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EFFECTS OF IN-HOME POSITIVE BEHAVIOR SUPPORT TRAINING ON  
PARENT PERCEPTIONS OF PARENT-CHILD RELATIONSHIPS  
AND CHILD MALADAPTIVE BEHAVIOR

by

Elisha K. Wintch

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Education Specialist

Department of Counseling Psychology and Special Education

Brigham Young University

August 2008

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

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This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

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As chair of the candidate's graduate committee, I have read the thesis of Elisha K. Wintch in its final form and have found that (1) its format, citations and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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## ABSTRACT

### EFFECTS OF IN-HOME POSITIVE BEHAVIOR SUPPORT TRAINING ON PARENT PERCEPTIONS OF PARENT-CHILD RELATIONSHIPS AND CHILD MALADAPTIVE BEHAVIOR

Elisha K. Wintch

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School Psychology

This study investigated the effects of the positive behavior support program Family HOPE conducted in homes of families of children with disabilities. Graduate students conducted an 8-10 week collaborative method of training for parents of children with disabilities to reduce problem behaviors of their child with a disability. The Parent-Child Relationship Inventory (PCRI) and Scales of Independent Behavior-Revised (SIB-R) were given to both experimental and control group families to investigate the program effects on parents' perceptions of limit setting, parental support, frequency and severity of problem behaviors. Results indicated that there was not a significant pre-post difference for either group on limit setting and parental

support. There was a significant decrease in the frequency and severity of problem behaviors on the SIB-R for the treatment and control groups; however, no significant difference was found according to group membership. On subscales of Limit Setting and Parental Support on the PCRI no significant differences were found between control and experimental groups.

Implications for further research are suggested and include items such as the control group size and using measures that are sensitive enough to detect changes in behavior over a short period of time.

## ACKNOWLEDGEMENTS

When I was going to school to receive my undergraduate degree in Therapeutic Recreation I swore to myself that I would never get more education. After finally graduating from college after almost six years I was ready to be a working force, making lots and lots of money. I would never have to write another paper or take another test again! My life would be great. I graduated, started working, and found that I actually missed school! I missed learning, not to mention I found out that I would never make lots and lots of money as a Therapeutic Recreation Specialist. I knew I needed more. Not for the money, but for myself. This was one influential piece into the decision I made to further my education and receive a degree in School Psychology.

I look back and see that one of the most influential people in my life was also influential in my decision to gain a graduate degree. This person is my mother. She has been an anchoring strength for me and my family. When circumstances demand that she return to the working world after 12 years of being a stay-at-home mother, it was her education that we relied on to provide us the essentials my brothers and sisters needed to carry on with our daily lives. As an educator herself, my mother values education and sought to receive a graduate degree about five years ago while she was still teaching. During this time she found out that she had breast cancer and had to undergo radiation and chemotherapy treatments during the time she was working, being a mother, and getting a graduate degree. She graduated with highest honors, of which our family was so proud. I was inspired to receive a graduate degree from my mother's example. If she could do it with all those responsibilities, I could (and probably should) surely do the same. We have recently found that my mother's cancer has come back in some vertebrae, lymph nodes,

and various other places in her body. She is undergoing radiation and chemotherapy treatments once more. We pray for her success and I dedicate this thesis, in part, to her.

I would also like to thank all the families that were a part of this study. Not ever having a child with a disability in my family I had never quite known the challenges and joys families feel from their children. We often look at these children and pity the child or the family. Often times we don't know how to be supportive even if we wanted to. I have learned through this experience that families with children of disabilities are just families. These families may simply just need an understanding glance of love when their child is screaming at the grocery store because they cannot watch the sliding door open or close any more. They might just need an extra pat on the back as a friend when their child throws cereal at them because it wasn't poured properly. These families develop qualities of an understanding and compassionate heart that I hope I can emulate.

To Tina Dyches and Karolyn Peery I am also very grateful. They have been great supports through the whole process and have dedicated a lot of time on my behalf. And finally, thanks to my loving husband for doing the dishes, making dinner, and folding the laundry so I could dedicate time into finishing this project. I am so lucky!

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## INTRODUCTION

Parents of children with disabilities often encounter struggles and difficulties that make parenting a stressful task. In many cases, children with disabilities have greater problem behaviors than those without disabilities (Baker, Blacher, Crnic, & Edelbrock, 2002; Baker-Ericzén, Brookman-Fraze, & Stahmer, 2005; Beckman, 1991; Lardieri, Blacher, & Swanson, 2000). Families may feel as though they are not able to do simple things such as shopping at the mall or grocery store because of potential behavior problems they may encounter. Families frequently have a difficult time balancing the needs of their child with disabilities with the needs of the family.

Parents and families who are able to utilize their resources effectively and maintain positive attitudes during hardships are able to decrease the stress they feel and increase their quality of life (Dyson, 1997; Floyd & Gallagher, 1997; Lustig & Akey, 1999). As they increase their quality of life, they become more confident in their abilities to parent effectively, which, in turn, helps to reduce the stress they feel due to problem behaviors of their child with a disability (Jackson, 2000; Jackson & Huang, 2000).

This section will provide a brief summary of several factors related to parents raising children with disabilities, namely, family adaptation, family stress, family quality of life, problem behaviors, parenting self-efficacy, and positive behavior support. The Brigham Young University Family HOPE Project is a program that works with families with children with disabilities to help increase their quality of life through training families in a positive behavior support program in order to change problem behaviors. The research presented is a foundation for understanding how this program can help families increase quality of life through providing support and information that will hopefully decrease stress families feel through the problem behaviors of children with disabilities.

### *Family Adaptation*

McCubbin and Patterson (1983) devised a conceptual framework of family adaptation to crisis, based on Hill's ABCX model of family crisis (1949, 1958). According to this model, families who are able to adapt positively to crises are those who bonadapt. Conversely, those who are not able to adapt through a crisis experience maladaptation, a state of functioning in which families get burned out, feel tired, and experience an increase in stress.

According to Hill's ABCX model of family adaptation, (Hill, 1949; Hill, 1958) stress comes from the following factors: the *a factor*, a stressor or hardship that places demands upon a family; the *b factor*, community, family, or professional resources available to the family in dealing with the stressor; and the *c factor*, negative or positive perceptions the family gives towards the stressors or hardship. A crisis situation, the *x factor*, arises when a family experiences a stressor or hardship and they do not receive adequate support from the community, family, or professionals, while dealing with the stressor.

McCubbin and Patterson's Double ABCX model (McCubbin, Cauble, & Patterson, 1982; McCubbin & Patterson, 1983) describes the previous factors in more depth and describes factors that contribute to a pile up of events over time and include the following: the *aA factor*, a pile up of prior stressors and strains; the *bB factor*, access to new or existing resources; and the *cC factor*, meaning families give to the overall crisis. The *xX factor* is the families' ability to gain a sense of coherence during a crisis situation. It is their ability to bonadapt, which results in strengthening the family. Maladaptation comes as a result of the families' inability to cohere and adapt during a pile up of stressful events. Stress is experienced by families in various ways, due to the crises they experience as well as the supports and strengths they have to mediate the stressors.

### *Family Stress*

Raising a child with a disability places stress on parents, siblings, and the child with a disability. Parents often report experiencing more stress when compared to parents of children without disabilities (Baker, Blacher, & Olsson, 2005; Baker-Ericzén et al., 2005; Beckman, 1991; Innocenti, Huh, & Boyce, 1992; Lardieri et al., 2000). Research regarding siblings of children with disabilities has shown mixed results. Some studies have found that siblings of children with disabilities exhibit a higher locus of control, good self-concept (Williams, 1997), cooperation, and self-control (Mandleco, Marshall, Olsen, & Dyches, 2003) compared to siblings who do not have a child with a disability in the family. Others report siblings at a higher risk for internalizing and externalizing behaviors (Ishizaki et al., 2005; Senel & Akkök, 1995). For the child with a disability, stress may become apparent through problem behaviors that arise because of either an inability to communicate their needs and desires or the environment exacerbates or maintains inappropriate behaviors (Lucyshyn, Dunlap, & Albin, 2002; O'Neill, Horner, Albin, Sprague, & Newton, 1997; Umbreit, Ferro, Liauspin, & Lane, 2007).

### *Family Quality of Life*

A family's quality of life is impacted by the problem behaviors and stressors that accumulate in a family system. A family's quality of life incorporates the family's ability to utilize resources in order to enhance relationships as well as the family's health and well being (Smith-Bird & Turnbull, 2005; Summers et al., 2005). Families who are able to bonadapt are those who are able to increase their overall quality of life. These are families who are able to define their life in terms of possibilities and optimism for the future. They are able to make the most of their resources and supports, keep a positive outlook on the future, and view the family member with a disability as a contributing part of the family unit (Summers, Behr, & Turnbull, 1989; Walton-Moss, Gerson, & Rose, 2005).

Social, emotional, and professional supports are useful for family adaptation and increasing or enhancing family quality of life. Social and emotional support help to provide comfort, security, and companionship as well as serving as a stress or anxiety reliever (Lustig & Akey, 1999; McCubbin & Patterson, 1983; Quatman, 1997; Summers et al., 1989).

Professionals can help families increase their quality of life by providing instruction that allows the family members to be in control over their family. Professionals who are most helpful are those who work within the family structure to help empower family members to make positive changes (Bennett & DeLuca, 1996).

The ability of family members to develop positive perceptions regarding their circumstance increases family adaptation and quality of life. Realistic perceptions regarding an optimistic future for the life of the child with a disability and the family unit allow family members to feel a sense of control and helps reduce stress (Hastings & Taunt, 2002; Summers et al., 1989). Optimism, along with hope, helps family members develop a love for life and resilience through tough times (Abdel-Khalek, 2007; Greeff, Vansteenwegen, & Ide, 2006; Kashdan et al., 2002). Some of these difficult times for families raising children with disabilities are caused by frequent or severe problem behaviors.

### *Problem Behaviors*

Children with disabilities often show more problem behaviors than children without disabilities. There is a range in severity of problem behaviors depending upon the severity of a child's disability (Hawley, 2003; Liwag, 1989; Schwartz et al., 2003), as those with more severe disabilities often engage in more severe problem behaviors. Parental stress is often related to the severity and intensity of a child's problem behavior (Hastings, 2002; Lardieri et al., 2000). Although parents of children without a disability may have a child with problem behaviors, parents of children with disabilities often report more stress than the former due to an increase of

problem behaviors presented by a child with a disability (Baker et al., 2005; Baker-Ericzén et al., 2005; Floyd & Gallagher, 1997). Such stress may have an effect on how parents view their ability to effectively parent their child with disabilities.

### *Parenting Self-Efficacy*

Self-efficacy is the extent to which an individual believes certain events will occur as a result of personal effort (Bandura, 1997; Bandura, 1999). Bandura (1977) described four ways people gain information about these outcome expectancies. They include the following (a) a synthesis of past performances, “enactive mastery experience” (Bandura, 1997, p. 80), (b) observations and images of the self, or others similar to the self, performing the desired task “vicarious experience” (Bandura, p. 86), (c) verbal feedback or reinforcement given by respected individuals or others of authority “verbal persuasion” (Bandura, p. 101), and (d) biofeedback an individual receives from the given task “physiological and affective states” (Bandura, p. 106). Through these four sources an individual will develop cognitions that can, in turn, predict the amount of effort will be dedicated towards certain tasks. Those with low self-efficacy will avoid or give up on given tasks. Conversely, an increase of self-efficacy will encourage larger amounts of effort and persistence in tasks (Bandura, 1999; Cervone, 2000).

