman, E. A., Budd, K. S., Christophersen, E. R., Szykula, S., Wahler, R., Embry, L. H., Kogan, K., O'Leary, K. D., & River, L. S. (1981). Engagement in behavioral family therapy: A multisite investigation. Behavior Therapy, 12, 461-472.
- Bradburn, N. M., & Sudman, S. (1979). Improving interview method and questionnaire design. San Francisco: Jossey-Bass Publishers.
- Bugaighia, M. A., Schumm, W. R., Bollman, S. R., & Jurich, A. P. (1983). Locus of control and marital satisfaction. The Journal of Psychology, 114, 275-279.
- Butler, J. K. (1983). Reciprocity of trust between professionals and their secretaries. Psychological Reports, 53, 411-416.
- Cadman, D., Shurvell, B., Davies, P., & Bradfield, S. (1984). Compliance in the community with consultants' recommendations for developmentally handicapped children. Developmental Medicine and Child Neurology, 26, 40-46.
- Carnahan, J., & Nugent, C. (1975). The effects of self-monitoring by patients on the control of hypertension. American Journal of the Medical Sciences, 269, 69-73.
- Cattell, R. B. (1966). The meaning and strategic use of factor analysis. In R. B. Cattell (Ed.), Handbook of multivariate experimental psychology. Chicago: Rand McNally.
- Chambliss, C. A., & Murray, E. J. (1979). Efficacy attribution, locus of control, and weight loss. Cognitive Therapy and Research, 3, 349-353.
- Collins, B. E. (1974). Four components of the Rotter Internal-External Scale: Belief in a difficult world, a just world, a predictable world, and a politically responsive world. Journal of Personality and Social Psychology, 29, 381-391.
- Connors, C. K. (1970). Symptom patterns in hyperactive, neurotic, and normal children. Child Development, 41, 667-682.
- Conrad, K. J., & Eash, M. J. (1983). Measuring implementation and multiple outcomes in a Child Parent Center Compensatory Education Program. American Educational Research Journal, 20, 221-236.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.
- Davidson, P. (1976). Therapeutic compliance. Canadian Psychological Review, 17, 247-259.

- Di Matteo, M. R., & Di Nicola, D. D. (1982). Achieving patient compliance: The psychology of the medical practitioner's role. New York: Pergamon Press Inc.
- Dinkmeyer, D., & McKay, G. D. (1976). Systematic training for effective parenting. Circle Pines, Minn.: American Guidance Service, Inc.
- Donlan, D. (1983). The effects of two models of staff development on self-awareness and attitudes of teachers with internal vs. external locus of control. Journal of Experimental Education, 51, 109-113.
- Dunbar, J. (1983). Compliance in pediatric populations: A review. In P. J. McGrath & P. Firestone (Eds.). Pediatric and adolescent behavioral medicine: Issues in treatment (Volume 10, Springer Series on Behavior Therapy & Behavioral Medicine). New York: Springer.
- Dunbar, J. M., Marshall, G. D., & Hovell, M. F. (1979). Behavioral strategies for improving compliance. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Edwards, A. L., & Kenney, K. C. (1967). A comparison of the Thurstone and Likert techniques of attitude scale construction. In M. Fishbein (Ed.), Readings in Attitude Theory and Measurement. New York: John Wiley & Sons, Inc.
- Etzwiler, D. D., & Robb, J. R. (1972). Evolution of programmed education among juvenile diabetics and their families. Diabetes, 21, 967-971.
- Epstein, L. H., & Cluss, P. A. (1982). A behavioral medicine perspective on adherence to long-term medical regimens. Journal of Consulting and Clinical Psychology, 50, 950-971.
- Erickson, R. C. (1983). Psychotherapy and the locus of control. Journal of Religion and Health, 22(74-81).
- Evans, R. I., Rozelle, R. M., Lasater, T. M., Dembroski, T. M., & Allen, B. P. (1970). Fear arousal, persuasion, and actual versus implied behavioral change: New perspective utilizing a real-life dental hygiene program. Journal of Personality and Social Psychology, 16, 220-227.
- Eyberg, S. M., & Johnson, S. M. (1974). Multiple assessment of behavior modification with families: Effects of contingency contracting and order of treated problems. Journal of Consulting and Clinical Psychology, 42, 594-606.
- Farley, O. W., Peterson, K. D., & Spanos, G. (1975). Self-termination from a child guidance center. Community Mental Health Journal, 11, 325-334.

- Feinstein, A. R., Wood, H. F., Epstein, J. A., Taranta, A., Simpson, R., & Tursky, E. (1959). A controlled study of three methods of prophylaxis against streptococcal infection in a populations of rheumatic children: Results of the first three years of the study, including methods for evaluating the maintenance of oral prophylaxis. New England Journal of Medicine, 260, 697-702.
- Fink, D. L. (1976). Tailoring the consensual regimen. In D. L. Sackett & R. B. Haynes (Eds.). Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Firestone, P. (1982). Factors associated with children's adherence to stimulant medication. American Journal of Orthopsychiatry, 52, 447-457.
- Firestone, P., & Witt, J. E. (1982). Characteristics of families completing and prematurely discontinuing a behavioral parent-training program. Journal of Pediatric Psychology, 7, 209-222.
- Fishbein, M., & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioral criteria. Psychological Review, 81, 59-74.
- Fitzgerald, J. D. (1976). The influence of the medication on compliance with therapeutic regimens. In D. L. Sackett & R. B. Haynes (Eds.). Compliance with therapeutic regimens. Baltimore: John Hopkins University Press, 1976.
- Fleischman, M. J. (1979). Using parenting salaries to control attrition and cooperation in therapy. Behavior Therapy, 10, 111-116.
- Fleischman, M. J. (1981). A replication of Patterson's "Intervention for boys with conduct problems". Journal of Consulting and Clinical Psychology, 49, 342-351.
- Forehand, R., & Atkeson, B. M. (1977). Generality of treatment effects with parents as therapists: A review of assessment and implementation procedures. Behavior Therapy, 8, 575-593.
- Forehand, R., & King, H. E. (1977). Noncompliant children: Effects of parent training and behavior and attitude change. Behavior Modification, 1, 93-109.
- Francis, V., Korsch, B. M., & Morris, M. J. (1969). Gaps in doctor-patient communication. New England Journal of Medicine, 280, 535-540.
- Frankel, B. S., & Hovell, M. F. (1978). Health service appointment keeping: A behavioral view and a critical review. Behavior Modification, 2, 435-465.

