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AN OUTCOMES ASSESSMENT OF TWO THERAPUETIC
GROUP HOMES SERVING CHILDREN WITH
REACTIVE ATTACHMENT DISORDER IN A RURAL COMMUNITY

By

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M. A., University of Montana, Missoula, Montana 2006

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Dissertation

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Summer 2008

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An Outcomes Assessment of Two Therapeutic Group Homes Serving Children with
Reactive Attachment Disorder in a Rural Community

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Archival data collected on 35 4-12-year-old children, each of whom completed treatment for reactive attachment disorder (RAD), was used to evaluate a treatment program in a rural northwestern community. The Child Behavior Checklist (CBCL) (Achenbach, 1991) and Youth Outcomes Questionnaire (Y-OQ) (Burlingame, Wells, & Lambert, 1996) were completed by coding behaviors early in treatment and late in treatment from behavioral records. A correlational design was used, and t-test, repeated measures and fixed factor analyses of variance were conducted. Results showed that there was an overall decrease in the amount of maladaptive behaviors at the conclusion of residential treatment for attachment related problems on both the CBCL and Y-OQ. Males had significantly more externalizing behaviors than females and had the greatest amount of change over time. Children with the greatest number of risk factors had the best outcomes, contrary to what was expected. Future research directions and limitations to the study are discussed.

Acknowledgements

This dissertation could not have been completed without the help of some very special individuals. I would first like to thank Dr. Paul Silverman, chair of this dissertation and advisor throughout my graduate training. Paul, you have been an incredible support throughout this project and your experience working with children helped make this work possible. My appreciation goes to Geoffrey Birnbaum and Loree West who permitted a collaboration between the residential treatment homes and the university. Thank you, Dr. Dan Denis for your extensive help and guidance with the statistical analyses in spite of the summer sun shining outside. Thank you to Dr. Lynne Koester, Dr. Duncan Campbell, and Dr. Lucian Conway for serving on my committee and offering invaluable suggestions as this project unfolded and throughout the process of revisions. Thank you, Dr. Rick Van Den Pol for stepping in at the last moment and serving as my outside committee member. I would like to also thank my research assistants: Deborah Maney, Joan Godbolt, Jacqueline Tucker, Valerie Dressel, Mary Weber, and Kirsten Bergstrand for their unending dedication to the project and its completion.

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Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
Table of Contents.....	iv
List of Tables.....	v
List of Figures.....	vi
Introduction and Background: Explanation of Constructs.....	1
Residential Treatment.....	1
Residential Treatment and Attachment.....	6
Reactive Attachment Disorder.....	9
Child Maltreatment.....	17
Risk and Protective Factors.....	20
Current Study.....	23
Hypotheses.....	28
Method.....	32
Participants.....	32
Measures.....	33
Individual Characteristics.....	33
Individual Risk Factors.....	33
Parental Risk Factors.....	34
Protective Factors.....	34
Child Behavior Checklist.....	35
Youth Outcomes Questionnaire.....	36
Design and Procedure.....	38
Results.....	38
Descriptive Characteristics.....	38
Descriptive Risk Factors.....	39
Protective Factors.....	43
Treatment Characteristics.....	43
Paired Sample T-test Analyses.....	44
Repeated Measures Analyses of Variance.....	47
Fixed Factors Analysis of Variance.....	48
Gender Differences.....	49
Treatment Change.....	50
Discussion.....	51
General Discussion.....	51
Strengths and Limitations.....	58
Future Directions.....	61
References.....	64
Appendix A.....	73
Appendix B.....	77
Appendix C.....	78
Appendix D.....	81
Appendix E.....	83
Appendix F.....	84

List of Tables

Table 1	Descriptive Characteristics of Participants.....	39
Table 2	Risk Factors.....	40
Table 3	Correlations Cumulative Risk/Outcome.....	41
Table 4	Correlations for Individual Risk Factors, Parental Risk Factors, & Protective Factors	42
Table 5	Protective Factors.....	43
Table 6	Treatment Characteristics.....	44
Table 7	T-test Differences Early/Late Treatment.....	45
Table 8	T-test Differences for Gender Early/Late Treatment.....	49

An outcome assessment of two foster-care group homes serving children

List of Figures

with reactive attachments disorder in a rural community

Figure 1	Maladaptive Behavior.....	85
Figure 2	Individual Trajectory CBCL.....	86
Figure 3	Individual Trajectory Y-OQ.....	87
Figure 4	Maladaptive Behavior Change; Risk Factor Group....	88
Figure 5	Internalizing Behaviors CBCL; Risk Factor Group....	89
Figure 6	Externalizing Behaviors CBCL; Risk Factor Group...	90
Figure 7	Maladaptive Behavior Change; Gender.....	91
Figure 8	Internalizing/Externalizing CBCL; Gender.....	92

An outcomes assessment of two therapeutic group homes serving children with reactive attachment disorder in a rural community

Residential treatment, a part of the foster care system, has been a method of treating troubling childhood problems since the early 1950s (Leichtman, 2006). The development of childhood residential treatment programs arose from the orphanages, asylums, and hospitals that were the common method of treating children with mental health disorders prior to the mid twentieth century (Leichtman, 2006). These asylums and hospitals, the early residential treatment centers, treated patients without sensitivity to individual needs (Wolfensberger, 1972). Wolfensberger helped the normalization movement be recognized in the 1970s and was the first to document the social needs of individuals in residential care. Prior to this movement, individuals with psychological disorders were seen as inseparable from their mental impairment; there was no individual beneath the problem. The medical focus of institutionalized treatment slowly changed to a social model, recognizing and addressing not only the medical needs of the individuals in residential care, but the social and emotional needs of the individuals (Wolfensberger, 1972). A few years later Burton Blatt and Fred Kaplan (1974) published photographic accounts of the institutions treating children with mental retardation: the living conditions which were described were atrocious. Residential treatment at the time involved locking the patients in their rooms, having bars on windows, placing patients in inadequate sleeping spaces with numerous beds packed into small spaces, and tolerating overcrowded facilities with insufficient resources to care for those in the facilities (Blatt & Kaplan, 1974). Children were bound, restricted, and tied up when having difficulties;

the care they received was far from the sensitive residential treatment implemented in modern day facilities.

Residential treatment, as a term, was not coined until the late 1940s when several programs for the treatment of children became increasingly similar to the types of treatment used today. Children treated for intellectual and behavioral problems in hospitals and asylums were now being served in residential treatment homes (Leichtman, 2006). Residential treatment at the time focused on incorporating psychodynamic principles and techniques into the lives of the children being treated in long-term care facilities. Staff members in the childcare facilities were the implementers of these principles and provided guidance for the children in the care of the treatment home. As the institution of residential treatment became increasingly more accepted as an effective treatment tool, residential facilities quickly proliferated. Treatment in these institutions, however, was not standard. Residential treatment centers varied greatly in their size, the number of children being served, and the types of treatment methodology being implemented. Most residential treatment centers during the 1970s and 1980s defined themselves as applying a behaviorist approach, but their methods and implementation were not always consistent with this (Leichtman, 2006).

As the methods were inconsistent, the definition of residential treatment was inconsistent as well. Residential treatment may refer to group care where several children are placed in a home within a community or a group care situation where hundreds of children are institutionalized (Frensch & Cameron, 2002). Regardless of what type of care is received, residential treatment for children is determined when children live out of the home in the care of individuals who are not family members.

During the past twenty years, the excitement concerning residential treatment for children has dropped. There has been extensive pressure for residential treatment institutions to develop short-term treatment techniques instead of long-term care models (Leichtman, 2006). Residential treatment causes the family system to be disrupted and therefore is not always the first choice of treatment (Frensch & Cameron, 2002).

Research focusing on effectiveness of residential treatment programs has been found to be flawed due to small research samples, improper statistical procedures, and lack of objective outcome measures (Frensch & Cameron, 2002). When examining residential treatment it is not always easy to clearly identify what services are being provided to the clients and which services are causing the effects that are observed. It has been argued that differences between scores on pre-treatment and post-treatment assessments cannot distinguish between whether treatment caused the changes between measurements, or changes are due to within child differences, due to maturity, or due to other confounding factors (Frensch & Cameron, 2002). When examining different dimensions of treatment, however, research can attempt to isolate specific factors and their effect on a child's outcome. This type of outcome assessment is beneficial because when conducted, one can describe a more complete picture of treatment effectiveness beyond whether a child improved or not, and identify what treatment components in particular influenced improvement.

Few studies have been reported with regard to the outcomes of individuals in group home care over the past twenty years, and information regarding the effectiveness of group care is weak (Farmer, Dorsey, & Mustillo, 2004). The number of studies examining group homes where large numbers of children are being treated outweighs the

studies examining group homes where a small number of children are being treated (Frensch & Cameron, 2002). A meta-analysis of outcome assessments summarizing the effects of many different group homes across the country shows differences in the types of group homes studied and the characteristics of each (Frensch & Cameron, 2002). This review identified many differences among the 14 group homes that were examined. In a small number of the sampled treatment homes, teachers were cited as part of the treatment team. In several of the reported studies there were on-site schools where children were being taught with trained treatment staff. Several studies include married staff as the main implementers of treatment. Almost all of the reported studies described large numbers of children in each treatment setting, and only one seemed similar to the treatment homes in the present study. One outcomes assessment described in the meta-analysis (Day, Pal, & Goldberg, 1994), examined children diagnosed with conduct disorder in an eight bed home who were treated with a behavioral and social learning approach. Factors related to outcome were examined and post discharge functioning was evaluated yet there was no control group in this study. Severity of problems at intake was related to greater difficulty post treatment. Also children who returned to their families had better outcomes than those children who were considered wards of the state. Treatment duration was between 6 and 12 months. Treatment philosophy entailed focusing on the child's daily needs and the inclusion of the family in treatment. For those children who did not have family involved in treatment, foster families and focusing on the loss of the biological family became treatment goals. It was found that scores on the Child Behavior Checklist (Achenbach, 1991) at intake and discharge were statistically different. Problems decreased after treatment was complete. This decrease in

maladaptive behaviors was consistent at 6, 12, and 24 month follow-ups. These results were evident regardless of the child's age, sex, or parental custody status. There are many studies focusing on group home treatment such as this for conduct disordered children. However, it is clear that more work needs to be done in the area of outcome assessments for group homes treating children with reactive attachment disorder as there are no published studies to date evaluating treatment for RAD in group homes.

Over the past several decades the push to switch from institutional care to community based care has led to changes in the characteristics of children receiving residential treatment. The ease of medicating children has caused many children to be served in outpatient clinics for behavioral problems (Mash & Wolfe, 2005). Consequently, children in residential treatment centers are often severely impaired and have diverse afflictions (Wells & Whittington, 1993). There are also differences in the age of the child who enters group care; some children enter group care as infants, while others do not receive such services until adolescence (Hawkins-Rodgers, 2007). The majority of children in residential treatment are wards of the state or in parental custody that is being monitored by the state. When children in residential treatment are removed from parental care, attachment security can be negatively impacted (Bowlby, 1973).

One way to assess the effectiveness of residential treatment is to investigate the amount of change throughout the treatment period. The study described in this report examined the effectiveness of a residential treatment program targeting children with reactive attachment disorder. A comparison group of untreated children was not available. Consequently an investigative strategy was adopted to examine the extent to which child characteristics, family characteristics, and particular program characteristics

predicted change in children's adjustment. Attachment security during residential treatment, characteristics of reactive attachment disorder, child maltreatment, and risk factors and protective factors of children with attachment difficulties were examined in the study and are discussed in the introduction. This information helps to inform the reader of the complexity of issues involved in residential treatment for reactive attachment disorder.

Residential Treatment and Attachment

Attachment behavior in humans has been studied for almost 50 years, frequently with young children (Ainsworth, 1970), and has been identified as influencing many dimensions of a person's entire life (Bowlby, 1988). It is increasingly recognized that children who are removed from their families are taken from the environment that should have been their "safe base" from which they could learn about themselves, others in close relationships, and acquire emotional regulation strategies (Bowlby, 1973). Children in group care have not only been removed from their families but have often been abused or neglected. The series of losses and rejections that a child faces in a chaotic home environment may lead to maladaptive behavior and poor attachment bonds (Bowlby, 1982). Children's first attachments to primary caregivers form during infancy and most often this attachment is formed with their mother (Bowlby, 1982). As the child continues to grow and develop, the reliance on the attachment figure also continues (Bowlby, 1988). This reliance is evident throughout the course of development as children use their attachment figure as a source of protection or as a secure base from which to explore (Bowlby, 1988). When the child receives inconsistent care from a parent due to sickness, abuse, or neglect, the developing attachment bonds can be negatively affected.

The type of childhood attachment that develops varies among individuals, depending on the sensitivity of care received from the caregiver and on the child's temperament, among other factors. There are four types of attachment styles which have been identified to characterize the child's attachment behaviors: secure, avoidant, ambivalent, and disorganized (Prior & Glaser, 2006). The three attachment types of avoidant, ambivalent, and disorganized are considered to be characteristic of an insecure attachment. Young children who are considered to have a secure attachment with their caregiver often dislike being separated from their caregiver and make great effort to regain proximity, and to reunite with the caregiver. Young children with an avoidant attachment style do not seek the closeness that is typical of a secure attachment. Young children with an avoidant style of attachment are indifferent to their caregiver's absence and do not seek closeness with a caregiver upon reunion. Young children with an ambivalent pattern of attachment both seek and dismiss a caregiver as a source of comfort. Young children who have a disorganized attachment pattern exhibit contradictory behaviors, including reaching for their caregiver while simultaneously turning their body away from the caregiver, freezing upon reunion, and shielding their eyes from the caregiver. Often children with a disorganized attachment have been the victim of abuse by the hands of a caregiver; the attachment figure is seen both as the cause of distress and the provider of comfort to relieve the stress (Hardy, 2007).

Many studies have found (see Landy, 2002 for a summary) that young securely attached children have higher levels of social competency and relatively high levels of empathy. In contrast, insecurely attached children have been found to be more at risk for behavioral and emotional difficulties, have lower levels of social competence and report

less social support (Kerns et. al, 2001; Landy, 2002). Children with insecure attachment bonds are particularly at risk to develop psychological disorders (Pielage, Gerlsma, & Schaap, 2000).

In extreme cases, these behavior problems and poor attachment bonds pave the way to a residential treatment home. Residential treatment is often the last resort (Frensch & Cameron, 2002; Hawkins-Rodgers, 2007), and children entering residential treatment have had unsuccessful experiences with other types of services (Wells & Whittington, 1993). Children in residential treatment have experienced separation from their parents and other care providers in previous placements and when during group treatment. It has been found that the greater number of attachment disruptions experienced by a child, the more likely a child is to have an insecure attachment (Zegers, Schuengel, Van IJzendoorn, & Janssens, 2006). Children who enter residential treatment are likely to have behavioral disturbances, impulsivity, proneness to risk taking, and conduct problems (Frensch & Cameron, 2002).

The attachment pattern that is developed during early years influences the internal working model the child uses in later relationships. Internal working models are formed when a child conceptualizes his or her experiences with an early caregiver, as a way to address others in future intimate relationships (Raikes & Thompson, 2005). These internal working models may be considered schemas that children and adults use when interacting with others. These schemas are malleable, positively or negatively, with new experiences if the new experience changes the way the child views him, herself, or others. When the early relationships children experience are maladaptive, attachment security can be affected. Children in treatment facilities, removed from their families due

to abuse and neglect, are expected to have insecure attachment patterns and negative views of themselves (Zegers, Schuengel, Van IJzendoorn, & Janssens, 2006).

