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The psychosocial effects of juvenile rheumatic diseases and disease activity were examined among 24 families (12 with a rheumatic disease child, 12 with no chronic illness). Rheumatic disease children were paired with a healthy control child nominated by their classroom teacher. Family and child functioning was assessed through measures of stress, competence, coping, and adjustment while observations in the classroom were made to assess peer relations. MANOVA's and ANOVA's were performed to determine significant differences. Families with a child with inactive rheumatic disease tended to be less likely to seek out and accept help, more likely to put activities into a competitive framework, and displayed higher levels of mastery than families with a child with an active disease. Families of rheumatic disease children were less apt to encourage independence than control families, and rheumatic disease children used more coping strategies. Overall, rheumatic disease children and their families evidence functioning in the normal range and appear to have adequate coping strategies.

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Psychosocial Effects of Juvenile Rheumatic Disease: The Family and Peer Systems as a Context for Coping

Although the psychological effects of pediatric chronic illness have been the focus of considerable research, the findings from these studies remain equivocal. Some studies suggest that children with chronic illnesses are susceptible to psychological and social difficulties (e.g. Gayton & Friedman, 1973) and that the psychosocial problems incurred by these chronically ill children may be more disabling than the direct effects of the illness (Pless, Roughman, & Haggerty, 1972). In contrast, other research has found no significant differences between children with chronic illnesses and healthy controls (Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980; Perrin, Ramsey, & Sandler, 1987). In an effort to clarify these mixed findings, the current study will examine the impact of juvenile rheumatic diseases and the psychological sequela of these chronic illnesses.

Juvenile rheumatic diseases are variable in terms of time of onset and extent of disability; onset occurs throughout childhood and some children have no physical stigmata while others have severe physical deformities. These variations in onset and severity allow rheumatic disease children to be easily divided into naturally occurring groups. Consequently, juvenile rheumatic diseases provide a model cluster of illnesses for the study of how chronic illness affects children's psychological development. The knowledge gained from investigating these illnesses should allow for a better understanding of rheumatic disease children and provide better means to assist these children in coping with their medical problems.

Initially three background areas were examined: (a) the physical manifestations of juvenile rheumatic diseases, (b) differences in disease severity as a determining factor of psychological adjustment, and (c) the mediating influence of the family and peer system on children's coping with rheumatic illness. These background areas provided the rationale for the hypotheses underpinning the present study.

Juvenile Rheumatic Diseases and their Physical Effects

Juvenile arthritis (JA) and other rheumatic diseases are a group of illnesses characterized by inflammation of the connective tissues of the joints which causes pain, heat, swelling, and redness (Hanson, 1983). Types of juvenile rheumatic diseases include JA, ankylosing spondylitis, and connective tissue disorders (i.e. systemic lupus erythematosis, dermatomyositis, and scleroderma). JA, in particular, is a syndrome affecting approximately one in one thousand children in the United States (Wilkinson, 1983). In general, JA begins insidiously, involves the peripheral joints, has periods of remission, and can have sudden flare ups triggered by emotional disturbances (Calabro, Katz, & Multz, 1971). JA is a disease of diverse etiologies and consists of three different patterns of onset-- systemic, polyarticular, and pauciarticular (Brewer, Bass, & Baum, 1977; Calabro et al, 1971; Cassidy, 1982; Hanson, 1983). Each subtype has its own unique course as well as differential pattern of effects.

Systemic-onset is the most rare and debilitating form of JA. Onset is usually between one and three years of age, more common in females, and accompanied by high fever and a rash. Lymphadenopathy

(a disease of the lymph nodes), splenomegaly (enlargement of the spleen), myocarditis (inflammation of the walls of the heart), pericarditis (inflammation of the pericardium), and iridocyclitis (inflammation of the iris and the ciliary body of the eye) occur in some cases (Calabro et al, 1971).

Polyarticular onset is most common and most likely to be diagnosed correctly. Although this type of onset involves five or more joints during the initial six months of the syndrome, this syndrome has none of the complications of systemic-onset (Kredich, 1979). Peak ages of onset are between one and three and between eight and ten years.

In pauciarticular onset, one to five joints may be involved. Single joint involvement is most common to the pauciarticular group, comprising approximately twenty-five percent of all JA patients. Age of onset ranges from six months to 15 years with a mean age of five years. Unlike the systemic or polyarticular onset children, pauciarticular children are generally well and do not show the growth disturbances common among children with other types of onset (Lindsley, 1979).

The other types of juvenile rheumatic diseases include several types of disorders. Ankylosing spondylitis is a type of peripheral rheumatoid arthritis which ultimately affects the spine. Systemic lupus erythematosis, a type of connective tissue disorder, is very similar to systemic- onset JA except that it is unusual for children under age five and also includes lesions in the mouth and possible renal abnormalities. Also considered as connective tissue disorders are schleroderma (a chronic hardening and shrinking of the connective

tissues) and dermatomyositis (a nonsuppurative inflammation of the skin, subcutaneous tissue, and muscles with necrosis of muscle fibers) (Calabro, et al, 1971).

Severity of Disability as a Determinant of Psychological Functioning

Research findings suggest that there are differences in psychological adjustment of JA children due to the extent of disability; however, these results are equivocal as to whether it is the severely disabled or mildly disabled child that experiences more difficulties. The seminal work examining extent of disability as a determinant of adjustment among JA children concluded that nondisabled JA children experienced more psychosocial problems than disabled JA children (McAnarney, Pless, Satterwhite, & Friedman, 1974). In the McAnarney study, children with JA were classified as one of the following: (a) nondisabled (able to carry on all usual activities without handicaps), (b) mildly disabled (able to engage in normal activity despite handicap of discomfort or limited motion of one or more joints), and (c) moderately to severely disabled. Unfortunately the provocative findings from this study are muted by a series of methodological flaws. First, the age range in this study was six to seventeen years with the mean age of each subgroup not given. Consequently, it is unclear whether the study included more adolescents or children. Second, the type of statistical tests used to analyze the data were not given, and the results that were given were uninterpretable. For example, the authors reported that on twelve of the sixteen measures more of the nondisabled than moderately or severely disabled JA children were maladjusted. However, when examining the table of comparisons, only

two measures showed significant differences ($p < .05$). In addition, it is impossible to determine whether the difference was between the nondisabled and mildly disabled, the nondisabled and moderately to severely disabled, or the mildly disabled and moderately to severely disabled. Third, 51 percent of the normal control children were found to have poor personal adjustment on the California Test of Personality; this high percentage of maladjustment brings into question the characteristics of the normative sample and/or the test's validity.

Other investigations have attempted to clarify the McAnarney, et al (1974) findings. Ivey, Brewer, & Giannini (1981) found that children with pauciarticular and polyarticular JA did not differ in level of psychological functioning. In some cases, children with a more severe disability or illness have been found to be more maladjusted or at greater risk for psychological dysfunction (Heller, Rafman, Zvagulis, & Pless, 1985; Steinhausen, Schindler, & Stephan, 1983). Daniels, Moos, Billings, and Miller (in press) reported that rheumatic disease children with severe disability showed significantly more psychosocial disturbance, but disease severity accounted for only a small proportion of the variance associated with psychosocial functioning. Jessop and Stein (1985) found that children who have a normal appearance are less sick medically, but their mothers have more difficulty in coming to terms with the illness, thus causing children with less visible disability to have a poorer functional status.

Family and Peer Systems as Contexts for Adaptation

Any consideration of extent of disability as a determinant of psychological functioning requires an evaluation of the JA child in both

the family and peer contexts. In the family system, attention must be given to level of stress, parental pathology, and family functioning.

Chronic illness is not only a psychosocial stressor for the child but also for the family. Parents, for example, are not able to carry out usual parenting behavior, and they may experience a sense of helplessness in their inability to protect their child from pain and suffering and in not knowing how to best help the child (Miles, 1987).

Satterwhite (1978) reports that families with a JA child may experience financial strain, fatigue, limited social life, parental friction, restrictions on travel, sibling neglect, sibling resentment, and interference from relatives. In addition, the families with a severely disabled child report difficulties in these areas significantly more often than those families with a mildly disabled child.

In terms of parental pathology, it has been found that psychopathology in parents is associated with psychopathology in children. This correlation may be attributable to possible genetic factors as well as to modeling and to the disruption in parenting practices caused by psychological disorder (Hetherington & Martin, 1986). Consequently, parental pathology might be expected to have profound effects on the already psychosocially vulnerable rheumatic disease child. For example, parental depression and medical problems have been found to predict more psychosocial problems in JA children and children with other rheumatic diseases even when duration and severity of the illness were controlled (Daniels, et al, in press).

Family functioning also plays a major role in child adjustment. Poor communication between the parents can lead to inadequate problem

solving in a family, and without positive modeling of problem solving techniques, the child cannot learn to cope with his/her problems (Patterson, 1982). Pless and his colleagues (1972) found that happy, cohesive, and communicative families with a high level of marital satisfaction were at lower risk for maladjusted JA children while poorly functioning families were twice as likely to have poorly adjusted children.

Family experience can play a key role in the development of social skills and status among children in the school setting. Through the family system the child learns how to interact in other social contexts such as the peer system. Hartup (1979) emphasizes that socialization in the peer and family contexts needs to be considered concurrently when evaluating a child's adjustment. The interdependence between these two social worlds is a mediating factor of developmental outcome.

Unfortunately, the peer relations of children with rheumatic disease has seldom been examined, to say nothing of consideration of the interdependence of the family and peer systems. Yet examining peer relations is particularly important as peer relations are one of the best indicators of emotional well-being or emotional problems (Cowen, Pederson, Babigian, Izzo & Trost, 1973). Through peer relations, the child learns to relate to others, develop self-control, and incorporate the rules of society (Hartup, 1983).

The intent of the current study was to examine the role of extent of disability as a determinant of peer and family adjustment of rheumatic disease children. First, rheumatic disease children were expected to

have poorer adjustment than normal controls. Second, it was hypothesized that children with severe disability would have more difficulties in their peer relations and overall psychological adjustment than mildly disabled children or children who were in remission. Third, the factor of disease would be mediated, however, by the child's social skills and level of family functioning.

More specifically, the hypotheses of this study were as follows.

1. It was hypothesized that the normal control children would have better scores on the Perceived Competence Scale (Harter, 1979; Harter & Pike, 1984) and Child Behavior Checklist (Achenbach & Edelbrock, 1983) than the juvenile rheumatic disease population.

2. It was hypothesized that the illness of juvenile rheumatic disease would have a detrimental effect on family functioning and that this would be evidenced by poorer scores for families with a rheumatic disease child than normal control families on the Stress Analysis System (Nelson, Schmidt, & Nelson, 1983), the Family Environment Scale (Moos, 1974), the F-COPES (Family Crisis Oriented Personal Evaluation Scales) (McCubbin, Larsen, & Olson, 1987), and the Faschingbauer Abbreviated MMPI (Faschingbauer, 1974).