- Friman, P. C., Finney, J. W., Rapoff, M. A., & Christophersen, E. R. (1985). Improving pediatric appointment keeping with reminders and reduced response requirement. Journal of Applied Behavior Analysis, 18, 315-321.
- Gardner, J. M. (1971). Behavior modification in mental retardation: A review of research and analysis of trends. In R. D. Rubin, H. Finsterheim, A. A. Lazarus, & C. M. Franks (eds.), Advances in behavior therapy. New York: Academic Press.
- Gibson, E. S. (1979). Compliance and the organization of health services. In R. B. Haynes, D. W. Taylor, & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.
- Gillum R. F., & Barsky, A. J. (1974). Diagnosis and management of patient noncompliance. Journal of the American Medical Association, 228, 1563-1567.
- Gordis, L. (1976). Methodologic issues in the measurement of patient compliance. In D. L. Sackett & R. B. Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Gordis, L. (1979). Conceptual and methodologic problems in measuring patient compliance. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.
- Gordis, L., Markowitz, M., & Lilienfeld, A. M. (1969). Studies in the epidemiology and preventability of rheumatic fever: A quantitative determination of compliance in children on oral penicillin prophylaxis. Pediatrics, 43, 173-182.
- Gordon, S. B., & Davidson, N. (1981). Behavioral parent training. In A. S. Gurman & D. P. Kniskern (Eds.), Handbook of family therapy. New York: Brunner/Mazel, 1981.
- Graziano, A. M. (1975). Behavior therapy with children. Chicago: Aldine.
- Graziano, A. M. (1977). Parents as behavior therapists. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.), Progress in behavior modification. New York: Academic Press.
- Green, L. W. (1977). Evaluation and measurement: Some dilemmas for health education. American Journal of Public Health, 67, 155-161.
- Green, L. W. (1979). Educational strategies to improve compliance with therapeutic and preventive regimens: The recent evidence. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.

- Gurman, A. S., & Kniskern, D. P. (1981a). Family therapy outcome research: Knowns and unknowns. In A. S. Gurman & D. P. Kniskern (Eds.). Handbook of family therapy. New York: Brunner/Mazel.
- Gurman, A. S., & Kniskern, D. P. (Eds.) (1981b). Handbook of family therapy. New York: Brunner/Mazel.
- Gurman, A. S., & Razin, A. M. (1977). Effective psychotherapy: A handbook of research. New York: Pergamon.
- Gutek, B. A., Allen, H., Tyler, T. R., Lau, R. R., & Majchrzak, A. (1983). The importance of internal referents as determinants of satisfaction. Journal of Community Psychology, 11, 111-120.
- Guy, W. (1976). ECDEU: Assessment manual for psychopharmacology. The United States National Health, Education, and Welfare, Publications No. ADM76-338.
- Hagen, R. L., Foreyt, J. P., & Durham, T. W. (1976). The dropout problem: Reducing attrition in obesity research. Behavior Therapy, 7, 463-471.
- Hammel, R. W., & Williams, P. O. (1964). Do patients receive prescribed medication? American Pharmacological Association Journal, 4, 331-334.
- Harris, R. J. (1975). A primer of multivariate statistics. New York: Academic Press.
- Haynes, R. B. (1976a). Strategies for improving compliance: A methodologic analyses and review. In D. L. Sackett & R. B. Haynes (Eds.). Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Haynes, R. B. (1976b). A critical review of the "determinants" of patient compliance with therapeutic regimens. In D. L. Sackett & R. B. Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Haynes, R. B. (1979). Determinants of compliance: The disease and the mechanics of treatment. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Haynes, R. B., Sackett, D. L., Gibson, E. S., Taylor, D. W., Hackett, B. C., Roberts, R. S., & Johnson, A. L. (1976). Improvement of medication compliance in uncontrolled hypertension. Lancet, 1, 1265-1268.
- Haynes, R. B., Taylor, D. W., & Sackett, D. L. (Eds.) (1979). Compliance in health care. Baltimore: John Hopkins University Press.

- Holland, C. J. (1977). Directive parental counselling. Windsor: University of Windsor.
- Hulka, B. S. (1979). Patient-clinician interactions and compliance. In R. B. Haynes, D.W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Hulka, B., Kupper, L., Cassel, J., & Mayo, F. (1975). Doctor-patient communication and outcome among diabetic patients, Journal of Community Health, 1, 15-27.
- Jones, F. A., & Caldwell, H. S. (1981). Factors affecting patient compliance with diagnostic recommendations. American Journal of Orthopsychiatry, 51, 700-709.
- Kasl, S. V. (1974). The health belief model and behavior related to chronic illness. Health Education Monographs, 2, 433-454.
- Kirscht, J. P. (1974a). The health belief model and illness behavior. Health Education Monographs, 2, 387-408.
- Kirscht, J. P. (1974b). Research related to the modification of health beliefs. Health Education Monographs, 2, 455-469.
- Labaw, P. J. (1980). Advanced questionnaire design. Cambridge, Mass.: Abt Books.
- Lau, R. R. (1982). Origins of health locus of control beliefs. Journal of Personality and Social Psychology, 42, 322-334.
- Lau, R. R., & Ware, J. F. (1981). Refinements in the measurement of health-specific locus of control beliefs. Medical Care, 19, 1147-1157.
- Lefcourt, H. M. (1976). Locus of control: Current trends in theory and research. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Lewin, K. (1951). Field theory in social sciences: Selected theoretical papers. New York: Harper & Row, Publishers.
- Lovass, O. I., Freitag, G., Gold, V. J., & Kassorla, I. C. (1965). Recording apparatus and procedure for observation of behaviors in children in free play settings. Journal of Experimental Child Psychology, 2, 108-120.
- Lowenthal, D. J., Briggs, W. A., Mutterperl, R., Adelman, B., & Creditor, M. A. (1976). Patient compliance with antihypertensive medication: The usefulness of urine assays. Current Therapy Research, 19, 405-409.