Parental involvement during a child's group home treatment and a supportive family relate significantly to progress during treatment and the ability to adapt successfully to life outside of a treatment facility after discharge (Frensch & Cameron, 2002). The group home study of children diagnosed with conduct disorder previously mentioned supported this finding showing that parental involvement including family therapy, being directly involved in their child's treatment, and training conferences targeting parenting behaviors may lead to decreases in conduct disordered behavior six months after treatment discharge (Day, Pal, & Goldberg, 1994). Children who have been maltreated, but who have positive relationships with their parents, have been found to be resilient in spite of the experience of maltreatment (Jaffee et al., 2007). Parents of maltreated children who are part of the treatment process may contribute positively to their child's treatment. Indeed, family involvement has been emphasized since the early 1980s because of the important role parent support plays in treatment success (Leichtman, 2006).

Reactive Attachment Disorder

Children who experience extreme attachment problems are at risk for developing reactive attachment disorder. Reactive attachment disorder is a disorder that affects young children long before they or their parents may be aware of its impact. Although, reactive attachment disorder may not be formally diagnosed until toddlerhood and the effects may not be seen until later in childhood, the earliest moments of caregiving can facilitate later healthy relationships or they may lead to the development of a disorder.

Attachment between a child and a consistent caregiver is fostered during the first moments they are interacting. With consistency and caring experiences comes secure attachment; with inconsistency and harsh caregiving comes insecure attachment.

A secure attachment bond between child and caregiver develops when there is a predictable, loving connection between each member of the dyad (Ainsworth, 1979; Bowlby, 1988). As a secure attachment is fostered and developed between a consistent caregiving parent and a responsive child, an insecure attachment bond or an attachment problem may result from inconsistent parenting or a poor temperamental fit between parent and child. A securely-attached child is able to use his or her parent as a secure base to explore his or her world but is also able to seek comfort and be comforted by an attachment figure when times are tough. A child who experiences consistency and predictability within the caregiving environment is likely to internalize the attachment figure as someone who can be relied on in moments of stress and is able to elicit care from a caregiver if the child is in need of support.

An insecurely-attached child does not see his or her attachment figure as a source of comfort, and in moments of stress, a child with an insecure attachment does not rely on his or her caregiver in the same way a securely attached child may (Bowlby, 1988). An insecure attachment pattern is not always the result of bad parenting. Environmental factors can also influence attachment connections, when the environment is unpredictable, a problem in the attachment relationship may result that is beyond parental control.

Children with an insecure attachment are at risk for developing a more intense attachment related difficulty. The most severe attachment problem is reactive attachment

disorder of infancy and early childhood (RAD) (American Psychiatric Association, 2000). There are two types of RAD described in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) (APA, 2000): inhibited or disinhibited. The inhibited subtype is characterized by developmentally inappropriate responses to social interactions with caregivers. The disinhibited subtype is characterized by a global sense of attachment in which a child does not discriminate and selectively choose an attachment figure but shows heightened awareness and sensitivity to all unfamiliar adults, seeking an attachment connection with any available individual. Children with either RAD subtype have associated emotional distress, and this dysfunction in attachment is often the result of severe neglect or emotional or physical abuse. A diagnosis of RAD is given when the following criteria are met (APA, 2000):

markedly disturbed and developmentally inappropriate social relatedness in most contexts, beginning before age 5 years, as evidenced by either a persistent failure to initiate or respond in a developmentally appropriate fashion to most social interactions as manifest by excessively inhibited, hypervigilant, or highly ambivalent and contradictory responses (e.g., the child may respond to the caregivers with a mixture of approach, avoidance, and resistance to comforting, or may exhibit frozen watchfulness); or diffuse attachments are manifest by indiscriminate sociability with marked inability to exhibit appropriate selective attachments (e.g., excessive familiarity with relative strangers or lack of selectivity in choice of attachment figures) (p. 130).

Reactive attachment disorder symptomologies must not result from mental retardation or another pervasive developmental disorder. There must be a component of pathological

care, which includes: “persistent disregard of the child’s basic emotional needs for comfort, stimulation, and affection; persistent disregard of the child’s basic physical needs; repeated changes of the primary caregiver that prevent formation of stable attachments (e.g., frequent changes in foster care)” (APA, 2000, p. 130).

Although RAD is common among children who have been victims of abuse and neglect, abuse and neglect are neither necessary nor sufficient causes (Prior & Glaser, 2006). Abuse and neglect are risk factors for the development of RAD and, with inconsistent caregiving and chaotic home environments, the outcome is even more likely (Prior & Glaser, 2006).

In recent times, attachment disorders have become more recognized in the psychological community, yet the increased recognition does not relate to increased understanding of the complexities of the disorder. Unfortunately there have not been any studies reporting the prevalence, incidence or natural course of RAD. Reports point to the number of children who have been victims of abuse and neglect, yet there are problems with this method of establishing the prevalence of the disorder (Hanson & Spratt, 2000). Children who lie, threaten, steal, and have a lack of conscience are often labeled as having an attachment disorder, yet this is not always the case (Prior & Glaser, 2006). Children who are diagnosed with a disorder of attachment must have the behaviors present before age 5, making it difficult to diagnose without available life history information. This may be problematic, because many children with RAD are in the foster care system and may not have available historical information (Zeanah et al., 2004). Children who are removed from their families due to abuse and neglect experience chaotic home environments. These chaotic home environments may result in inconsistent

parenting which increases the risk of developing a disorder of attachment. Children with RAD are more likely to have multiple out of home placements (Shaw & Pletz, 2001). The disorder makes it difficult to bond with new caregivers and increases the chances that the child will be removed from subsequent homes. The lack of attachment, as seen by an outsider, can make the home environment look like a bad fit between foster family and child. When out of home placements are numerous due to the frequency of being unable to remain in the home, life history can be long. Children who are over the age of 5 who show characteristics of RAD, but are without an existing diagnosis of RAD may have another externalizing behavior disorder or a disorganized attachment pattern (Pipher & Gusek, 2006). A disorganized attachment pattern, as previously discussed, is characterized by contradictory behavior towards the parent. A child who has RAD experiences "markedly disturbed and developmentally inappropriate social relatedness" (APA, p. 127). Social relatedness may not be as severely affected for a child who has a disorganized pattern of attachment.

Presently there is no laboratory test to diagnose RAD. A diagnosis of RAD is a result of behavioral observation, parental or caregiver report, and family history (Shaw & Pletz, 2007). Unlike childhood mental health disorders that are caused by genetic or biological factors, RAD is often considered to be a maladaptive environment (Shaw & Pletz, 2007). Some authors report that psychotropic medication can be used to treat the comorbid diagnosis, such as anxiety disorders, or depression, that afflict children of RAD, however, medication does not often relieve the symptoms of RAD. The most effective treatment to date is for children to live in a safe, consistent, and supportive environment (Marvin & Whalen, 2003).

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Attachment patterns are malleable and can be changed with effort and care (Hughes, 1999). This allows for treatment, if comprehensive and consistent, to be successful at helping a child regain the trust and comfort from adult care. As described by Marvin & Whalen (2003), treatment for RAD includes family involvement and a treatment developed for both the child and the family as there are changes that must be made at the family level. RAD treatment aims to increase the child's safety, increase the child's feelings of trust within a family, settle problems immediately as they arise, maintain physical and emotional boundaries, manage the child's behavior, and increase the child's family and community supports (Shaw & Páez, 2007). When these areas are addressed and the family and child are being treated, significant change may occur (Shaw & Páez, 2007).

Little is known about the impact of RAD; Prior and Glaser (2006) indicate that there have been methodological problems with studies focusing on attachment disorder. Specifically, children who are being assessed for RAD are often in out-of-home placements, as children who experience RAD are often removed from their homes due to environmental and parenting issues. Not all children who have been diagnosed with RAD have been removed from their biological homes. However, clinical samples in out-of-home placements are often the subjects of research studying this disorder.

Depending on the timing of the assessment of attachment security, the amount of time that has passed can influence the result of the assessment (Prior & Glaser, 2006). Children who are assessed quickly after placement, will naturally lack the attachment to a new caregiver and therefore have assessment results that are poor. It is believed that children removed from previous attachment figures, even if unhealthy, need to grieve the

loss of the previous caregiver before beginning to develop an attachment relationship with a new caregiver. The intensity of the emotions of loss and rejection can influence the assessment dramatically. This time period for grieving is dependent on the child, his or her age, the length of time with the previous attachment figure, and the child's developmental level (Prior & Glaser 2006).

Problems with attachment, such as RAD, do not just impact the early years of life. As previously mentioned, children's internal working models affect all of their future interactions (M. F. Erickson, personal communication, April 15, 2008). A child who internalizes being unable to elicit care may feel that all adults in his or her life will not be able to provide the care he or she may need. The negative internalization not only impacts the child's early relationship with his or her parent, but also impacts the relationship later in development during the formative school aged years (Landy, 2002).

Attachment insecurity, such as that associated with RAD, predicts behavior problems later in life (Moss, St. Laurent, Dubois-Comtois, & Cyr, 2005). Relationships with peers can suffer (Landy, 2002) and may lead to exclusion of the child from his or her peer group. Children with RAD may also be at risk for other externalizing disorders. When other behavioral disorders are comorbid, school performance can be negatively impacted (Hall & Geher, 2003). Children with reactive attachment disorder often lack the ability to understand cause and effect thinking, seemingly lack the understanding of moral reasoning, or lack a conscience. This can promote interactions with adults that are unhealthy, compromising the relationships with those of adults outside the home as well. Children who have the protective factor of having a healthy and successful experience in school may be able to counteract the negative implications of having RAD, yet children

with RAD are likely to be as unsuccessful in school as children with antisocial behaviors (Hall & Geher, 2003).

As described by Hall and Geher (2003), school administrations and teachers are faced with the predicament of figuring out how to appropriately serve the needs of children with RAD. Children with RAD are likely to bully, intimidate, and frighten peers within the school system. Children with RAD do not succeed well in regular mainstream classrooms, yet do not meet special education eligibility requirements. Children with RAD are also more likely to seek out other children with externalizing behaviors and form maladaptive peer alliances (Hall & Geher, 2003).

Children who have attachment difficulties such as RAD do not face relief as they grow older. The difficulty of attaching and forming a loving relationship with another can be seen in later adulthood in regards to romantic relationships as well as the problems evident with the parent-child relationship (Bowlby, 1988).

Children who receive treatment, through individual therapy, family therapy, or residential treatment may be able to change their maladaptive internal working models through the processes of assimilation and accommodation (Erickson, 2008). A child who has unsuccessful schemata of interacting with adults with help may be able to assimilate experiences with competent, quality caregivers and slowly change the internal working model as they grow. When the internal working model has successfully been modified, future interactions with others will be viewed through the lens of the "new" model, replacing the maladaptive experiences with more and more healthy experiences, through the process of accommodation. This process, a central part of development and

understanding of the world, allows a child to adapt to new environments where experiences can be rejuvenating, and to recover from the negative effects of RAD.

In the current published literature, there are no outcome studies focusing on residential treatment for children diagnosed with RAD. While treatment effectiveness for RAD symptoms should be evaluated, this is not the purpose of the current study. The long-term relationship with future caregivers would be the outcome of interest if we examined treatment effectiveness for RAD. The treatment organization available for the present study does not have this information for each client, therefore general psychological functioning is examined as a function of various possible predictors.

Child Maltreatment

Children with RAD are commonly survivors of child maltreatment. Child abuse and neglect is a significant problem in the United States where it is recognized that sexual, physical and emotional abuse and neglect causes harm to psychological development (Mash & Wolfe, 2005). Child maltreatment is considered to be psychologically important because of the environment in which it typically occurs. Children who experience abuse at the hands of their caregivers--the persons who are expected to be supportive and nurturing and in reality are unpredictable and frightening--find themselves in a paradoxical situation (Mash & Wolfe, 2005): children want the violence to stop but do not want the connection to the family to stop. Within the context of the abusive environment, there is often attention and love, something that all children seek and desire. Child maltreatment not only damages the child physically and emotionally, but also damages the child's relationships with others and his or her fundamental sense of identity (Mash & Wolfe, 2005).

Neglect directed towards children is the most common form of child maltreatment, accounting for more than half of reported cases (Mash & Wolfe, 2005). Infants are at greatest risk for child neglect due to the amount of care and provisions they require. Toddlers and school aged children, as they gain independence, are more likely to be the victims of emotional and physical maltreatment. Sexual abuse, however, does not show differences across developmental periods; once a child is three years old the prevalence rates are non-discriminate for age (Mash & Wolfe, 2005).

Children who experience abuse and neglect are at greater risk for developing psychopathology (Lynskey & Fergusson, 1997; Widom, 2000). Often children who are abused and neglected experience a generally chaotic home environment, surroundings that could be considered to challenge their developing personalities. The chaotic environment could simply be a neglectful experience where caregivers do not provide the needed support for the child. Often however, chaotic home environments include unpredictability in the forms of anger and hostility directed at the child or the child's parents. Parental discord, poverty conditions, and disrupted daily routines all influence the developing child within the maladaptive environment. Children who experience abuse and neglect at the hands of their parents see their family as a source of stress and fear (Trickett, Kurtz, & Pizzigati, 2004), causing the child to develop necessary coping skills, as a method of adapting.

Abused and neglected children, however, do not have the same predictable or consistent developmental trajectories (Mash & Wolfe, 2005). The long-lasting effects of child abuse and neglect depend on the severity of the maltreatment and its interaction with the individual child's protective factors (Mash & Wolfe, 2005). Children who have

experienced abuse and neglect are often cognitively impacted as well as psychologically and emotionally impacted. When maltreatment occurs during early years, developmental progress is affected. Specifically, cognitive and language development is slowed (Wenar & Kerig, 2000). More importantly, emotional development is profoundly impacted. Between 70 and 100% of children who experience abuse develop insecure attachments with their caregivers. Children are also at risk for developing poor interpersonal skills, and are likely to struggle with peer interactions (Wenar & Kerig, 2000).

Wodarski, Kurtz, Gaudin, & Howing (1990) compared outcomes of maltreated and non-maltreated school aged children in regard to academic, socio-emotional and adaptive functioning were compared. Data were obtained from parents, teachers, children and school records. It was hypothesized that children who experienced abuse or neglect would be developmentally delayed and this delay would be evident in all areas of outcome. More behavior problems were reported on the Child Behavior Checklist for the maltreated group. Children who experienced abuse had significantly more problem behaviors than children who were neglected or who did not experience any type of maltreatment. Young males had more externalizing problems, while females had more internalizing problems. Children who were abused had remarkably different experiences in school than their non-maltreated or neglected peers. Children who experienced neglect were not statistically different from their non-maltreated peers in socio-emotional development but did display severe academic delays. Abused children showed poorer outcomes on interpersonal and intrapersonal adjustment scales. Results showed that young boys received lower ratings of socio-emotional ability by both parents and teachers. This negative rating, the authors conclude, is problematic, because the young

boys have the highest risk of experiencing future abuse and are perceived as having greater difficulty. The difficulty the young boy experiences, could therefore increase the likelihood of further maltreatment.

Ainsworth and colleagues (Ainsworth, Blehar, Waters, & Wall, 1978; Crittenden & Ainsworth, 1989) followed a group of abused and neglected children and compared their behaviors during the strange situation (an assessment used to determine attachment security) to those of children who did not experience maltreatment. Children who experienced abuse did not seek closeness with their attachment figures in an effective manner. The children recognized and acknowledged their mothers but did not initiate contact. It was concluded that the number of insecure attachments between parent and child were more common in families that experienced abuse and neglect.

There are long-term effects for children who experience abuse and neglect (Appleyard et al., 2005), however, it is important to remember that children rarely experience abuse or neglect in isolation. It is an attempt of the present study and others (Appleyard et al., 2005) to examine the impact of the combination of abuse and the co-occurring other risk factors.