3. It was hypothesized that children with a severe disability would have poorer scores than those with a mild disability or in remission on the Life Events Checklist (Johnson, 1982), the Coping Inventory (Newcomb, Cobb, Harris, & Pattee, 1987), the Child Behavior Checklist (Achenbach, et al, 1983), the Perceived Competence Scale (Harter, 1979; Harter, et al, 1984), the Family Effects of Illness (Stein & Riessman, 1980), The CHIP, Coping Health Inventory for Parents

(McCubbin, McCubbin, Nevin, & Cauble, 1987), as well as the Stress Analysis System (Nelson, et al , 1983) and the Family Environment Scale (Moos, 1974).

4. It was hypothesized that rheumatic disease children would show less successful peer interactions than their matched normal controls when observed during recess and class time at school.

5. Severely disabled children were expected to display less successful peer interactions than children mildly disabled or in remission.

Method

Subjects

Twelve rheumatic disease children who were patients of Dr. Harry Gewanter, Children's Hospital, Richmond, VA were participants for the current study. These children were classified according to the three criteria proposed by Billings, Moos, Miller, and Gottlieb (1987). First, disease type was considered (systemic-onset JA, polyarticular JA, pauciarticular JA, ankylosing spondylitis, or other connective tissue disorders). Second, attention was given to disease activity (none, slight, mild, moderate, very active). Third, functional status was assessed: Class I (ability to carry on all usual activities without handicap), Class II (adequate ability for normal activities despite discomfort or limited mobility), Class III (adequate ability to perform only little or none of the usual activities) or Class IV (confinement to bed or wheel chair permitting little or no self-care). Table 1 shows the sex, age, diagnosis, disease activity, and functional status of the

children.

Insert Table 1 about here

Rheumatic disease children were paired with a healthy control child nominated by their classroom teacher on the basis of age, sex, and family demographics (how many parents in the household). All children were between six and eleven years old, of normal intelligence, and had no concurrent medical conditions, gross neurological, or sensory impairments.

Procedure

Child and family functioning as well as peer relations were examined by administering a series of measures to all groups of children and their mothers and by also observing the children in their schools. The following factors were of interest: (a) stress, (b) competence, (c) coping, (d) adjustment, and (e) peer relations. The specific measures to assess these factors are shown in Table 2 (copies of measures not readily available in the literature and definitions of scores derived from each measure can be found in Appendix A).

Insert Table 2 about here

Measures were administered to the children and their mothers by a trained undergraduate or graduate student at Children's Hospital or in the family's home as convenient for the parent. The Family Effects of Illness (Stein, et al, 1983) and the Coping Health Inventory for Parents

(CHIP) (McCubbin, et al, 1987) were administered to the juvenile rheumatic disease families only. The observational method for studying peer relations will be discussed following a review of other measures.

Three measures were used to assess child stress and family stress. First, a modified form of the Life Event Scale for Children (Johnson, 1982) was administered to parents to examine differences in the number of stressful life events experienced by their children; two scores (a positive change score and a negative change score) were derived from this measure. The Stress Analysis System (Nelson, et al, 1983) and the Family Effects of Illness (Stein, et al, 1980) measured the amount of stress on the family. The Stress Analysis System provides six scores of stress (Type "A", Anger-in, Situational, Corollary Health Habits, Low Accountability/Victim Syndrome, and Interpersonal) while the Family Effects of Illness has four scores (Financial Burden, Familial/Social Impact, Personal Strain, and Feelings of Mastery) indicating maternal perception of impact of the child's illness.

Two measures were incorporated to determine the perceived competence of the child and the level of functioning (or competence) in family. The pictorial version of the Perceived Competence Scale (Harter, et al, 1984) was used to assess children under ten years of age and the Perceived Competence Scale (Harter, 1979) was used to assess ten, eleven, and twelve year old children. Each of the Perceived Competence scales provides three scores that are basically equivalent to each other (Cognitive, Social, and Physical competence) while the pictorial version provides a fourth score of Maternal

Acceptance and the older child version provides a fourth score of General Self-worth. Family functioning was measured by The Family Environment Scale (FES) (Moos, 1974) and yielded scores for Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual Cultural Orientation, Moral Religious Emphasis, Organization, and Control.

In order to evaluate the child's coping skills the Child and Adolescent Coping Inventory (Newcomb, et al, 1987) was completed by the parents to produce nine scores examining coping methods used by the child when he/she is faced with difficulties (Physiologic, Aggression, Withdrawn, Denial, Social Support, Self Hurt, Self Improvement, Immaturity, and Anxiety). The Family Crisis Oriented Personal Evaluation Scales (F-COPES) was administered to parents to identify two different types of internal family coping patterns (Reframing Family Problems and Family Passivity) and three types of external family coping patterns (Seeking Spiritual Support, Acquiring Social Support, and Mobilizing Family to Acquire and Accept Help) as well as a total score. The Coping Health Inventory for Parents (CHIP) (McCubbin, et al, 1987) was used to determine how juvenile rheumatic disease parents cope when their child has an illness. The CHIP identifies usage of three different coping patterns: (a) maintaining family integration, co-operation and an optimistic definition of the situation, (b) maintaining social support, self esteem, and psychological stability, and (c) understanding the medical situation through communication with other parents and consultation with medical staff.

The Child Behavior Checklist (Achenbach, et al, 1983) was incorporated to assess overall psychosocial adjustment of the children (Internalizing and Externalizing scores were used). The Faschingbauer Abbreviated MMPI (Faschingbauer, 1974) was used to evaluate the parent's psychological adjustment. The Disturbance Index Score (Cooke, 1967) was used to determine the degree of disturbance in parents.

Observational data on peer relations was collected on OS3 data events recorders (Observational Systems, Seattle, WA) by trained undergraduate and graduate students in Central Virginia county and city schools. Observations were made during the child's classroom time as well as recess time. A coding scheme consisting of 71 operationally defined behaviors was devised to show both qualitative and quantitative aspects of children's behavior. Codes are categorized as either duration behaviors or discrete behaviors. A copy of the entire coding scheme with definitions can be found in Appendix B.

The duration behaviors are divided into play behaviors and classroom behaviors and are listed in Table 3. Play duration codes are based upon developmental stages of play as described by Rubin, Fein, and Vandenberg (1983). Classroom duration codes are used to describe the child's behavior while having to attend to assigned tasks.

Insert Table 3 about here

The discrete behaviors are designed to capture specific behaviors and can be coded (using a numeric prefix) as to whether a particular

behavior is emitted by the target or received by the target from a peer. These discrete codes are based on the work of Dodge, Schlundt, Schocken, and Delugach (1983), Gottman (1983), Newcomb & Meister (1985), Reid (1978), and Wahler, House, & Stambaugh (1976) and are shown in Table 4.

Insert Table 4 about here

Undergraduate and graduate students were trained as observers. First, observers memorized the coding scheme, and then were given 100-item aural tests describing scenarios of play and classroom behavior. Observers continued with these tests until a 95% criterion was met. Observers were then taught to apply the codes by watching videotapes of children and observing children at a residential treatment center (Virginia Treatment Center for Children, Richmond, VA). Coding children during play and classroom time on the OS3 data event recorder at the Treatment Center was done each week to train and keep observers in practice. Following three consecutive agreements of 85% (Cohen's kappa, 1960) between observer and trainer, the observer was qualified to collect study data. In addition, tape recorded audio quizzes of the coding scheme were administered every other week to monitor observer drift. Monitoring reliability during data collection also involved obtaining nine reliability trials (25% of the total observations) randomly chosen across observers and classrooms. Cohen's kappa estimate of inter-observer reliability was .838.

Classroom duration codes were examined as percentages of time in each code for each of the 3 days of observation. In one case only 2 days of observations were made, so the average percentages for those 2 days were entered as the third day. The codes of Time Out and Self-stimulation were not coded at all in the current study. Due to the fact that children in the fourth and fifth grades do not have any recess and all other grades only receive 20 to 30 minutes of free time each day, the investigator could not analyze data collected during play.

Discrete codes were clustered into specific categories including prosocial interactions, non-interaction/withdrawal, aggressive (negative) behavior, dysphoria/low self-esteem, and positive affect (Table 5 shows composition of the clusters). Children received frequency scores for each of these clusters for each day of observation.

Insert Table 5 about here

Results

The current study employed a single factor independent groups design with the between subjects factors of disease activity (inactive versus active) and chronic illness (juvenile rheumatic disease versus healthy controls). Dependent variables included scores on assessment measures, percentages of time spent in different duration codes, and frequency scores for discrete code clusters. Standardized means and standard deviations of particular interest are cited in the text (see Appendix C for all means and standard deviations).

MANOVA's (or single factor ANOVA's where appropriate) were performed using the SPSS-X statistical package to determine the statistical significance of differences between active and inactive disease levels. These procedures were also used to determine the significance of differences between rheumatic disease children and normal controls. Single factor ANOVA's were performed on the Faschingbauer Abbreviated MMPI, the Child Behavior Checklist, and the Life Events Checklist. In analyses where MANOVA's were found to be significant at the .10 level, univariate ANOVA's were performed which examined specific scores or codes for statistical significance.

Assessment Measures

A MANOVA revealed that the F-COPES was significantly affected by disease activity level, F (1, 10) = 5.69, $p < .05$. None of the five F-COPES scales reached significance. The Mobilizing the Family to Acquire and Accept Help scale approached significance, $F(1,10) = 2.24$, $p = .17$. Families of children with inactive rheumatic disease tended to score lower (M = 67.00, SD = 38.15) on ability to seek out community resources and accept help from others in comparison with families of children with higher disease activity levels (M = 91.17, SD = 10.48).

The Family Environment Scale also produced a significant F-score on the MANOVA for the combined ten scales [F (1, 10) = 220.29, $p <$ .05], but none of the individual scales reached the .05 level of significance. Achievement Orientation was the only scale which approached significance [$F(1, 10) = 1.77$, $p = .21$] (means and standard deviations equalled 54.33 and 7.47, and 47.33 and 10.52 for the inactive and active disease groups, respectively). The rheumatic disease

families without disease activity were more likely to put activities such as school and work into an achievement-oriented or competive framework.

With regard to the Family Effects of Illness Scale, a MANOVA revealed significant differences between the two disease activity groups, F (1, 10) = 7.29, $p < .05$. The two groups differed significantly on the scale of Mastery (coping strategies employed by the family to master the stress of illness such as talking and sharing, mutual support, normalization of the ill child, and heightened self-esteem gained through mastery), $F(1,10) = 11.91$, $p < .01$. The inactive disease group showed a higher level of mastery (M = 16.33, SD = 3.72) than the active disease group (M = 10.33, SD = 2.07). The inactive disease group scored above the normal range on Mastery according to norms collected by Stein and Riessman (1980).