- Ludenia, K., & Donham, G. W. (1983). Dental patients: Health locus of control correlates. Journal of Clinical Psychology, 39, 854-858.
- Maiman, L. A., & Becker, M. H. (1974). The health belief model: Origins and correlates in psychological theory. Health Education Monographs, 2, 336-353.
- Manheim, H. L. (1977). Sociological research: Philosophy and methods. Homewood, Ill.: The Dorsey Press.
- McVicar, P., & Herman, A. (1983). Assertiveness, self-actualization, and locus of control in women. Sex Roles, 9, 555-562.
- Miller, L. K., & Miller, O. L. (1970). Reinforcing self-help group activities of welfare recipients. Journal of Applied Behavior Analysis, 3, 57-64.
- Morse, D. L., Coulter, M. P., Nazarian, L. F., & Napodano, R. J. (1981). Waning effectiveness of mailed reminders on reducing broken appointments. Pediatrics, 68, 846-849.
- Nazarian, L. F., Mechaber, J., Charney, E., & Coulter, M. P. (1974). Effect of a mailed appointment reminder on appointment keeping. Pediatrics, 53, 349-352.
- Neufeld, V. R. (1976). Patient education: A critique. In D. L. Sackett & R. B. Haynes (Eds.). Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Norusis, M. J. (1985). Advanced statistics guide: SPSS-X. Chicago: McGraw-Hill Book Company.
- O'Dell, S. L. (1974). Training parents in behavior modification: A review. Psychological Bulletin, 81, 418-433.
- O'Leary, M. R., Rohsenow, D. J., & Donovan, D. M. (1976). Locus of control and patient attrition from an alcoholism treatment program. Journal of Consulting and Clinical Psychology, 44, 686-687.
- Olson, D. H., McCubbin, H. I., Barnes, H., Larsen, A., Muxen, M., & Wilson, M. (1982). Family inventories: Inventories used in a national survey of families across the family life cycle. St. Paul, Minnesota: University of Minnesota.
- Patterson, G. R., Cobb, J. A., & Ray, R. S. (1973). A social engineering technology for retraining the families of aggressive boys. In H. E. Adams & I. P. Unikel (Eds.), Issues and trends in behavior therapy. Springfield, Illinois: Charles C. Thomas.

- Patterson, G. R. (1974). Retraining of aggressive boys by their parents: Review of recent literature and follow-up evaluation. Canadian Psychiatric Association Journal, 19, 142-158.
- Patterson, G. R. (1976). The aggressive child: Victim and architect of a coercive system. In E. J. Marsh, L. A. Hamerlynck, & L. C. Handy (Eds.), Behavior modification and families. New York: Brunner/Mazel.
- Patterson, G. R. (1979). Families: Applications of social learning to family life. Champaign, Ill.: Research Press.
- Patterson, G. R., & Forgatch, M. S. (1985). Therapy behavior as a determinant for client noncompliance: A paradox for the behavior modifier. Journal of Consulting and Clinical Psychology, 53, 846-851.
- Pearce, T., O'Shea, J. S., & Wessen, A. F. (1979). Correlations between appointment keeping and reorganization of hospital ambulatory pediatric services. Pediatrics, 64, 81-87.
- Pedhazur, E. J. (1982). Multiple regression in behavioral research: Explanation and prediction. New York: Holt, Rinehart and Winston.
- Pinsof, W. M. (1981). Family therapy process research. In A. S. Gurman & D. P. Kniskern (Eds.), Handbook of family therapy. New York: Brunner/Mazel.
- Reiss, M. L., Piotrowski, W. D., & Bailey, J. S. (1976). Behavioral community psychology: Encouraging low-income parents to seek dental care for their children. Journal of Applied Behavior Analysis, 9, 387-397.
- Rosenberg, S. G. (1976). Patient education - An educator's view. In D. L. Sackett & R. B. Haynes (Eds.), Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Rosenstock, I. M. (1974). Historical origins of the health belief model. Health Education Monographs, 2, 328-335.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external locus of control reinforcement. Psychological Monographs General - Applied, 80 (Whole No. 609), 1-28.
- Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 43, 56-67.
- Rummel, R. J. (1970). Applied factor analysis. Evanston: Northwestern University Press.

- Sackett, D. L. (1976). Priorities and methods for future research. In D. L. Sackett & R. B. Haynes (Eds.). Compliance with medical regimens. Baltimore: John Hopkins University Press.
- Sackett, D. L. (1979). Methods for compliance research. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Sackett, D. L., & Haynes, R. B. (Eds.) (1976). Compliance with therapeutic regimens. Baltimore: John Hopkins University Press.
- Sackett, D. L., & Snow, J. C. (1979). The magnitude of compliance and noncompliance. In R. B. Haynes, D. W. Taylor, & D. L. Sackett (Eds.), Compliance in health care. Baltimore: John Hopkins University Press.
- Schunk, D. H. (1981). Modeling and attributional effects of children's achievement: A self-efficacy analysis. Journal of Educational Psychology, 73, 93-105.
- Sellers, E. M., Cappell, H. D., & Marshman, J. A. (1979). Compliance in the control of alcohol abuse. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Shelton, J. L., & Levy, R. L. (Eds.) (1981). Behavioral assignments and treatment compliance: A handbook of clinical strategies. Champaign, Ill.: Research Press.
- Shepard, D. S., & Moseley, T. A. (1976). Mailed versus telephoned appointment reminders to reduce broken appointments in a hospital outpatient department. Medical Care, 14, 268-273.
- Slaikeu, K., Lester, D., & Tulkin, S. R. (1973). Show versus no show: A comparison of referral calls to a suicide prevention and crisis service. Journal of Consulting and Clinical Psychology, 40, 481-486.
- SPSS Inc. (1983). A complete guide to SPSS-X: Language and operations. Chicago: McGraw-Hill Book Company.
- Tavormina, J. B. (1974). Basic models of parent counselling: A review. Psychological Bulletin, 81, 827-835.
- Taylor, D. W. (1979). A test of the health belief model in hypertension. In R. B. Haynes, D. W. Taylor & D. L. Sackett (Eds.). Compliance in health care. Baltimore: John Hopkins University Press.
- Thurstone, L. L. (1967). Attitudes can be measured. In M. Fishbein (Ed.), Readings in attitude theory and measurement. New York: John Wiley & Sons, Inc.

- Turner, A. J., & Vernon, J. C. (1976). Prompts to increase attendance in a community mental health center. Journal of Applied Behavior Analysis, 9, 141-145.
- Wallston, B. S., Wallston, K. A., Kaplan, G. D., & Maides, S. A. (1976). Development and validation of the health locus of control (HLC) scale. Journal of Consulting and Clinical Psychology, 44, 580-585.
- Watts, F. N. (1980). Behavioral aspects of the management of diabetes mellitus: Education, self-care and metabolic control. Behavior Research and Therapy, 18, 171-180.
- Weisenberg, M., Kegeles, S. S., & Lund, A. K. (1980). Children's health beliefs and acceptance of a dental preventive activity. Journal of Health and Social Behavior, 21, 59-74.
- Wolf, M. M. (1978). Social validity: The case for subjective measurement. Journal of Applied Behavior Analysis, 11, 203-214.