Risk and Protective Factors

Risk and protective factors have been an important part of outcome research for several decades (Masten & Garmezy, 1985) and have been shown to influence both positive and negative trajectories for children with behavioral problems. When risk factors are evident for an individual, it is believed that there is a higher probability of a negative result. Whether this is the development of a mental health disorder or simply a negative behavior depends on the individual and his or her experiences (Masten &

Garnezy, 1985). Risk factors have been identified as individual, family, and environmental influences such as a person's gender, socioeconomic status, genetic or biological history, experience of stressful life events, family psychological history and experienced absence of supports which increase the chances of having negative outcomes (Masten & Garnezy, 1985). It is typical that research focuses on risk factors and their impact on an individual's developmental outcome as broad areas, such as behavioral outcome or psychopathology, and does not focus on narrower phenomena (Masten & Garnezy, 1985).

Environments in which people live can be described as transactions, both influencing an individual and being influenced by an individual. A child who experiences risk factors is influenced by these risk factors, and the child also influences the environment in which the risk factors are present. The degree to which a child is affected by such risk factors, or the degree to which a child's environment is supportive or maladaptive to the child's development, is considered a transaction (Sameroff & Chandler, 1975).

Risk factors predispose individuals to negative outcomes (Cowan, Cowan, & Schulz, 1996) and include things like child abuse, low socio-economic status and parental distress. Children who have higher numbers of risk factors are at greater risk for developing behavioral problems or psychological difficulties (Cowan, Cowan, & Schulz, 1996). However, research has shown that risk factors in some children are not directly related to poor outcomes. For example, an individual exposed to the risk factor of parental divorce does not definitely have behavioral outbursts in school. Risk factors

may influence the outcomes on an individual level but are not simple causes of negative outcomes (Mash & Wolfe, 2005).

Children in residential group care, a part of the foster care system, are exposed to a greater number of risk factors than the typical population. As described by Simmel (2007) there are intrinsic risk factors present which may influence treatment outcomes. Children who experience severe maltreatment and abandonment through abuse or neglect and who have multiple placements within the foster care system have been found to be negatively impacted by such experiences.

The cumulative risk hypothesis (Rutter, 1979; Sameroff, 2000) attempts to explain the impact of multiple risks instead of single risk factors. Developmental outcomes are impacted by the presence of a cumulative effect, as these risk factors do not occur in isolation. In a study examining individual risk factors and their connection to later psychopathology, no single risk factor alone was found to contribute to later outcomes (Rutter, 1979). Poor outcomes were related to the presence of multiple risk factors, including marital discord, low socioeconomic status, large family size, paternal criminality, maternal mental disorder, and foster placement and combinations of said risk factors. The greater number of risk factors present related to poorer developmental outcomes.

Risk factors experienced by children that are present earlier in life may have different effects than those present later in childhood. Appleyard and colleagues (2005) suggest that children who experience multiple risk factors earlier in life will have worse developmental outcomes than children who experience risk factors later in life. They found that children who experience cumulative risks of abuse, family disruption, inter-

parental violence, and life stress during early childhood (birth to 64 months) were more likely to have later behavior problems than children who experienced these risk factors later during middle childhood.

Children can be shielded from the effects of risk factors by protective factors. For example, children can be protected from the effects of child maltreatment by having a positive and consistent relationship with an adult who is consistent and protective (Trickett et al., 2004). Risk and resilience research has focused on identifying protective factors that may allow an individual to overcome adversity and adjust successfully (Judge, 2005). Characteristics of both the individual and the environment can buffer an individual's reaction to risk factors (Masten & Garmezy, 1985). Protective factors have been identified as a way to ameliorate a child's response to risk factors. Protective factors which have been identified as enhancing resilience among children include high levels of parental competency, supportive friendships, and successful school interactions (Alvord & Grados, 2005). Among a large number of protective factors that have been identified, having a supportive and caring family has also been shown to contribute positively in regard to outcome for at-risk children (Judge, 2005). For a factor to be considered protective there must be an interaction with a present risk factor: the protective factor must actively influence an individual who experiences risk (Haskett, Allaire, Kreig, & Hart, 2008).

The influence of individual risk, parental risk, and protective factors on maladaptive behavior change for children who completed residential treatment for RAD was examined in the present study.

Specific Study

Archival data was obtained from residential treatment homes in this study. The homes were two non-profit, private homes implementing the same treatment model in the same treatment organization in a rural community in the northwest United States. Each home serves six children in community-based environments where children between the ages of 4 and 11 are treated for attachment-related difficulties. The children in these group homes all attend mainstream public schools. Each child within the facility has behavioral difficulties and is diagnosed with RAD by a licensed clinician before treatment begins.

The group care philosophy is an attachment model based on Daniel Hughes' (1999) work on therapeutic treatment for attachment difficulties. Within this model, relationships are fostered in the attempt to build intimacy and belonging between a child and an adult attachment figure, a staff member of the group home. Treatment involves being supportive and nurturing to each child, allowing the child to feel like he or she is empowered and able to be an active contributor to his or her treatment. As described by Moses (2000), developing relationships with staff are encouraged and children typically spend the majority of their in-home time with one specific staff member at the start of treatment, as an attempt to increase the connection between staff and child. Treatment goals are established at the beginning of treatment (See Appendix A) and evaluated every three months (See Appendix B). The goals that are established at the beginning of treatment are presented over the course of two year treatment, with two goals being active at a time. Behavior records are maintained, which document children's movement toward and achievement of treatment goals. If during the 90-day period previous to treatment plan review the child has met one or both of the goals which were the focus of

treatment, those goals are considered met and the next goal to be worked on becomes active for the next 90 days. When all goals established at the beginning of treatment have been adequately met and approved by the treatment team, the child is considered to have completed treatment. If the child has not achieved all of the goals by the end of two years, the child is considered to be partially successful or unsuccessful in completing treatment goals. Depending upon the importance of unmet goals, further treatment may be suggested (e.g., feeling safe with adult care). If the incompletely met goals are considered by the treatment team to be amenable to further progress and attention in a family setting, the child is returned to his or her biological family or placed with a foster family dependent on the individual's treatment plan.

Treatment is provided through a therapeutic milieu where trained staff provide individual support to each child. Staff-client ratio is normally one staff for three residents, although there are times where there is a greater number of staff per child. Members of the treatment team include therapeutic staff, an in-home counselor, and the child's parents, guardians, or foster parents. Children are monitored throughout their progress in the two-year treatment program and the ultimate goal is permanent placement in a family. To date, 74% of children (26 of 35) who received treatment have been placed in foster families or reunited with biological family. Treatment goals are established for each child upon entrance into the program. The attainment of goals is assessed every three months when goals are considered completed or modified for the following treatment period through review and discussion of the therapeutic treatment team. Success in the program is reached when all treatment goals have been completed.

Behavior-based techniques, including allowing natural consequences to take course, positive reinforcement, and pausing/reflection in the moments when a child engages in maladaptive behaviors, are used within the milieu. For example, a child engaging in problematic behavior may be asked to stop all activity and then, after a minute or two, engage in discussion with a staff member about the reasons that the child was asked to slow down. Children are provided individual therapy, group therapy, family therapy, and medical care during treatment and respite care after treatment is complete.

The treatment homes each provide 24-hour care for six children who have behavioral and emotional difficulties that prevent them from living in a family setting. The majority of children in these homes have been referred from state agencies and, in most cases, parental custody has been terminated or is in the process of termination due to abuse or neglect. The children being served in this manner have been placed in the foster care system prior to group care and have failed.

Care is provided by trained staff, all of whom hold a minimum education level of a bachelor's degree. Attachment counselors serve as direct care staff providing individual support for the children living at the homes during the afternoon and evening hours on school days and entire waking periods on the weekends. Relationships with two staff members (i.e., a male and female attachment figure) and the child are established throughout treatment. When a child has established a bond with a pair of staff members, those staff members are then responsible for providing primary care to that child. This care involves close attention and soothing such as being rocked in a rocking chair and being read bedtime stories each night by one of the members of the "attachment staff",

providing guidance and reassurance when the child expresses a need, and helping the child with tasks of daily living such as bathing and picking out clothes. Training is provided through direct observation, where staff members watch and ask questions of experienced staff members before interacting with the children on a one-on-one basis. Attachment counselors attend on-going attachment-focused training sessions led by licensed professional counselors who serve on the board of directors and are consultants for each individual child's treatment. These trainings focus on the work of Daniel Hughes and his attachment based method of treating RAD. This is a specially designed treatment program aimed at teaching safety and at teaching the child to trust adult caregivers. The trainings teach staff members about attachment theory and the challenges of working with attachment disturbed children. There are individual, group and family therapy sessions throughout treatment aimed at promoting healthy relationships, self esteem, and problem solving skills. Treatment also includes follow-up care when children are placed in a foster care or with their biological family. Biannual evaluations of the treatment staff are conducted to assess the staff's ability to fulfill their duties.

Facilities today have moved from the segregation models of the past, where individuals with psychological problems were removed from society, removed from schools, and placed in institutions to the normalization movement allowing for the integration of people with impairments to be with society at large. The residential treatment program described in the present study follows the normalization movement (Wolfensberger, 1972) placing the children in school within the community. A staff member employed by the group homes has an office at the public school where the

children attend classes. If children are removed from the classroom due to behavioral disruptions or emotional outbursts, this trained staff member provides an opportunity to discuss what is going on, or contacts the home to have other staff retrieve the child and end the day at school. There are overnight staff members who are awake to provide care for the children if they wake up with any problems during the night each night of the week. Therapy is provided by a licensed mental health counselor, who meets with each child at least once per week. Trained support staff assist the attachment counselors on long weekend shifts, or during the after-school hours or other times when there is increased activity within the home. Children who are not able to attend school stay at home with trained support staff. After every shift, typically between three and five times each day, behavioral logs are maintained for each child. Behavioral logs are written by staff members and include a synopsis of daily activities, how the child interacted with others, and behavior logs also document the child's successes and difficulties during the preceding observation period.

The present study examined risk and protective factors and the effect these factors have on the outcome for children with RAD who received residential treatment in a rural northwestern United States community. Archival records were used as the data source. The study focused on risk and protective factors and their influence on treatment progress and outcomes for residents between the years of 2001 and 2007. Individual characteristics of each child (i.e., age, sex, family history), were evaluated and the influences of these characteristics on treatment outcome were also noted.

Hypotheses

1. It is hypothesized that there will be an overall decrease in the amount of maladaptive behaviors from the start of treatment to the end of treatment. This would suggest that treatment may be helping the child and reducing his or her maladaptive behaviors.

2. It has been concluded throughout much of the literature that children who experience a greater number of risk factors are more likely to have poor outcomes as compared to children who experience fewer risk factors (Fergusson, Horwood, & Lynsky, 1994). Children who have come from at-risk backgrounds, such as those living within a chaotic home environment, have an increased chance of having a greater number of risk factors, and in turn have fewer protective factors (Judge, 2005).

It is hypothesized that the number of risk factors experienced by the child will influence the outcome of treatment. Children who have experienced the greatest number of risk factors will have the least amount of change in the outcome measures over time, while those children who have experienced fewer risk factors will have better outcomes over time. As a component of the risk factor variable, age of entrance into care was coded as a risk factor. This is a likely relationship because children who have experienced earlier attachment disruptions are found to be less likely to have a positive treatment outcome. Children who remain in a family setting until a later age may be more likely to have positive outcomes (Hanson & Spratt, 2000). Children who have experienced a greater number of foster care placements, also coded as a risk factor in this study, have been found to have poorer outcomes in longitudinal studies of foster care youth (Simmel, 2007). Other risk factors in this study conceptualized as part of the cumulative risk model are the child's experience of sexual abuse and the number of the

child's out-of-home placements prior to treatment (Anctil, McCubbin, O'Brien, & Pecora, 2007). Multiple dimensions of abuse (i.e. presence of sexual abuse and physical abuse) may act as a risk factor for children more than as a single dimension of abuse. According to the literature (Connor, Miller, Cunningham, & Melloni, 2002), children who experienced sexual or physical abuse had poorer outcomes than did children who did not experience sexual or physical abuse. Children who experienced greater magnitudes of abuse or neglect are at greater risk for poor outcomes as well (Lamb, Ketterlinus, & Fracasso, 1992).

3. It is proposed that children whose parents present a greater number of risk factors will also have the least amount of positive change in maladaptive behaviors on the CBCL and Y-OQ over time. Children whose parents present fewer risk factors will have the greatest amount of positive change and the best outcomes over time. Parental drug use was coded as a risk factor. Lynskey & Fergusson (1997) conducted a large longitudinal study examining psychological outcomes of children who experienced sexual abuse. They found that children whose parents used drugs and alcohol differed significantly from children whose parents were not drug or alcohol users on measures of adjustment difficulties. In the current study, parental risk factors include parental drug and alcohol abuse, parental incarceration, early family dysfunction such as divorce or never being married, and parents as abusers. Parental psychopathology and socioeconomic status of the family are also considered to be risk factors yet will not be evaluated in the proposed study due to limited archival data regarding birth families.

4. It is proposed that children with the greatest number of protective factors will show the greatest amount of positive change. Supported by the literature on risk and

protective factors, children who have protective factors are more likely to have better outcomes. If protective factors are thought of as reducing the potential harm from risk factors, those with a greater number of protective factors may be more likely to have positive outcomes (or less negative outcomes) in spite of the profound risk factors (Haugaard & Hazan, 2004; Masten & Garmezy, 1985; Trickett, Kurtz, & Pizzigati, 2004). Protective factors in this study include a positive school environment, family involvement during treatment, absence of staff disruption and positive peer relationships. Youth in residential treatment who are less severe in terms of psychopathology, and who have greater academic ability have had better outcomes than children who are more severely afflicted and have greater difficulty in school settings (Connor, Miller, Cunningham, & Melloni, 2002). Supportive family involvement during treatment was conceptualized as a protective factor. In previous studies, it has been reported that children with an involved and active family during residential treatment have better outcomes than children who do not have an involved and active family during residential treatment (Connor, Miller, Cunningham, & Melloni, 2002; Hardy, 2007). Children, who have been abused, in particular, have been found to have better outcomes when parents are involved (as summarized by Hanson & Spratt, 2000). Lack of disruption in staff relationship (i.e. the staff did not leave during treatment) was coded as a protective factor because children who experience positive adult role models, in or out of the home, are more likely to have better outcomes than children who do not have a supportive adult in their lives (Alvord & Grados, 2005; Anctil, McCubbin, O'Brien, & Pecora, 2007; Trickett, Kurtz, & Pizzigati, 2004). Children can develop healthy attachment relationships with consistent caregivers (Cassidy, 1999) and children in treatment who

did not experience a disruption may have been more likely to be protected by their connection with staff.

5. It is proposed that children will have a significant decrease in psychotropic medication use over the course of treatment. The reduction in psychotropic medication could be related to treatment effectiveness. Psychotherapy has been found to decrease the need for medication in patients with depression, attention deficit disorder, and other psychological impairments for children, adolescents, and adults (Levitz & Twerski, 2005; Mufson, Dorta, Moreau, & Weissman, 2004; Werry, 2000; Kazdin, 1990). Residential treatment, coupled with individual and group therapy, therefore is likely to decrease the reliance on medication for children receiving services.

Method

Participants

Participants were 35 children between 4 and 13 years of age. Each of the participants was a resident in a therapeutic youth home in a rural northwest community between 2001 and 2007. With respect to gender, the sample was 23 (65.7%) males and 12 (34.3%) females. The ethnic breakdown included 25 (71.4%) Caucasian, 8 (22.9%) American Indian, and 2 (5.7%) Latino participants. The average age at intake was 7.9 (SD= 2.1) years and the average age at discharge was 9.6 (SD= 2.1) years. See Table 1 for demographic information.

The participants were placed in the youth home for treatment of attachment related problems. Treatment lasted between 4.3 and 39.3 months with an average length of treatment being just under two years, 22.5 months. Participant intake information regarding history prior to residence in the facility was considered in the study. Consent

from each child's legal guardian through a release of information (i.e., allowing for treatment records to be released to the research team for review) was received prior to data being evaluated.

Measures

Individual characteristics. Each child's age, gender, and ethnicity were included as individual characteristics gathered from chart review (see Appendix C for recorded variables).