Parenting self-efficacy concerns the extent to which a parent believes he or she will be successful in raising his/her children as a result of personal effort. It is achieved through the same four sources as overall self-efficacy. Self-efficacy in one domain (e.g., sports) has the ability to increase self-efficacy in other domains (e.g., public speaking). Parents with greater overall self-efficacy often report higher rates of parenting self-efficacy (Coleman & Karraker, 1998; Coleman & Karraker, 2000). Parents who report high parenting self-efficacy also report lower amounts of stress, more involved parenting, a greater sense of hope for the future, and children with mild temperaments (Jackson, 2000; Jackson & Huang, 2000). Parenting self-

efficacy is also increased through actual experiences with children, observation of others working with children, and programs that provide opportunities for success (Coleman & Karraker, 1998; Coleman & Karraker, 2000). Programs that are based on positive behavior support may be able to provide the success experiences needed to increase parenting self-efficacy as they teach families how to successfully support the positive behaviors of their children.

### *Positive Behavior Support*

Positive behavior support uses principles of applied behavior analysis to replace problem behaviors with functional and adaptive behaviors that are positively reinforced. Positive behavior support considers creating clear, positive expectations, teaching to those expectations, and reinforcing the child when expectations have been met. Families that use positive behavior support are able to devise plans that fit within the context of their values and goals.

Professionals who use positive behavior support principles allow families to be the experts regarding their children and work within the families' frameworks (Lucyshyn et al., 2002; Lucyshyn, Kayser, Irvin, & Blumberg, 2002; O'Neill et al., 1997).

To analyze the circumstances surrounding the challenging behavior a team of professionals and family members conduct a functional behavior assessment and analysis (FUBA). A FUBA investigates setting events, antecedents, reasons for why an individual engages in a particular behavior, and consequences following a target behavior. This information is gathered through interviews, observations, and data collection. Information gathered from the FUBA is used to guide parents and professionals to make appropriate behavior support plans for the child (Lucyshyn et al., 2002; O'Neill et al., 1997; Wilder et al., 2002).

In the positive behavior support framework, behaviors are thought of as purposeful ways to communicate needs, escape unwanted activities, stimulate a sensory need, and/or gain

acknowledgement (O'Neill et al., 1997; Umbreit et al., 2007; Wilder et al., 2002). Through interviews and observations, parents and professionals analyze the circumstances (setting events) that increase the likelihood that, in the presence of a specific trigger (antecedent), a problem behavior will occur. Parents and professionals then hypothesize what consequences are helping maintain the problem behavior.

After a full functional assessment is conducted a behavior support plan is developed based on the information gathered. The behavior plan teaches a new, more appropriate behavior to replace the problem behavior (alternate competing behavior). It is essential to make the new alternate competing behavior more efficient, effective, and relevant than the prior behavior (Lucyshyn et al., 2002; O'Neill et al., 1997).

As a result of using positive behavior support principles, parents are taught skills they can use to correct problem behaviors throughout the life of their child. In one case (Lucyshyn et al., 2002), a mother felt hopeless and trapped as she tried to manage the problem behaviors of her daughter in home, school, and the community. After implementing a positive behavior support plan to correct a troublesome bedtime behavior, she was able to use these same techniques in other areas of their daily routine. Soon the family was able to go to the store, to church, and take vacations with less difficulty. Stress levels decreased and the family's overall quality of life began to improve as a result of using positive behavior support.

#### *Brigham Young University Family HOPE Project*

The Brigham Young University (BYU) Family HOPE (Happiness, Optimism, Promise, and Excellence) Project is in its fifth year of helping families increase their quality of life by striving to increase parenting self-efficacy and bonadaptation. The project provides in-home training to parents of children with disabilities, teaching them techniques of positive behavior support, focusing on families on the Division for Services for People with Disabilities (DSPD)

waiting list for government-provided services. DSPD Family Support provides respite care, community living services, day services, supported employment services, and other support for people with disabilities and their families (<http://www.dspd.utah.gov/>). Due to a long waiting list, there are many who do not receive services through DSPD.

Participants on this waiting list have been assessed by DSPD intake officers and show a need for support and services for their child with disabilities. It is common for families to be on the waiting list for 10 or more years without receiving services of any kind. In addition to serving families on the DSPD waiting list, occasionally the BYU Family HOPE Project also serves other families in need.

### *Statement of the Problem*

Many families raising children with disabilities have difficulties achieving a state of adaptation. A pileup of many maladaptative situations, including obtaining the diagnosis, treatment, and care of the child with a disability, may potentially lead a family into a state of crisis (McCubbin & Patterson, 1983).

Through five years of studies the Family HOPE Project has shown parent ratings concerning certain problem behaviors to decrease (Jones, 2008) while their ability to set limits and their perceived sense of support increase (Peery, 2005). These results have not yet been compared to a comparison control group. It is unknown if the results from the past are due to a maturation effect or any other confound that may influence the results of previous studies conducted with families of the Family HOPE Project. Therefore, in order to determine the effects of the in-home training, a controlled study is warranted.

### *Research Questions*

1. Is there a difference in pre- and post- ratings on the Limit Setting subscale of the Parent-Child Relationship Inventory (PCRI), as rated by parents, between a control and

experiment group after participation in an 8-10 week positive behavior support training program?

2. Is there a difference in pre- and post- ratings in parent support on the Support subscale of the Parent-Child Relationship Inventory (PCRI), as rated by parents, between a control and experiment group scale after participation in an 8-10 week positive behavior support training program?
3. Is there a difference in the frequency of child problem (maladaptive) behaviors on the Scales of Independent Behavior-Revised (SIB-R), as rated by parents, between a control and experiment group on the after participation in an 8-10 week positive behavior support training program?
4. Is there a difference in the severity of child problem (maladaptive) behaviors on the Scales of Independent Behavior-Revised (SIB-R), as rated by parents, between a control and experiment group after participation in an 8-10 week positive behavior support training program?

## REVIEW OF LITERATURE

Families are presented with stressors and hardships that they must cope with on a daily basis. Stress comes in many forms, such as losing a job, moving to a new area, or losing a family member. The manner in which families deal with the crises they experience is related to their overall adaptation. This section will review a model Hill's family adaptation, the Double ABCX Model of Adaptation, and a discussion on stress that families, specifically parents, feel as a result of trying to manage problem behaviors of children with disabilities.

### *Family Adaptation Model*

One of the earliest models explaining family adaptation and crisis comes from Hill (1949; 1958). According to this model there are four variables that help families adjust and adapt through difficult situations. If these are not balanced appropriately the family increases their risk of moving toward a state of crisis. The variables in this model, also called the ABCX model of family adaptation, are (a) the *a factor*—stressful events, (b) the *b factor*—resources, (c) the *c factor*—perceptions, and (d) the *x factor*—accumulation. Each of these factors will be described below in detail.

*The a Factor—Stressful Events.* The *a factor* represents stressors or hardships that place demands on a family. For example, a stressor may include a divorce, move, loss of a job, or raising a child with special needs (Boyd, 2002; Dyson, 1997; Floyd & Gallagher, 1997; Hassall, Rose, & McDonald, 2005; Hastings, 2002; Knussen & Sloper, 1992; Lustig & Akey, 1999; Morison, Bromfield, & Cameron, 2003). An example of a hardships or stressors could include managing health concerns, scheduling and taking their child to medical appointments, accommodating for the child's special needs, and adjusting to high demands placed by the child due to behavioral concerns.

*The b Factor—Resources.* Resources that are available to families that help ease the impact of stressors make up the *b factor*. These are resources in the community, family, or professionals who can help reduce stress or hardships the family is experiencing. Resources are a valuable source of support in that they provide information, emotional support (Quatman, 1997), and special programs that are specifically designed to assist people in difficult situations (Dyson, 1997; Floyd & Gallagher, 1997; Lustig & Akey, 1999; Morison et al., 2003).

*The c Factor—Perceptions.* Perceptions families have regarding their particular hardship is the *c factor*. Hardships and stressors gain significance according to a family's value system and the degree to which they feel they are able to manage them. Summers et al. (1989) suggested that the greater the family's ability to manage a situation, the greater their ability to adjust to the challenges they face. They claim that there are individual and family benefits to finding meaning and purpose in a child's disability. Likewise, Hastings and Taunt (2002) have found that positive perceptions help families better adapt to changes in family systems and routines.

*The x Factor—Accumulation.* The *x factor* is an accumulation of factors that contribute to creating a crisis situation. Thus, the "crisis is characterized by the family's inability to restore stability and by the continuous pressure to make changes in the family structure and patterns of interaction. In other words, stress may never develop into crisis proportions if the family is able to access and use existing resources and define the situation so as to resist systemic change and maintain family stability" (McCubbin & Patterson, 1983, p. 10). It is possible that the family may never reach a crisis state because they have been able to use their resources effectively and maintain an optimistic attitude about their given situation.

### *The Double ABCX Model*

McCubbin and Patterson (1983) added to Hill's ABCX model of family crisis (1949; 1958) and developed the Double ABCX model. This model recognizes that stressors and hardships are continually present and may accumulate, thus influencing a state of maladaptation within the family unit. Families who are able to manage the accumulation of hardships and stressors function in a state of bonadaptation. Elements of maladaptation and bonadaptation will be discussed in the following paragraphs by providing an explanation of the *aA*, *bB*, *cC*, and *xX* factors

*The aA Factor.* The *aA* factor is called the "pile-up" factor and includes prior strains, as well as additional strains, that become intensified over time. McCubbin and Patterson (1983) described five types of stressors and strains that appear during a crisis situation: "(a) the initial stressor and its hardships, (b) normative transitions, (c) prior strains, (d) the consequences of family efforts to cope; and (e) ambiguity, both intra-family and social" (p.11). For example, in addition to adjusting to and managing problem behaviors of a child with disabilities a parent may struggle to juggle demands from home and work.

*The bB Factor.* The *bB* factor concerns the family's existing or expanded resources. These include entities such as family, community, professionals, or religious groups. Social support is a useful resource for families because it lets family members know that they are appreciated, respected, and a part of a network that understands them (McCubbin & Patterson, 1983). These resources help families meet the demands of dealing with the crisis situation.

*The cC Factor.* The meaning families give to their overall crisis situation is called the *cC* factor. This includes their ability to redefine a crisis, decrease emotional intensity, and encourage family development. As families redefine the crisis situation they strive to "(a) clarify the issues, hardships, and tasks so as to render them more manageable, and responsive to

problem solving efforts; (b) decrease the intensity of the emotional burdens associated with the crisis situation; and (c) encourage the family unit to carry on with its fundamental tasks of promoting member social and emotional development” (McCubbin & Patterson, 1983, p. 16). New coping styles are developed which help families to accept the circumstances that they can or cannot control.