Appendix A

- i) Behavior Log
- ii) Instructions to Parents

Behavior Log

Child's Name:

Target Behavior:

Date:

RECORD THREE TARGET BEHAVIORS DAILY

Behavior	Time Mom/Dad	What Happened Just Before Target Behavior	Child's Behavior	Parent's Response	What Eventually Happened
#1					
#2					
#3					

Instructions to Parents

1. You have identified one of your child's behaviors which is either of immediate concern to you or is the source of much frustration for you in trying to deal with it. You have been asked to record examples of this target behavior for a period of one week. For example, if your child has a temper tantrum when you ask him/her to do something, you might record that behavior. If the target behavior is the fighting that goes on between the children in your family, record examples of these disagreements. Record three examples of the target behavior daily.
2. Sometimes the target behavior will occur many times during a day. The decision as to which of the target behaviors to record is up to you. You may record examples of the behavior which seem to you to be the most "serious" examples, or you may record examples which seem to be "typical". You must pick which approach you think will give you the most information.
3. Record behaviors three times daily. That is, choose three times during the day when problem behaviors are likely to occur. For example, if your child goes to school, you might record behavior in the morning before he/she goes to school, during the time spent at home after school, and during the evening before bedtime. Record behaviors at the same time each day. If no problem behaviors have occurred during a recording period (in the above example, in the time before your child goes to school in the morning, after school, or before bedtime) record that the time was free of behavior problems.
4. For each of the behaviors that you record, also record who makes the recording (mother or father) and the approximate time during the day that the behavior occurred. Briefly describe events that occurred immediately before the behavior, exactly what the child's behavior was, how you or others (for example, brothers and sisters) responded, and what the eventual outcome of the interaction was.
5. Keep your record sheets in a place that is handy for recording. Remember to record three behaviors - or the absence of the misbehaviors - daily. It is important to record accurately so that a precise record of your child's behavior may be obtained. If you forget to record, leave that day blank.
6. If you have any questions about the use of these recording forms, please ask.

Appendix B

Description of Content of Parent Group Sessions and
of General Approach Taken in Conducting Sessions

Brief Description of Parent Group Sessions

The parent groups will involve six sessions of about two hours each, held once weekly. The training approach used will be based on a combination of approaches (Patterson, 1979; Holland, 1977; Dinkmeyer & McKay, 1976; Gordon et al., 1979). Each group session will consist of two main components. First, there will be an informational component and second, there will be a participation/problem solving component.

In the information component, the specific topics will be covered here as follows: (Note however that, depending on the needs of the particular parent group, these topics may be altered somewhat.)

Session #1 - Understanding child behavior/misbehavior; i.e., what are the goals of misbehavior (e.g., attention, power, revenge, display of inadequacy) and how does one go about building positive relationships with one's children (e.g., mutual respect, taking time for fun, encouragement, good communications). Included here will be information on the "good parent" syndrome.

Session #2 - Building a child's feelings of confidence and self worth (e.g., encouraging, being positive, recognizing effort and improvement as well as final accomplishments) while avoiding negative expectations (e.g., unreasonably high standards, competition between siblings, double standards).

Session #3 - Communication: ~~Listening~~ Listening to children; how to avoid being moralistic, critical, judgemental while "listening" to your child. Being a "reflective" listener and being able to respond to nonverbal cues.

Session #4 - Communication (continued); how to help children explore alternatives; effective ways to express your ideas and feelings to children. Included here is the concept of "problem ownership" - helping parents distance themselves from problems which really belong to their children and helping children accept same.

Session #5 - Natural and logical consequences; involves an examination of these techniques as a method of discipline that helps to develop a sense of responsibility in the child. Basic principles involving some of the "do's" (understanding, consistency, encouragement) and "don'ts" (pitying, fighting, giving in) will be included. Application of these principles to a variety of "typical" parenting situations will occur.

Session #6 - Continuation of discussion of natural and logical consequences. In addition, concluding remarks regarding child management/reinforcement principles will be made.

The second component of each group session will be more practically oriented and will consist of a problem solving discussion. Specifically, during the time between weekly sessions, parents will collect information about the target behaviors (i.e., behaviors they want to change) of the children. This will be done by use of the behavior logs. The information collected by the use of these logs will be used for the basis of the discussion of what parents might change in their interactions with the child. From the discussion of the problems, parents will be encouraged to make a commitment of trying a new approach to the behavior over the course of the

next week of recording, and to report back to the group with regard to the degree of success with the new approach.

Depending on the outcome parents may choose to try yet another alternative for dealing with the problem or they may go on to dealing with a new behavior. It is in this component of the groups that parents will have the opportunity to integrate some of the concepts that are presented in the more formal section of the group.

Appendix C

Script for Effort Attribution Intervention

Script for Effort Attribution Intervention.Rationale

1) For the past week or so you have been collecting information about your child's behavior/behavior problems. To collect this information you have been using what we call "behavior logs". 2) These logs are simply a standardized way of recording the information that is needed in the Parent Groups. They provide the information that is used in group discussions in these groups; it is from these discussions that parents develop new ideas about ways of dealing with their child's behavior. 3) During the time between group sessions, parents have the opportunity to try out some of these new ideas at home. The logs help give information about how successful some of the different approaches might be. 4) In trying to remember examples of their child's behavior in the weekly group sessions, many parents find that relying on memory is not enough. For example, if your child does something that you want to discuss in the parent group - but does it several days before the group is held - you may forget some of the details of that behavior or how you felt about the situation. 5) Given very hectic schedules and many demands on parent's time, this is not unusual. What the use of the behavior log does, however, is to help overcome these problems. 6) Also, when parents rely solely on their memory, it sometimes happens that they concentrate only on the negative things about their child's behavior. Although it is certainly easy to do this given the concern about negative behaviors, it is important to try to think about positives as well. Once again, use of the behavior logs helps with this. 7) When they first use the behavior logs, many parents find them to be quite awkward. While it is in fact a somewhat different way of thinking about child behavior, parents generally find that once they have used the logs for a while, the information obtained from them is helpful in getting the most out of the parent groups and in changing their kid's behavior in general.	<p>1) Introduction</p> <p>2) Information re:
use of logs; motivation
re: use of logs</p> <p>3) Information re:
use of logs; motivation
re: use of logs.</p> <p>4) Information re:
benefits of use of logs.
Motivation re: use of
logs.</p> <p>5) Self-efficacy
attributing problems with
use of the logs to
factors external to
parents themselves.</p> <p>6) Information re:
benefits of log use.</p> <p>7) Self-efficacy
attribution of problems
in log use to difficulty
of the task.</p> |
|---|--|

Script for Effort Attribution InterventionRationale

8) That is, in the parent groups, when we discuss ways of changing some of your child's behavior, it is important that we have as accurate and complete information as possible.