Individual risk factors. Individual risk factors were coded as being present or absent. Four types of child maltreatment experienced prior to group care (i.e. sexual abuse, neglect, physical abuse, and emotional abuse) were recorded. Abuse and neglect claims were validated by Child Protective Services for each child who experienced maltreatment. All risk factors were dichotomized, allowing for the use of analysis of variance. Age of entrance into group care (before age 9, the median for this group of children) and placement history (the number of placements before entering residential treatment, 0 for one or two previous placements, 1 for three previous placements, and 2 for greater than four previous placements) were also used as risk factors. Number of diagnoses, greater than 3 for each child was measured as a risk factor. Due to the number of risk factors proposed, factors were identified as either parental or individual influences and examined separately. Risk factors that were not naturally dichotomized (previous placements, diagnoses, or age) were dichotomized at the median for each variable. If the variable scores did not exhibit a normal distribution, histograms examining the distribution of each variable were produced and variables were split into groups approximating a normal curve. Total cumulative risk experience was also categorized

Child Behavior Checklist (CBCL) (Achenbach, 1991). This measure, designed to be completed by a parent, consists of 113 items designed to assess a child's behavior problems and competencies. This measure has reported very high internal reliability (0.78- 0.97) and inter-rater reliability (0.93 – 0.96) for a sample of 1,753 children (Achenbach, 1991). For this study, the CBCL form was completed by trained research assistants, using behavioral log data of total maladaptive behaviors from the second month of treatment and the second to last month of treatment. The second month of treatment was used as the first time period, as the discomfort of entering a new setting (known as the honeymoon phase) would be likely to be overcome by this time, resulting in a more accurate representation of behaviors for the children receiving treatment. The second to last month of treatment was used as the end of treatment time frame as it is typical that behaviors change when the child learns that they will be leaving the facility. Children typically learn about their departure within the last 30 days of treatment so the month prior to this would be considered the best example of end of treatment behaviors.

The frequency of behavior was recorded using records over the two 30-day periods. Behavior records were read and coded for numbers of maladaptive behaviors described in the passage (See Appendix D). Some complex behaviors were coded as multiple items. For example if the behavior log described a child kicking another child, it was coded as both "disobedient" and "physically aggressive to others. It was not possible to make precise frequency distinctions (i.e., 'occasional' vs. 'frequent') frequent for behaviors commonly occurring during the 30-day period. Thus, in the present study, a total frequency score on the CBCL was used to measure the frequency of behaviors.

Two separate coders were used for each time period, and a total of six coders were trained and used for the study. Training included reading sample behavior logs and recording the frequencies of behaviors. Several samples were coded together to determine which would be the best way to code certain behavioral descriptions. When there was a discrepancy among coders regarding the category they placed a behavior in, it was discussed with the entire treatment team. Agreement for where the behavior would best be quantified was reached by consensus. Inter-rater agreement was calculated on six samples that were separate from those used to establish coding system. Adequate inter-rater agreement was calculated after completion of sample records prior to data analysis and on several checks within the time period of coding data. All agreement checks were at 79% or better throughout the study for the CBCL. Raw scores were used in analyses on the subscales measuring internalizing and externalizing behaviors and the subscales of anxious/depressed behaviors, withdrawn/depressed behaviors, rule breaking behaviors, aggressive behaviors, social problems, thought problems, and attention problems. Coding protocols were established to use the Child Behavior Checklist with archival data (See Appendix E). Inter-rater agreement was established at 90% or better before permission to code actual data was given.

Youth Outcomes Questionnaire (Y-OQ) (Burlingame, Wells, & Lambert, 1996).

This measure, designed to be completed by parents, consists of 64 items designed to assess a child's behaviors and moods. Items are answered on a scale of 0-4, with 0 meaning never or almost never and 4 meaning always or almost always. There are six subscales of the Y-OQ: intrapersonal distress, somatic, interpersonal relations, social problems, behavioral dysfunction, and critical items. With a sample of 427 elementary

school students, high internal consistency (.94) was reported and convergent validity was adequate (.78) between the Y-OQ and the CBCL (Wells, Burlingame, & Lambert, 1999). As with the CBCL, this measure was completed by trained research assistants examining treatment and behavior records and recording behaviors documented during the second month of treatment and the second to last month of treatment by separate coders. The frequencies of the 64 items were recorded for an overall score indicating the number of times a particular behavior was present over a 30-day period. Behavior records were read and coded for numbers of maladaptive behaviors described in the passage in the same way as the CBCL. Some complex behaviors were coded as multiple items. For example if the behavior log described a child who was kicking another child, it was coded as both "I have physical fights (hitting, kicking, biting, or scratching) with my family or others my age" and "I break rules, laws, or don't meet others' expectations on purpose". It was not possible to make precise frequency distinctions (i.e., 'occasional' vs. 'frequent') frequent for behaviors commonly occurring during the 30-day period. Thus, in the present study, a total frequency score on the Y-OQ was used to measure the frequency of behaviors.

Inter-rater agreement was calculated after completion of sample records and on several checks within the time period of coding data. These reliability checks were at 85% or better throughout the study. Coding protocols were established to use the Y-OQ with archival data (See Appendix F). Inter-rater agreement was established at 90% before permission to code actual data was given.

Psychological outcome variables. Frequencies of problem behaviors reported on both the Y-OQ and CBCL were used as outcome variables for each child.

Procedure

Approval for the study was given by the University of Montana Institutional Review Board. Once consent was received from each legal guardian to use child records in this study, the children's files were examined to collect data outlined above. The residents' names were not attached to the assessment material (i.e., demographic information, outcome measures) and each was assigned a number in order to accurately identify the measures. Coders were trained on several samples before coding data used in the study (See Appendix D). Coders were blind to the research hypotheses, the origin of the data, and were only permitted to code one time period, preventing the coder from coding both of the behavior records for a given participant. To test for inter-rater agreement, coders coded sample data that was not used for analyses. These samples were actual treatment cases but from times that were not included in the study (i.e., the middle of treatment) to limit the exposure to actual data, preventing the coders from discovering there were two time periods for each participant.

Analysis

All quantitative analyses were conducted using Statistical Package for Social Sciences (SPSS). All hypotheses were tested with an alpha level of .05 unless otherwise specified. Pearson's product moment correlations, paired samples *t*-tests, repeated measures analyses of variance, and fixed factors analyses of variance were carried out.

Results

Descriptive Analyses

Thirty-eight children who completed treatment between 2001 and 2007 were selected for inclusion in the study. Three of the cases had incomplete data, leaving 35 cases for analysis. Approximately two-thirds of the sample was male.

Table 1

Descriptive Characteristics of Participants

(N=35)

Category	n	% of Total
Gender		
Male	23	65.7
Female	12	34.3
Age Categories		
4-6 years	10	28.6
7-9 years	16	45.7
10-11 years	9	25.7
Ethnicity		
Caucasian	25	71.4
American Indian	8	22.9
Latino	2	5.7

Descriptive Risk Factors

Almost all children were diagnosed with RAD at the onset of treatment. The average number of diagnoses was 3.1 ($SD=1.2$). Children were referred for problem behavior, emotional problems, learning problems, risk of committing suicide, and history of abuse (sexual, physical and emotional) and neglect. Characteristics of the parents

included whether or not the biological parents were married, divorced, addicted to drugs/alcohol, incarcerated, and/or abusive. Almost all parents had been cited for abuse. These results are reported in Table 2.

Table 2

Risk Factors (N=35)

Category	n	% of Total
Diagnoses		
RAD	33*	94.3
ODD	11	31.4
ADHD	16	45.7
Anxiety	2	5.7
Depression	6	17.1
Developmental Delay	2	5.7
PTSD	26	74.3
Other	12	34.3
Suicide Risk	13	37.1
Sexual Abuse	26	74.3
Need for Special Education	22	62.8
Parental Characteristics		
Married	8	22.9
Divorced	7	20
Total Risk	0.43**	0.01

Never Married	20	57.1
Addicted to Drugs/Alcohol	23	65.7
Incarcerated	13	37.1
Child Abuse by Parent	32	91.4
<u>Number Previous Placements</u>	<u>M= 4.1</u>	<u>SD= 2.9</u>
		<u>Range: 0-15**</u>

* All 35 children had been diagnosed with RAD at treatment discharge.

** One child was placed by her family and not a placement agency (DPHHS), and therefore had no previous placements.

Correlations between cumulated risk and outcomes are provided in Table 3. These correlations ranged between -0.057 to 0.618. CBCL and Y-OQ scores were significantly related at each time point. Total risk was significantly correlated with CBCL early scores, but not CBCL late scores or either Y-OQ scores. Interestingly, early and late scores were not correlated for either measure. Correlation analyses were carried out among individual risk factors to facilitate examination of whether they would be appropriately considered distinct from each other in the more complex models. Individual risk factor correlations ranged between -.04 and .50. These correlations are provided in Table 4. Correlation analyses also were performed among parental risk factors to determine that they could be considered distinct in the more complex models. Parental risk factor correlations ranged between -.05 and .43 (See Table 4).

Table 3

Correlations for Cumulative Risk & Outcome Variables

	Total Risk	CBCL Early	CBCL Late	Y-OQ Early	Y-OQ Late
Total Risk	----	0.43**	-0.06	0.21	-0.01

CBCL Early	----	----	0.08	0.62**	0.17
CBCL Late	----	----	----	0.18	0.36*
Y-OQ Early	----	----	----	----	0.08

* $p < .05$, ** $p < .01$

Table 4

Correlations for Individual Risk Factors, Parental Risk Factors, & Protective Factors

	SR	SA	NSp	A>9	PP	Div	DA	Abu	Pri	PTx	Sch	Peer	NoDis
Diag	0.17	0.08	0.09	0.06	-0.27	0.16	0.32	0.23	0.04	0.26	-0.09	0.04	-0.07
SR	----	0.18	0.10	0.50*	-0.20	-0.09	0.06	0.28	0.14	0.22	-0.10	0.07	-0.11
SA	----	----	-0.32	-0.01	0.08	0.13	-0.15	0.20	0.05	0.08	0.32	-0.11	-0.12
NSp	----	----	----	0.32	-0.04	-0.06	-0.06	0.10	-0.27	-0.22	-1.00*	-0.07	-0.01
A > 9	----	----	----	----	-0.08	-0.13	-0.26	0.01	-0.18	-0.08	-0.32	-0.02	-0.02
PP	----	----	----	----	----	-0.29	0.12	-0.01	0.00	-0.21	0.13	0.09	-0.04
Div	----	----	----	----	----	----	0.06	-0.05	-0.09	0.32	0.06	-0.14	-0.17
DA	----	----	----	----	----	----	----	0.12	0.43*	-0.03	0.06	0.10	-0.06
Abu	----	----	----	----	----	----	----	----	0.28	-0.07	-0.10	0.23	-0.21
Pri	----	----	----	----	----	----	----	----	----	-0.02	0.27	0.07	0.13
PTx	----	----	----	----	----	----	----	----	----	----	0.07	-0.24	0.10
Sch	----	----	----	----	----	----	----	----	----	----	----	0.07	0.01
Peer	----	----	----	----	----	----	----	----	----	----	----	----	0.01

Note. Diag= diagnoses; SR=suicide risk; SA=sexual abuse; NSp=need for special education; A>9=age above 9; PP=previous placements above 4; Div=parents divorced; DA=parents drug/alcohol abuse; Abu=parents abusive; Pri=parents in prison;

PTx=parents part of treatment; Sch=school positive; Peer=positive relationship with peers; NoDis=no disruption in staff relationship.

* $p < .01$

Protective Factors

The average number of protective factors experienced while in treatment was 2.17 ($SD=.95$). Protective factors that were selected for inclusion were parent participation in treatment, no need for special education services, lack of peer problems, and consistency of staff while in treatment. See Table 5. Correlation analyses were carried out among protective factors to facilitate examination of whether they would be appropriately considered distinct from each other in the more complex models. The correlations for protective factors ranged between -0.24 and $.22$. These correlations are reported in Table 4.

Table 5

Protective Factors (N=35)		
Category	n	% Total
Parents Part of Treatment	14	40
School Experience Positive	13	37.1
Positive Experience With Peers	20	57.1
Consistent Attachment Figure	16	45.7

Treatment Characteristics

Treatment characteristics which were recorded included duration of treatment and placement post treatment. Children were considered successfully completing treatment if placed in a family after treatment. Treatment for children who were placed in a treatment

facility was considered unsuccessful. About three-quarters of children were placed in families. These results and others are reported in Table 6.

Table 6

Treatment Characteristics (N=35)

Category	n	% Total
Placement in Foster Family	17	48.6
Placement in Biological Family	9	25.7
Placement in Treatment Facility	9	25.7
Duration of Treatment(months)	$M= 22.6$ $SD= 8.0$ Range: 5.3 -39.3	

Paired Sample T-test Analyses

In order to determine if there was a change over time in total number of maladaptive behaviors, paired sample *t*-tests were performed on early and late scores. It was hypothesized that there would be a significant difference in overall problem behaviors exhibited during the start of treatment when compared to problem behaviors exhibited during the conclusion of treatment.

There was an overall significant change for problem behaviors reported on the Child Behavior Checklist and the Youth Outcomes Questionnaire (See Figures 1, 2 and 3). The paired sample *t*-test analysis indicated that there was a significant difference between early and late treatment scores on the CBCL. The subscales of the CBCL showed that all means decreased, with four of the ten being statistically significant differences.

There was a significant decrease of aggressive behaviors during treatment.

Thought problems significantly decreased over time. Reported internalizing behaviors and externalizing behaviors decreased over time. There was not a significant decrease in anxious/depressed behaviors, withdrawn/depressed behaviors, somatic complaints, rule-breaking behavior, or social problems. The attention problem subscale paired sample *t*-test indicated a marginally-significant difference in early and late treatment scores.

Results from the total scores on the Youth Outcome Questionnaire also indicate a significant change over time. The paired sample *t*-test analysis indicates that there is a significant difference between early and late treatment scores. The subscales of the Y-OQ results indicate means decreased in all areas, with two of the six subscales indicating statistically significant changes. Intrapersonal distress and interpersonal distress decreased significantly throughout treatment. There was not a significant decrease in somatic complaints, behavioral dysfunction, or critical items over time. Social problems decreased, and the paired samples *t*-test indicates that there was a marginally-significant decrease between early and late treatment scores. See Table 7 for these results.

Table 7

T-test Differences Early/Late Treatment

(df = 34)

<u>Assessment Category</u>	<u>Early Mean (SD)</u>	<u>Late Mean (SD)</u>	<u><i>t</i></u>	<u><i>p</i> value</u>
Child Behavior Checklist*	181.2(74.2)	128.4(56.8)	3.478	.001
Anxious Depressed [^]	22.1(13.1)	16.4(13.4)	1.918	.064
Withdrawn Depressed	12.1(6.8)	9.9(7.4)	1.478	.148
Somatic	2.1(2.7)	1.2(1.6)	1.644	.109
Rule Breaking Behaviors	5.5(6.9)	4.7(5.3)	.509	.614

Aggressive Behaviors*	48.7(31.0)	25.1(18.0)	3.922	.000
Social Problems	17.1(8.9)	15.7(10.3)	.566	.575
Thought Problems*	4.8(5.3)	2.1(4.4)	3.026	.005
Attention Problems^	13.8(9.6)	9.5(9.1)	1.915	.064
Internalizing Behaviors*	36.4(17.3)	27.6(16.9)	2.295	.028
Externalizing Behaviors*	54.2(35.0)	29.8(21.3)	3.428	.002
Youth Outcomes Questionnaire*	192.8(115.4)	124.2(88.0)	2.915	.006
Intrapersonal Distress*	54.9(29.7)	37.9(18.6)	3.285	.002
Somatic	6.3(13.4)	3.1(4.6)	1.556	.129
Interpersonal Relations*	91.5(79.7)	50.9(55.1)	2.433	.020
Social Problems^	11.5(11.9)	6.9(8.2)	1.811	.079
Behavioral Dysfunction	17.3(9.7)	15.1(15.8)	.699	.489
Critical Items	11.3(6.8)	10.2(9.7)	.596	.555

* $p \leq .05$

^ $p \leq .10$

The average number of medications significantly decreased over time. At intake, the average number of medications orally taken for psychological disturbance was 1.5. At treatment discharge the average number of medications taken orally for psychological disturbance was 0.8. The paired samples *t*-test indicates a significant change between intake and discharge medications ($t(34) = 3.02, p < .005$).