*The xX Factor*, The *xX factor* pertains to a families’ ability to gain a sense of unity during a crisis situation. While hardships and stressors play a taxing role on a family, if dealt with appropriately, they also have the ability to influence a desired change in families. A sense of coherence comes when families are able to develop a perception in which they are secure in knowing they have done all they can do with what they are given. McCubbin and Patterson (1983) claimed that the central concept of the Double ABCX model is the family’s ability to meet the demands of family, individual, and community involvement. A move in a positive direction will allow family movement towards a state of bonadaptation. This “results in (a) the maintenance or strengthening of family integrity; (b) the continued promotion of both member development and family unit development; and (c) the maintenance of family independence and its sense of control over environmental influences” (McCubbin & Patterson, p. 20). On the other hand, a negative direction will lead the family to a maladaptive state or to an imbalance of a family’s efforts to meet their demands. The stress a family may feel, especially from raising a child with disabilities, affects family relationships. Stress also affects the brain chemistry of individuals experiencing high amounts of stress over time. Each of these concepts will be addressed.

### *Family Stressors*

*Effects of stress on parents and families of children with disabilities.* There have been ample studies examining stress among parents of children with disabilities. When compared to

parents of children without disabilities, these parents feel extra stress as a result of parenting a child with disabilities (Baker et al., 2003; Baker et al., 2002; Baker et al., 2005; Baker-Ericzén et al., 2005; Beckman, 1991; Lardieri et al., 2000). In a study conducted by Innocenti, (1992), 725 parents of children with disabilities were given the Parenting Stress Index (PSI) and compared to surveys of families without children with disabilities. The PSI measures aspects of stress related to parenting, which include: (a) stress related to the perception of the child's contribution of a stressful relationship, and (b) the impact parenting has on other areas of a parents' life. Results showed significantly higher stress ratings in parents with children with disabilities.

In a study conducted by Smith, Oliver, & Innocenti (2001), 880 parents of children with developmental delays were given assessments measuring their parental distress, parent-child dysfunctional relationship, and a measure assessing the difficultness of their child. Family functioning was measured in an 18-item questionnaire investigating (a) perception of support from family, friends, social groups, and professional services; (b) a measure of time and financial resources available; and (c) a survey evaluating the presence or absence of life-straining events within the past year. It was found that family functioning variables, which included family support, resources, life events, and a lack of resources, seemed to be the greatest predictor of parenting stress and family functioning.

*Effects on siblings of children with disabilities.* Many research studies have investigated several aspects of the effects on siblings of children with disabilities in regard to their behavior, psychosocial functioning, and stress. Stoneman (2005) found that siblings generally had a good self-concept, no differences in loneliness when compared to other children without siblings with a disability, and a higher internal locus of self-control. Similar results were found by Mandlco et al. (2003), where siblings of children with disabilities scored higher on teacher ratings of self-control and cooperation than siblings of children without disabilities.

Other studies have found contrasting results to those above. In Williams' (1997) review of literature between 1970 and 1995 on behavior problems in siblings of a child with disabilities, 60% of the studies reported increased risk for higher internalizing and externalizing behaviors, and low social competence, 30% showed no risk factors, and 10% of the research found positive and negative results. Other studies indicated psychosocial problems and stress levels were more prevalent among siblings of a child with disabilities (Ishizaki et al., 2005; Senel & Akkök, 1995).

*Effects of stress on brain chemistry.* Stress not only has an effect on family functioning, it also affects an individual's brain structure. In several studies investigating the effects of stress on brain and cell functioning, it has been found that stress changes the structure of cells in the hippocampus and hypothalamus of the brain. This induces a release of chemicals that have the ability of linking to DNA and inhibiting the DNA to reproduce properly (Joëls et al., 2004; Karst & Joëls, 2003; McEwen, 1999). Chronic stress has also been found to impact memory through reconstruction of neuron transmissions (Roisman, 2005).

In sum, it is likely that families with children with disabilities may be at a greater risk of additional stressors than families who are not raising children with disabilities, thus making them at a higher risk for maladaptation. It also appears as though family functioning in families with children with disabilities (all other factors being the same) is at greater risk for maladaptation than families without children with disabilities. This is seen through situations that arise such as an increase in problem behaviors, parents' perceived ability to manage difficult situations, sibling relationships, and changes in brain chemistry through stressful situations. Families who are able to work through these stressors and bonadapt are also able to have a higher sense of family quality of life.

### *Family Quality of Life*

Quality of life for a family is evidenced in several elements of bonadaptation. However, quality of life has been defined in various ways. Smith-Bird (2005) conceptualized family quality of life as a construct that addresses the needs of the family while emphasizing the families' strengths. Summers et al. (2005) summarized common elements of several frameworks of family quality of life for families with children with disabilities. These elements include teaching effective parenting, gaining advocacy skills, and building support networks. Both descriptions of quality of life for families address the need to utilize resources that adequately address the needs of not only the individual family members, but the family unit as well.

Family quality of life can be affected by having a family member with a chronic illness or disability. In a qualitative study conducted by Walton-Moss et al. (2005) individuals diagnosed with a mental illness and their families were interviewed regarding their family's quality of life. Their responses were divided into three categories of quality of life: hanging on, stable, and doing well.

The families described as simply *hanging on* characterized their experiences of living with an ill relative as uncertain and a source of frustration (Walton-Moss et al., 2005). They often felt as though they had limited support or resources to them from their community or family. They also had a limited knowledge of and felt overwhelmed with their family member's illness.

*Stable* families had been able to push past the *hanging on* stage. These families "had come to realize that they could no longer allow the illness to consume family life" (Walton-Moss et al., 2005, p. 634). These families learned ways to cope with the mentally ill family member. They needed and adhered to routines, the family member had limited roles in their family, and the family was resigned to thinking that things were as good as they could get.

The third type of family is described as *doing well*. “These families described their family life in terms of possibilities and opportunities for growth in the future. They also tended to have resources and strong intra-familial support” (Walton-Moss et al., 2005, p. 636). *Doing well* families had figured out ways to make the mentally ill family member a part of the family unit. They were optimistic about the future, had found ways to utilize their resources well, and had positive perceptions of the futures of both the ill family member and the family unit. Family support and positive perceptions are two important factors that help increase family quality of life.

*Family support.* Social and emotional supports are both important to improving family quality of life. Research suggests that both social and emotional support facilitates family functioning and contributes to adaptation of stressful events (Lustig & Akey, 1999; McCubbin & Patterson, 1983; Summers et al., 1989; Quatman, 1997). This body of research has found that these types of support help provide comfort and security to family members. Lustig & Akey report that “social support affects family adaptation by providing the family with instrumental and affiliative assistance from other family members and from external sources” (p. 262). In a study examining social support of mothers of children with autism, a low level of social support was found to be a predictor of stress and anxiety (Boyd, 2002). In the McCubbin and Patterson (1983) theory of family stress, bondadaptation occurs when the demands on a family are aligned with family capabilities. Social and emotional supports can help to manage these demands.

Professional support provides a similar resource and support for families. Bennett & DeLuca (1996) conducted a qualitative study investigating bondadaptation in families raising children with disabilities. Parents suggested that, “Professionals can provide support to parents by providing resources and expertise, allowing the locus of control to lie within the family, and helping create and maintain an open, honest, and collaborative relationship with parents” (p. 34).

It was important to these families for the professional to develop rapport with their family and their child. Parents also wanted to feel empowered when raising their child with disabilities through a knowledge of best practices, flexibility of the professional, as well as being an active participant in the decision making process.

*Positive perceptions.* Positive perceptions of stressful situations improve family quality of life as they help families to adapt to changes (Hastings, 2002). Summers et al. (1989) claimed that “the ability to maintain control of a situation, or to perceive that one has control, may be a powerful factor in reducing feelings of stress” (p. 32). Other studies have found that optimism and hope were characteristics that helped families and individuals gain a love of life and be more resilient through tough times (Abdel-Khalek, 2007; Greeff et al., 2006; Kashdan et al., 2002).

Providing parents with social, emotional, and professional support can help parents with perceptions they may have about the stressors of raising their child with a disability. These same elements are characteristics of bondadaptation, the defining characteristic in McCubbin and Patterson’s (1983) family stress model. As professionals work with families they can help increase a family’s quality of life through providing resources that help family members feel empowered and help foster positive perceptions about raising a family member with a disability.

#### *Problem Behaviors*

Problem behaviors, such as tantrums, are apparent in most typically developing children. There are a variety of problem behaviors children display depending upon the type and severity of a child’s disability and the environment. Many children with autism have problem behaviors such as tantrums, obsessions and compulsivity, poor social skills, or self-injurious actions (Liwag, 1989). For children with a traumatic brain injury (TBI), problem behaviors often include mood fluctuations, hyperactivity, poor social skills, aggression, or temper tantrums (Hawley, 2003; Hawley, 2004; Schwartz et al., 2003). Often times these behaviors increase as

the severity of the TBI increases (Hawley, 2003; Schwartz et al., 2003). An increase in problem behaviors depending upon the severity of disability have been seen in individuals with an intellectual disability as well (Deb, Thomas, & Bright, 2001; Janssen, Schuengel, & Stolk, 2002).

Problem behaviors are a source of stress for parents. Parents of children with disabilities have been shown to have more stress than those without children without disabilities, which is due, in part, to an increase of problem behaviors from children with disabilities. (Baker et al., 2002; Baker et al., 2005; Baker-Ericzén et al., 2005; Beckman, 1991; Dyson, 1997; Floyd & Gallagher, 1997; Lardieri et al., 2000). Hastings (2002) suggested five predictors of parent stress in relationship to problem behaviors:

1. Prospectively, behavior problems will predict parental stress probably more strongly than measures of the severity of a child's intellectual or adaptive functioning.
2. Parents of children with developmental disabilities who are under increased stress will engage in different parenting behaviors, and these behaviors may well be most likely to contribute to child behavior problems.
3. Certain parenting behaviors (e.g., a coercive style; cf. Patterson, 1982) will be linked to higher levels of challenging behaviors via reinforcement processes.
4. Various psychological resource variables (coping, social support, self-efficacy, other beliefs) will mediate and/or moderate the impact of children's behavior problems on parental well being.
5. Parental negative emotional reactions to problems behaviors may be a key mechanism explaining the impact of such behaviors on a day-to-day basis on longer term parental stress responses. (p. 157)

While researchers have found that parents of children with disabilities often have more stress, a child's problem behaviors are sources of stress for parents of children without

disabilities as well (Lardieri et al., 2000). Even when factors such as family socio-economic status, intellect, and adaptive behavior are controlled, problem behaviors were still the highest predictors of parent stress (Baker et al., 2002; Hastings, 2002; Keller & Honig, 2004; Plant & Sanders, 2007).

### *Self-Efficacy*

Self-efficacy is the extent to which an individual believes events will or will not occur as a result of personal effort. Self-efficacy is a cognitive function and uses past experiences of success or failure to make predictions about future performance. Successful experiences help promote a perception that one will achieve success in similar situations in the future. Likewise, a history of failure in the past has an effect on the success or failure of a similar event in the future. These outcome expectancies may be driven by an individual's perceived self-efficacy (Bandura, 1977). The actual outcome itself is not a predictor of efficacy because self-efficacy considers an individual's personal beliefs, which also affect persistence and resilience in certain situations.

Four ways of gaining self-efficacy are (a) performance accomplishments, (b) vicarious experience, (c) verbal persuasion, and (d) physiological responses (Bandura, 1977; Bandura, 1997). Performance accomplishments refer to one's history of success or failures. Vicarious experiences are behaviors that are observed, or seen by and individual. Verbal persuasion refers to the verbal encouragement once receives to participate in a certain behavior. Finally, physiological responses are the actual biological process one's body will experience during a task (Bandura, 1977; Bandura, 1997).