Differences were also found when rheumatic disease children were compared to their normal controls, using MANOVA's. Scores for the Family Environment Scale and the Child and Adolescent Coping Inventory approached significance on the factor of rheumatic disease (df = 1,22), F = 2.30 and F = 2.48, $p < .10$, respectively. In addition, a single factor ANOVA yielded a significant difference on the Externalizing Score for the Child Behavior Checklist, $F(1,22) = 6.39$, $p < .05$.

Results from the Family Environment Scale suggested that rheumatic disease families were less apt to encourage family members to be assertive, self-sufficient, and make their own decisions (Independence Score), $F(1,22) = 3.91$, $p < .10$. Means and

standard deviations were 44.83 and 11.33, and 53.25 and 9.43 for the rheumatic disease families and control families, respectively.

Univariate ANOVA's were significant on five of the nine scales of the Child and Adolescent Coping Inventory, including Physiological, Aggression, Social Support, Self-hurt, and Immaturity. Parents answered the statements on a one to five scale ('1' meant the coping behavior was seldom observed while '5' meant the behavior was often observed). Scores were marginally significant on the scales of Withdrawn and Anxiety. Table 6 displays means, standard deviations, F-values and levels of significance for those seven scales reaching marginal significance or better. As evident in Table 6, the rheumatic disease children showed more coping strategies on these seven scales. Subscale reliability was assessed using Cronbach's alpha (Cronbach, Gleser, Nanda, & Rajaratnam, 1972). Relatively high alpha coefficients were found for the inventory: Physiological = .82, Aggression = .81, Social Support = .61, Self-hurt = .80, Immaturity = .71, Withdrawn = .76, and Anxiety = .76.

Insert Table 6 about here

On the Child Behavior Checklist, rheumatic disease children obtained an elevated score on the Externalizing factor as compared to the control children, $\underline{F}(1,22) = 6.39$, $\underline{p} < .05$. Although JRD children still scored within the normal range ($\underline{M}$ = 59.83, $\underline{SD}$ = 9.03) it appears that they display more aggressive, antisocial, and uncontrolled behavior than the normal controls ($\underline{M}$ = 50.92, $\underline{SD}$ = 8.23).

Analyses of all other measures were not significant. It is of interest to examine how the groups in this study compared to normative data. The active disease group and the control group both scored above the normal range on the scales of Situational Stress (Stress Analysis System), Moral Religious Emphasis (Family Environment Scale), and the Disturbance Index (Faschingbauer Abbreviated MMPI). Families of the inactive disease group scored just below the cutoff on the Disturbance Scale. Control families also showed above average scores on family cohesion (Family Environment Scale).

Observational Codes

Repeated measures MANOVA's were used to determine differences for duration codes and discrete code clusters during classroom observations with day of observation as the repeated measure, and either disease activity or chronic illness as the independent variable. Duration codes were analyzed as percentages of time spent in each duration code, while discrete code clusters were analyzed according to the frequency of occurrence. All means and standard deviations are given in Appendix C.

The duration codes Active Off Task, Peer Tutor, and Excessive Movement during Individual Instruction Exchange occurred at such low levels (highest level was 2% of total time in class), they were removed from the analyses. In all groups the majority of time was spent On Task (mean percent time On Task ranged from 76% to 93%). MANOVA's performed for duration codes yielded no significant findings for disease activity or chronic illness.

Analyses of the discrete code clusters were also found to be nonsignificant with the exception of an effect for day of observation which approached significance.

Discussion

The purpose of this study was to help clarify previous equivocal findings on the psychosocial effects of juvenile rheumatic diseases. Juvenile rheumatic diseases were considered a model cluster of illnesses because they can range from essentially no physical effects to severe disabilities. Examination of disease activity as well as comparisons between rheumatic disease children and normal controls focused on two questions. First, "Does degree of disease severity/activity affect psychosocial outcome?", and second, "Does juvenile rheumatic disease affect psychosocial outcome?". Previous research led to the prediction that rheumatic disease children would have poorer adjustment than normal controls. Furthermore, children with moderate to severe levels of disease activity would have more difficulties in their peer relations and overall psychological adjustment than mildly disabled children. Finally, the child's social skills and level of family functioning would be mediating factors on the effect of disease.

Juvenile rheumatic disease did not appear to be associated with detrimental psychosocial effects. Few differences were evident between rheumatic disease children and normal controls or between active and inactive disease groups. The rheumatic disease children and their parents showed average levels of stress, competence, coping, and adjustment and were comparable to the normal controls.

Classroom observations revealed that rheumatic disease children's peer relations were very similar to those of children without illnesses. Thus, none of the original hypotheses were confirmed. However, the differences that were found between groups are nevertheless of interest.

Families functioned somewhat differently according to the Family Environment Scale. Families of children with severe disease activity did not encourage competitiveness as much as those families whose children were in remission or had mild disease activity (Achievement Orientation Scale). Also control families encouraged greater independence and assertiveness than rheumatic disease families. Both of these findings are intuitive. Parents of a child who is struggling with severe illness naturally would not pressure him or her to view activities in a competitive way. It also follows that children with an illness in general might not be pushed as much to be self-sufficient and make their own decisions as those who are healthy and without disability.

In another study on children with juvenile arthritis and ankylosing spondylitis, Myones, Williams, Billings, and Miller (1988) used the Family Environment Scale but only incorporated the Cohesion, Expressiveness, Conflict, and Independence scales. Comparisons of 50 JA children with standard norms yielded no significant differences between the two groups. The findings of the current study coincide well with those of Myones and his colleagues. Although scores were not equivalent on the Independence scale, these differences only approached significance in the current study. The Family Environment

Scale was sensitive enough to detect differences in families with juvenile diabetes (Anderson, Miller, Auslander, & Santiago, 1981), thus the investigator was confident in stating that families with rheumatic diseases function normally.

In contrast with the Satterwhite report (1978) that rheumatic disease families experience numerous stressors due to illness, the sample in the current study did not demonstrate exceptional levels of stress. This disparity may be attributed to the fact that Satterwhite collected data through an open-ended interview while standardized measures were used in the current investigation. No other work has examined parent and child strategies for dealing with stressors associated with juvenile rheumatic disease until this study. Stein and Riessman identified a construct of coping (the Mastery scale) on the Family Effects of Illness Scale. Families in the current study whose ill child was in remission showed more coping strategies designed to reduce the stress of illness on the Mastery scale than the norms reported for the measure. In addition, families with mild disease activity or in remission also scored significantly above those who were struggling with the illness in an active phase.

The present study also examined coping as measured by the F-COPES and the Child and Adolescent Coping Inventory. Families with high levels of disease severity displayed greater ability in mobilizing the family to acquire and accept help from community resources (F-COPES). Although the Child and Adolescent Coping Inventory has not been fully validated, there was interest in examining the different scales of the measure. Rheumatic disease children showed higher

levels of using the defined coping strategies in all cases where there were significant differences between groups. One might speculate that families and children with rheumatic disease have had more experience in coping with difficulties due to their illnesses and therefore, incorporate more coping strategies overall as compared to healthy children and families. An alternative reason might be that parents of children with a rheumatic disease may watch their children more closely and just notice more.

There were two findings of interest with regard to child and maternal adjustment on the Child Behavior Checklist and the Faschingbauer Abbreviated MMPI. A difference was found on the Externalizing score of the Child Behavior Checklist: those children with a rheumatic disease scored higher than those without illness. The rheumatic disease children may display more aggressive, antisocial, and uncontrolled behavior than the controls; however, it should be noted that the normal controls were almost uncannily normal and the rheumatic disease children were still within the normal range. No differences were found between groups on Cooke's Disturbance Index for the MMPI, but mothers in the active disease group and the control group both scored above the normal range, and mothers of the inactive disease group scored just below the cutoff on the Disturbance Scale. Cooke's Disturbance Index was used in the current study so that maternal adjustment could be examined efficiently with just one score rather than attempting to look at all ten standard profile scores. The Disturbance Index is computed from the standard MMPI profile scores plus three supplementary scales: Welsh A, Welsh R, and Barron Es.

Welsh A, Welsh R, and Barron Es scales are not computed on the Faschingbauer Abbreviated MMPI, therefore the Disturbance Index calculation was modified to equate subjects' scores to those used by Cooke. Thus, the exceptionally high scores could be due to an unequal way of scoring or to an inherent problem with Cooke's Disturbance Index. Daniels and his colleagues (in press) found parental depression and medical problems to predict more psychosocial problems in rheumatic disease kids even when duration and severity of the illness were controlled. Due to the small sample size in the current study, analysis examining parental adjustment as an independent variable or a predictor was not possible.

The foremost contributing factor of the current study is that it broadened the scope of previous research while attempting to clarify the equivocal findings. Results of the current study are in agreement with Billings et al., (1987) in that no differences were found between children with mild levels of disease activity and controls. However, Billings and his colleagues found higher levels of maladjustment in children with more severe levels of disabilty; a finding that was not replicated in the present research. This discrepancy in the findings among severely disabled children is likely due to the fact that Billings studied a population that was more severely disabled than the population in the current study. The present findings are also similar to those of Kellerman et al., (1980) who found no increased risks due to chronic illness in their sample. Taken together, the current findings and those of Billings et al., and Kellerman et al., are in disagreement with those of McAnarney et al., (1974), suggesting that children with

mild disability are not psychologically different from children with no chronic illnesses.