The differences between low, medium, and high numbers of risk factors were examined. Children who had the greatest number of risk factors exhibited a significant magnitude of change with an early treatment mean of 203.3 and a late treatment mean of

117.4, $p < .004$. Children who fell in the middle for experiencing risk factors had a marginally significant change over time with an early treatment mean of 193.1 and a late treatment mean of 142.7, $p < .08$. Children who experienced a low amount of risk factors did not have a significant amount of change when compared to the other two groups, with an early treatment mean of 133.3 and a late treatment mean of 120.8. See Figure 4 for these results.

The differences in internalizing and externalizing behaviors among low, medium, and high numbers of individual risk factors were examined. Children who had the greatest number of risk factors had higher levels of both internalizing and externalizing behaviors on the CBCL early in treatment. Each group had decreases in both internalizing and externalizing behaviors over time. See Figures 5 and 6 for these results.

Repeated Measures Analyses of Variance

Repeated measure analyses of variance were used to evaluate the influence of risk factors and protective factors on the outcome of change in score on both the CBCL and the Y-OQ. These analyses were conducted to determine the influence of each child's individual risk factors, and protective factors using time as a factor for the early treatment and late treatment scores on the CBCL and the Y-OQ.

The multivariate repeated measures analysis of variance for the Child Behavior Checklist total score looking at the influence of time, level of risk factors present (high, medium, or low), and gender were conducted. Results indicate significant decrease in CBCL scores over time ($F=6.66, p < .015$) and a difference for gender over time ($F=6.97, p < .013$). No significant effect of individual risk factors was found in the multivariate

tests. Examining the between subjects effects for this model, individual risk factors were marginally significant ($F=3.27, p<.053$) for predicting the change in CBCL scores.

The Youth Outcomes Questionnaire showed a significant decrease over time ($F=5.85, p<.02$). Individual risk factors and gender were included in the model and no significant effects for the combination of time, gender, or individual risk factors were found. The between subject effects analysis resulted in significance for individual risk factors ($F=3.76, p<.035$) at predicting change in scores over time for the Y-OQ.

Parental risk factors were examined to see if they accounted for the change in scores on the Child Behavior Checklist and the Youth Outcomes Questionnaire. The results indicate an effect of time ($F=12.41, p<.001$) and time by gender interaction ($F=6.23, p<.018$) for the change in CBCL scores. Results for the Y-OQ indicate a significant effect of time ($F=7.21, p<.012$). The interaction of time and gender and risk factors was not significant.

Protective factors and their influence on change for both the CBCL and the Y-OQ were examined. The effect of time was significant for predicting the change in CBCL scores ($F=4.56, p<.041$), and the interaction between time and gender was significant ($F=8.15, p<.008$). The examination of time and protective factors was not significant. The repeated measures ANOVA conducted on the difference in time one scores and time two scores for the Y-OQ resulted in a significant statistic for time ($F=5.07, p<.032$) but not for the interaction of gender and protective factors.

Fixed Factors Analysis of Variance

Level of risk factor (high, medium, or low) experienced by each child was marginally significant at predicting early treatment scores on the CBCL ($F=2.87, p<$

.072, adjusted $R^2 = .099$). Risk factors were not predictive of early treatment scores on the Y-OQ ($F=1.25, p < .299$, adjusted $R^2 = .015$). Parental risk factors were not predictive of early treatment scores on the CBCL or the Y-OQ.

Individual risk factors experienced by each child were not predictive of late treatment scores for the CBCL ($F=.74, p < .486$, adjusted $R^2 = -.016$), but were predictive of late treatment scores on the Y-OQ ($F=5.09, p < .012$, adjusted $R^2 = .194$). Parental risk factors were not predictive of late treatment scores on the CBCL or Y-OQ.

Gender Differences

As there was an effect for gender for the CBCL over time but not for the Y-OQ in the repeated measures ANOVA, the differences in means for both males and females were examined further. Females had a significantly lower treatment score early in the program with a mean of 144.1 ($SD=67.1$) as compared to males with a mean of 200.6 ($SD=71.6$) with a value of $p < .03$. See Table 8 for these results. Over time, the females showed a slight non-significant increase in problem behaviors. Males over time significantly decreased overall problematic behavior (See Figure 7).

Internalizing and externalizing subscales were examined separately to see if there were differences in expression of maladaptive behaviors for males and females. Males demonstrated significant decreases in total scores, internalizing, and externalizing behaviors. Females exhibited no change. See Figure 8 for these results.

Table 8

T-test Differences for Gender Early/Late Treatment

<u>Assessment Category</u>	<u>Early Mean(SD)</u>	<u>Late Mean(SD)</u>	<u>t</u>	<u>p value</u>
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Child Behavior Checklist Total				
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Males	200.8(71.6)	119.9(42.9)	4.632	.000
Females	144.1(67.1)	144.7(76.6)	-.026	.980
Internalizing Behaviors				
Males	39.8(16.9)	26.6(16.2)	2.498	.020
Females	29.8(16.8)	29.5(18.7)	.066	.949
Externalizing Behaviors				
Males	62.0(36.6)	27.0(13.7)	4.559	.000
Females	39.4(27.4)	35.3(31.2)	.315	.759

Treatment Change

Behavioral problems reduced on average, by 53 total points for the CBCL and 69 total points for the Y-OQ. Some children, however, had higher decreases or higher increases in problem behavior. On the CBCL, there were 11 (31.4%) children with a change score, within one standard deviation of the mean for improvement, and six (17.1%) children who had improvement scores which were beyond one standard deviation of the mean for improvement. On the Y-OQ, there were ten (28.5%) children with a change score within one standard deviation of the mean who had a reduction in maladaptive behaviors throughout treatment. There were six (17.1%) children who had change scores beyond one standard deviations of the mean for improvement.

There were eight (22.8%) children within one standard deviation who had slight decreases in problem behavior over time on the CBCL. There were seven (20%) children whose change scores were beyond one standard deviation from the mean indicating deterioration on the CBCL. The Y-OQ results revealed ten (28.5%) children within one standard deviation away from the mean, six (17.1%) of whom had slight decreases in

problem behavior over time and four (11.4%) of whom had an increase in maladaptive behavior over time. There were six (17.1%) children whose change scores indicated deterioration on the Y-OQ, beyond one standard deviation of the mean.

There were no significant differences on independent samples *t*-test analyses regarding total number of individual risk factors or parental risk factors, total number of protective factors, age at intake, or duration of treatment for the children who significantly improved or significantly deteriorated throughout treatment.

Discussion

A major goal of this study was to determine whether residential treatment decreases problem behaviors over time for children with attachment related difficulties, a finding that has never been reported to date. The first hypothesis was supported. When the mean scores on both the Youth Outcomes Questionnaire and the Child Behavior Checklist were compared for early and late treatment behaviors, the comparison showed a significant decrease in problematic behaviors. This finding suggests that residential treatment, as a whole, for reactive attachment disorder using the treatment methods outlined above, helped children decrease the maladaptive behaviors that may be preventing them from being successful in a family setting. The findings in this study are consistent with previous studies focusing on residential treatment effectiveness in general (Day, Pal, & Goldberg, 1994).

The second hypothesis was not supported in the way that was expected. Contrary to what was hypothesized, the severity of individual risk factors for children entering treatment did not predict behavioral outcomes in the way that was proposed. Children with the greatest number of individual risk factors showed the largest amount of decrease

in maladaptive behaviors over time. In contrast, it was proposed that children with the lowest amount of individual risk factors would have the greatest amount of behavioral change. This result contradicts the findings of Appleyard, Egeland, van Dulmen, & Sroufe (2005) who found that the greater number of risk factors that are present for a child, the worse the outcome for the child during adolescence. Although Appleyard and colleagues' study followed children who were not institutionalized, their findings test the cumulative risk model showing that children with the greatest number of risk factors evident during middle childhood have the poorest outcomes during adolescence. Children in the present study were not followed and assessed after treatment as were the children in Appleyard et al.'s study, which could influence the implications of this finding.

Cumulative risk may prove to influence later outcomes negatively, and more immediate or short term outcomes may not show the effects in the same light. Children who had the greatest number of individual risks in the present study also had the greatest amount of maladaptive behavior problems at the start of treatment, which could suggest that they would be the ones to have the greatest amount of change due to their elevated levels at the start. Nevertheless, the decrease in maladaptive behavior problems was less than for the other two groups (medium and low risk factors). At the conclusion of treatment, there were no significant differences for any individual risk factor category on maladaptive behaviors. The lack of group differences at the conclusion of treatment suggests that all children are decreasing problematic behavior to a more adaptive level of functioning. To determine if there were differences in the types of behaviors presented during treatment, internalizing and externalizing behaviors based on risk factor group

were examined. The children with the highest amount of risk factors showed elevated levels of both internalizing and externalizing behaviors early in treatment. This result indicates that children with fewer individual risk factors were not engaging in higher levels of internalizing behaviors, which may have been less likely to be documented. Children with the highest level of risk factor had the greatest number of both internalizing and externalizing behaviors showing an overall decrease in both maladaptive behavior types. Parental risk factors were not found to be a significant predictor of change over time on both the CBCL and Y-OQ.

Membership in risk factor grouping (high, medium, or low) was predictive of early treatment scores on the CBCL but not the Y-OQ. Children with the greatest number of individual risk factors had the highest scores at the start of treatment. Children with the lowest number of individual risk factors had the lowest scores at the start of treatment. Children who fell in the middle for individual risk factors were in the middle for maladaptive behaviors, which was as expected. Individual risk factor group membership was not predictive of early treatment scores on the Y-OQ. Individual risk factor group membership was not predictive of late treatment scores on the CBCL, but was predictive of late treatment scores on the Y-OQ. Parental risk factors were not predictive of early or late treatment scores on either the CBCL or the Y-OQ. It was hypothesized that protective factors would be positively related to treatment outcomes. Protective factors in this study were not found to influence change in maladaptive behaviors on both the CBCL and the Y-OQ. It was predicted that children with the highest amount of individual risk factors would have the least amount of change. However, children with the highest number of individual risk factors had the greatest

amount of change on both the CBCL and Y-OQ. The means for total scores on the CBCL and Y-OQ were highest for the group with the most individual risk factors; it is not surprising that the reduction in maladaptive behaviors for this group was significant.

Protective factors were not predictive of change in maladaptive behaviors. The lack of prediction for protective factors could be due to the limited number of protective factors entered in this study. Children who had protective factors present without the accompanying risk factors would not benefit from the ameliorating effects one would expect with protective factors; however, this was not tested. The separation, therefore, of the risk and protective factors, may not have been the best way to measure their influence.

Psychotropic medication use significantly decreased for children in this study. This finding supports the hypothesis that treatment effects would lessen the dependence on medicinal treatments for behavioral problems. When admitted to treatment, many children were being treated solely with medication. It is not surprising to find that children being treated medicinally for behavioral problems can decrease the need for medication when the underlying emotional problem is being addressed. Each child participated in group and individual therapy several times a week. The therapy component of treatment could be considered the reason medication use decreased.

Repeated measures ANOVAs showed that there were effects of gender on the change in CBCL scores over time. Males, in this treatment setting, exhibited high levels of externalizing behaviors when compared to females when entering treatment. Over time, the males significantly decreased the amount of externalizing behaviors that were observable by staff members. This change, however, is not surprising as it could be

related to the low number of externalizing behaviors that the females were engaging in. Externalizing behaviors, for the males, may have been more salient to treatment staff as their expression of the behaviors may have seemed extreme in comparison to the females. Males have been found to have greater improvement over time in residential treatment (Visser, Van der Ende, Koot, & Verhulst, 2003) when compared to females, yet this may not be as related to males being more likely to change as it is to females being less likely to show high levels of externalizing problems.

Females did not show an overall decrease in problematic behaviors over time which is also consistent with Visser and colleagues' findings (2003). This does not mean, however, that treatment was not effective for them. If females were showing significantly fewer externalizing behaviors than males at the start of treatment, these problems may not have been the focus of treatment. Females are more likely to have internalizing problems, (Mash & Wolfe, 2005), which may be much less likely to be noticed by treatment staff recalling events of the day.

The difference between male and female treatment change could also be related to the subtypes of RAD endured by males and females. In a study conducted in 2004, Zeanah and colleagues examined the presentation of RAD in maltreated children who had a history of institutionalization and were later in the foster care system. The researchers concluded that both subtypes of RAD were identifiable in children who experienced maltreatment. It was also found that behaviors consistent with diagnosis of RAD withdrawn/inhibited subtype were present even after a lasting relationship was established with a foster parent. This finding could suggest that treatment outcomes may not indicate the child is improving his or her relationship with others, when in fact, this is

happening but not documented by treatment staff. All of the children in this outcomes assessment had a diagnosis of reactive attachment disorder at the end of treatment. Diagnostic information regarding the type of RAD that the child exhibited was not available for inclusion in the study. Nevertheless, it could be that children who did not decrease in problematic behavior according to documentation, are experiencing the phenomenon associated with the withdrawn/inhibited subtype. The behaviors associated with the withdrawn/inhibited subtype of RAD could be evident throughout treatment. Children with this type of RAD may be internalizing better strategies to be successful in parent-child relationships but not acting differently.

There were seven children on the CBCL and ten children on the Y-OQ in the present study who exhibited significant increases in maladaptive behaviors throughout treatment, with their change scores falling beyond one standard deviation from the mean. There were six children on the CBCL and six children on the Y-OQ who exhibited significant improvements with their change scores falling beyond one standard deviation from the mean. Seven children scored significantly worse on the CBCL at time two when compared to time one scores. There were ten children who scored significantly worse on the Y-OQ at time two when compared to time one scores. There were no significant differences between the children with change scores beyond one standard deviation from the mean for deterioration when compared to the children who exhibited significant improvement, with change scores falling beyond one standard deviation away from the mean for amelioration when examining age of admission, total number of individual risk factors, total number of parental risk factors, total number of protective factors, or treatment duration. There may be characteristics which influenced the success

or lack of success in treatment that were not identified in this study which contributed to the differences in treatment outcomes. Children are screened prior to treatment and this result suggests that the treatment center may not be able to identify through the methods currently used whether children will improve during treatment. There may be differences due to the staff and the care they are providing which were not evaluated in this project (e.g., lack of familiarity with the specific child (i.e., relief staff), staff turnover, if the staff was in a rush filling out behavior logs, etc.).

The lack of significant differences between early and late treatment scores on several subscales on the CBCL (withdrawn/depressed behaviors, somatic complaints, rule-breaking behaviors, and social problems) and subscales on the Y-OQ (somatic complaints, behavioral dysfunction, and critical items) could be the result of the vocabulary used by the staff completing the behavior logs. Treatment staff are trained to write summaries regarding the events of the day and the child's overall behavior. An adult completing the CBCL or the Y-OQ in the traditional manner may have his or her memory "jogged" and may be more likely to have reported on the frequencies of some of the behaviors in the subscales. It could also be that treatment may not focus on some of the behaviors that are included on these subscales. The lack of difference on the withdrawn/depressed subscale and the somatic complaints subscale may be due to this. Somatic complaints that are identified in treatment logs include when the child is *actually* sick, and the lack of decrease in these behaviors, may be the result of a child being sick, not having maladaptive behaviors. Somatic complaints throughout treatment were lower than any other behavior with an average of 2.1 complaints on the CBCL at the beginning of treatment and 1.2 complaints on the CBCL at the conclusion of treatment. It is

surprising, however, that rule-breaking behaviors did not significantly decrease throughout treatment, until one notices the early and late treatment means. Rule-breaking behaviors were very low early in treatment and late in treatment, something that is very closely focused on during treatment. An average of 5.5 rule breaking behaviors over a thirty day period is very low for a group of children with behavioral problems. Reducing this to an average of 4.7 and the lack of statistical significance could be due to such low frequencies of these behaviors from the start. Behavioral dysfunction and number of critical items did not decrease significantly for this group on the subscales of the Y-OQ. A group of children with psychological maladjustment is likely to have high scores in both behavioral dysfunction and critical items. The Y-OQ is designed to recognize behavioral problems and indicate a need for treatment. Residential treatment designed for attachment difficulties may not address all of the items that the behavioral dysfunction and critical items subscales are measuring.