8) Benefits of log use - motivation.

9) What is essential at the beginning stages of such a project then, is that parents stick to using the logs for a long enough period of time so that they may begin to feel comfortable with them and to see some of the benefits that may be obtained from their use.

9) Long-term benefits of log use - motivation. Self-efficacy - persevering long enough for the logs to be beneficial.

10) The advantages of using the behavior logs in parent groups are at least three-fold. First, their use helps parents specify what problems they are concerned about and might want to change. Second, there is an increased understanding of the problems which result from a breaking down of the problems into their component parts. (In the log that is presently being used, these behaviors are broken down into "what happened before, what the parents' response was, and what happened in the end or the eventual outcomes".) Third, the logs can be used as a measure of change in the child's behavior over time. This can be useful for seeing how the behavior is changing and for evaluating which parental responses seem to be the best for obtaining the desired results. Now, let's look a little more closely at each of these benefits.

10) Information regarding advantages of log use - motivation.

11) First, use of the logs helps parents take out-of-control or problem behavior and break it into more manageable units of behavior.

11) Information - motivation.

12) For example, instead of trying to change all of your child's misbehaviors at once, use of the logs helps parents focus on one target behavior at a time. It usually happens that if the parent tries to make too many changes at once, both parent and child are simply overwhelmed.

12) Self-efficacy - benefits of trying to work slowly, changing one behavior at a time.

13) In the long-run then, it is those parents who take the slower, more thorough - and often more time consuming - approach to changing their child's behavior, who are more successful in implementing the long-lasting changes that are desired.

13) Self-efficacy.

14) For example, Sally - age 5 years - tantrums when she doesn't get the toy she wants, fights when it is time to go to bed, refuses to eat at mealtime, and makes life miserable for Mom in stores; if Mom and Dad try to change all of these behaviors at once, the task is simply too complex and they are likely to give up after a few futile attempts to change them. On the other hand, if they put a lot of work and energy with one of the behaviors - say mealtime routine - they will begin to see improvements in that one area.

14) Self-efficacy - motivation

Script for Effort Attribution InterventionRationale

15) Not only will this success encourage them to put more effort into changing mealtime routine, but they may begin to see improvements in other areas as well.

15) Self-efficacy, motivation

16) As improvement occurs, parents may then decide what problem they want to tackle next.

16) Self-efficacy

17) The second benefit - most parents find that recording their child's problem behavior (i.e., what happened before, the parent's response and so on), helps them decide on ways in which it would be possible to go about changing the behavior. Once again, what this allows parents to do is to focus more specifically on smaller more manageable aspects of the problem behavior.

17) Information - motivation.
Self-efficacy

18) Again too, this may be more time consuming than just trying to think back to examples of your child's behavior, but it is a much more accurate method. For example, if Johnny is being mean to the family dog, it might be useful to know that this behavior usually occurs just after his little sister took away his favorite toy. Or, if the teenager in your home is sulking and negative, it may be important to know that this behavior follows the time when Mom or Dad make decisions for him or her that he or she feels should be his or her own responsibility. Again, in the parenting groups this is very important - perhaps other parents have been faced with similar situations and have tried either successfully or unsuccessfully alternate ways of handling a particular problem. After discussing alternatives, parents might decide to use one of the alternatives themselves during the next week of recording. At the following parent session, the usefulness of that alternative will again be discussed. Parents may then evaluate their progress.

18) Information - motivation. Self-efficacy re: feelings of control over child behavior.

19) This leads directly to the third advantage involved in the use of the logs. That is, accurate and complete filling out of the logs allows parents to make comparisons of behaviors over time. For example, if tantrums are the behavior targetted, the logs will provide a record of what the child actually did, how the parents response - and how they changed their responses -, and the outcome (whether positive or negative) for that behavioral episode.

19) Information re: analyzing change in child behavior - motivation.

Script for Effort Attribution InterventionRationale

20) Parents may then look back to the type of interactions that occurred when the groups first started and see how they have changed during the course of the group sessions. As parents try new approaches to dealing with problem behavior, the child may or may not respond differently; a record of which parental responses are most successful in dealing with certain behavioral problems will then be available.

20) Motivation.
Self-efficacy - sense of parent control.

21) To review then, use of the behavior logs for recording information about child behavior - even though it may be more time-consuming and tedious - is useful in parent groups for the following reasons. First, their use allows parents to focus on specific concrete problems. Second, their use allows parents to break behaviors down into their component parts so that the problem behaviors are easier both to understand and to deal with. Third, their use helps parents to focus on positive as well as negative aspects of behavior that their child displays.

21) Repeat of information previously discussed. Motivation.
Self-efficacy.

One last point to keep in mind. Don't forget, it took a long time for your child to develop his or her problem behaviors. Don't expect things to change over night. Use of the behavior logs is simply a first step in the long process of helping your children to behave in more appropriate ways.

Appendix D

Description of Film Used in Attention Control Procedure

Film Title: Child's Play: Window on Development, U.S.A., 1976

Length: 23 minutes

Description: The purpose of this film is to illustrate the serious purposes of child's play and its role in the social and cognitive development of the human. Sandra Scarr-Salapatek, Professor of Child Psychology at the University of Minnesota, narrates the film as it illustrates the four types of play: dramatic, sensory, skill-mastering, and social.

Appendix E
Conners Parent's Questionnaire

CONNERS PARENT'S QUESTIONNAIRE

Name of Child _____ Date _____
Your Name _____ Relationship _____

Instructions: Listed below are items concerning children's behaviour or the problems they sometimes have. Read each item carefully and decide how much you think your child has been bothered by this problem during the past month -

NOT AT ALL, JUST A LITTLE, PRETTY MUCH or VERY MUCH

Indicate your choice by placing a check mark (✓) in the appropriate column to the right of each item.