Each of these sources plays an important role in increasing one's self-efficacy. Consequently, self-efficacy influences the expected outcomes of a certain instance, which in turn predicts how much effort and persistence people will put into a task. Greater amounts of self-efficacy will induce greater amounts of engagement in the given task. Likewise, low perceived

self-efficacy will induce low amounts of engagement in a given task. An increase of efficacy is attained through systematic programming in which perceived personal efforts are lower than or matches the perceived difficulty of a task (Coleman & Karraker, 2000). Instances of this have been seen in areas of increasing school performance (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura, Barbaranelli, Vittorio Caprara, & Pastorelli, 2001; Zimmerman, 1998) reducing anxiety (Rodebaugh, 2004), stuttering (Bray, & Kehle, 2001), and reducing phobia (Götestam, 2002; Johnstone & Page, 2004).

### *Parenting Self-Efficacy*

Parenting self-efficacy is a specific domain of general self-efficacy and has been defined as “one’s perceived ability to exercise positive influence on the behavior and development of one’s children” (Coleman & Karraker, 1998, p. 58). Parents with greater overall general self-efficacy also have greater efficacy in specific domains, such as parenting (Coleman & Karraker, 1998; Coleman & Karraker, 2000). Parental self-efficacy is acquired through the same four sources described above. More specifically, parenting self-efficacy is increased through positive relationship building, modeling parenting techniques to the parent, and providing opportunities for success (Coleman & Karraker, 1998; Coleman & Karraker, 2000).

Higher parenting self-efficacy is linked to positive outcomes for parents. For example, parents with high self-efficacy report a decrease in stress and depression levels, greater parenting satisfaction, more supportive and involved parenting styles, and children with milder temperaments (Coleman & Karraker, 1998; Coleman & Karraker, 2000; Jackson, 2000; Jackson & Huang, 2000). Parents with lower parenting efficacy avoid difficult tasks and often give in to high demands of their children (Coleman & Karraker, 2000). In summary, Coleman and Karraker (1998) state that

Without the belief that people can effect real change in their lives, there is little or no incentive to try; ... parental perceptions of personal efficacy may represent the primary means through which individuals are able to transform poor living conditions into environments conducive to child growth. (p. 71)

Thus, the higher the parents' perceived efficacy in other areas in their lives, the higher their parenting efficacy is predicted to be. This will, in turn, allow them to have a more positive impact upon their children's achievements (Ayrapetyan, 2006; Gonzalez, 2005). Parents with authoritative styles of parenting, meaning they are supportive and assertive (Ayrapetyan, 2006), have been found to have lower amounts of stress (Woolfson & Grant, 2006), children with higher levels of academic efficacy when compared to same-age peers, and a greater sense of overall efficacy (Ayrapetyan, 2006; Gonzalez, 2005; Lim & Leng Loo, 2003).

### *Positive Behavior Support*

Families play a critical part in the development of their children with disabilities. Luchshyn et al. (2002) claimed that: (a) participation in the growth and development of children has an important place in the family, (b) a parent knows best about their child and the dynamics of their family, and (c) special education law states that families should be allowed to take an active role in interventions involving their children. Positive behavior support is a method of analyzing problem behaviors using a functional analysis of behaviors in order to develop a behavior support plan for the child that integrates the family, ecological factors, and positive support methods. This section will discuss the foundations of positive behavior support, functional behavior assessments, behavior support plans, and a case study that describes a mother's experience using positive behavior support.

### *Foundations of Positive Behavior Support*

Positive behavior support is based on principles of Applied Behavior Analysis (ABA), which is a method of improving and understanding human behavior (Cooper, Heron, & Heward, 1987; Ward, 1991; Zirpoli & Melloy, 1993). Based on B. F. Skinner's research on conditioning, ABA assumes that behavior is determined and can be influenced by the environment (Cooper et al., 1987). Behaviors are controlled by their consequences; reinforcements increase the likelihood of the behavior's reoccurrence while punishments decrease the likelihood of occurrence.

Positive Behavior Support (PBS) augments ABA by considering the impact of setting events and replacement behaviors. Setting events are considered to be "prevention principles" (Ward, 1991, p.10). Some of these prevention principles include changing seating arrangements and modeling correct behavior for students. Setting events increase the likelihood that when in the presence of a particular antecedent, the target behavior will occur. For example, if a child was asleep on the bus ride home from school (setting event) and his mother asks him to take a nap when he gets home (antecedent), he may not be likely to cooperate with that request (behavior). The mother may scold the child (negative consequence) for not taking a nap. If, however, the child was awake during the bus ride home and then asked to take a nap, he may comply. PBS focuses on targeting setting events and antecedents rather than on consequences that immediately follow the target behavior. PBS also seeks to understand why a problem behavior occurs by using a functional behavior assessment and investigates ways to create an atmosphere where behavioral expectations are set and positively reinforced in order to replace problem behaviors.

*Functional behavior assessment.* A functional behavior assessment is a "general label used to describe a set of processes for defining the events in an environment that reliably predict

and maintain problem behaviors” (O’Neill et al., 1997, p. 1). The function of a behavior refers to the purpose the behavior serves. It addresses the reason an individual chooses any action as their action of choice. All behavior is displayed in order to gain access or avoid something. In one instance, a child may be trying to communicate needs to another person. Other behaviors strive to gain acknowledgement or attention. Often times, behaviors may occur as a way to fulfill a sensory need. Finally, a behavior may be used as a means to avoid or escape an unwanted task (O’Neill et al., 1997; Umbreit et al., 2007).

Through interviews, observations, and a manipulation of variables that are not directly associated with the problem behavior, parents, professionals, and teachers gather information to determine the function of the problem behavior. These strategies (i.e., interview, observation, and manipulation of variables) are designed to investigate events that are associated with problem behavior. O’Neill et al. (1997) used these strategies in order to find out the when, where, and whys of a problem behavior.

When assessing the problem behavior, it is critical to understand the circumstances, which, when in the presence of a particular antecedent, increase the likelihood that the behavior will occur. These circumstances are called “setting events.” For example, a setting event for a child taking another child’s food could be that the target child did not eat breakfast that morning. When he saw the other child’s food (antecedent), he took it (problem behavior). However, if the child had breakfast in the morning and saw the other child’s food, because the setting events support positive behaviors, the child is less likely to take food from others. King-Peery and Wilder (2005) trained parents to investigate these variables by instructing parents to record the setting events, antecedents, problem behavior, maintaining consequences, and the function of the behavior in an organized chart that helps to create effective behavior intervention plans.

*Behavior support plans.* Behavior support plans use information gained from the functional behavior assessment to make the problem behavior irrelevant, inefficient, and ineffective (Lucyshyn et al., 2002; O’Neill et al., 1997; & Umbreit, et al., 2007). O’Neill suggested characteristics that a behavior plan will need to incorporate in order for it to be relevant, efficient, and effective. The behavior plan must

(a) fit the natural routines of the setting; (b) be consistent with the “values” of the people in the setting (they need to indicate a willingness to perform the procedures); (c) be efficient in terms of time, money, and resources; (d) be matched to the skills of the people who will carry out the procedures; and (e) produce reinforcing (not punishing) short-term results. (p. 68)

The new replacement behavior is a behavior that cannot be performed at the same time as the problem behavior. The new behavior will be such that the parent or caregiver can reinforce the new behavior in a manner that the new reinforcer will be more desired than the former maintaining consequence. In order for the new reinforcer to be effective it must fulfill the same need as the problem behavior (Lucyshyn et al., 2002; O’Neill et. al., 1997; Umbreit et al., 2007; Wilder et al., 2005). For example, if a child screams as a way to communicate needs, then the new behavior plan must give a desired way of communicating needs along with a maintaining consequence that is more desirable than the prior maintaining consequence. It is important to use the functional behavior assessment as a resource to design and implement behavior plans that meet the needs of the child and the values of the family.

#### *Case Study Example*

The following is a case study from *Families and Positive Behavior Support: Addressing Problem Behavior in Family Contexts* (Lucyshyn et al., 2002).

Ashley was a young elementary student diagnosed with autism who often displayed severe behavior problems in school, home, church, and the community. Because of her problem behaviors, it was difficult for her to make friends at school and for her family to go places in public. Bedtime was an incredibly difficult routine and Ashley would yell, scream, or cry so much that her mother often gave up having her do bedtime tasks such as brushing her teeth. “It just wasn’t worth the effort,” her mother reported, “When we tried to put her to bed, she cried and hurt herself” (p. 272). At school, teachers called her mother in and showed her documentation of up to 50 accounts of aggressive behaviors from Ashley each day. During a meeting with the special education teacher and principal, Ashley’s mother mentioned a conference she had recently gone to discussing positive behavior support. The school was then able to bring in a positive behavior support specialist that changed Ashley and her family forever.

Jim, Ashley’s behavior consultant, went into their home and asked questions about the family and Ashley. Ashley’s mother “found it highly unusual for a professional, especially one with a Ph.D., to ask us about *our* experiences, *our* views and *our* concerns” (p.273). Jim found out that the bedtime routine was very difficult and the most important to be fixed at that particular time. After conducting a functional behavior analysis they speculated that the function of Ashley’s behavior was for attention and communication purposes. After addressing the functions of the behavior new routines and schedules were put into place. Ashley soon went to bed without any trouble.

Similar processes were done for other times of the day at home, school, church, and in the community. Ashley’s behaviors were being addressed so effectively that she was starting to make friends and the family was also able to buy a mobile home and travel the country for a year. Through the help of a competent professional, positive behavior support, and efforts to

work within the family's values and structure Ashley and her family were able to do things they thought never possible.

### *Conclusion*

Raising a child with a disability may be stressful at times, especially when dealing with problem behaviors. As families are able to effectively utilize their resources and develop optimistic perceptions, they will have greater chances of bonadaptation during a crisis or hardship. As they do this their parenting self-efficacy can improve which will also improve their perceived ability to accomplish difficult tasks.

The problem behaviors a child has can be a main source of stress for parents. Professionals can help families use principles of Positive Behavior Support to replace problem behaviors with more acceptable behaviors. By utilizing these techniques families will have the chance to do things they never thought possible followed by an increase in family quality of life.

### *Statement of Purpose*

The purpose of this study is to investigate the effectiveness of a positive behavior support program offered to families of children with disabilities. The Family HOPE program is offered through Brigham Young University (BYU) to families on the Division for Services for People with Disabilities (DSPD) Family Support waiting list and other families who are raising children with significant disabilities and behavior problems in the surrounding area. Participants on the waiting list have been assessed by the DSPD intake workers and show a need for support and services for their child with disabilities. It is common for families to be on the waiting list for 10 or more years with out receiving family support services. The BYU Family HOPE (Happiness, Optimism, Promise, and Excellence) program is designed to help families raising children with disabilities through providing support through research-based methods using positive behavior support to help minimize problem behaviors.

According to the McCubbin & Patterson (1983) model of family adaptation crisis situations arise out of a pile up of hardships and stressors. This comes about, in part, as a result of (a) prevailing hardships and stressors, (b) a families' inability to consolidate these stressors or hardships with the available resources, and (c) perceptions regarding the stressors or hardships. Bonadaptation comes as a result of effectively managing stressors or hardships by utilizing resources, and retaining a positive perception. Maladaptation is a result of difficulty in finding resources to help with their stressors or hardships and formulating damaging perceptions about the situation at hand. The mission of the Family HOPE program of BYU is to help train parents to use positive behavior support in order to replace problem behaviors with more acceptable behaviors. As of yet, there is no research regarding the effectiveness of this program. This study investigates the effectiveness of the Family HOPE program with regard to parent ideas of limit setting and support along with ratings of problem behaviors of their child with a disability.