Limitations of this project include the lack of a comparison group. There is no way to tell whether the treatment or protective and risk factors have caused the outcomes identified in these children or if the change is simply due to maturation. If this project could have included other treatment methodologies, one could examine the differences among treatment styles and the effects of each. The sample of children in this study is a forced sample of those who completed treatment in both of the group homes studied. Having children included who have similar behavioral problems but who were not receiving treatment at the residential treatment centers would also be necessary for reasons of generalizability. Without a control group, one cannot with confidence claim

that treatment is solely causing the changes in maladaptive behaviors exhibited by the children. The changes could be due to maturation, time, or even chance.

Keeping in contact with children who completed treatment and assessing their relationship with their new caregiver would be beneficial to determine the overall effectiveness of the residential treatment model and the long term outcomes for these children. The children in this study had all been unable to sustain familial relationships because of attachment related difficulties prior to treatment. Watching these children in future experiences with caregivers would help illustrate true treatment effectiveness for the program. If the children entering treatment struggled with an insecure attachment, it would be wonderful to see whether they were able to modify their internal working models and use these corrective experiences to interact successfully with future caregivers, something this study was unable to examine as treatment staff do not maintain contact or have follow-up visits with the children after treatment.

The children in this outcomes assessment all received treatment attempting to help with problems related to attachment difficulties. Although this is a pioneering effort to evaluate the effectiveness of residential treatment for RAD, the absence of a comparison group makes it difficult to attribute behavior change to the treatment alone. No other outcome studies focusing on residential treatment for attachment related difficulties have been published to date. All published residential treatment studies have focused on treatment for behavioral disorders such as conduct disorder or oppositional defiant disorder. Having a group of children with attachment related difficulties who have received a different model of treatment would be beneficial for both the field of psychology and assessing the treatment model employed.

As there were differences between genders, it would be interesting to see if there are different treatment outcomes for males and females who are treated for RAD who are not living in co-educational treatment facilities. The difference in treatment effectiveness for gender could be related females being more likely to exhibit internalizing behaviors than males (Mash & Wolfe, 2005). Treatment staff may have been more likely to notice and comment on externalizing behaviors presented by the males and therefore these behaviors may be the behaviors that are addressed more often in the therapeutic milieu. Therefore, although it looks as though females are not benefiting from treatment, they may be decreasing internalizing behaviors that are less likely to be noticed by treatment staff in the first place.

There also are limitations with using archival data, as children and treatment staff were not be able to speak currently about the treatment received to capture the complexities which may be missed by using quantitative analyses of this type. Information regarding socioeconomic status was unavailable, which could have been an important risk factor for this group of children (Appleyard et al., 2005). Having access to more information about parental history (such as education and mental health history) would be advantageous to allow for a closer examination of variables that may have affected treatment but were unaccounted for in the present study.

Coding protocols were established, yet it is uncertain whether the coding system allowed for accurate descriptions of the relationship between risk and protective factors and treatment outcome. Treatment records were written by many different staff members over the 30 day period and early and late treatment records were not written by the same people in many cases. The accuracy of records may never be known.

There are limitations with the use of categorizing risk factors. The decision as to where to split the group was based on the sample statistic of median. Future studies may find the sample median for the variables of interest to be different than the medians identified in this study; generalization therefore should be exercised with caution. Separating the influence of risk and protective factors may also be difficult due to the interactions that are necessary for a protective factor to be considered protective. Unfortunately, this interaction of risk and protective factors was unable to be calculated with the current sample.

Individual characteristics influence the response to child maltreatment (Hanson & Spratt, 2000) and the response to residential treatment. This study could not account for temperamental differences or protective factors that were not recorded by youth home staff. This model of treatment for children with a primary diagnosis of RAD, through this investigation, shows on average, positive outcomes for children who complete the recommended treatment course.

A larger research sample in future studies of this nature may facilitate more accurate understanding of the results and more careful examination of group differences. With an increased sample size, one could examine group differences more carefully. Having a group of children who experience sexual abuse compared to a group of children who did not experience sexual abuse within the group receiving residential treatment could help focus treatment methods in different ways for the different life experiences each child brings to treatment. The timing of experiencing maladaptive home environments and child abuse has been found to influence the types of behaviors later exhibited by children (Hanson & Spratt, 2000). Children who have been abused earlier in

life have been found to have greater impairment than children who were older when first experiencing child abuse, therefore living more of their life experiencing a healthier upbringing (Hanson & Spratt, 2000). Having a greater amount of participants would allow for differences between children who experienced abuse early in life and late in life to be examined.

Studies examining the outcomes of children receiving treatment for difficulties are necessary and vital to the success of mental health treatment. Residential treatment was found to be effective, on average for children with attachment related difficulties. Treatment, however, was not successful for a handful of children who needed to go on to further residential care and whose behavioral maladjustment scores increased. What changes could be made for these cases, to make the treatment more successful? Are these cases simply related to problem children who will be unable to succeed in any treatment model, or are there areas to focus on to improve treatment for all children? These changes, if they were to occur, would be vital because of the large number of children being cared for each and every day in residential treatment homes across the globe. Offering the best treatment available is the least society can do to help the children who desperately need help in making the changes necessary to live healthy lives.

The number of children in the foster care system, including residential treatment, family care, and institutional care, is very high. Evaluating the treatment that children in residential treatment homes receive is important. When care is provided by competent, dedicated staff where children are cared for consistently, positive outcomes can be increased. When residential care is provided by inconsistent, poorly trained staff, children will not be experiencing the adaptive environment necessary for treatment

success. When the treatment is implemented in the ways in which it is intended, suited specifically for the children in its shadow, positive experiences can disrupt the negative life experiences the children have previously encountered. This level of care is vital to the success of the interventions provided to these children. Helping residential treatment staff limit the risk factors experienced by each child and promote protective factors may lead to better outcomes for this population.

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Appendix A

Sample Treatment Plan for Beginning of Treatment

Master Treatment Plan

Name of Child: Joey Macaroni	Sex: M	Age: 5
Name of Family:	Date of Birth:	Date of Placement:
Placing Agency: DPHHS	Caseworker:	County:
SS#:	Therapist:	Date of Plan:

This document is to serve as a Master Treatment Plan for Joey Macaroni while he is in Therapeutic Group Care. Listed below are the major problems faced by this child and his/her family as identified by the Clinical Team at the time of admissions and subsequent to further observation and treatment. Each "Problem Statement" is followed by a "Discharge Goal" which is a broad goal which when reached should mitigate that problem for the child and family. Often, discharge goals are too broad to be addressed specifically in treatment; therefore, each goal is divided up into operationally defined steps or "Objectives" that when reached accomplish the general goal. Finally, "Interventions" suggest the work that the program, family, and/or other collaterals will do to help the child/family accomplish each individual objective.

Referral Issues

Joey is a five year old boy referred to the treatment from a temporary foster care placement. Joey was in a total of five foster placements since the initial removal from his father's care, Harry Macaroni, in April of 2000. He was returned to Harry's care in May 2000 until again being removed in June of 2003. He was removed for extensive abuse and neglect at the hands of Harry and his girlfriend Sally Smith. Harry and Sally have chronic chemical dependency issues, specifically with methamphetamines. Joey was unsuccessful in each of his foster placements due to aggression, defiance and an inability to allow the adults in the home to adequately care for him. Joey also lived with Polly Macaroni, his paternal grandmother, who is known to be extremely labile in mood and ability to manage her own emotions. Visits initially were granted to Harry and Sally and had been satisfactory until Harry and Sally argued, during a visit at DCFS, about who possessed more methamphetamines with Harry actually pulling out some drugs in plain view. Monica Jello, Joey's bio-mother who left when Joey was two, has had her parental rights terminated. DCFS is also seeking termination of Harry's rights, allowing for Joey to be placed into another family. It is anticipated that Joey will be in treatment for 3-4 months until a family can be identified that is willing to work with the treatment organization to address Joey's attachment difficulties.

Clinical Conceptualization and General Treatment Direction

Joey displays a disorganized attachment pattern. His early caregivers were inconsistently available and at times dangerous. Monica Jello, Joey's bio-mother, left the family when

Discharge Plan

The discharge plan is for Joey to be discharged to a therapeutic foster family

Treatment Goals

Problem #1: Due to Joey's inconsistent and unpredictable care taking during his early years, he has a limited understanding of nurturance. This limited understanding of nurturance prevents Joey from being able to feel soothed which ultimately prevents him understanding adult care.

Goal #1: Joey will begin to understand adult care as soothing while in the group home and continue to experience and accept care as nurturing once he is placed in a family.

Objective 1.1: Joey will begin to develop trust of adult care as evidenced by his willingness to tolerate close proximity on adult terms.

Interventions:

1. Encourage Joey to start talking about his feelings with attachment staff (grieving loss of family).
2. Proactively meet Joey's needs
3. Bring Joey in close when he starts having difficulty with adult care.
4. Using nurturance and supportive language provide structure and boundaries in order to help maintain Joey.
5. When Joey's anxiety is high provide him with nurturance and rockings in order to help him begin to co-regulate with the adults.
6. Keep your expectations low and keep in mind that he is only five years old.
7. Be aware that a caretaker possibly sexually abused Joey. This could cause a distortion in his understanding of nurturance.

Problem #2: Due to Joey's history of multiple placements, parental abandonment and rejection, Joey does not view adult's as safe and predictable.

Goal #2: Joey will begin to experience adults as predictable and safe while in the group home setting. Joey will continue to experience adults as predictable and safe once he is placed in a family.

Objective 2.1: Joey will continue to experience adult control as positive as evidenced by an increase in his ability to accept adult decisions.

Interventions:

1. Recognize Joey's manipulative behavior (crying, tantrums, etc) as a means to emotionally engage staff.
2. Give clear one-step directions and continue to keep expectations low.
3. Give choices within adult choices.
4. Recognize aggressive behaviors as a defense and expression of his fears.

5. Offer supportive language and nurturance when Joey is refusing to follow directions.
6. Joey has had a chaotic upbringing, help him to learn alternative defense mechanisms besides destruction, aggression, and lying behaviors.
7. Be aware that transitions are hard for Joey, offer support by preemptively advising Joey of upcoming transitions, 2-3 minutes before the transition.

Problem #3: Due to Joey's early chaotic years Joey lacks age appropriate internal regulation. His inability to regulate prevents him from making age appropriate transitions. His inability to transition disrupts him from attending school and being able to be in a family.

Goal #3: Joey will begin to allow the adults to provide him with external regulation in order to help him to gain internal regulation

Objective 3.1: No objectives at this time.

Interventions:

Problem #4: Joey is in need of a long term permanency placement. However is current custody issues are not yet fully resolved.

Goal #4: DCFS and the treatment team will work together to clarify Joey's custody issues such that he can be matched and transitioned into a permanency placement leading to adoption.

Interventions:

1. DPHHS will move toward Permanent Legal Custody by the end of March or beginning of April.
2. Treatment organization will identify and prepare a pre-adoptive family by May 15th, 2003

Signatures:

_____	_____	_____	_____
Parent	Date	Caseworker	Date
_____	_____	_____	_____
Parent	Date	Therapist	Date
_____	_____	_____	_____
Clinical Director	Date	(Other)	Date

Appendix B

Sample Treatment Plan Review

Treatment Objectives and Strategies

Name of Child: George Monkey	Date of Birth:	Age: 12
Name of Family:	Date of Placement:	Sex: M
Placing Agency: DPHHS	Caseworker:	Date of Plan:
SS#:	Therapist:	

Objective #1: George will continue to experience trust of care with in his significant relationships as evidenced by a decrease in his anxiety during times of separation.

Milieu Strategies:

- Though George is 12 remember we are helping his to experience the joy of being a child.
- During room time give George reassurance that you know where he is and that he isn't forgotten.
- Remind George that his bedroom door is not shut or locked.
- Significant staff will attune from afar, using special signs, sounds, etc.
- Role-play nonverbal communication skills with George. i.e., guessing emotions game.
- Be aware that George struggles with interpreting non-verbal cues.
- Recognize that George is at a different place with male attachment staff than he is with female attachment staff and vice versa, this may skew the counts for this objective.

Objective #2: George will increase his trust of adult control as evidenced by his ability to tolerate adult decisions on adult terms

Milieu Strategies:

- Look for opportunities to support George's regressive behavior.
- Look for opportunities to be in the moment with George.
- Look for opportunities for intense, spontaneous fun and help George recognize when to stop or slow down.
- Allow opportunities to empathize with George when he is showing genuine emotion.
- Help George by exploring and accepting both verbal and non-verbal cues.
- Be aware that George may not respond well at times to "rules" (adult control) that everyone knows, he may need to "learn" these due to his prenatal alcohol exposure and PTSD.
- Continue to allow George opportunities to be frustrated while being safe.