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Table 1

JRD Subjects

Sex	Age	Diagnosis	Disease Activity	Functional Status
Female	9	Pauci JA	2	II
Male	11	Poly JA	3	II
Male	8	Pauci JA	2	II
Male	7	Pauci JA	1	I
Female	7	Pauci JA	2	II
Female	7	Pauci JA	1	II
Male	6	Vasculitis	2	I
Female	8	Poly JA	1	II
Female	9	Poly JA	1	II
Female	7	Poly JA	3	III
Female	10	Pauci JA	1	II
Male	10	HLAB27 Arthropathy/ Multified Osteomyelitis	1	II

Note: 0-1 = inactive/mild active

2-3 = moderate/severe activity

Table 2

Measures of Child and Family Functioning

Measure	Construct
The Life Events Checklist	Child Stress
Stress Analysis System	Parent Stress
Perceived Competence Scale	Child Competence
Family Environment Scale (FES)	Family Functioning
F-COPES	Family Coping
Child Behavior Checklist (CBCL)	Child Adjustment
MMPI (Abbreviated)	Family Adjustment
Family Effects of Illness *	Family Stress
Child and Adolescent Coping Inventory	Child Coping
CHIP *	Family Coping
Observations in the school	Peer Relations

* Administered to rheumatic disease families only

Table 3

Codes from the Observational Coding Scheme

Play Duration Codes	
Unoccupied	Constructive Associative Play
Singular Freetime Play	Dramatic/Pretend Assoc. Play
Solitary Play	Rule governed/Competetive Play
Wait and Hover	Adult Intervention
Parallel Play	
Rough & Tumble Functional	
Functional Associative Play	

Classroom Duration Codes	
On Task	Individual Instruction
Excessive Movement-On Task	Exchange with Teacher
Passive Off Task	Peer Tutor
Active Off Task	Self-stimulation
Time Out	Excessive Movement during Individual Instruction Exchange

Table 4

Discrete Codes from Observational Coding Scheme

Entry Tactics	
Greeting/Introduction	Direct Entry
Direct Request	Leave the Field
Normative Behaviors	
Attention Directing	Negative Command
Change in Play Activity	Compliance
Assistance	Non-Compliance
Watch/Look	Rebuttal Sharing
Ignore Take Away	Self-congratulate
Positive Reinforcement	Self-rebuke
Accusation	Non-verbal acknowledgement
Reasonable Command	Whisper
Classroom Behaviors	
Request Assistance/ Information	Compliant with Adult Request
Noncompliant to Adult Request	Adult Positive Reinforcement
Volunteers	Inappropriate Talk with Adult
Adult Disapproval	Compliant with Learning
Noncompliant with Learning Directive	Directive
Social Conversation	
Play Conversation	Intimate Information
Surface Information Exchange	Exchange
Appropriate Conversation with Adult	

Table 4 (cont.)

Discrete Codes from Observational Coding Scheme

Affective Behavior	
Empathy	Laugh/Smile
Whine	Displeasure
Cry	Positive Physical Contact
Disruptive Behaviors	
Talk Out	Tease/Humiliate
Destructiveness	Non-communicative
Yell	Verbalization
Accident	Negative Physical

Table 5

Individual Codes Comprising Hypothetical Clusters

Prosocial Interactions	
Assistance	Sharing
Positive reinforcement	Activity conversation
Personal surface information exchange	Personal intimate information exchange
Appropriate conversation with adult	
Non-Interaction/Withdrawal	
Leave the field	Ignore
Aggressive (negative) Behavior	
Take away	Accusation
Negative command	Non-compliance
Rebuttal with peer	Inappropriate talk with adult
Destructiveness	Physical negative
Tease/humiliate	
Dysphoria/Low Self-esteem	
Whine	Cry
Displeasure	
Positive Affect	
Empathy	Laugh/smile
Positive physical	

Table 6

Means, Standard Deviations, F-values, and Levels of Significance for JRD Children and Normal Control Children on The Child and Adolescent Coping Inventory

Scale	JRD		Control		F-value	Level of Significance
	M	(*SD*)	*M*	(*SD*)		
Physiological	1.97	(.81)	1.07	(.74)	7.95	.01
Aggression	1.95	(.61)	1.07	(.72)	10.30	.01
Withdrawn	1.93	(.73)	1.26	(.94)	3.75	.10
Social Support	2.51	(.57)	1.77	(.90)	5.74	.05
Self-hurt	1.40	(.65)	.63	(.59)	9.42	.01
Immaturity	1.89	(.81)	1.14	(.83)	4.98	.05
Anxiety	1.67	(.64)	1.10	(.83)	3.56	.10

Appendix A

Child and Adolescent Coping Inventory, Modified Life Events Checklist for Children, and Definitions of All Scores for All Measures

Child and Adolescent Coping Inventory
(Parent Form)

Your Name: _____
Child's name: _____
Child's sex: _____

Introduction:

We are trying to learn more about how children handle normal, everyday, stressful situations. As a parent you are in a special position to know the kinds of stress your child faces and the ways your child tries to cope with this stress.

The statements that follow describe different ways that children cope with the situations they face. We ask that you read each statement carefully and decide how often your child showed that behavior when handling stressful situations.

Please make sure you answer all the items. Remember to answer how often your child showed each behavior as a way to cope with difficulties he/she faces in his/her everyday life. If your child never does the behavior described, please circle "NA" for not applicable.

When faced with everyday difficulties, how often does your child?

	Seldom				Often	
1. Complain of a stomach ache or nausea	1	2	3	4	5	NA
2. Act younger than her/his age	1	2	3	4	5	NA
3. Behave as if the situation didn't exist	1	2	3	4	5	NA
4. Get others to help	1	2	3	4	5	NA
5. Become overly concerned with ordering things in a certain way	1	2	3	4	5	NA
6. Complain of a headache.....	1	2	3	4	5	NA
7. Make critical statements about self	1	2	3	4	5	NA
8. Spend more time than usual alone in room ...	1	2	3	4	5	NA
9. Engage in fighting	1	2	3	4	5	NA
10. Cry	1	2	3	4	5	NA
11. Copy the way others have successfully solved problems	1	2	3	4	5	NA
12. Clown around and make light of the situation..	1	2	3	4	5	NA
13. Display a nervous twitch or tremor	1	2	3	4	5	NA
14. Smoke	1	2	3	4	5	NA
15. Spend time with family	1	2	3	4	5	NA
16. Complain of muscle or joint pain	1	2	3	4	5	NA
17. Apologize	1	2	3	4	5	NA
18. Lose temper or get angry	1	2	3	4	5	NA
19. Eat more than normal	1	2	3	4	5	NA
20. Concentrate on finding possible solutions	1	2	3	4	5	NA
21. Deny that the difficult situation existed	1	2	3	4	5	NA
22. Seek advice about the situation.....	1	2	3	4	5	NA
23. Swear or curse	1	2	3	4	5	NA
24. Ask for help from parent, teacher, or friend.	1	2	3	4	5	NA
25. Blame someone/something for the difficulty ..	1	2	3	4	5	NA
26. Complain of fatigue	1	2	3	4	5	NA
27. Do nothing or have no observable reaction at all	1	2	3	4	5	NA
28. Request medication or appointment with a doctor.....	1	2	3	4	5	NA
29. Lose his/her appetite	1	2	3	4	5	NA
30. Use illegal drugs	1	2	3	4	5	NA
31. Bite nails	1	2	3	4	5	NA
32. Go to the bathroom more often	1	2	3	4	5	NA
33. Lie about the situation and other related events	1	2	3	4	5	NA
34. Criticize self	1	2	3	4	5	NA
35. Watch television, read, play video games or listen to music more than usual	1	2	3	4	5	NA
36. Become restless or fidgety	1	2	3	4	5	NA
37. Try to figure out a solution	1	2	3	4	5	NA
38. Say the situation is not important	1	2	3	4	5	NA
39. Pray or seek spiritual support	1	2	3	4	5	NA
40. Stutter	1	2	3	4	5	NA
41. Seem unable to concentrate	1	2	3	4	5	NA
42. Spend time with friends	1	2	3	4	5	NA

When faced with everyday difficulties, how often does your child?

	Seldom				Often	
43. Behave or speak as if feeling hopeless	1	2	3	4	5	NA
44. Spend time worrying about the situation	1	2	3	4	5	NA
45. Whine	1	2	3	4	5	NA
46. Daydream	1	2	3	4	5	NA
47. Engage in destructive behavior/vandalism	1	2	3	4	5	NA
48. Become fearful or panicked	1	2	3	4	5	NA
49. Laugh or giggle excessively	1	2	3	4	5	NA
50. Withdraw from family and friends	1	2	3	4	5	NA
51. Ignore everything/everyone related to the situation	1	2	3	4	5	NA
52. Argue with family or peers	1	2	3	4	5	NA
53. Express disbelief or surprise at the situation	1	2	3	4	5	NA
54. Engage in repeatedly in the same activity	1	2	3	4	5	NA
55. Refuse to discuss the situation	1	2	3	4	5	NA
56. Show concern for future performance	1	2	3	4	5	NA
57. Throw temper-tantrums	1	2	3	4	5	NA
58. Show reluctance or refusal to take medication	1	2	3	4	5	NA
59. Have an imaginary friend	1	2	3	4	5	NA
60. Try to get others in trouble	1	2	3	4	5	NA

The Life Events Checklist

Instructions to the parent:

This checklist is used to better understand the good and bad events, that your child has experienced during the past 12 months. You need to complete three parts of this questionnaire:

1) First, circle the yes after every item that has occured in your child's life **during the past year.**

2) Second, if an event has occurred please rate it as good or bad by checking the appropriate space.

3) Third, mark how much you feel the event has changed your child's life on a scale of 1 (little effect) to 5 (great effect).

Remember to rate only those events your child has actually experienced during the past year.

In the past year....

Event	Circle Yes	Type of Event Good	Bad	Impact of effect Little				Great
1. Has your child moved to a new home?	Yes	_____	_____	1	2	3	4	5
2. Does your child have a new brother or sister?	Yes	_____	_____	1	2	3	4	5
3. Has your child changed to a new school?	Yes	_____	_____	1	2	3	4	5
4. Has there been a serious illness or injury of a family member?	Yes	_____	_____	1	2	3	4	5
5. Have you and your spouse divorced?	Yes	_____	_____	1	2	3	4	5
6. Has there been an increased number of arguments between you and your spouse?	Yes	_____	_____	1	2	3	4	5
7. Has your child failed to make an athletic team?	Yes	_____	_____	1	2	3	4	5
8. Has there been a death of a family member?	Yes	_____	_____	1	2	3	4	5
9. Have you and your spouse separated?	Yes	_____	_____	1	2	3	4	5
10. Has one of your child's close friends died?	Yes	_____	_____	1	2	3	4	5
11. Have you or your spouse been increasingly absent from home?	Yes	_____	_____	1	2	3	4	5
12. Has your child's brother or sister left home?	Yes	_____	_____	1	2	3	4	5
13. Has one of your child's close friends had a serious illness or injury?	Yes	_____	_____	1	2	3	4	5

In the past year....

Event	Circle Yes	Type of Event Good	Bad	Impact of effect Little				Great
14. Have you or your spouse gotten into trouble with the law?	Yes	_____	_____	1	2	3	4	5
15. Have you or your spouse gotten a new job?	Yes	_____	_____	1	2	3	4	5
16. Has your child made an athletic team?	Yes	_____	_____	1	2	3	4	5
17. Have you or your spouse gone to jail?	Yes	_____	_____	1	2	3	4	5
18. Have you or your spouse experienced a change in financial status?	Yes	_____	_____	1	2	3	4	5
19. Has your child been having difficulty with a brother or sister?	Yes	_____	_____	1	2	3	4	5
20. Has your child received special recognition for goods grades?	Yes	_____	_____	1	2	3	4	5
21. Has your child joined a new club?	Yes	_____	_____	1	2	3	4	5
22. Has your child lost a a friend?	Yes	_____	_____	1	2	3	4	5
23. Has there been a decreased number of arguments between you and your spouse?	Yes	_____	_____	1	2	3	4	5
24. Does your child have a new boyfriend or girl-friend?	Yes	_____	_____	1	2	3	4	5
25. Has your child had a failing grade?	Yes	_____	_____	1	2	3	4	5

In the past year....