## METHOD

### *Participants*

Participants were families raising children with disabilities who were recruited from the DSPD Family Support waiting list and the BYU - Public School Partnership schools in Utah County and south Salt Lake County. After DSPD personnel and BYU faculty screened families, graduate students from the Counseling Psychology and Special Education department of BYU selected families from a list comprised of families from these sources. The average age of the children with disabilities was 8.5, 31 male and 17 female (N=48). Several disabilities from the experiment and control groups were represented in this study and can be seen in Table 1.

*DSPD Participants.* DSPD personnel selected families eligible to participate in this study from their waiting list based upon the following criteria: (a) their child is school aged (5-17), (b) the child has a developmental disability, (c) the child has a challenging behavior (e.g., behaviors that interfere with adaptive functioning, behaviors that interfere with social relationships), and (d) the challenging behavior was not severe enough to warrant expert help or training.

*Partnership Schools.* Families from the BYU Public School Partnership schools were put on a different list based upon similar criteria to families on the DSPD waiting list. These families were recruited through invitations sent home to parents of children with disabilities at the partnership school districts.

### *Procedures*

Procedures consist of three parts (a) training the graduate students working with the families, (b) implementation of the program with the experiment group, and (c) gathering pre- and post- questionnaire data from the control group.

Table 1

*Disabilities of Children in Study*

Disability	Number
Autism	20
Down syndrome	9
Intellectual Disability	4
Cerebral Palsy	3
Unknown	3
Attention-Deficit/Hyperactivity Disorder	2
Multiple Disabilities	2
Angleman's Syndrome	1
Brain Injury	1
Charge Syndrome	1
Seizure Disorder	1
Turner's Syndrome	1

*Training Graduate Students.* As part of their semester course work, graduate students in the Counseling Psychology and Special Education (CPSE) department were taught to implement an 8-10 week parent-training program using methods of positive behavior support. They were informed on confidentiality rules of working with research participants and required to sign an agreement of confidentiality before working with families. All graduate students were fingerprinted for background checks in compliance with requirements for employment in public education schools in the state of Utah, and have completed the Institutional Review Board (IRB) training module.

Weekly instruction to graduate students was given by Karolyn Peery, a university instructor who works with the BYU Family HOPE project. During each meeting Mrs. Peery modeled appropriate steps involved when meeting with families. A detailed outline explaining each family meeting was provided to the graduate students in order to help control for consistency in the content of the visits. These visits focused on teaching the parents to conduct a functional behavioral assessment and creating and implementing a behavior plan. This included gathering information regarding the function of the targeted problem behavior, gathering data, finding a new alternate competing behavior, and implementing an intervention to reduce a specific problem behavior of their child through positive behavior support.

*Control Group.* Families (n=13) from the DSPD waiting list and the BYU partnership schools list who were not chosen by the graduate students were placed in the control group. Families in the control group were given pre/post PCRI and SIB-R assessments during the same time as families receiving services. They did not receive services from the Family HOPE program during this time, but were told that they would have an opportunity to receive services during the following semester.

*Experimental Group.* Families from the DSPD waiting list and BYU partnership schools received post cards in the mail with an invitation to participate in the Family HOPE project. A list of the families' names of those who returned their cards, as well as their home city, was presented to the graduate students working with the families. Graduate students chose families from the list that was closest to the practicum or intern sites where they were currently working. Families lived from 1-40 miles away from the students' university. The families (n=35) that were chosen comprised the experimental group. After the students worked with the families to conduct a functional behavioral assessment on a problem behavior the graduate student collaborated with the family to design and implement an appropriate intervention. All interventions were approved by Karolyn Peery (instructor) or Tina Dyches (principle investigator of the BYU Family HOPE project) to ensure they followed DSPS Family Support ethical guidelines. After each visit the graduate students wrote summaries documenting notes on each meeting with their family. A pre- and post- Parent-Child Relationship Inventory (PCRI) and Scales of Independent Behavior-Revised (SIB-R) assessments were given by research assistants as a means of investigating parent scores on parent support and limit setting and problem behaviors.

### *Measures*

Two assessments were used in this study: the Parent-Child Relationship Inventory (PCRI) and the Scales of Independent Behavior—Revised (SIB-R).

*Parent-Child Relationship Inventory.* The PCRI (Gerard, 1994) was developed to assess attitudes parents have toward their children as well as their own parenting skills for parents of children ages 3-15. The PCRI is divided into eight sections and statements are rated on a 4-point Likert scale. Ratings scores within sections are added and converted to a *t-score* in order to compare individual scores to the norming sample. The PCRI was administered to 1,100 parents

around the nation after which internal consistency was found to be good ( $r=.82$ ), while test-retest reliability indicated good stability. Individual scales are intended to determine problematic areas within the parent-child relationship for each rater. The PCRI also has two validity indicators embedded within the measure. Socially acceptable answers are detected through the Social Desirability indicator, and an Inconsistency Indicator looks at a parent's inclination towards inconsistent responses.

Sections used in this study were Limit Setting and Parental Support. Lower limit setting scores indicate higher stress as the parent's perceived control over a situation is less evident. Parental Support was used as an indicator to measure the amount of support the parent receives regarding his/her child from family members, friends, or those in the community. Higher support indicates a higher sense of support. See Appendix A for the questions used in each section.

*Scales of Independent Behavior-Revised.* The Scales of Independent Behavior – Revised (SIB-R) is a caregiver survey that divides a child's behaviors into two sections, adaptive and problem behaviors. The adaptive behavior section gives a Broad Independence Scale score is comprised of questions, given to a caregiver, regarding motor skills, social interaction and communication, personal living, and community living. The Problem Behaviors section provides a maladaptive behavior score which considers the following categories of behavior: Hurtful to Self, Hurtful to Others, Destructive to Property, Disruptive Behavior, Unusual or Repetitive Habits, Socially Offensive Behavior, Withdrawal or Inattentive Behavior, and Uncooperative Behavior. Each item is rated on a Likert scale regarding frequency and severity. Frequency ratings include: 0 = never; 1 = less than once a month; 2 = 1 to 3 times a month; 3 = one to 6 times a week; 4 = one to 10 times a day; and 5 = one or more times an hour. Severity ratings include: 0 = not serious; not a problem; 1 = slightly serious; a mild problem; 2 =

moderately serious; a moderate problem; 3 = very serious; a severe problem; and 4 = extremely serious; a critical problem. Test-retest reliability of Maladaptive Behavior Indexes range between .83 to .88 (Bruininks et al., 1996).

### *Data Analysis*

Pre- and post- data on the PCRI and SIB-R were gathered on each family in the control (n=40) and experiment groups (n=12), 8-10 weeks apart. PCRI raw scores regarding limit setting and parental support were converted to *t-scores* (mean = 50, SD=10). A repeated measures split-plot ANOVA ( $p<.05$ ) was used to determine whether there was differential change regarding these sections over time according to group membership. This allowed for effective analysis of change over time between the experiment and control groups during pre- and post-assessment.

Data on the SIB-R were analyzed using change scores on the frequency and severity of a specific problem behavior. Specific behavior categories (i.e., Hurtful to Self, Hurtful to Others, Destructive to Property, Disruptive Behavior, Unusual or Repetitive Habits, Socially Offensive Behavior, Withdrawal or Inattentive Behavior, and Uncooperative Behavior) for each experiment family were chosen regarding the problem behavior that they chose to work on with the graduate students. For example, for a family working on decreasing physically harmful behaviors to others, frequency and severity scores would be taken from the “Hurtful to Others” section of the problem behaviors portion of the SIB-R. Due to the nature of being in a control group, there were no behaviors that were specifically targeted between pre- and post-assessment times. This being the case, problem behaviors were selected and analyzed in two different ways for the control groups.

First, frequency and severity averages were calculated across all eight problem behavior categories from the SIB-R for each control group assessment. Averages were calculated in order to get a general rating of all problem behaviors for each assessment. The next method was

implemented based on the assumption that families would chose the most problematic behavior to work on if, in fact, they were receiving services from the Family HOPE program. In this method, frequency and severity scores were added and the problem category with the highest numerical value was used for analysis. If several categories had the same highest numerical value a category was chosen at random between those specific categories. A split-plot ANOVA ( $p < .05$ ) was used to determine whether there was differential change in the frequency and severity of problem behaviors over time according to group membership. Similar to the SIB-R, this allowed for effective analysis of groups over time.

## RESULTS

Split-plot ANOVA's were conducted to answer each of the questions presented in this study. Total number of participants in this study was 68, with participants in the experimental group totaling 54, and the control group totaling 14. During post-testing, not all SIB-R assessments were completed accurately or returned. The pre-tests from participants who did not complete or return assessments were removed from statistical analysis. Results including completed assessments will be presented for each research question.

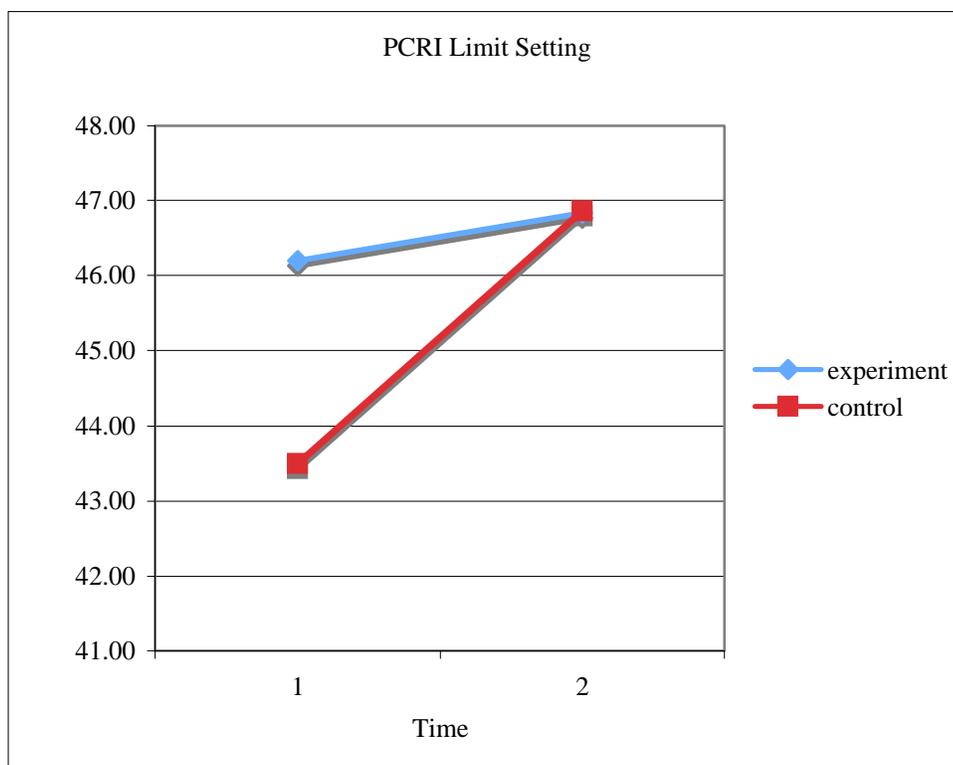
### *Limit Setting*

The first research question asks if there was a difference in pre- and post- ratings on the Limit Setting section of the PCRI, as rated by parents between a control and experiment group after participation in an 8-10-week positive behavior support training program. The mean t-score at pre-test for the experiment group was 46.20 (SD=8.42; n=54) while the mean for the control group t-score was 43.50 (SD=9.23, n=14), with higher scores indicating a greater ability to set limits. At post-test mean t-scores for the experiment group were 46.83 (SD=6.84, n=54) with the control group mean t-score equaling 46.86 (SD=6.67, n=14). Results indicated no significant difference over time for either the experimental group or the control group ( $p > .05$ ). Further, when including data from both groups, no significant differences were found,  $F(1,50)=2.23$ ,  $p=.140$  (see Table 2 and Figure 1).