ANSWER ALL ITEMS

Observation	Not at All	Just a Little	Pretty Much	Very much
PROBLEMS OF EATING				
1. Picky and finicky				
2. Will not eat enough				
3. Overweight				
PROBLEMS OF SLEEP				
4. Restless				
5. Nightmares				
6. Awakens at night				
7. Cannot fall asleep				
FEAR AND WORRIES				
8. Afraid of new situations				
9. Afraid of people				
10. Afraid of being alone				
11. Worries about illness and death				
MUSCULAR TENSION				
12. Gets stiff and rigid				
13. Twitches, jerks, etc.				
14. Shakes				
SPEECH PROBLEMS				
15. Stuttering				
16. Hard to understand				
WETTING				
17. Bed wetting				
18. Runs to bathroom constantly				
BOWEL PROBLEMS				
19. Soiling self				
20. Holds back bowel movements				
COMPLAINS OF FOLLOWING SYMPTOMS EVEN THOUGH DOCTOR CAN FIND NOTHING WRONG				
21. Headaches				
22. Stomach aches				
23. Vomiting				
24. Aches and pains				
25. Loose bowels				
PROBLEMS OF SUCKING CHEWING or PICKING				
26. Sucks thumb				
27. Bites or picks nails				
28. Chews on clothes, blankets, or others				
29. Picks at things such as hair, clothing, etc.				
CHILDISH OR IMMATURE				
30. Does not act his age				
31. Cries easily				
32. Wants help doing things he should do alone				
33. Clings to parents or other adults				
34. Baby talk				
TROUBLE WITH FEELINGS				
35. Keeps anger to himself				
36. Lets himself get pushed around by other children				
37. Unhappy				
38. Carries a chip on his shoulder				

Observation	Not at All	Just a little	Pretty much	Very much
OVER ASSERTS HIMSELF				
39 Bullying				
40 Bragging and boasting				
41 Sassy to grown ups				
PROBLEMS MAKING FRIENDS				
42 Cries				
43 Afraid they do not like him				
44 Feelings easily hurt				
45 Has no friends				
PROBLEMS WITH BROTHERS AND SISTERS				
46 Feels cheated				
47 Mean				
48 Fights constantly				
PROBLEMS KEEPING FRIENDS				
49 Disturbs other children				
50 Wants to run things				
51 Picks on other children				
RESTLESS				
52 Restless or over active				
53 Excitable, impulsive				
54 Fails to finish things he starts — short attention span				
TEMPER				
55 Temper outbursts, explosive and unpredictable behaviour				
56 Throws himself around				
57 Throws and breaks things				
58 Pouts and sulks				
SEX				
59 Plays with own sex organs				
60 Involved in sex play with others				
61 Modest about his body				
PROBLEMS IN SCHOOL				
62 Is not learning				
63 Does not like to go to school				
64 Is afraid to go to school				
65 Daydreams				
66 Truancy				
67 Will not obey school rules				
LYING				
68 Denies having done wrong				
69 Blames others for his mistakes				
70 Tells stories which did not happen				
STEALING				
71 From parents				
72 At school				
73 From stores and other places				
FIRE SETTING				
74 Sets fires				
TROUBLE WITH POLICE				
75 Gets into trouble with the police				
Why?				
PERFECTIONISM				
76 Everything must be just so				
77 Things must be done same way every time				
78 Says no's too often				
ADDITIONAL PROBLEMS				
79 Inattentive & daydreams				
80 Constantly talking				
81 Cannot be left alone				
82 Always climbing				
83 A very early riser				
84 Will run around between mouthfuls at meals				

85. Demands must be met immediately — easily frustrated				
86. Cannot stand too much excitement				
87. Laces and zippers are always open				
88. Cries often and easily				
89. Unable to stop a repetitive activity				
90. Acts as if driven by a motor				
91. Mood changes quickly and drastically				
92. Poorly aware of surroundings or time of day				
93. Still cannot tie his shoelaces				

II. Please add any problems you have with your child

III. How serious a problem do you think your child has at this time?

() No Problem () Minor Problem () Serious Problem

IV. Indicate the items you are most concerned about or those you think are the most important problems your child has by placing a circle around the number (1-93) of those items.

How would you rate the child's behaviour compared to other children the same age?

much worse _____ worse _____ about the same _____ better _____ much better _____

1. Please fill in the following information about each member of the child's immediate family. (Please print clearly.)

NAME	Relationship To Child	Age	Date of Birth	Occupation (Grade if a Student)	General Health	Height	Weight

2. What did the child eat for breakfast this morning? (Specify Type of Cereal)

What is his usual breakfast?

What is the usual breakfast of the other children?

3. What school is the child presently attending?

Teacher's Name:

Principal's Name:

Appendix F

Rotter Internal-External Locus of Control Scale

Select that alternative which you *personally believe to be more true*.

I more strongly believe that

1. ☐ a. Children get into trouble because their parents punish them too much.
☐ b. The trouble with most children nowadays is that their parents are too easy with them.
2. ☐ a. Many of the unhappy things in people's lives are partly due to bad luck.
☐ b. People's misfortunes result from the mistakes they make.
3. ☐ a. One of the major reasons why we have wars is because people don't take enough interest in politics.
☐ b. There will always be wars, no matter how hard people try to prevent them.
4. ☐ a. In the long run people get the respect they deserve in this world.
☐ b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. ☐ a. The idea that teachers are unfair to students is nonsense.
☐ b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. ☐ a. Without the right breaks one cannot be an effective leader.
☐ b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. ☐ a. No matter how hard you try some people just don't like you.
☐ b. People who can't get others to like them don't understand how to get along with others.
8. ☐ a. Heredity plays the major role in determining one's personality.
☐ b. It is one's experiences in life which determine what they're like.
9. ☐ a. I have often found that what is going to happen will happen.
☐ b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. ☐ a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
☐ b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. ☐ a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
☐ b. Getting a good job depends mainly on being in the right place at the right time.
12. ☐ a. The average citizen can have an influence on government decisions.
☐ b. It is wrong to rely on the "average person" and there is not much the little man can do about it.
13. ☐ a. As a person grows older he becomes more certain that he can handle things.
☐ b. It is no joy to grow up too fast and because many things turn out to be what you expected for bad reasons to grow.

- 14 ☐ a. There are certain people who are just no good.
☐ b. There's none good in everybody.
- 15 ☐ a. I may be getting what I want has little or nothing to do with luck.
☐ b. Sometimes we might just as well decide what to do by flipping a coin.
- 16 ☐ a. It's hard to tell how often dependent on luck was lucky enough to make the right decision.
☐ b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
- 17 ☐ a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
☐ b. By taking an active part in political and social affairs the people can control world events.
- 18 ☐ a. Most people can't realize the extent to which their lives are controlled by accidental happenings.
☐ b. It's not so much as it might seem.
- 19 ☐ a. It's difficult for me to learn to admit his mistakes.
☐ b. It's not so much as it might seem.
- 20 ☐ a. It's hard to tell whether or not a person really lives your life.
☐ b. It's not so much as it might seem.
- 21 ☐ a. In the long run the bad things that happen to us are balanced by the good ones.
☐ b. Many misfortunes are the result of lack of ability, ignorance, laziness or all three.
- 22 ☐ a. With enough effort we can wipe out political corruption.
☐ b. It is difficult for people to have much control over the things politicians do in office.
- 23 ☐ a. Sometimes I can't understand how teachers arrive at the grades they give.
☐ b. There is a direct connection between how hard I study and the grades I get.
- 24 ☐ a. A good leader expects people to decide for themselves what they should do.
☐ b. A good leader makes it clear to everybody what their jobs are.
- 25 ☐ a. Many times I feel that I have little influence over the things that happen to me.
☐ b. It is impossible for me to believe that chance or luck plays an important role in my life.
- 26 ☐ a. People are lonely because they don't try to be friendly.
☐ b. There's not much use in trying too hard to please people, if they love you, they like you.
- 27 ☐ a. There is too much emphasis on athletics in high school.
☐ b. Team sports are the easiest way to build character.
- 28 ☐ a. It's hard to tell how often dependent on luck was lucky enough to make the right decision.
☐ b. Sometimes I feel that I don't have enough control over the direction my life is taking.
- 29 ☐ a. Most of the time I can't understand why politicians behave the way they do.
☐ b. In the long run the people are responsible for bad government on a national as well as on a local level.