Appendix C

Individual Demographic/Variables

1. ID # _____
2. Sex _____ (Male= 0 Female =1)
3. Race _____ (White=0, Black =1, Hispanic =2, American Indian =3)
4. Age at admission _____
5. Number of previous out of home placements _____
6. Age at discharge _____

Diagnoses

7. Conduct Disorder Y or N
8. Oppositional Defiant Disorder Y or N
9. Attention Deficit Hyperactivity Disorder Y or N
10. Anxiety Disorder Y or N
11. Depression Y or N
12. Reactive Attachment Disorder Y or N
13. Developmental Disorder Y or N
14. Substance Abuse Disorder Y or N
15. PTSD Y or N
16. Other _____
17. Total Number of Diagnoses _____

Reason for Referral

18. Behavior Problems Y or N
19. Emotional Problems Y or N
20. Learning Problems Y or N
21. Suicide Y or N
22. Abuse Y or N Sexual Y or N Emotional Y or N Physical Y or N
23. Neglect Y or N

Family History

24. Parents divorced Y or N
25. Parents never married Y or N
26. Parents addicted to drugs/alcohol Y or N
27. Parents in prison Y or N
28. Parent considered abusive Y or N
29. When parental rights terminated _____ (date)

Referral Source

30. Another treatment center Y or N
31. Inpatient facility Y or N
32. Court ordered Y or N
33. Juvenile Justice Y or N
34. Family Y or N
35. DPHHS Y or N

Previous Living Arrangements

36. At home with family member Y or N
37. Relative other than immediate family Y or N _____
38. Placement other than home Y or N
39. Other _____

Treatment Characteristics

40. Duration of treatment in weeks _____

Medications

41. Number of medications at intake _____
42. Number of medications at discharge _____

Treatment Participation

43. Youth seen alone Y or N
44. Parent as part of treatment Y or N
45. Family as part of treatment Y or N

Staff Relationships

- 46. Experience of staff disruption Y or N
- 47. When staff disruption occurred _____ (week of treatment)

Educational Experience

- 48. Grade level of child _____ (start of treatment) _____ (end of treatment)
- 49. Regular classroom Y or N
- 50. Behavior classroom Y or N
- 51. Need for Special Education Services Y or N
- 52. Academic Failure Y or N
- 53. Behavior Problems Y or N
- 54. Attendance Poor Y or N
- 55. Peer friendships Poor Y or N

Post-Treatment

- 56. Placement in Family Y or N Biological Y or N Foster Y or N
- 57. Placement in Treatment Center Y or N

Estimate of Therapy Effectiveness

- 58. Premature Termination Y or N
- 59. Unsuccessful Treatment Y or N
- 60. Partially Successful Y or N
- 61. Successful Y or N

Youth Outcomes Questionnaire

- 62. Initial score _____
- 63. Post treatment score _____
- 64. Change in score _____

Child Behavior Checklist

- 65. Initial score _____
- 66. Post treatment score _____
- 67. Change in score _____

Appendix D

Sample Behavior Log

Name: Jane Doe

Date/Time	Description
10/14/07 Overnight	Jane slept through the night. No problems. (Staff signature).
10/14/07 8 am – 3 pm	Jane started the day well. She was able to stay slow reading books before breakfast and made it through morning routine well. Jane played outside and rode bikes without problems. Upon returning inside, Jane struggled with washing her hands, started screaming when asked to use the soap, and when brought close appeared to go out of her way to hit and kick staff even when staff backed away. She was brought in close and calmed down. Jane talked about being mad at her mom and scared to show this mad to mom but rather showed it to group home staff. She moved well to lunch and then slow individual play. (Staff signature).
10/14/07 3 pm- 10pm	Jane played by herself and then ate snack and watched a movie with peers. She was appropriate and responsive to prompts and accepted limits without argument including seats [used as a time out to slow the child down when having behavior outbursts]. Jane ate dinner and was able to play individually after dinner without difficulty. She showed marked ability to keep herself entertained with minimal staff interaction or oversight. She required some prompting, but not inappropriate amount to monitor voice level. Jane completed all routines and went to room. She expressed worry over someone being in her closet and possibility of "monsters under her bed" but was able to accept staff reassurance and went to bed smoothly. (Staff signature).
10/15/07 Overnight	Jane slept well all night and had a good morning. (Staff signature).
10/15/07 3 pm- 11 pm	Jane attended after school program until 4 pm today. She transitioned home well and talked about her day. Jane was able to be in the rocking chair with staff briefly and then had a visit with her case manager. During this visit, Jane fell from the monkey bars and hurt her wrist. She cried loudly but accepted staff care, lying on staff's lap for a while with an ice pack. Jane did seem to play up her wrist injury at times in an attempt to gain attention. She was moderate and slow in responses to directions. Jane went to bed well. (Staff signature).

- 10/16/07
Overnight Jane woke up at 11:30 pm crying that her wrist hurt. Her wrist was swollen and when asked to move her fingers she could not without crying. This staff put ice on her wrist and after 45 minutes she woke again crying loudly that her wrist still hurt. This staff gave her 1 children's Tylenol and she was back to sleep at 12:30 am. Jane slept well the rest of the night and had a good morning.
- 10/16/07
3 pm -11 pm Jane transitioned home from school and at times did not want to rest and accept the care staff was giving her. Throughout the day she showed signs of this but other times asked to be close to staff and accepted soothing. She participated in group and during this as well as other times throughout the night Jane appeared to be strangely focused on other kids seeking them for affirmation or worry that the staff weren't noticing her or the things she had done. She was able to stay close and despite some yelling was able to respond positively to proximity and physical touch. Jane had a good bedtime. (Staff signature).
- 10/17/07
Overnight Jane slept through the night. (Staff signature).
- 10/17/07
3 – 11 pm Jane transitioned home from school and was able to play outside with peers but had a little struggle transitioning back inside. Jane appeared to become disorganized over small things throughout the day. For example, she asked for help sweeping and when staff was on their way, Jane tried to do it herself and couldn't, then screamed at staff that she didn't need help and stormed off to her room, kicking, etc. Eventually she took a seat (motivated by staff standing near her). Similar things happened multiple times with Jane today. During her evening rocking she seemed to go away or indirectly let staff know it was too much [closeness] however was easily brought back. She expressed being scared about her visit with her mom tomorrow. She went to bed well. (Staff signature).
- 10/18/07
Overnight Jane slept through the night. (Staff signature).
- 10/18/07 Jane woke and joined breakfast. Throughout the entire morning, she seemed easily triggered by staff's request but whenever she walked or ran away or hid, she cried out "mommy". She responded well to soothing but initially didn't like being close. Was slow and distracted with some routine buy overall managed and followed some requests well when given time. (Staff signature).

Appendix E

Coding Protocol for Child Behavior Checklist

Recorder word	CBCL Item		
		Impulsive	41
Alone			
Doesn't want to play	42		
Avoiding	22	Lousy	
Angry		Mood	35
Attack	95	Health	56
About Rule	22		
Anxious	50	Oppositional	3
Argue (when specific)	3	Physical Contact	57
Different than challenging	22	Aimless hurt	57
Bedtime trouble	11	Pouting/Sore loser	88
Blaming	26	Quiet/ Withdrawn	111
Bored	5	Rage	87 & 95
Complaining	109	Sad	103
Controlling	22	Down in the dumps	103
Cranky/Whiney	86 & 109	Showing off	74
Defiant	22	Gamey	74
Refuses to talk	65	Goofing around	74
Argues	3	Entertaining others	74
Disobedient	22	Strange behavior	
Demanding/Interrupting others	19	Laughing uncontrollably	84
Disengaged	8 and 78	Struggle	113
Bedtime/Roomtime-Struggle	11	Unable to follow directions	22
Frustrated	113	Unable to accept....	22
Grumpy	103	Violent	95
Gamey	74	Tried to or broke item	21
High Energy	45	Tried to hurt person/threatening	97
Hostile (see violent)		Successfully hurt person	57
Lots of hugs	11	Worrying	112
Hurt self (biting, hit head, etc)	18	About school	30
Ignoring Decisions	22		

Appendix F

Coding Protocol for Youth Outcomes Questionnaire

Recorder word	YOQ item		
		Rage	19 & 30
Angry		Showing off	52
	Attack	Strange behavior	
	About Rule	Laughing	
		Uncontrollably	44
Anxious	15		
Blaming	28	Struggle	64
Bored		Unable to follow directions	43
N/A		Unable to accept....	43
Complaining	43	Violent	19
Controlling	27 & 43	Tried to or broke item	55
Cranky/Whiney	9 & 49	Tried to hurt	
Defiant	43	person/threatening	19
	Refuses to talk	Successfully hurt person	11
	Argues		
	Disobedient		
Distracted	56		
Disengaged	34		
Frustrated	64		
Grumpy	25		
Gamey	44		
High Energy	14 & 44		
Hostile (see violent)			
Hurtful (to others)	4		
Hurt self			
(biting, hit head, etc)	21		
Ignoring Decisions	31		
Impulsive	59		
Kick (anything but person)	55		
Lousy			
	Mood	25 & 62	
	Health	35	
Nothing good enough	9		
Oppositional	4		
Physical Contact	11 & 19		
Pulls away			
	Emotional/Physical/		
	Hiding	34	
	Quiet/ Withdrawn	34	

Figure 1.

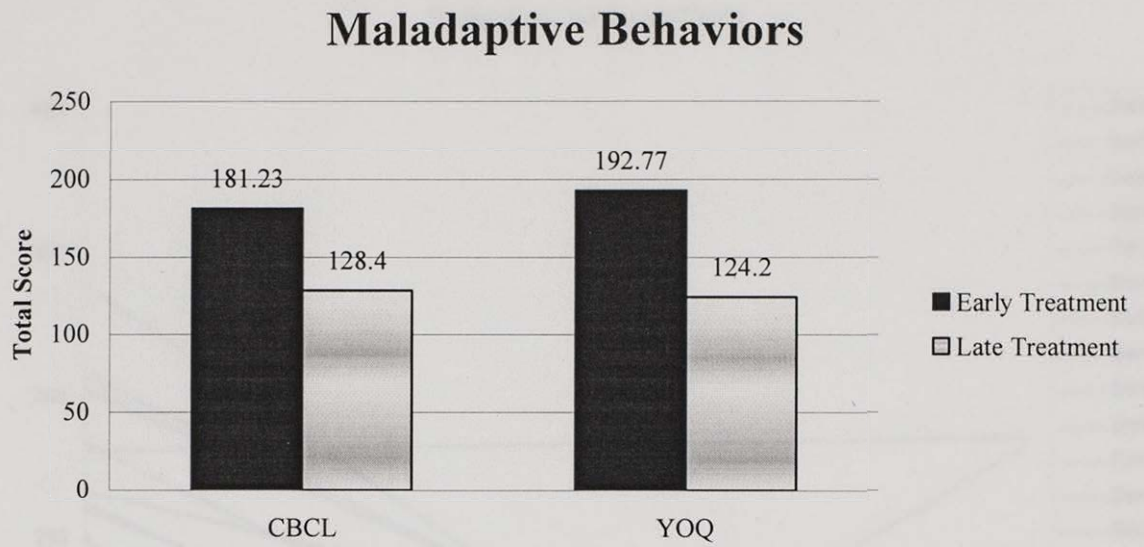


Figure Caption. *Significant change in maladaptive behaviors reported on CBCL and Y-OQ. CBCL $t(34) = 3.478, p < .001$, Y-OQ $t(34) = 2.915, p < .006$.*

Figure 2.

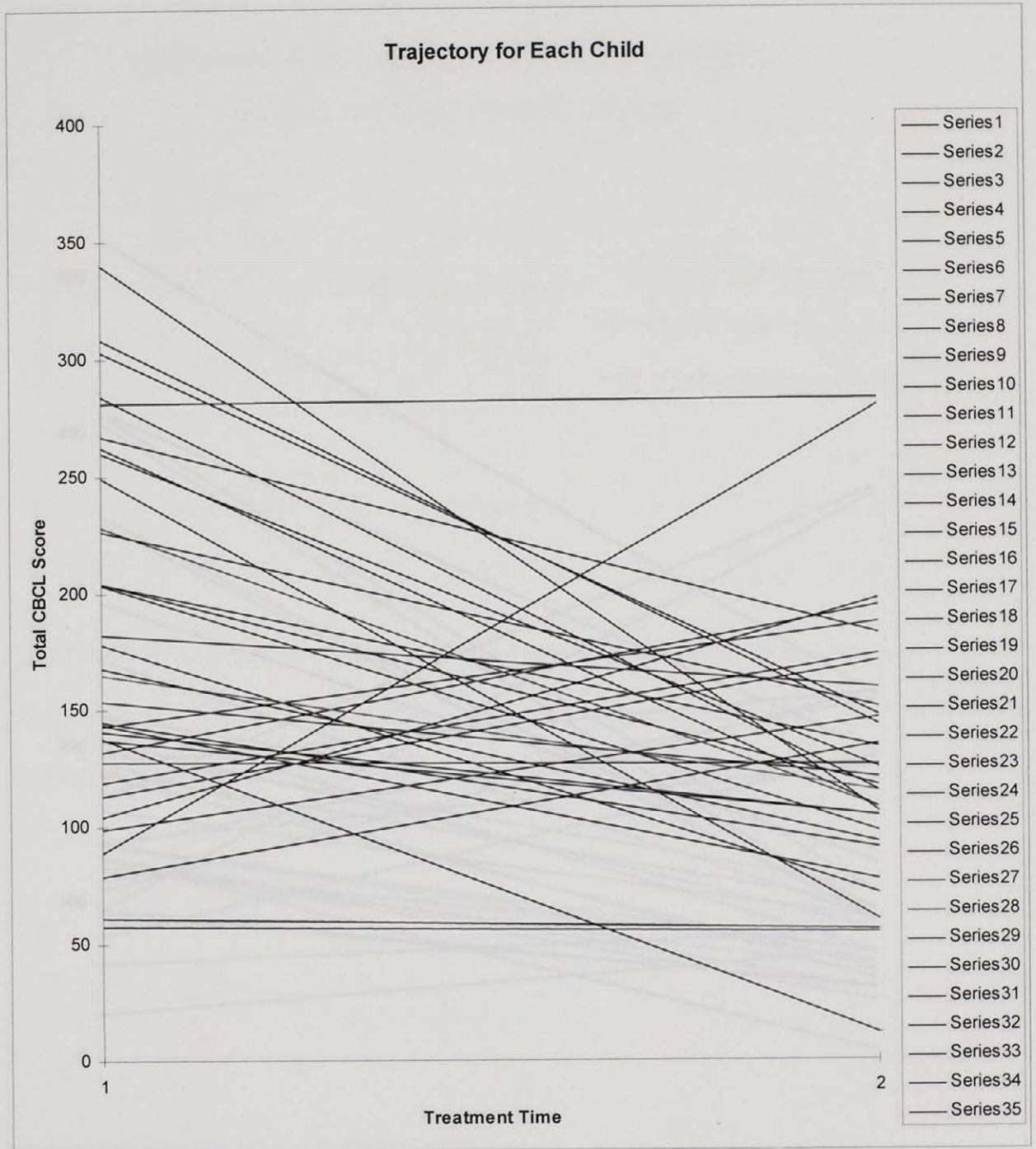


Figure Caption. Individual total scores for time one and time two on CBCL.

Figure 3.

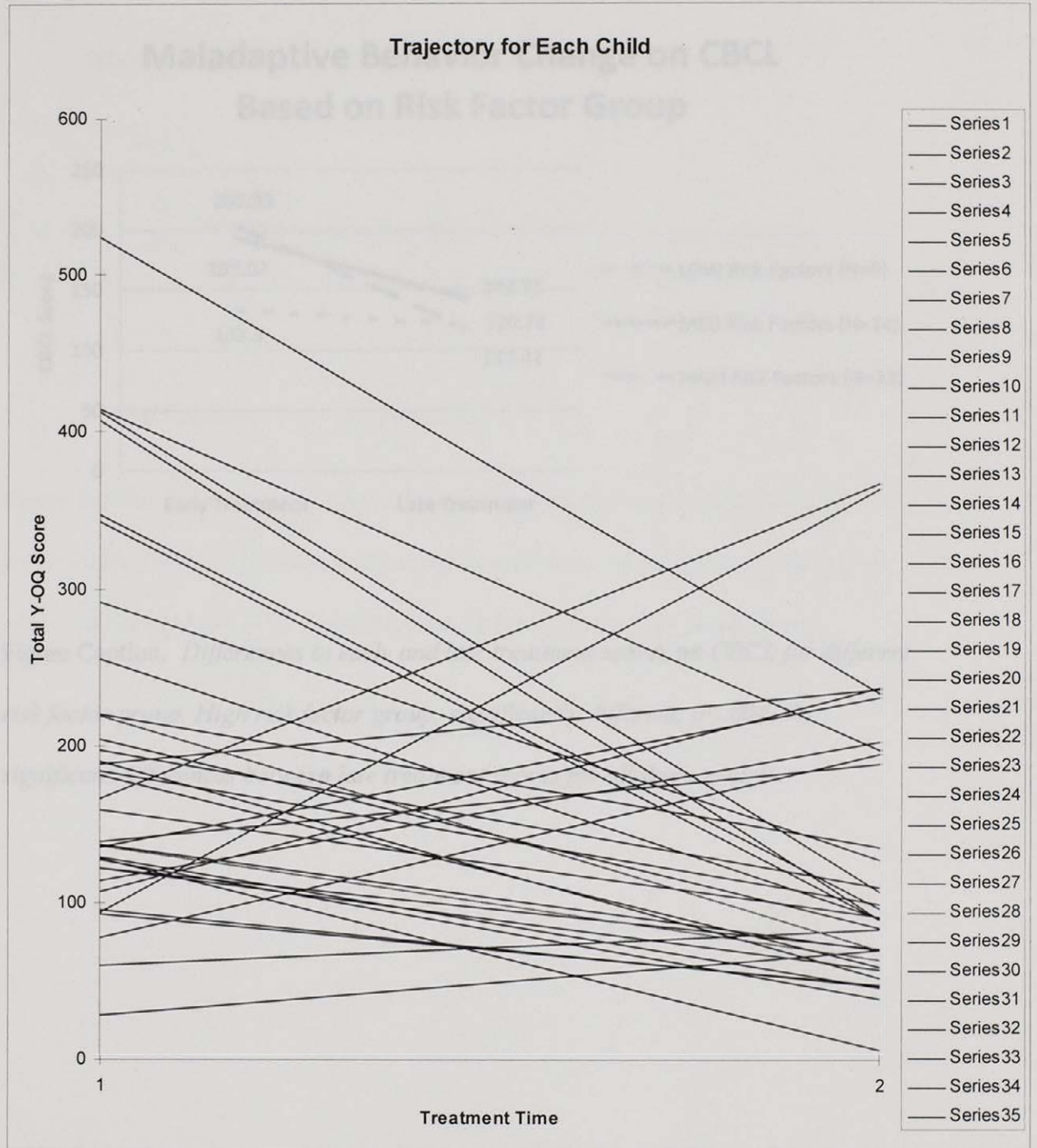


Figure Caption. Individual total scores for time one and time two on Y-OQ.