Event	Circle Yes	Type of Event Good	Bad	Impact of effect Little				Great
26. Have you or your spouse had an increased number of arguments with your child?	Yes	_____	_____	1	2	3	4	5
27. Has your child had a major personal illness or injury?	Yes	_____	_____	1	2	3	4	5
28. Has your child had trouble with a teacher?	Yes	_____	_____	1	2	3	4	5
29. Have you or your spouse lost a job?	Yes	_____	_____	1	2	3	4	5
30. Has your child been suspended from school?	Yes	_____	_____	1	2	3	4	5
31. Has your child made any failing grades on a a report card?	Yes	_____	_____	1	2	3	4	5
32. Does your child have a new stepparent?	Yes	_____	_____	1	2	3	4	5
33. Has your child had trouble with classmates?	Yes	_____	_____	1	2	3	4	5
34. Has your child had special recognition for athletic performance?	Yes	_____	_____	1	2	3	4	5

Now, if you know of any other events which have had an impact on your child's life, could you please briefly describe them and rate them as you did above?

In the past year....

	Event	Circle Yes	Type of Event Good	Bad	Impact of effect Little				Great
35.	_____	Yes	_____	_____	1	2	3	4	5
	_____								
	_____								
36.	_____	Yes	_____	_____	1	2	3	4	5
	_____								
	_____								
37.	_____	Yes	_____	_____	1	2	3	4	5
	_____								
	_____								

Definitions of Scores for All Measures

Life Events Checklist

Positive Change: The sum of the impact ratings of those events rated as positive.

Negative Change: The sum of the impact ratings of those events rated as negative.

Stress Analysis System

Type A: Stress created by one constantly trying to control all facets of one's life; characterized by time management problems, and a preoccupation with "results" and time.

Anger In: Stress created through an inability to constructively deal with one's own emotions. The resulting frustration and anger is often turned inward, creating an "anger-in" syndrome.

Situational Stress: Stress due to an unusually high number of major adjustments and changes, either positive or negative during the previous year.

Health: Stress due to poor eating, drinking, and exercise habits.

Accountability: Stress incurred by not assuming accountability for one's life. Anger and frustration stem from feelings of being victimized. The individual often feels that life is controlled by luck or fate, and therefore, is out of one's control.

Interpersonal Stress: Stress produced by weak or inadequate relationships with others - often the result of poor communication.

Perceived Competence Scale

Perceived Competence: An important correlate and mediator of the child's intrinsic motivation to be effective, and to engage in independent mastery attempts in the anticipation of a competent outocme. The more a child is intrinsically motivated, the greater will be his or her sense of competence.

Cognitive: Includes school as well as nonschool performance. School-related competence refers specifically to doing well at school work, feeling good about one's performance in school, finishing one's work quickly, etc. The less specific cognitive items refer to being smart, remembering things easily, and so forth.

Social: Interpersonal competence with regard to one's peers, including issues such as having a lot of friends, being easy to like, being an important member of one's class, and being popular.

Physical: Ability at sports and outdoor games, primarily athletic skills, for example doing well at sports, learning new outdoor games readily, preferring to play sports rather than watch, etc.

Family Environment Scale

Cohesion: The degree of commitment, help, and support family members provide for one another.

Expressiveness: The extent to which family members are encouraged to act openly and to expreess their feelings directly.

Conflict: The amount of openly expressed anger, aggression, and conflict among family members.

Independence: The extent to which family members are assertive, are self-sufficient, and make their own decisions.

Achievement Orientation: The extent to which activities (such as school and work) are cast into an achievement-oriented or competitive framework.

Intellectual-Cultural Orientation: The degree of interest in political, social, intellectual, and cultural activities.

Active-Recreational Orientation: The extent of participation in social and recreational activities.

Moral Religious Emphasis: The degree of emphasis on ethical and religious issues and values.

Organization: The degree of importance of clear organization and structure in planning family activities and responsibilities.

Control: The extent to which set rules and procedures are used to run family life.

F-COPES

Social Support: A family's ability to actively engage in acquiring support from relatives, friends, neighbors, and extended family.

Reframing: A family's capability to redefine stressful events in order to make them more manageable.

Spiritual Support: A family's ability to acquire spiritual support.

Mobilizing Family to Acquire and Accept Help: The family's ability to seek out community resources and accept help from others.

Passive Appraisal: The family's ability to accept problematic issues, thus minimizing reactivity.

Child Behavior Checklist

Externalizing: Aggressive, antisocial, undercontrolled behavior.

Internalizing: Fearful, inhibited, overcontrolled behavior.

Faschingbauer Abbreviated MMPI

Disturbance Scale: An index to determine if significant degrees of disturbance are present; values of 549 and below are considered to be within the normal range of adjustment.

Child and Adolescent Coping Inventory

Physiological: Physiological, bodily reactions.

Aggression: Responding with verbal or physical aggression.

Withdrawn: Isolating self through individual activity or intentionally avoiding others.

Denial: Denying the problem exists, or not facing the issue.

Social Support: Seeking help or comfort from others.

Self Hurt: Self derogatory comments or harmful actions.

Self Improvement: Attempting to improve in the problem area, or another area.

Immaturity: Acting younger than one's age, regressing.

Anxiety: Becoming fearful or worried.

CHIP

Integration: Family integration, cooperation, and an optimistic definition of the situation: focus on strengthening family life and relationships, and parents' outlook on life with a chronically ill child.

Support: Maintaining social support, self esteem and psychological stability: parents' efforts to develop relationships with others, engage in activities which enhance feelings of individual identity and self worth plus behaviors to manage psychological tensions and pressures.

Medical: Understanding the health care situation through communication with other parents and consultation with the health care team.

Family Effects of Illness

Financial Burden: The economic consequences for the family of an ill child.

Familial/Social: The disruption in normal social interaction both within and outside the family system which is a direct consequence of a child's illness.

Personal Strain: The personal disequilibrium experienced by the primary caretaker relating to the psychological burden of the illness. This includes the constant fatigue experienced, the uncertainty, and difficulty of planning for the future.

Mastery: The coping strategies employed by the family to master the stress of illness: talking and sharing, mutual support, normalization of the child and heightened self-esteem gained through mastery.

Appendix B

Peer Relations Research Project
University of Richmond
Observational Coding Manual

Introduction

Discrete and Duration Codes

The observational coding scheme described in this manual has been designed to assess children's peer relations in classroom and home settings. The codes have been classified into two groups: (a) Duration Codes and (b) Discrete Codes. There are a total of 20 duration codes and 50 discrete codes. All codes are defined in the following pages of the manual. The basic use of the codes is described below.

Duration codes (see Directory) measure the duration of time the child is in a particular classroom or play behavioral context. These codes provide a molar description of the child's ongoing behavior. A duration code must be in place at all times during coding. Duration codes can only be emitted by the target.

Discrete codes (see Directory) capture behavioral events which occur within various duration contexts. These codes are subdivided into six categories: (a) Entry tactics, (b) Normative behaviors, (c) Classroom behaviors, (d) Social conversation, (e) Affective behavior, and (f) Disruptive behaviors. The category labels have been selected to facilitate learning of the codes. The labels are not intended to restrict the usage of discrete codes to particular behavioral contexts (e.g., classroom behavior codes to only a classroom setting).

Code Prefixes

As shown in the Directory, all codes are represented by unique two digit numbers. Each time a code is used, the code must be preceded by a one-digit prefix. The two prefixes are used as follows:

4 - if the target emits the behavior, e.g., 440: target makes a statement about a game (all duration codes have a "4" prefix).

6 - if the target receives the behavior from a peer, e.g., 614: target has a toy taken away.

Employing the Coding Scheme

First, select the appropriate duration code; a duration code must always be in place during coding. Duration codes will always have the prefix 4. You must count "1, one thousand, 2, one thousand, 3, one thousand" before engaging or disengaging a duration code. After a duration code has been selected, discrete codes with appropriate prefixes are to be recorded.

Directory

I. Play Duration Codes

85 Unoccupied
86 Singular Free Time Play
87 Solitary Play
88 Wait & Hover
89 Parallel Play
90 Rough & Tumble Associative Play
91 Functional Associative Play
92 Constructive Associative Play
93 Dramatic/Pretend Associative Play
94 Rule Governed/Competitive Play
95 Adult Intervention

II. Classroom Duration Codes

36 On Task
28 Excessive Movement/ On Task
37 Passive Off Task
38 Active Off Task
39 Time Out
47 Peer Tutor
75 Self-stimulation
83 Excessive Movement during Individual Instruction Exchange
43 Individual Instruction Exchange with Teacher/Aide

III. Discrete Codes

A. Entry Tactics

02 Greeting or Introduction
04 Direct Request
08 Direct Entry
09 Leave the Field

B. Normative Behaviors

05 Attention Directing
10 Shift in Play Activity *
11 Assistance
12 Watch/Look
13 Sharing
14 Take Away
15 Positive Reinforcement
16 Accusation
17 Imitation
18 Reasonable Command
19 Negative Command
20 Compliant
21 Noncompliant
22 Rebuttal
23 Ignore
24 Self-congratulate *
25 Self-rebuke *
26 Nonverbal Acknowledgment
27 Whisper

C. Classroom/Home Behaviors

29 Requests Assistance/Information *
30 Adult Positive Reinforcement *
31 Adult Disapproval *
32 Complies with Adult Behavioral Request *
33 Noncompliant with Adult Behavioral Request *
34 Volunteers *

35 Inappropriate Conversation with Adult *
44 Complies with Learning Directive *
45 Noncompliant with Learning Directive *
49 Adult Ignores *
77 Raises Hand *

D. Social Conversation

40 Activity Conversation
41 Personal Surface Information Exchange
42 Personal Intimate Information Exchange
46 Appropriate Conversation with Adult *

E. Affective Codes

53 Empathy
54 Whine *
55 Cry *
56 Laugh/Smile
57 Displeasure/Disappointment/Disapproval *
58 Positive Physical
59 Exclamation *

F. Disruptive Behaviors

63 Talk Out *
64 Destructiveness *
66 Physical Negative
68 Tease/Humiliate
69 Non-communicative Verbalization *
70 Accident *

* Codes that may only be used with the "4" prefix (i.e., can only be emitted).

I. Play Duration Codes

Index:

85 Unoccupied
86 Singular Free Time Play
87 Solitary Play
88 Wait and Hover
89 Parallel Play
90 Rough and Tumble Associative Play
91 Functional Associative Play
92 Constructive Associative Play
93 Dramatic/Pretend Associative Play
94 Rule Governed/Competitive Play
95 Adult Intervention

Definitions:

85 Unoccupied Child is alone at a distance from peers and appears to be doing nothing. 'Distance' refers to the psychological field of the child as well as physical distance.