Appendix G

i) Parent Questionnaire

ii) Outline of Rationale for Inclusion of Items

Parent Questionnaire

Instructions:

Respond to each question by circling the appropriate number. For example, if you feel that the current problem your child is experiencing is moderately serious you might circle the "3" in the following manner:

If, however, you feel that your child's problems are very serious you might check "6" as follows:

If you have any questions about how to answer the questionnaire please ask them at this time. If you have no questions please answer the following questions:

Background Information:

1. Would you describe yourself as a good parent?

2. How close do you feel to the rest of your family?

Current Problems:

3. How much do the current problems that you are experiencing with your child interfere with your day-to-day family routine?

4. How anxious do you feel about the problems that you are currently experiencing with your child?

5. How usual is it for your child to be displaying some sort of behavior problem?

6. How important is it to you that your child's behavior improve?

7. How serious are your child's problems?

8. To what extent do you feel that your child's current problems will be related to longer-term problems in his/her getting along with people?

9. How much effort do you feel you will be able to make in helping your child deal with his/her problems?

10. Are you satisfied with the child management approaches you are now using?

11. How confident do you feel about your ability to help your child overcome the problems for which you are seeking help?

1	2	3	4	5	6
Not At All Confident		Moderately Confident			Very Confident

12. How much will your family have to change before the problems, for which your child was referred, improve?

1	2	3	4	5	6
Change Not At All		Change Moderately			Change Very Much

13. How useful do you think the Parents Groups will be in helping your child overcome the problems for which you are seeking help?

1	2	3	4	5	6
Not At All Useful		Moderately Useful			Very Useful

Use of Behavior Log

14. How well do you feel that you understand how to use the logs?

1	2	3	4	5	6
Do Not Understand At All		Understand Moderately Well			Understand Very Well

15. How helpful do you feel use of the behavior log will be in overcoming your child's problem?

1	2	3	4	5	6
Not At All Helpful		Moderately Helpful			Very Helpful

16. How confident do you feel about your ability to complete the behavior log?

1	2	3	4	5	6
Not At All Confident		Moderately Confident			Very Confident

17. How anxious do you feel about using the behavior logs?

1	2	3	4	5	6
Not At All Anxious		Moderately Anxious			Very Anxious

18. How difficult is it to use the behavior log?

19. How much will completing the behavior log interfere with your day-to-day activities?

20. How much effort are you willing to make in order to complete the behavior log?

21. How certain do you feel that you would be able to use the behavior log to record a variety of your child's behaviors?

22. How certain do you feel that you will be able to record one or two examples of your child's behavior on some days during the next week?

23. How certain do you feel that you will be able to record one or two examples of your child's behavior every day during the next week?

24. How certain do you feel that you will be able to record three examples of your child's behavior every day during the next week?

Outline of Rationale for Inclusion of Particular Items

1. Family Therapy Literature (Gurman & Kniskern, 1981a).
2. Family Cohesion (Olson et al., 1982).
3. Health Belief Model (HBM) - Motivation re: parent training.
4. HBM - motivation (cue to action) re: parent training.
5. HBM - concern re: child's behavior in general (cue to action) plus perceived susceptibility
6. HBM - intention to comply (cue to action) with parent training.
7. HBM - perceived severity of problem in general.
8. HBM - perceived severity of problem for the long term.
9. HBM - motivation (cue to action) in general.
10. Self-efficacy re: Child management in general.
11. Self-efficacy re: management of child behavior in general.
12. HBM - perceived barrier (lifestyle change required) to parent training.
13. HBM - perceived benefits (therapeutic or outcome efficacy) of parent training.
14. Knowledge re: use of behavior log.
15. HBM - perceived benefits of use of behavior log.
16. Self-efficacy - level.
17. HBM - perceived barrier/motivation to use of behavior log.
18. HBM - perceived barrier to use of behavior log.
19. HBM - perceived barrier to use of behavior log.
20. HBM - perceived motivation to use of behavior log.
21. Self-efficacy - generalizability.
22. Self-efficacy - strength.
23. Self-efficacy - strength.
24. Self-efficacy - strength.

Appendix H

Subjects: Inclusion/Exclusion Criteria

Parent Group Screening

Please circle "yes" or "no" for each of the following questions:

1. Are marital problems a major concern in this family?

Yes

No

2. Are the parents displaying signs of severe psychological or psychiatric problems?

Yes

No

3. Are either of the parents currently experiencing problems with either alcohol or drug abuse?

Yes

No

4. Is there any evidence of child abuse or neglect in this family?

Yes

No

5. Are the problems for which the child was referred primarily school related?

Yes

No

6. Are the parents unconcerned about child management issues in the home?

Yes

No

If the answer to any of the above questions is "yes", these parents are not appropriate for the groups being run.