Figure 4.

Maladaptive Behavior Change on CBCL Based on Risk Factor Group

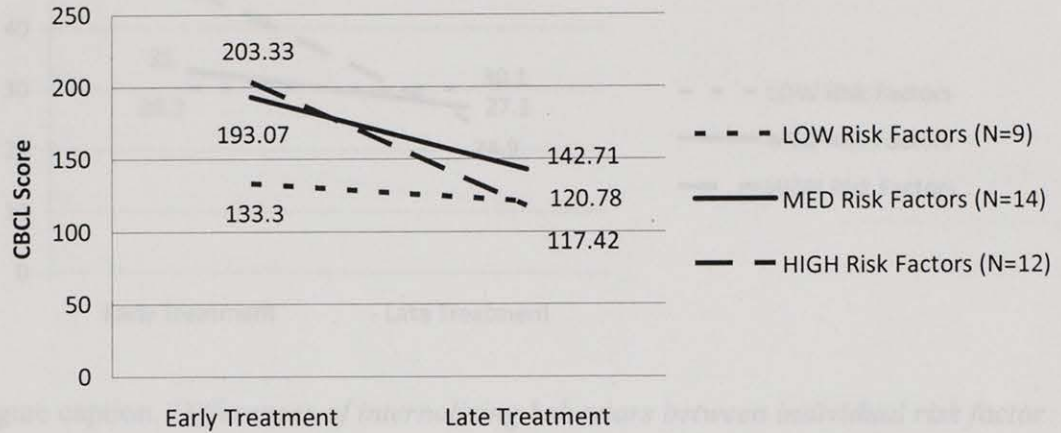


Figure Caption. Differences in early and late treatment scores on CBCL for different risk factor group. High risk factor group, significantly different, $p < .004$. No significant differences between late treatment scores for all three groups.

Figure 5.

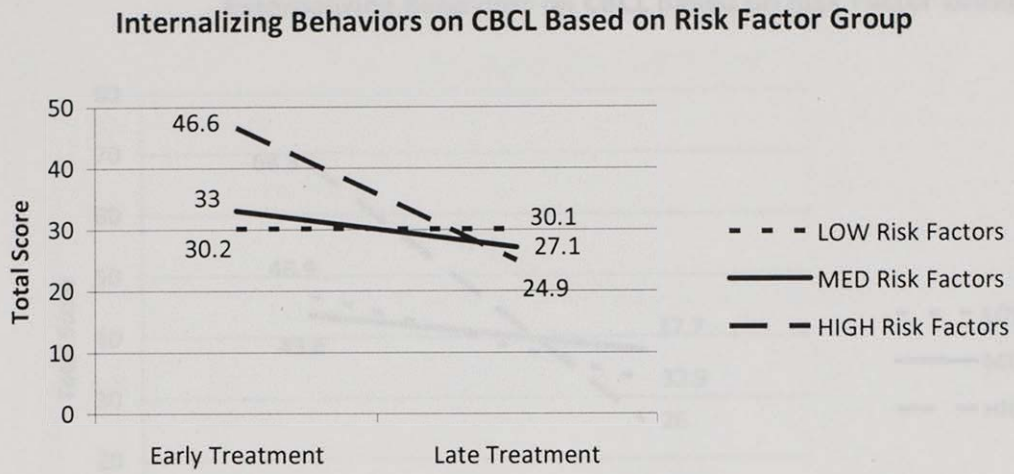


Figure caption. *Differences of internalizing behaviors between individual risk factor group on the CBCL. Significant difference between low and high risk factor group early in treatment ($p < .012$), no differences between groups late in treatment.*

Figure caption. *Differences of externalizing behaviors between individual risk factor group on the CBCL. No differences between groups early or late in treatment.*

Figure 6.

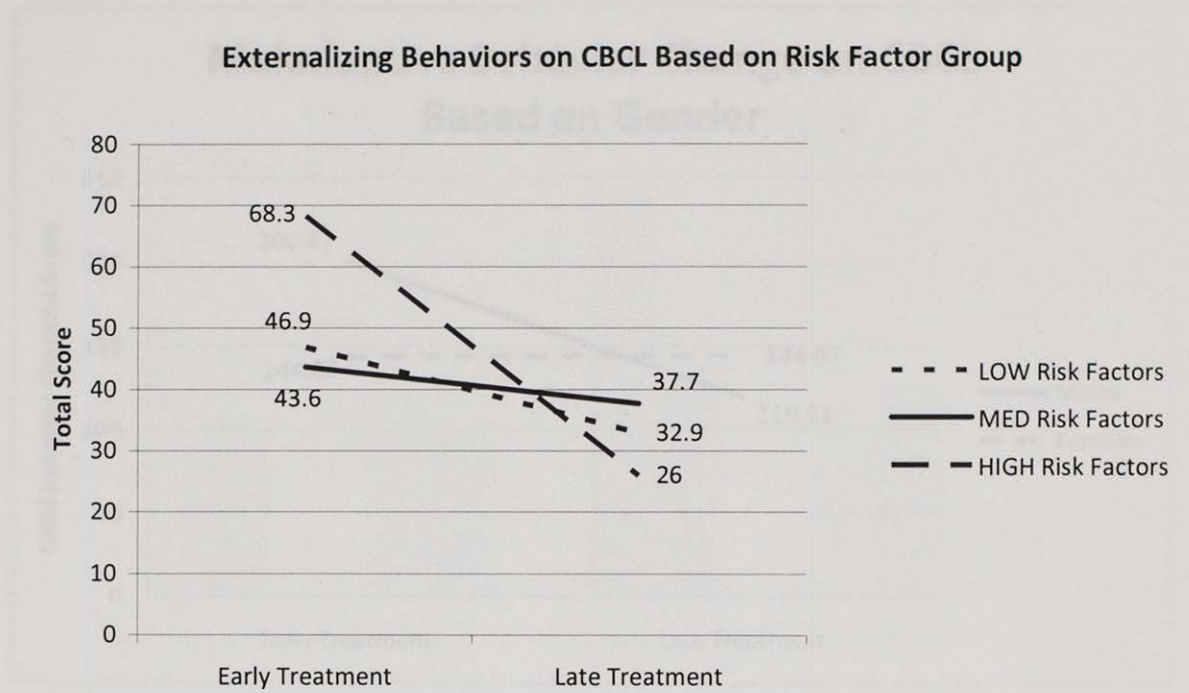


Figure caption. Differences of externalizing behaviors between individual risk factor group on the CBCL. No differences between groups early or late in treatment.

Figure 7.

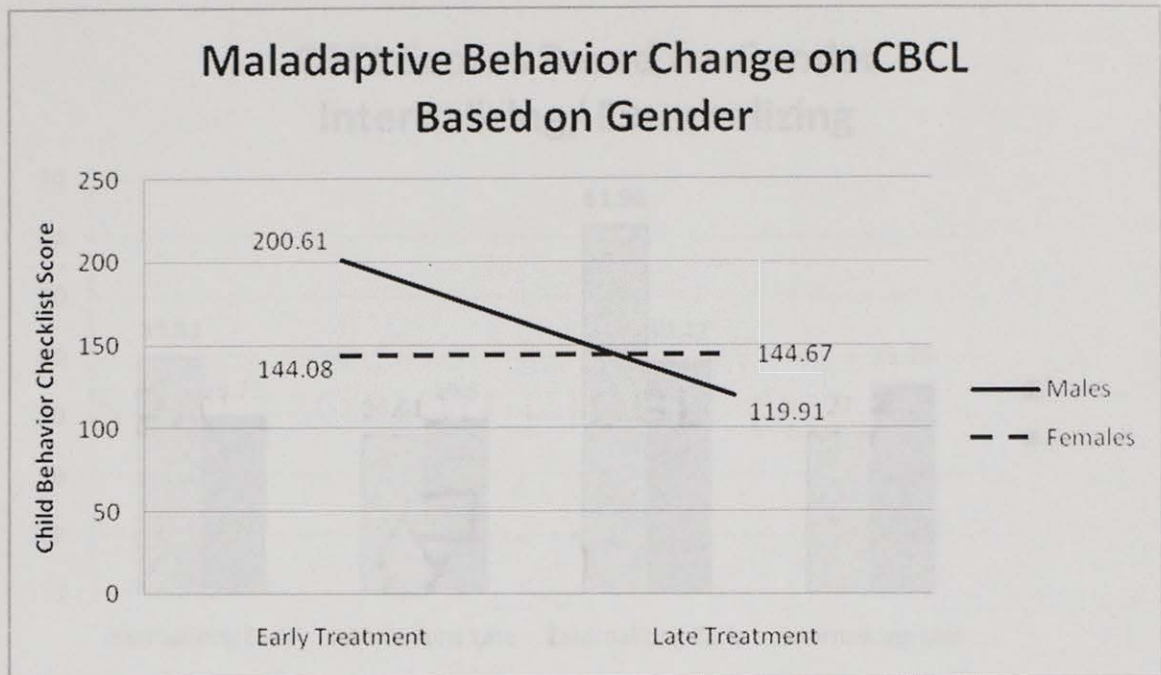


Figure caption. *Gender differences on early and late treatment scores on CBCL.*

Males significant change, $t(22) = 4.632, p < .00$. Significant difference between males and females at start of treatment, $t(23.267) = 2.312, p < .03$.

Figure 8.

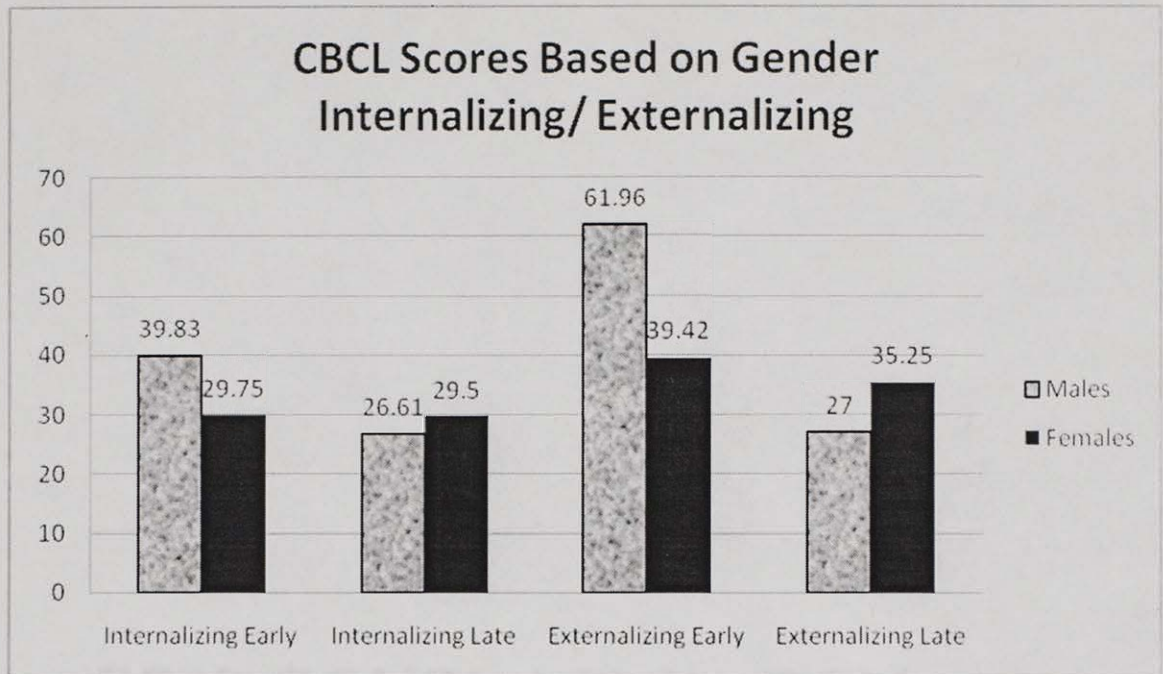


Figure caption. *Gender differences on internalizing and externalizing subscales of CBCL. Significant difference between early and late internalizing ($p < .02$) and externalizing ($p < .00$) scores for males.*

Figure 8.

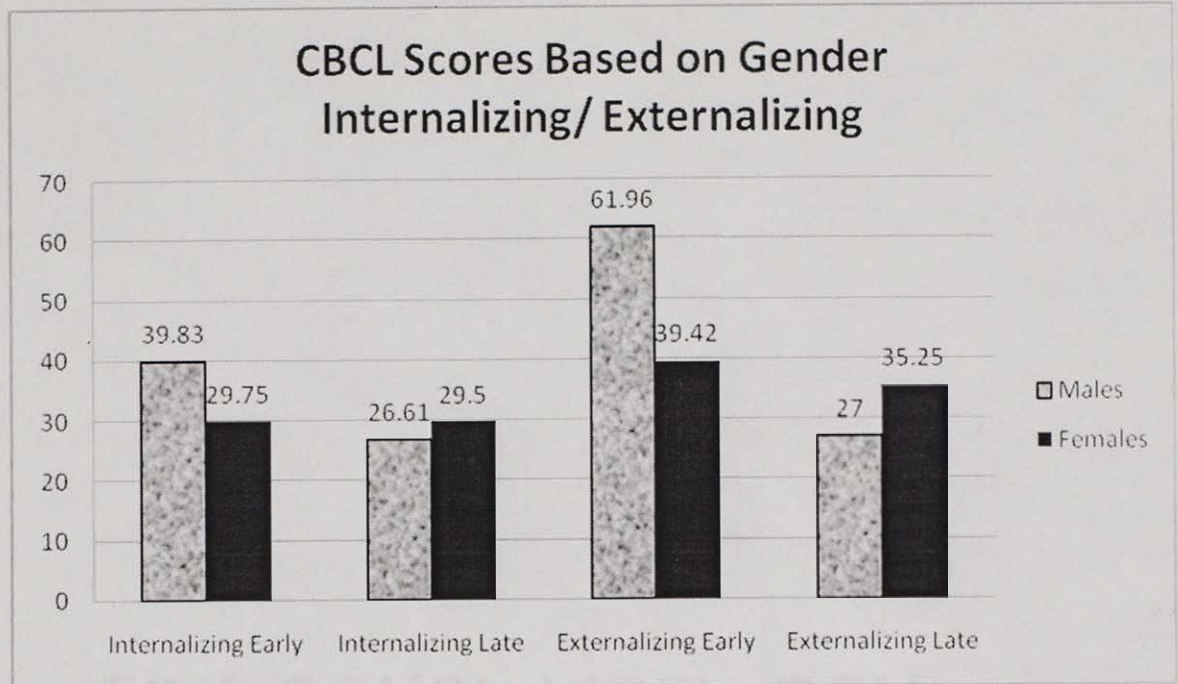


Figure caption. *Gender differences on internalizing and externalizing subscales of CBCL. Significant difference between early and late internalizing ($p < .02$) and externalizing ($p < .00$) scores for males.*