Table 2

*Descriptives for Limit Setting on the PCRI*

PCRI Limit Setting	Mean	Std. Deviation	N
Pre-test			
Experiment	46.20	8.42	54
Control	43.50	9.23	14
Total	45.65	8.59	68
Post-test			
Experiment	46.83	6.84	54
Control	46.86	6.67	14
Total	46.84	6.77	68



*Figure 1.* Pre-post scores of control and experiment groups on the Limit Setting section of the PCRI.

### *Parental Support*

The second research question investigated whether there was a difference in pre- and post- ratings on the Parental Support subscale of the PCRI, as rated by parents between a control and experiment group scale after participation in a 10-week positive behavior support training program. The mean t-score at pre-test for the experiment group was 44.81 (SD=8.50; n=54) while the mean t-score for the control group was 43.79 (SD=10.94, n=14), with higher scores indicating a greater sense of support. At post-test mean t-scores for the experiment group were 46.72 (SD=9.20, n=54) with the control group mean t-score equaling 43.36 (SD=9.55, n=14). Results indicate no significant difference over time ( $p>.05$ ) even when adding a control group,  $F(1,66)=.973, p=.327$  (see Table 3 and Figure 2).

Table 3

*Descriptives for Parental Support on the PCRI*

	<i>Mean</i>	<i>Std. Deviation</i>	<i>N</i>
Pre-test			
Experiment	44.81	8.50	54
Control	43.79	10.94	14
Total	44.60	8.97	68
Post-test		9.15	54
Experiment	46.72	9.55	14
Control	43.36	9.26	68
Total	46.03		

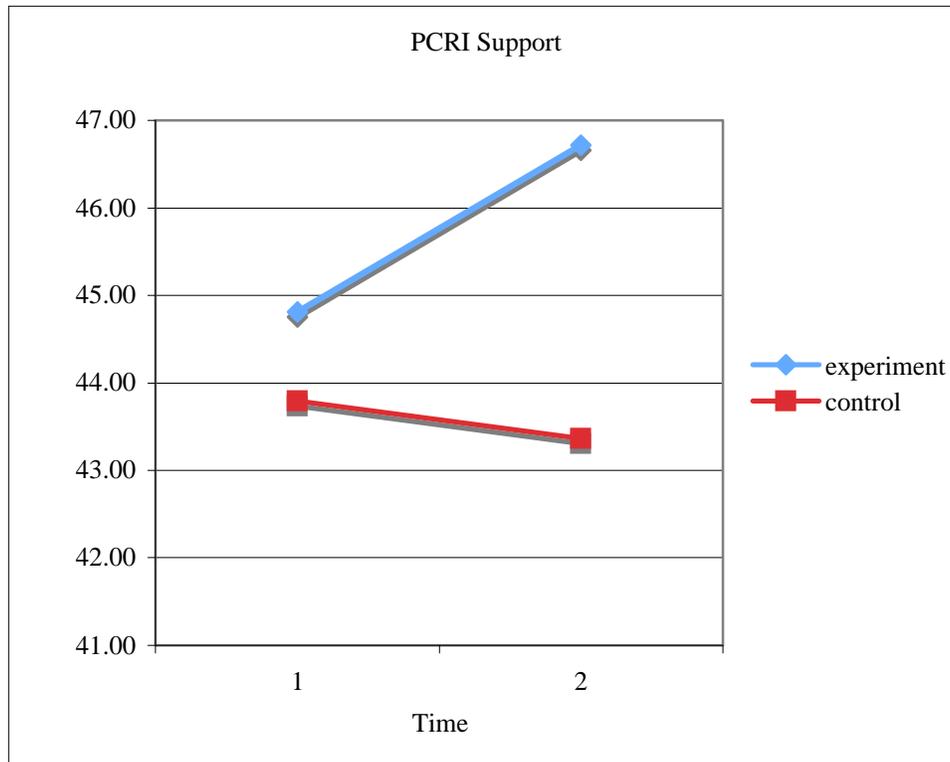


Figure 2. Pre-post scores between control and experiment groups for the Limit Setting section of the PCRI.

### *Problem Behaviors*

*Frequency.* The third research question investigated whether there was a difference in the frequency of child problem (maladaptive) behaviors on the SIB-R, as rated by parents between a control and experiment group on the after participation in a 10-week positive behavior support training program. Two scores will be reported. First, scores reported use mean frequency scores across all eight behavior categories for the control group. The next scores are frequencies taken from select behavior categories, based upon the behavior plan, from the experiment group, and selected categories from the control group that were based upon highest score. The highest score was based on the assumption that families in the experimental group would have high scores in the problem behavior section category pertaining to the problem behavior which was the focus of the intervention.

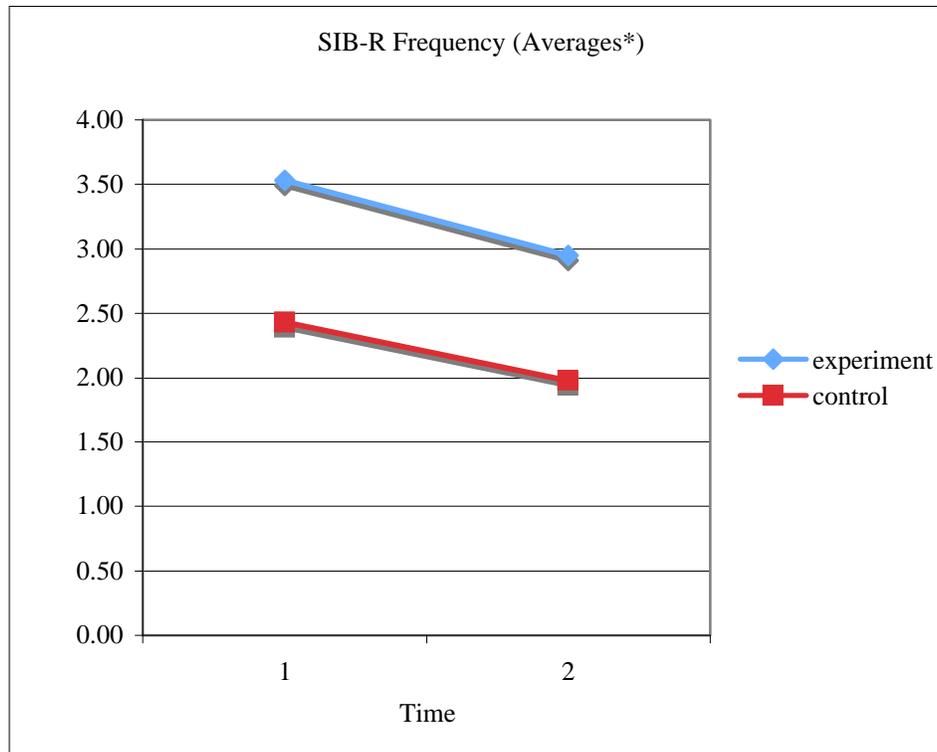
The mean frequency score at pre-test for the experiment group was 3.55 (SD=.87; n=40) while the mean for the control group was 2.34 (SD=.865, n=12). At post-test mean scores for the experiment group was 2.95 (SD=1.40, n=40) with the control group mean score equaling 1.98 (SD=.96, n=12). Results indicate significance over time,  $F(1,50)=6.80, p=.012$ . However, there were no significant differences between experimental and control groups,  $F(1,50)=.104, p=.748$  (see Table 4 and Figure 3).

Table 4

*Descriptives of frequency of problem behaviors rated on the SIB-R\**

	Mean	Std. Deviation	N
Pre-test			
Experiment	3.53	0.88	40
Control	2.43	0.87	12
Total	3.27	0.98	52
Post-test			
Experiment	2.95	1.4	40
Control	1.98	0.96	12
Total	2.73	1.36	52

\*Scores are based on average frequency scores across all 8 behavior categories for the control group.



*Figure 3.* Pre- and post-frequency data on problem behaviors from the SIB-R. \*Scores are based on average frequency scores across all 8 behavior categories for the control group.

The next scores are frequencies taken from select behavior categories, based upon the behavior plan, from the experiment group, and selected categories from the control group that were based upon highest score for similar reasons explained above. The mean frequency score at pre-test for the experiment group was 3.53 (SD=.87; n=40) while the mean for the control group was 4.00 (SD=.85, n=12). At post-test mean scores for the experiment group was 2.95 (SD=1.40, n=40) with the control group mean score equaling 2.83 (SD=1.64, n=12). Results indicate significance over time,  $F(1,50)=13.30$ ,  $p=.001$ . However, there were no significant differences between experimental and control groups,  $F(1,50)=1.53$ ,  $p=.222$  (see Figure 4 and Table 5).

Table 5

<i>Descriptives of frequency of problem behaviors rated on the SIB-R</i>			
	Mean	Std. Deviation	N
Pre-test			
Experiment	3.53	0.88	40
Control	4.00	0.85	12
Total	3.27	0.98	52
Post-test			
Experiment	2.95	1.4	40
Control	2.83	1.64	12
Total	2.73	1.36	52

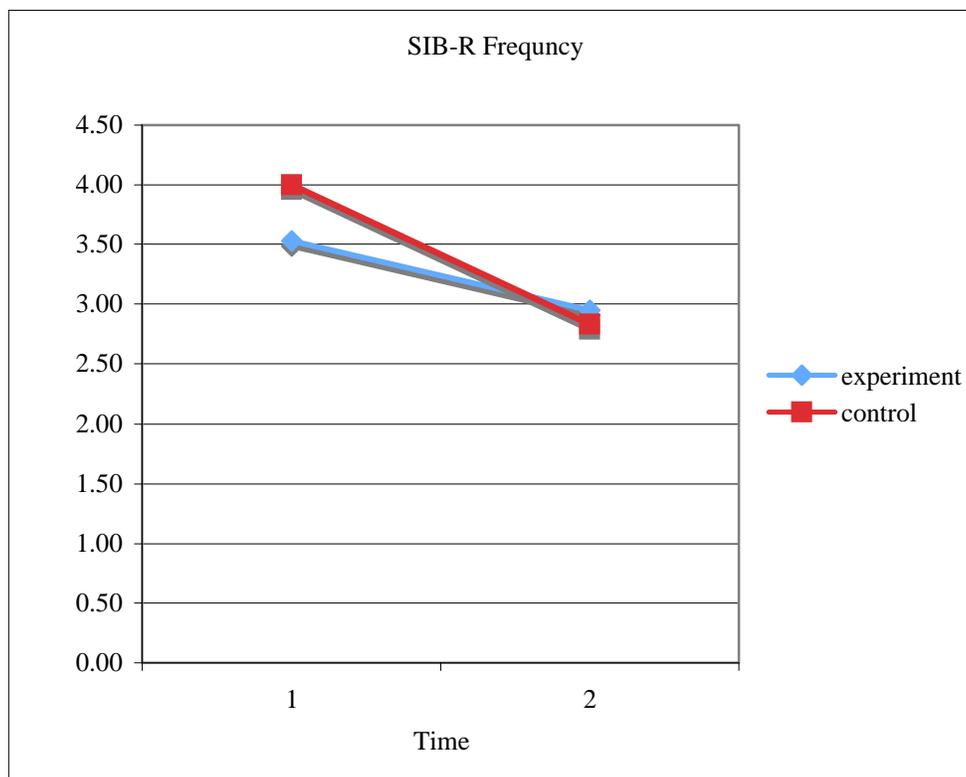


Figure 4. Pre- and post-frequency data on problem behaviors from the SIB-R.