Examples:

a. Child is wandering aimlessly around playground.

b. Child is sitting in a sandbox staring into space.

86 Singular Free Time Play There are no other peers available to play with, and the child is engaged in a unique and independent play activity. An adult may NOT be participating.

Examples:

a. Child has been on good behavior and has efficiently finished her assignment before anyone else. The teacher allows the child to begin the "recess" period 5 minutes before playtime is granted to the other peers. The child begins playing independently with dominoes.

87 Solitary Play The child is alone and is engaged in a unique and independent play activity. No adults can be involved. The child can be eating a snack. If the child is eating a snack and talking with others for a duration longer that 3 seconds, then the code should be functional associative play. If a child is doing an assignment during designated break time then the situation must be assessed. When the child is doing homework by choice or recreational reading, etc. use 487; when child's break time has been taken away (punishment for misconduct) and assignment is required, then use 436.

Examples:

a. The child is playing dominoes while sitting at a desk. The child is not watching any other child play with dominoes.

b. The child is swinging on a swing, alone. No other children are playing on the swings.

c. The child is reading a paper back book for leisure and not interacting with other children.

88 Wait and Hover Child is in proximity of the peer group but is observing and not interacting with the peer group. If standing or sitting in close enough proximity, the child may absent-mindedly toy with materials being used by peer group. This is to be differentiated from intentional use of materials which would represent parallel play. An adult may NOT be participating.

Examples:

a. The child approaches peer group at play, yet remains standing at some distance away, simply observing the other children.

b. The child approaches peer group and sits down in relatively close proximity to other children; the child observes, yet makes no verbal or nonverbal introduction or entry.

89 Parallel Play While in the vicinity of a peer or peer group, the child is engaged in an independent play activity. The play activity is similar to that of the peer or peer group. When child begins talking with others nearby a duration of 3 seconds must be established before associative interaction can be coded. An adult may NOT be participating.

Examples:

a. Child shoots baskets on a court adjacent to peers engaged in a basketball game.

b. The child is pretending to be an airplane pilot while across the room a friend is doing the same. However, the children's "flight paths" never cross.

90 Rough and Tumble Play The child is engaged in vigorous physical play activity with peers. The positive or negative flavor of this interaction will be captured in the discrete codes. An adult may NOT be participating.

Examples:

a. Children's game of Thundercats has escalated into a wrestling match.

b. In rough and tumble play, one child is accidentally slammed to the ground. The other child gets angry and a fight ensues.

91 Functional Associative Play Child is engaged with peer or peer group, but this association does not involve the manipulation of an object. Nor is this association characterized by dramatization. An adult may NOT be participating.

Examples:

a. Child and peer play on the swings and discuss a mutual friend.

b. Child and peer run about the play ground without an obvious goal.

92 Constructive Associative Play Child is engaged in a play activity with another peer(s) that includes the appropriate and/or creative manipulation of an object or objects. An adult may NOT be participating.

Examples:

a. Child and a peer are building the Starship Enterprise out of Leggos.

b. Child is coloring a wall mural with a group of peers.

93 Dramatic/Pretend Associative Play Child is engaged in a play activity with another peer(s) that includes the dramatization of make believe roles and/or characters. An adult may NOT be participating.

Examples:

a. Child is pretending to be Batman while peer is the Joker.

b. Child and a group of peers are playing house with each taking a role as a parent.

94 Rule Governed/Competitive Play Child is playing a game or sport with a peer or peer group. The play is goal oriented, so that winning becomes an objective of the play. An adult may NOT be participating.

Examples:

a. Child is playing Candyland with a group of peers.

b. Child and a peer have a basketball and are playing "Horse."

95 Adult Intervention An adult maintains a presence in the child's activities. This constitutes playing with an adult, as well as an adult intervention into the child's play activity. The presence of an adult may be either positive or negative.

Examples:

a. Child and teacher are playing a board game outside of a tuition setting.

b. Children's play has become loud and overly boisterous. Parent comes in and lectures on the virtues of low decibel interaction.

c. Parent brings child and peers a lunch snack.

II. Classroom Duration Codes

Index:

36 On Task
28 Excessive Movement/On Task
37 Passive Off Task
38 Active Off Task
39 Time Out
43 Individual Instruction Exchange with Teacher/Aide
47 Peer Tutor
75 Self-stimulation
83 Excessive Movement during Individual Instruction Exchange

Definitions:

36 <u>On Task</u> Child appropriately focuses his/her attention or attends to assigned task. The task takes precedence over eating a snack (eating snack is lowest common denominator). If child is eating snack while working on required assignment, then code 436; also code on task during clean up.

Examples:

a. Child adheres to classroom protocol when not working specifically on an assignment, i.e., waits patiently at teacher's desk while an assignment is being corrected by the teacher.

b. The child is working on a math assignment at his/her desk.

28 <u>Excessive Movement/On Task</u> Child is on task while at the same time is engaged in a non-directed movement in excess of that required of the task.

Examples:

a. Child rocks his/her body in his/her seat while finishing a written assignment.

b. Child is attending to the teacher's instructions but at the same time is wiggling and fidgeting in his/her seat.

37 Passive Off Task Child is non-disruptively not attending to appropriate classroom activity. Specifically, these behaviors include 1) vacant staring, 2) actively looking around the room, and 3) inappropriate peer communication. Teacher may often determine the criteria for passive off task behavior. If unsure as to whether target is passively off task or on task, code him/her as on task (436).

Note: The only way a child can receive a 437 while waiting for a teacher's assistance is if he/she gets reprimanded for some concurrent behavior and that behavior is repeated after the reprimand.

Examples:

a. While doing seat work, the child begins to stare into space.

b. During a class singing session the child stops singing for a duration of three seconds or greater.

38 Active Off Task Rather than attending to the classroom or other activity, child is out of their seat and engaged in physical activity in excess of frequency and/or intensity expected in the setting.

Example:

a. While completing a class assignment, the child leaves his/her seat and begins to circle the room knocking peers books off of their desks.

39 Time Out Child is removed from classroom activity and placed in Time Out. Code remains until child returns to task. Time out is defined by the removal of the child from all reinforcing stimuli for a designated short period of time immediately following an unacceptable behavior.

Example:

a. The child has been actively off task for a prolonged period of time and is disrupting his/her classmates so he/she is placed in time out.

43 Individual Instruction Exchange with Teacher/Aide Child receives and/or provides instructional related information. This code is only used when exchange is between the child and the teacher; teacher must be in close proximity (either standing or sitting). If proximity criterion is violated, use codes 44 and 45 in conjunction with the appropriate duration code. Once instruction exchange is terminated, the child has 3 seconds to begin to return to his/her seat. You MUST have both individual attention and proximity to use this code.

Example:

a. Teacher is reviewing a reading assignment with the child at the child's desk.

83 Excessive Movement During Individual Instruction Exchange Refer to codes 43 and 28.

47 Peer Tutor Child is engaged in an academic related instruction exchange with peer.

Example:

a. Child and peer are helping each other write letters on the chalk board.

b. Peer is seated at child's desk and is helping him/her with math problems.

75 Self-stimulation Child is engaged in deliberate, self-directed behavior that provides tactile sensory input. The child's attention must be totally absorbed in the self-stimulation in order to be coded 475 (e.g., the child is unable to work on task while self-stimulation is going on.)

Example:

a. Child flaps hands in front of face.

III. Discrete Codes

A. Entry Tactics

Index:

02 Greeting or Introduction
04 Direct Request
08 Direct Entry
09 Leave the Field

Definitions:

02 Greeting or Introduction Child greets peer (s) verbally or gesturally or may provide his/her name.

Examples:

a. Target says "Hello" or "Hi."

b. "My name is ...." or "I'm ..."

04 Direct Request Child makes a direct request to join peer (s) at play.

Examples:

a. "Can I play?"

b. "What can I do?"

08 Direct Entry Child directly engages in ongoing activity without verbal or nonverbal introduction.

Example:

a. Peer group is playing "trucks." Child joins in by:

1) Picking up a truck and "driving" it on the already made "roads."

2) Immediately changing or creating new rules for the game.

09 Leave the Field Child leaves the field where peer(s) are engaged in play. The "field" refers to the psychological context of the child's play interactions with fellow peers.

Examples:

a. Child and peer are focusing their attention on the damage done to a toy truck. Child turns his attention to another toy and moves 2 feet away.

b. Child is playing a board game with a group of peers and moves across the room to work on a puzzle.

B. Normative Behaviors

Index:

05 Attention Directing
10 Shift in Play Activity *
11 Assistance
12 Watch/Look
13 Sharing
14 Take Away
15 Positive Reinforcement
16 Accusation
17 Imitation
18 Reasonable Command
19 Negative Command
20 Compliant
21 Noncompliant
22 Rebuttal
23 Ignore
24 Self-congratulate *
25 Self-rebuke *
26 Nonverbal Acknowledgment
27 Whisper

NOTE: Normative codes are to be used with peer interactions ONLY.

* Designates codes that may only be used with the "4" prefix.

Definitions:

05 Attention Directing Child attempts to redirect or get the attention of a fellow peer. This code is not to be used with an adult.

Example:

a. "Look at me!"

10 Shift in Play Activity Child is in a play duration and changes play activity within that duration code. Code for each change. When in associative play, peer group must remain constant, otherwise use entry tactic codes as appropriate.

Examples:

a. Child is playing dominoes, puts that game away, and takes out a puzzle.

b. Child moves from playing with blocks to playing house with same group of peers.

11 Assistance Child gives assistance to a peer by either a) explaining something to the peer or b) showing the peer how to complete a task.

Examples:

a. Child helps peer tie his/her shoe.

b. Child helps peer to build an airport out of Leggos.

12 Watch/Look Child watches or turns his/her attention only to fellow peer or peer group during a play or classroom activity for a temporal duration of 3 or more seconds. Watch/look is coded each time child changes gaze to a different peer or peer group or if child looks away and then back again for a duration of 3 seconds. If child is in 436 and watch/look continues for an additional 3 seconds, then change duration to 437.

Example:

a. While doing seat work, the child looks across the room at a peer who is being reprimanded.

13 Sharing Child offers object to peer for the peer's reciprocal use.

Example:

a. Child and peer(s) are engaged in coloring pictures with assorted colored crayons. Peer remarks aloud that the tip of his/her red crayon is broken. Without prompting, child offers the peer his/her own red crayon.

14 Take Away Child physically takes/grabs an object away from peer.

Example:

a. Child attempts to take or successfully yanks doll away from peer.