In addition, please check off one of the following items describing family situation:

- ☐ intact family
- ☐ single parent family, ☐ mother only ☐ father only
- ☐ blended family
- ☐ adoptive family
- ☐ foster family
- ☐ "intact" family with one non-biological parent; parents married
- ☐ "intact" family with one non-biological parent; parents not married
- ☐ other _____

Appendix I

Samples of Parent Consent Forms

Parental Consent Form for Participation in Research

1. Title of Project: An Examination of Issues Involved in the Use of Behavior Logs.
2. I, _____ consent to take part in a study which will investigate procedures involved in helping parents learn ways of collecting information about their children. The purpose of the study is to learn what factors are involved in the use of behavior logs.
3. The study is a project of the Psychology Department of the Children's Hospital of Eastern Ontario. Dr. P. McGrath of the Psychology Department will be supervising this project. The principal investigator, Lorne D. Megninbir, is also affiliated with Carleton University.
4. Participation in the study will include the completion of six sets of brief questionnaires (10-15 minutes each). The first set of questionnaires will be filled out during my initial meeting with Dr. McGrath. The second and third sets will be completed during the first parent training group, while the fourth and fifth sets will be completed during the second parent training group. The final set of questionnaires will be completed during the last (sixth) group session. In addition parts of some of the parent training sessions may be tape recorded for purposes of clinical review.
5. I understand that there are no known negative side effects involved in this study. The study will involve an interview and completion of six series of questionnaires. No information about my child or myself will be used for research purposes without my consent.
6. I understand that the benefit I receive from participation in this study will be in the form of information that I may use in group therapy sessions to help me in better understanding my child's problems.
7. I understand that I may withdraw from the study at any time, even after signing this form, and that this will in no way affect the regular care that I will receive from the psychology department staff or any of the other departments at Children's Hospital.
8. Any information that is collected about me will be kept confidential. I will not be identified in any way in any results that are reported or published.
9. _____

Father's Name.	Signature	Date
_____	_____	_____
Mother's Name	Signature	Date
_____	_____	_____
10. I have explained the nature of the study to the patient and believe that he/she has understood it.

Name

Signature

Date

Parental Consent Form for Participation in Research

1. Title of Project: An Examination of Issues Involved in the Use of Behavior Logs.
2. I, _____ consent to take part in a study which will investigate procedures involved in helping parents learn ways of collecting information about their children. The purpose of the study is to learn what factors are involved in the use of behavior logs.
3. The study is a project of the Psychology Department of Carleton University. Dr. B. Ferguson of the Psychology Department and Dr. P. McGrath of Children's Hospital of Eastern Ontario will be supervising this project. The principal investigator, Lorne D. Meginbir, is affiliated with Carleton University.
4. Participation in the study will include the completion of five sets of brief questionnaires (10-15 minutes each). The first set of questionnaires will be filled out during my initial meeting with Mr. Meginbir. The second, third and fourth sets will be completed during the first, second and third parent training sessions. The fifth set will be completed during the last (sixth) group session. In addition parts of some of the parent training sessions may be tape recorded for purposes of clinical review.
5. I understand that there are no known negative side effects involved in this study. The study will involve an interview and completion of five sets of questionnaires. No information about my child or myself will be used for research purposes without my consent.
6. I understand that the benefit I receive from participation in this study will be in the form of information that I may use in group therapy sessions to help me in better understanding my child's problems.
7. I understand that I may withdraw from the study at any time, even after signing this form, and that this will in no way affect the regular care that I will receive from the agency that referred me to the program.
8. Any information that is collected about me will be kept confidential. I will not be identified in any way in any results that are reported or published.
9. _____

Father's Name	Signature	Date
_____	_____	_____
Mother's Name	Signature	Date
_____	_____	_____
10. I have explained the nature of the study to the patient and believe that he/she has understood it.

Name	Signature	Date
_____	_____	_____

PARENT CONSENT FORM

I, _____ agree to take part
(Parent's Name)

in the parent group research project which is tied in with the
parent groups that are offered through the Children's Aid Society
of Ottawa-Carleton and Carleton University.

I understand that participation in the research project will in no
way influence any other services that I receive from the Children's
Aid Society.

(Parent's Signature)

(Date)

(Witness)

(Date)

Appendix J

Principal Component Analysis of Parent Questionnaire:
Factors Having Eigenvalues Greater Than One

The description of the factors derived from the principal component analysis (limiting the number of factors to those which have eigenvalues greater than one) was based on variables with factor loadings of greater than .49. Rotation revealed that all items loading on Factor 1 involved an assessment of parental self-efficacy regarding the use of the behavior logs. For Factor 2, all items with moderate to high loadings were on the motivational dimension; two items involved perceived severity of problems with the child while the four remaining items assessed parent's motivation to make changes in their parenting style.

One item on Factor 3 assessed perceived benefit of participating in parent group training while a second dealt more specifically with benefits related to use of the behavior logs. The remaining item loading heavily on Factor 3 assessed parental anxiety about use of the behavior logs. Although these items had not been expected to relate to each other, they could be interpreted as a component of parental motivation in that they all related to parental concern that something be done about the problems with their child. The two items loading heavily on Factor 4 related to perceived barriers to the use of the behavior logs. Two additional items which were hypothesized as being part of the barrier dimension of the health belief model did not, however, load heavily on this fourth factor. As with Factor 3, the three items that load positively on Factor 7 were not related theoretically. Upon examination, however, they did appear to assess the degree to

which parents were satisfied with the current family situation. Factors 5 and 6 were not easily interpretable.

Reliability coefficients for the factors derived from this factor analysis revealed that while Factors 1 and 2 provided stable measures (.82 - .88); the others were only moderately stable (.41 - .66).

Appendix K

Scree Test: Principal Component Analysis of
Baseline Parent Questionnaire

EIGEN-
VALUES
for
FACTORS

Figure K-1: Scree plot for principal component analysis of baseline parent questionnaire

Appendix L

Comparison of Overall Attendance with Attendance
First and Second Group Sessions

Table L-1

Comparison of Overall Attendance with Attendance for First and Second Group Sessions

Total No. of Sessions Attended	Regular Attendees	Irregular Attendees	Dropouts	Total
0			11*	11
1		12	1	13
2	1	5	8	14
3	1	5		6
4	4	4	1	9
5	6	1		7
6	12			12
Total	24	27	21	72

Chi-square = 66.042, $df = 12$, $p = .000$

*Number in each cell represents the actual number of subjects attending a certain number of sessions.

Appendix M

Points in Clinical Intervention at which Data
Were Collected

Assessments Completed	Screening Session	Group Session #1	Group Session #2	Group Session #3	Group Session #4	Group Session #5	Group Session #6
	- Conners #1	- Parent Questionnaire #2	- Parent Questionnaire #3	- Parent Questionnaire #4			- Parent Questionnaire #5
	- Parent Questionnaire #1		- Locus of Control #2				- Conners #2
	- Locus of Control #1						- Locus of Control #3
	- Logs intro-duced; subjects to collect 7 days baseline information	- Log #1 collected	- Log #2 collected	- Log #3 collected	- Log #4 collected	- Log #5 collected	- Log #6 collected
	- Group 1 receives effort attribution intervention procedure	- Group 1 receives attention control procedure					
	- Group 2 receives attention control procedure	- Group 2 receives effort attribution intervention procedure					

END

FIN

2

04

87