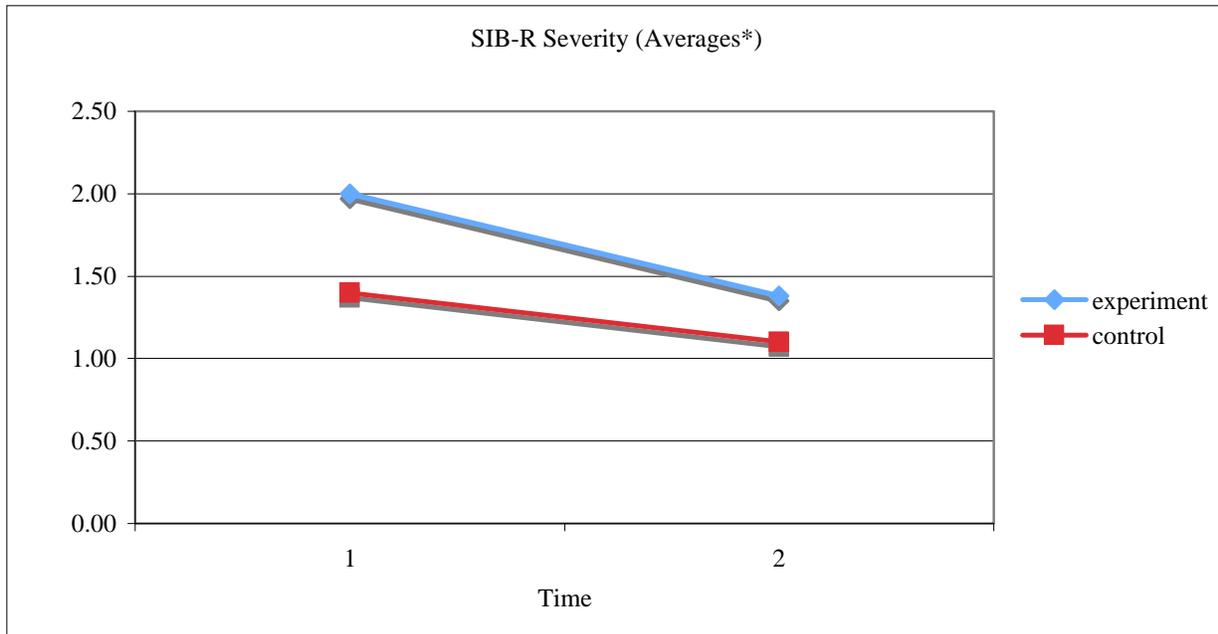
*Severity*. The fourth research question investigated whether there was a difference in the severity of child problem (maladaptive) behaviors on the SIB-R, as rated by parents between a control and experiment group after participation in a 10-week positive behavior support training program. The first scores reported will use mean severity scores across all eight behavior categories for the control group and severity scores for the target behavior for the experimental group. The mean severity score at pre-test for the experiment group was 2.00 (SD=.85; n=40) while the mean for the control group was 1.40 (SD=.84, n=12). At post-test, mean scores for the experiment group was 1.38 (SD=.90, n=40) and the control group mean score equaled 1.10 (SD=.59, n=12). Results indicate significance over time for both groups  $F(1,50)=7.37, p=.009$ . However, there were no significant differences between experimental and control groups,  $F(1,50)=.904, p=.346$  (see Table 6 and Figure 5).

Table 6

*Descriptives of severity of problem behaviors rated on the SIB-R\**

	Mean	Std. Deviation	N
Pre-test			
Experiment	2.00	0.85	40
Control	1.40	0.84	12
Total	1.86	0.88	52
Post-test			
Experiment	1.38	0.9	40
Control	1.10	0.59	12
Total	1.31	0.84	52

\*Scores are based on average severity scores across all 8 behavior categories for the control group.



*Figure 5.* Pre- and post-severity data on problem behaviors from the SIB-R.

The next scores are severity scores taken from select behavior categories, based upon the behavior plan, from the experiment group, and selected categories from the control group that were based upon highest score. The mean severity score at pre-test for the experiment group was 2.00 (SD=.85; n=40) while the mean for the control group was 2.67 (SD=.78, n=12). At post-test mean scores for the experiment group was 1.38 (SD=.90, n=40) and the control group mean score equaling 1.83 (SD=1.03, n=12). Results indicate significance over time,  $F(1,50)=12.09$ ,  $p=.000$ . However, there were no significant differences between experimental and control groups,  $F(1,50)=.308$ ,  $p=.581$  (see Table 7 and Figure 6).

Table 7

<i>Descriptives of severity of problem behaviors rated on the SIB-R</i>			
	Mean	Std. Deviation	N
Pre-test			
Experiment	2.00	0.85	40
Control	2.67	0.78	12
Total	2.15	0.87	52
Post-test			
Experiment	1.38	0.9	40
Control	1.83	1.03	12
Total	1.48	0.93	52

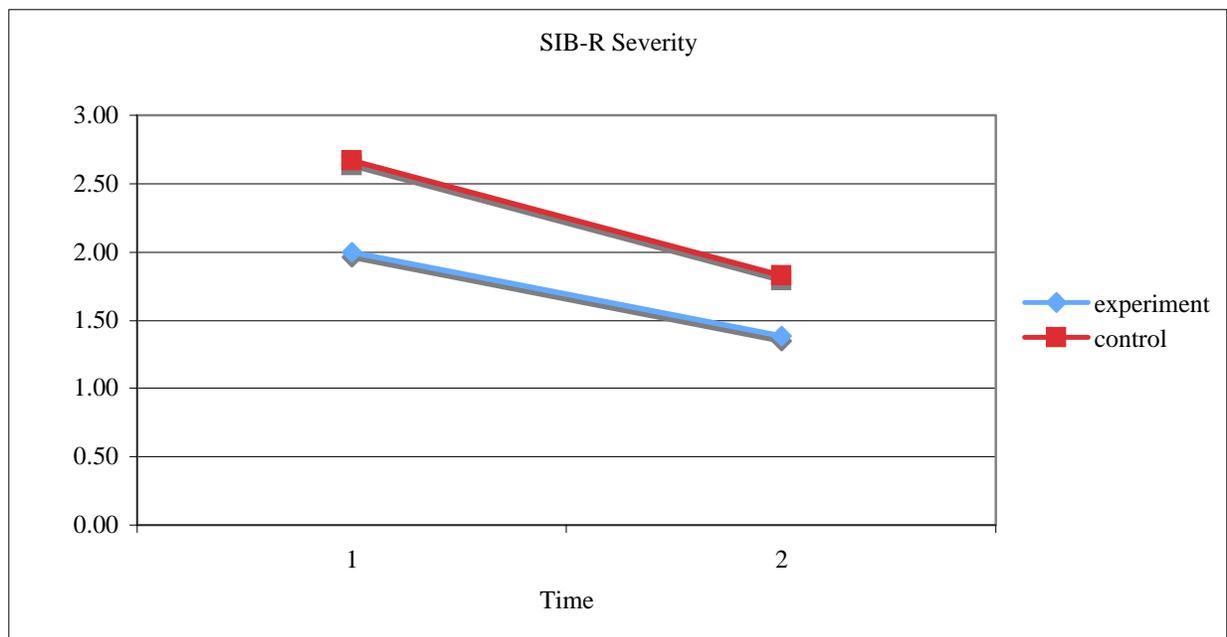


Figure 6. Pre- and post-severity data on problem behaviors from the SIB-R.

## DISCUSSION

The purpose of this study was to investigate the effects of an in-home positive behavior support program provided to parents of children with disabilities. It specifically investigated whether this program was able to (a) help parents gain a greater ability to set limits with their child; (b) provide support parents; (c) reduce the frequency of problem behaviors exhibited by the child with disabilities; and (d) reduce the severity of the child's problem behaviors. Results indicate that there were no significant differences between groups on limit setting or parental support over the 8-10 week period, based upon survey scores on the PCRI. This suggests that our hypothesis that the experiment group's scores would decrease concerning limit setting and parent support is not supported. There was a significant decrease in the frequency and severity of problem behaviors across all groups, suggesting that group membership in this research study was insignificant. Discussions of these findings from the PCRI and SIB-R are included in the following paragraphs.

Parent perceptions were used to determine if there was a change in a parents' ability to set limits and if they felt a greater sense of parental support according to the PCRI during the program. Questions from the PCRI consider a broad context of a parent-child relationship and may not be sensitive enough to detect an increase of limit setting abilities or parental support from the Family HOPE program. Similarly, measures of Limit Setting and Parental Support may not be important elements of support and help these families find valuable.

During the study graduate students were in families' homes for approximately one hour a week, which may not be sufficient time needed to develop a relationship of support that was enough to change a families' perception of support. Research has suggested that support (e.g., family, community, or professionals) is one of the factors contributing to minimize a crisis situation, however, this particular research did not indicate specifics regarding the type of

support, and at what length, support is utilized (McCubbin & Patterson, 1983). Further research is warranted to determine what minimal levels of support are necessary to make significant changes.

Another reason no significant differences were found may be due to high pre-assessment scores on measures of limit setting and parental support. These scores had an overall average of 45.65 and 44.60, respectively, which places them close to the 50th percentile of functioning for both scores. From these scores it is likely that families already had a sense of an ability to set limits appropriately and a support system on which they could rely. Families in the study are also possibly the types of families that seek out support and help as indicated by the fact that they were required to return a postcard before being considered for the study.

A final reason no significant differences were found may be that the control group size was considerably smaller than the experimental group. With a larger control group size, we will be able to compare the experiment group with more stable control group statistics.

While there was a significant difference in the frequency and severity of problem behaviors over time for all families, it did not appear to make a significant difference if the family received the treatment or not. Families were able to manage problem behaviors their children had with and without the Family HOPE program. This study focused on problem behaviors that were severe enough to interrupt families' activities of daily living, yet were not so serious that more frequent professional support was needed. One reason for the change over time amongst all groups is that families are not likely to allow problematic behaviors to persist. There may be several effective ways to decrease a problem behavior, and it is possible that they were able to manage the behaviors successfully on their own. Positive behavioral support methods also seek to work within the framework of the family (O'Neil et al., 1997; Lucyshyn, Dunlap, & Albin, 2000). In one case, a mother from the control group explained that her

daughter's problem behaviors had dramatically decreased between pre- and post-assessment times because of a change in diet. The mother reported that she was now able to report less frequent and severe problem behaviors.