15 Positive Reinforcement Child provides positive interest and/or positive verbalizations to another peer. Positive reinforcing behavior demonstrates approval which may be gestural or verbal in nature and is specifically directed at the behavior, appearance, or personal characteristics of an individual.

Examples:

a. Child congratulates peer for hitting a home run in a baseball game.

b. Child applauds for another peer and elicits such phrases as "That's right," and "Yea, good job."

c. Child pays a compliment such as "You are smart" or "That dress looks pretty on you."

16 Accusation Child gives or receives blame or fault. This can be shown directly or as tattling to an adult.

Examples:

a. Child remarks that peer must have lost the puzzle piece because they played with it last.

b. Child says to teacher, "Johnny stole a piece of my candy!"

17 Imitation Target matches/copies the behavior of peer, immediately following peers action. This repetition may be verbal or nonverbal and is not in a teasing or humiliating manner.

Example:

a. Target and peer are swinging. Peer jumps off the swing, and target then jumps off the swing in the same manner.

18 Reasonable Command Child makes a direct, reasonable, and clearly stated request of a peer. The verbal or nonverbal command must clearly specify the behavior expected from the peer to whom the command is directed.

Examples:

a. "Please give me that toy."

b. "Come here." (verbally or indicated by hand gesture)

c. "Stop doing that."

19 Negative Command Child makes a hostile directive toward peer(s) that may involve aversive consequences if compliance is not immediate, direct or implied threat, and/or humiliation. Aversive consequences may be indicated by the tone of voice as well as by the content of statement.

Examples:

a. "You better give me that toy right now!"

b. "Come here or you'll be sorry!"

c. "Stop doing that, you idiot!"

20 Compliant Child does what is asked or indicates verbally or behaviorally that he/she will comply within approximately 12 seconds of the request.

Examples:

a. Peer requests that the child move his/her chair over. Child gets up and moves the chair within approximately 12 seconds.

b. Child says, "Okay, I'll do it," within approximately 12 seconds after being asked by a peer to remove books from the play area.

21 Noncompliant Child does not do what is requested of him/her within 12 seconds of the request. Noncompliant behavior also applies to a child's verbal refusal to attend to the behavior requested of him.

Example:

a. Peer requests that child move his/her chair over. Child shakes his/her head and remains seated where he/she is.

b. Child asks peer to help pick up a game. Peer says he/she will help, but does not make any attempt to help. (Code as 20, then if there is no move to comply within 12 seconds, code as 21.)

22 Rebuttal Child makes a verbal statement or expression of disagreement to a condition/rule stated by fellow peer.

Examples:

a. Peer: "I won!"
Child: "You did not!"

b. Peer: "You're it!"
Child: "No I'm not, you didn't tag me hard enough."
Peer: "That's not fair! You're it now."
Child: "Uh Uh!"

23 Ignore Child makes an intentional and deliberate non-response to a behavior initiated by another peer. Ignore cannot follow a command (use 20 or 21).

Examples:

a. Child touches another peer and asks a question. Peer turns away or walks away.

b. Peer says directly to child, "I have a new bike if you want to see it." Child does not look at him and then turns to speak to another peer.

24 Self-congratulate Child gestures or makes a verbal statement that involves self-praise for previous actions.

Examples:

a. Child smiles and pats himself on the back after winning the game.

b. "I did a really good job."

c. "Oooh, I got it, wow!"

25 Self-rebuke Child gestures or makes a verbal statement that involves self-criticism for previous actions.

Examples:

a. Child hits himself on the head and says, "How could I be so dumb?!"

26 Nonverbal Acknowledgement Child acknowledges a gesture or statement of another peer in a nonverbal manner.

Examples:

a. Child nods his/her head after peer states condition of a game.

b. Child smiles at peer after receiving a positive physical.

27 Whisper Child quietly speaks in the ear of a peer or in proximity of the peer of one foot or less.

C. Classroom/Home Behaviors

Index:

29 Requests Assistance/Information *
30 Adult Positive Reinforcement *
31 Adult Disapproval *
32 Complies with Adult Behavioral Request *
33 Noncompliant with Adult Behavioral Request *
34 Volunteers *
35 Inappropriate Conversation with Adult *
44 Complies with Learning Directive *
45 Noncompliant with Learning Directive *
49 Adult Ignores *
77 Raises Hand *

* Designates codes that may only be used with the "4" prefix.

Definitions:

29 Requests Assistance/Information In an appropriate context, ie. either after raising hand or going to desk, child requests that the teacher provide assistance or information.

30 Receives Adult Positive Reinforcement Adult provides positive interest and/or positive verbalizations to child. Positive reinforcing behavior demonstrates approval which may be gestural or verbal in nature and is specifically directed at behavior, appearance, or personal characteristics of an individual. This category includes positive physical support from adults.

Examples:

a. Adult smiles, nods head, or signs "Okay!" with his/her hand after Ben shows her his Leggo sculpture.

b. Adult makes remarks such as, "That is nice work, Johnny."

c. Adult pats child on shoulder for a job well done.

31 Receives Adult Disapproval Adult expresses disapproval of child's behavior. Disapproval may be expresses both verbally and/or gesturally and is specifically directed at the behavior, appearance, or personal characteristics of the child.

Examples:

a. Adults shakes head or finger at child.

b. Adult elicits such phrases as, "You are behaving like a two year old," or "That's enough, Tommy!"

32 Complies with Adult Behavioral Request Child does what is requested of him by an adult within 12 seconds of the request. If activity is not maintained for at least 30 seconds (where appropriate), then code 433 in addition to the 432.

Example:

a. Adult requests that child stop talking with peer. Child stops conversation within approximately 12 seconds of request.

b. Teacher requests child get out workbook, child complies...

33 Noncompliant to Adult Behavioral Request Child does not do what is requested of him by an adult within 12 seconds of the request. See 32.

Example:

a. Adult requests that the child stop talking with peer. Child keeps right on talking after 12 seconds.

34 Volunteers After raising hand (477) child volunteers information or assistance without being asked, but after being acknowledged.

35 Inappropriate Talk with Adult Child talks to adult in a negative manner, talks with an adult in a setting where conversation is not permitted, or offers a rebuttal to teacher's statement.

Example:

a. Adult intervenes in a child's quarrel with peer. Child says to adult, "This is none of your business!" or "You're butting in, leave us alone."

44 Complies with Learning Directive Child responds to teacher's request during instruction exchange. This request must elicit evidence of learning. There is no proximity criterion for this code, therefore it can be used in a one-on-one teaching situation or when instructions are delivered across the room. This code can involve writing, reading, pointing, answering verbally, and/or gym class performance.

Examples:

a. Teacher asks child what the answer is to a math problem and the child responds with the correct or incorrect answer.

b. Teacher asks child to read an assignment out loud and the child complies.

c. Teacher asks child to point to the correct answer and child complies.

45 Noncompliant with Learning Directive Child does not respond to teacher's request during instruction exchange. See 44.

Example:

a. Teacher asks child to verbally answer a question and the child does not respond within the time limit.

49 Adult Ignores Teacher deliberately ignores child's verbalization or behavior. The teacher does not respond within approximately 3 seconds.

Example:

a. Teacher does not acknowledge child, when child asks at what time the class goes out for recess without raising his/her hand.

77 Raises Hand Child raises his/her hand.

D. Social Conversation

Index:

40 Activity Conversation
41 Personal Surface Information Exchange
42 Personal Intimate Information Exchange
46 Appropriate Conversation with Adult

Definitions:

40 Activity Conversation Child provides or requests information about an activity. It is a specific statement or instruction about a game or activity. This conversation is with peer(s) only.

Examples:

a. Child states: "Chess is a harder game to play than checkers."

b. Child asks, "How do you play this game?"

41 Personal Surface Information Exchange Child provides or requests information regarding self or peer that is related to school or sports. This conversation is with peer(s) only.

Examples:

a. Child states: "Our school has a better baseball team than yours."

b. Child asks: "Do you run track, too?"

42 Personal Intimate Information Exchange Child provides or requests information purely about self, family or peers. This conversation is with peer(s) only.

Examples:

a. Child states: "My sister is getting married next week."

b. Child asks: "How many brothers and sisters do you have?"

46 Appropriate Conversation with Adult Child engages in appropriate conversation with teacher.

Examples:

a. "Tell your son I said happy birthday"

b. "That was a hard assignment"

E. Affective Codes

Index:

53 Empathy
54 Whine *
55 Cry *
56 Laugh/Smile
57 Displeasure/Disappointment/Disapproval *
58 Positive Physical
59 Exclamation *

* Designates codes that may only be used with the "4" prefix.

Definitions:

53 Empathy Child indicates or shows genuine concern toward a fellow peer.

Example:

a. Child puts arm around peer and asks, "Are you O.K.?", after peer has tripped and fallen.

54 Whine Child uses a slurring, nasal, or high-pitched voice.

55 Cry Child sobs or cries tears.

56 Laugh/Smile Child laughs in an agreeable manner and/or smiles by turning corners of lips upward.

Example:

a. Child laughs at a joke.

57 Displeasure/Disappointment/Disapproval Child directly expresses his/her disappointment or disapproval of an event or person.

Example:

a. Child frowns when he/she is given an apple for snack.

58 Positive Physical Child touches another peer in a positive and friendly manner.

Examples:

a. A hug, a pat, a kiss.

b. An arm around shoulders, holding hands, ruffling hair, stroking, or caress.

59 Exclamation Child makes a neutral or positive vocal outburst which is not directed at another individual. Exclamation does not include negative outbursts such as "Ow!", which should be coded as displeasure (57).

Example:

a. The teacher says to the entire class that there will be a field trip to Sixth Street Market place, and the child exclaims "Yippee!"

F. Disruptive Behaviors

Index:

63 Talk Out *
64 Destructiveness *
66 Physical Negative
68 Tease/Humiliate
69 Non-communicative Verbalization *
70 Accident *

* Designates codes that may only be used with the "4" prefix).

Definitions:

63 Talk Out Without being acknowledged, child talks out of turn or interrupts during classroom time.

64 Destructiveness Child purposely destroys, damages, or attempts to damage an object.

Examples:

a. Child throws a toy truck against the wall.

b. Child breaks his/her crayons in half and throws them on the floor.

66 Physical Negative Child physically threatens, attempts to or actually attacks another peer.

Examples:

a. Child and peer are play-wrestling. During wrestling, child hits peer or pins him down in such a manner that it is potentially painful.

b. Child roughly pushes peer away.

68 Tease/Humiliate Child annoys, pesters, mocks, or makes fun of another person.

Examples:

a. Peer is trying to do homework and child keeps turning the pages that he/she is using for studying.

b. In a sing song voice child says, "Ha, ha, you got caught!"

c. Child peeks at peer's hand during a card game.

69 Non-communicative Verbalization Child engages in noise making, gutteral sounds that are not specifically for attention directing.

Example:

a. Child engages in nonsense singing.

70 Accident Child falls or has a major physical accident.

Example:

a. Child falls off a swing.

Appendix C

Means and Standard Deviations for Assessments and Codes on Rheumatic Disease Children and Normal Controls

Table C-1
Standardized Means and Standard Deviations for Assessments

	Inactive		Active		Total JRD		Controls	
Measure	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Life Events Checklist								
Positive Change	11.50	(8.34)	4.83	(4.75)	8.17	(7.35)	10.92	(8.02)
Negative Change	12.00	(12.49)	11.33	(14.28)	11.67	(12.79)	10.25	(11.13)
Stress Analysis System								
Type A	8.33	(3.20)	6.33	(3.20)	7.33	(3.23)	7.33	(2.15)
Anger In	5.17	(2.93)	5.33	(2.25)	5.25	(2.49)	4.92	(2.23)
Situational Stress	10.67	(7.63)	12.83	(9.15)	11.75	(8.11)	12.25	(11.91)
Health	6.33	(1.03)	5.50	(1.05)	5.92	(1.08)	4.92	(2.15)
Account-ability	4.67	(1.37)	6.17	(3.19)	5.42	(2.47)	6.17	(2.41)
Interpersonal Stress	3.33	(2.34)	2.83	(1.72)	3.08	(1.98)	3.83	(3.66)
Perceived Competence Scale								
Cognitive	3.44	(0.35)	3.26	(0.46)	3.35	(0.41)	3.19	(0.77)
Social	3.33	(0.71)	2.89	(0.46)	3.11	(0.62)	2.94	(0.66)
Physical	3.18	(0.60)	2.72	(0.58)	2.95	(0.61)	2.99	(0.74)
Family Environment Scale								
Cohesion	54.33	(20.65)	56.50	(10.23)	55.42	(15.58)	59.17	(12.61)
Expressive-ness	55.83	(5.23)	54.67	(18.04)	55.25	(12.68)	50.42	(13.60)
Conflict	51.17	(11.14)	45.67	(13.71)	48.42	(12.25)	47.42	(10.34)
Independ-ence	44.83	(9.13)	44.83	(14.11)	44.83	(11.33)	53.25	(9.43)
Achievement Orientation	54.33	(7.47)	47.33	(10.52)	50.83	(9.44)	49.83	(11.97)
Intellectual Cultural Orientation	56.17	(13.63)	49.50	(14.54)	52.83	(13.88)	57.08	(10.03)
Active Recreational Orientation	45.50	(19.48)	51.50	(11.76)	48.50	(15.66)	51.58	(12.67)

Table C-1, cont.

Standardized Means and Standard Deviations for Assessments

	Inactive		Active		Total JRD		Controls	
Measure	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Moral Religious Emphasis	59.00	(5.73)	63.33	(8.62)	61.17	(7.33)	65.25	(5.99)
Organization	54.00	(13.16)	49.50	(13.98)	51.75	(13.16)	55.58	(10.61)
Control	60.17	(6.31)	57.33	(13.52)	58.75	(10.16)	62.50	(6.60)
F-COPES								
Social Support	65.33	(36.20)	77.17	(11.37)	71.25	(26.32)	61.67	(31.59)
Reframing	60.33	(30.50)	76.50	(24.53)	68.42	(27.71)	54.92	(33.98)
Spiritual Support	29.50	(27.18)	50.00	(41.35)	39.75	(35.04)	51.75	(32.42)
Mobilizing Family to Acquire Help	67.00	(38.15)	91.17	(10.48)	79.08	(29.51)	62.33	(30.48)
Passive Appraisal	91.33	(12.03)	96.67	(3.20)	94.00	(8.84)	96.00	(6.41)
Child Behavior Checklist								
Externalizing	61.33	(10.33)	58.33	(8.21)	59.83	(9.03)	50.92	(8.23)
Internalizing	62.50	(5.39)	59.00	(7.82)	60.75	(6.66)	54.42	(9.08)
MMPI (Abbreviated)								
Disturbance Scale	548.83	(112.62)	559.17	(102.47)	554.00	(102.80)	560.25	(64.53)
Child and Adolescent Coping Inventory								
Physiological	1.90	(.33)	2.04	(1.16)	1.97	(.81)	1.07	(.74)
Aggression	2.04	(.55)	1.85	(.71)	1.95	(.61)	1.07	(.72)
Withdrawn	1.92	(.87)	1.94	(.65)	1.93	(.73)	1.26	(.94)
Denial	2.05	(.45)	1.21	(.60)	1.63	(.67)	1.62	(1.37)
Social Support	2.55	(.81)	2.48	(.23)	2.51	(.57)	1.77	(.90)
Self Hurt	1.47	(.62)	1.33	(.74)	1.40	(.65)	.63	(.59)
Self Improvement	2.80	(.90)	2.63	(.79)	2.72	(.82)	2.18	(1.13)
Immaturity	1.86	(.55)	1.92	(1.07)	1.89	(.81)	1.14	(.83)
Anxiety	1.69	(.51)	1.64	(.79)	1.67	(.64)	1.10	(.83)

Table C-1, cont.

Standardized Means and Standard Deviations for Assessments

	Inactive		Active		Total JRD		Controls	
Measure	M	(SD)	M	(SD)	M	(SD)	M	(SD)
CHIP								
Integration	36.83	(17.77)	46.50	(5.89)	41.67	(13.59)		
Support	32.67	(12.50)	34.17	(8.57)	33.42	(10.25)		
Medical	17.67	(3.08)	17.50	(3.39)	17.58	(3.09)		
Family Effects of Illness								
Financial Burden	8.17	(2.48)	5.67	(2.25)	6.92	(2.61)		
Familial/ Social	11.00	(6.20)	10.50	(4.59)	10.75	(5.21)		
Personal Strain	9.33	(4.18)	7.67	(3.08)	8.50	(3.61)		
Mastery	16.33	(3.72)	10.33	(2.07)	13.33	(4.25)		

Table C-2

Means and Standard Deviations of Percent of Time in Duration Codes

	Inactive		Active		Total JRD		Controls	
Code	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Excessive Movement On Task								
Day 1	11.80	(9.31)	4.58	(9.00)	8.19	(9.51)	3.28	(2.59)
Day 2	6.23	(7.63)	6.10	(4.10)	6.17	(5.84)	3.98	(5.93)
Day 3	6.75	(8.01)	7.73	(8.28)	7.24	(7.78)	3.39	(4.56)
On Task								
Day 1	75.78	(9.65)	82.93	(14.02)	79.36	(12.07)	88.43	(7.53)
Day 2	84.52	(11.69)	86.50	(3.85)	85.51	(8.37)	92.50	(7.07)
Day 3	85.00	(14.91)	84.73	(8.90)	84.87	(11.71)	84.87	(9.62)
Passive Off Task								
Day 1	6.62	(4.13)	6.98	(5.28)	6.80	(4.52)	2.99	(4.75)
Day 2	1.72	(3.83)	3.68	(4.68)	2.70	(4.20)	1.52	(1.71)
Day 3	6.62	(8.81)	4.62	(6.24)	5.62	(7.35)	5.96	(7.70)
Active Off Task								
Day 1	.62	(1.51)	.82	(2.00)	.72	(1.69)	.23	(.56)
Day 2	.17	(.41)	.97	(2.37)	.57	(1.67)	.20	(.69)
Day 3	.00	(.00)	.12	(.29)	.06	(.20)	1.20	(3.88)
Individual Instruction Exchange with Teacher								
Day 1	1.03	(1.06)	1.18	(1.90)	1.11	(1.47)	2.39	(4.86)
Day 2	4.82	(5.87)	1.30	(2.01)	3.06	(4.57)	.40	(.91)
Day 3	.43	(.77)	1.12	(1.82)	.78	(1.38)	2.53	(4.96)
Peer Tutor								
Day 1	1.43	(2.50)	2.37	(5.56)	1.90	(4.14)	1.26	(4.36)
Day 2	.00	(.00)	.05	(.12)	.03	(.09)	.08	(.29)
Day 3	.00	(.00)	.00	(.00)	.00	(.00)	.60	(2.08)
Excessive Movement during Individual Instruction Exchange								
Day 1	.52	(.96)	.03	(.08)	.28	(.70)	.00	(.00)
Day 2	.73	(1.80)	.00	(.00)	.37	(1.27)	.00	(.00)
Day 3	.00	(.00)	.02	(.04)	.01	(.03)	.00	(.00)

Table C-3

Means and Standard Deviations of Frequency in Discrete Code Clusters

	Inactive		Active		Total JRD		Controls	
Cluster	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Prosocial Interactions								
Day 1	30.50	(33.38)	22.00	(27.98)	26.25	(29.70)	25.67	(30.16)
Day 2	29.00	(56.40)	24.50	(19.79)	26.75	(40.37)	26.50	(25.82)
Day 3	12.67	(11.84)	25.00	(24.76)	18.83	(19.59)	21.00	(17.54)
Non-Interaction/Withdrawal								
Day 1	1.83	(3.06)	.17	(.41)	1.00	(2.26)	1.00	(1.41)
Day 2	.67	(.82)	.17	(.41)	.42	(.67)	.33	(.65)
Day 3	.00	(.00)	2.00	(2.19)	1.00	(1.81)	.58	(1.24)
Aggressive (negative) Behavior								
Day 1	8.17	(16.15)	1.33	(2.34)	4.75	(11.57)	1.42	(2.35)
Day 2	3.33	(4.97)	.83	(1.17)	2.08	(3.68)	.83	(1.19)
Day 3	2.00	(2.76)	.50	(.55)	1.25	(2.05)	2.25	(3.33)
Dysphoria/Low Self-esteem								
Day 1	1.00	(1.10)	.17	(.41)	.58	(.90)	.33	(.65)
Day 2	1.50	(2.35)	.67	(1.03)	1.08	(1.78)	1.17	(1.19)
Day 3	1.50	(1.98)	1.50	(1.98)	1.50	(1.88)	1.25	(1.55)
Positive Affect								
Day 1	17.67	(10.88)	9.00	(6.36)	13.33	(9.62)	15.50	(15.22)
Day 2	13.17	(19.59)	14.33	(9.56)	13.75	(14.71)	14.83	(10.37)
Day 3	17.33	(14.11)	12.33	(11.88)	14.83	(12.71)	18.08	(14.08)

Biography

Jennifer Harris was born on December 3, 1963 in Hartsville, South Carolina. She received her Bachelor's of Science in psychology from the University of Wisconsin - Stevens Point. Jennifer currently works at the Medical College of Virginia administering neuropsychological and psychological tests to head-injured and spinal cord-injured individuals. In addition to testing, she writes research articles on the effects of traumatic brain injury.