Another possible explanation may be due to the Hawthorne effect, which describes a situation in which participants improve as rated on measures in a study simply because of the importance they feel by being part of a study. This may not be the case completely, however, as scores only improved with regard to the SIB-R and not the PCRI. One possible explanation for this is that the SIB-R rated behaviors of their children, whereas the PCRI rated parents' perceptions of their parent-child relationships. Families may have thought the research involved problem behaviors only. If this was the extent of the knowledge families had concerning the research of this study this would be the only area in which they would improve according to the Hawthorne effect. Again, increasing the size of the control group may help to strengthen the significance of the data.

### *Limitations*

There were several confounding variables that limited the generalizability of this study. First, as was mentioned earlier, the size of the control group was disproportionate to the size of the experiment group. In order to provide more valid results an increase in the number of participants in the control group may be more advantageous. Another complication was that not all participants completed post-assessments correctly and we were not able to gather post-assessment data from a few families. Information from these missing assessments may have been able to strengthen the data by increasing numbers of participants.

Another limitation was in the measures that were used to investigate the research questions. The PCRI may have been too general of a measure for the study as it surveys parents about a more general overall sense of limit setting and parent support rather than specific support

or limit setting abilities they have gained from the positive behavior support program alone. Also, average range pre- and post-test scores indicate that the PCRI may not be sensitive enough to detect a growth in these sections over a short 8-10 week time period. Scores from the SIB-R were also questionable, as there was no method of checking to see if parents were reporting the same problem behaviors at post-test, within a problem behavior category, that they had reported at pre-test. For example, a family at pre-testing may have had scored a four for frequency and three for severity in the socially offensive behavior category for nose picking. During the course of the 8-10 weeks this child may have decreased his nose picking and started exhibiting another socially offensive behavior during the same time. It is possible that his parents may have reported the same frequency and severity scores (four and three, respectively), in the same behavior category, and for a completely different behavior that was a major problem during pre-testing.

A final limitation was a lack of investigation on the fidelity of a behavior plan. Families developed a behavior plan together with the graduate students that came to their home. There was not, however, a way to check that families were implementing their behavior plan correctly. Similarly, graduate students were able to receive support through consultation with other graduate students in their classes as well as continued support with the university professor involved in the study; however, fidelity checks on the graduate students' implementation and teaching of positive behavior support was not put into place either.

### *Implications for Future Practice and Research*

The research from this study may have several implications for practitioners, teachers, or school psychologists. Because parents in both the experimental and control groups perceived their children's behavior to improve over time, parents of children with disabilities may find it easier to manage problem behaviors simply because of the attention they feel from professionals,

regardless of the level of support and instruction they receive. This is not to discredit work of professionals working with families of children with disabilities, only that results from this study indicated that this could be a factor when collaborating with parents. Practitioners in schools are often have many responsibilities and work with many families with various needs. Something as simple as taking an hour to listen and understand the parent's story may be a good investment into their lives. It is possible that this may be all they need to feel as though someone knows and cares about their story, and now they feel more empowered to manage their child successfully because they know someone understands them.

Research has suggested that a parent's ability to set limits and feel support from outside resources reduces their stress level (Lustig & Akey, 1999; McCubbin & Patterson, 1983; Summers et al., 1989; Quatman, 1997). The research from this study contradicts this research in that limit setting and parental support did not increase after training from a positive support program. This study, however, did not measure the effects this project had on the stress levels of parents. Future research in the area of families and positive behavior support research may want to investigate this variable as a means to determine effectiveness within a positive behavior support program.

### *Conclusion*

The purpose of this study was to investigate the effectiveness of the Family HOPE program and its benefits for families of children with disabilities. The positive behavior support model that was used in working with these families over the course of an 8-10 week in-home training program focused on parents' abilities to set limits, increase support to the family, and reduce problem behaviors of the children. This program was put in place as a means to support bonadaptation within a family system through professional support (McCubbin & Patterson, 1983). Control and experiment groups were assessed and results indicated that while

maladaptive behaviors decreased, the change in children's problem behaviors did not occur solely as a result of the Family HOPE program. These findings come without discouragement for future programming and research.

It is possible that results may not reliably be generalizable to most families, as further research is needed regarding positive behavior support and collaboration with families of children with disabilities. During program involvement most families were appreciative of the extra support and were grateful for someone with whom they could brainstorm and collaborate. Practitioners and researchers are encouraged to use the information gathered from this study to improve research and practice in the area of positive behavior support for families with children with a disability.

## REFERENCES

- Abdel-Khalek, A. M. (2007). Love of life as a new construct in the well-being domain. *Social Behavior and Personality, 35*, 125-134.
- Ayrapetyan, V. (2006). *Parenting styles and self-efficacy beliefs in Armenian-American families and their relationship to their children's school performance*. US: ProQuest Information & Learning.
- Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research, 47*(4/5), 217-230.
- Baker, B. L., Blacher, J., & Olsson, M. B. (2005). Preschool children with and without developmental delay: Behaviour problems, parents' optimism and well-being. *Journal of Intellectual Disability Research, 49*(8), 575-590.
- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation, 107*(6), 433-444.
- Baker-Ericzén, M. J., Brookman-Fraze, L., & Stahmer, A. (2005). Stress levels and adaptability in parents of toddlers with and without autism spectrum disorders. *Research & Practice for Persons with Severe Disabilities, 30*(4), 194-204.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.
- Bandura, A. (1999). Self-efficacy: Toward a unifying theory of behavioral change. In R. F. Baumeister (Ed.), *The self in social psychology* (pp. 285-298). New York: Psychology Press.

- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development, 67*(3), 1206-1222.
- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development, 72*(1), 187-206.
- Beckman, P. J. (1991). Comparison of mothers' and fathers' perceptions of the effect of young children with and without disabilities. *American Journal on Mental Retardation, 95*(5), 585-595.
- Bennett, T., & DeLuca, D. A. (1996). Families of children with disabilities: Positive adaptation across the life cycle. *Social Work in Education, 18*, 31-44.
- Boyd, B. A. (2002). Examining the relationship between stress lack and of social support in mothers of children with autism. *Focus on Autism and Other Developmental Disabilities, 17*(4), 208-215.
- Bray, M. A. & Kehle, T. J. (2001). Long-term follow-up of self-modeling as an intervention for stuttering. *School Psychology Review, 30*(1), 135-141.
- Bruininks, R. H., Woodcock, R. W., Weatherman, R. F., & Hill, B. K. (1996). *Scales of Independent Behavior-Revised*. Itasca, IL: Riverside Publishing.
- Cervone, D. (2000). Thinking about self-efficacy. *Behavior Modification, 24*(1), 30.
- Coleman, P. K., & Karraker, K. H. (1998). Self-efficacy and parenting quality: Findings and future applications. *Developmental Review, 18*(1), 47-85.
- Coleman, P. K., & Karraker, K. H. (2000). Parenting self-efficacy among mothers of school-age children: Conceptualization, measurement, and correlates. *Family Relations: Interdisciplinary Journal of Applied Family Studies, 49*(1), 13-24.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (1987). *Applied behavior analysis*. Columbus: Merrill Publishing Company.

- Deb, S., Thomas, M., & Bright, C. (2001). Mental disorder in adults with intellectual disability: The rate of behaviour disorders among a community-based population aged between 16 and 64 years. *Journal of Intellectual Disability Research, 45*(6), 506-514.
- Dyson, L. L. (1997). Fathers and mothers of school-age children with developmental disabilities: Parental stress, family functioning, and social support. *American Journal on Mental Retardation, 102*(3), 267-279.
- Floyd, F. J., & Gallagher, E. M. (1997). Parental stress, care demands, and use of support services for school-age children with disabilities and behavior problems. *Family Relations, 46*(4), 359-371.
- Gerard, A. B. (1994). *Parent-Child Relationship Inventory (PCRI) Manual*. Los Angeles, CA: Western Psychological Services.
- Gonzalez, A. (2005). *The relations among parenting beliefs, parenting practices, and student motivation*. US: ProQuest Information & Learning.
- Götestam, K. G. (2002). One session group treatment of spider phobia by direct or modelled exposure. *Cognitive Behaviour Therapy, 31*(1), 18-24.
- Greeff, A. P., Vansteenwegen, A., & Ide, M. (2006). Resiliency in families with a member with a psychological disorder. *American Journal of Family Therapy, 34*(4), 285-300.
- Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(6), 405-418.
- Hastings, R. P., & Taunt, H. M. (2002). Positive perceptions in families of children with developmental disabilities. *American Journal on Mental Retardation, 107*(2), 116-127.
- Hastings, R. P. (2002). Parental stress and behaviour problems of children with developmental disability. *Journal of Intellectual & Developmental Disability, 27*(3), 149-160.

- Hawley, C. A. (2003). Reported problems and their resolution following mild, moderate and severe traumatic brain injury amongst children and adolescents in the UK. *Brain Injury*, *17*(2), 105.
- Hawley, C. A. (2004). Behaviour and school performance after brain injury. *Brain Injury*, *18*(7), 645-659.
- Hill, R. (1949). *Families under stress*. New York: Harper & Row.
- Hill, R. (1958). Generic features of families under stress. *Social Casework*, *49*, 139-150.
- Innocenti, M. S., Huh, K., & Boyce, G. C. (1992). Families of children with disabilities: Normative data and other considerations on parenting stress. *Topics in Early Childhood Special Education*, *12*(3), 403-427.
- Ishizaki, Y., Ishizaki, T., Ozawa, K., Fukai, Y., Hattori, Y., Taniuchi, S., et al. (2005). Psychosocial problems among siblings of children with disabilities in Japan: Psychosocial association between mothers and siblings. *Journal of Developmental and Physical Disabilities*, *17*, 119-132.
- Jackson, A. P. (2000). Maternal self-efficacy and children's influence on stress and parenting among single black mothers in poverty. *Journal of Family Issues*, *21*(1), 3-16.
- Jackson, A. P., & Huang, C. C. (2000). Parenting stress and behavior among single mothers of preschoolers: The mediating role of self-efficacy. *Journal of Social Service Research*, *26*(4), 29-42.
- Janssen, C. G. C., Schuengel, C., & Stolk, J. (2002). Understanding challenging behaviour in people with severe and profound intellectual disability: A stress-attachment model. *Journal of Intellectual Disability Research*, *46*(6), 445-453.

- Joëls, M., Karst, H., Alfarez, D., Heine, V. M., Qin, Y., Van Riel, E., et al. (2004). Effects of chronic stress on structure and cell function in rat hippocampus and hypothalamus. *Stress: The International Journal on the Biology of Stress*, 7(4), 221-231.
- Johnstone, K. A., & Page, A. C. (2004). Attention to phobic stimuli during exposure: The effect of distraction on anxiety reduction, self-efficacy and perceived control. *Behaviour Research and Therapy*, 42(3), 249-275.
- Jones, Alla S., (2005). *Effects of Positive Behavior Support on children's maladaptive behavior, parenting skills, and parental support of families with children with disabilities*, Unpublished masters thesis, Brigham Young University, Provo, Utah, United States.
- Karst, H., & Joëls, M. (2003). Effect of chronic stress on synaptic currents in rat hippocampal dentate gyrus neurons. *Journal of neurophysiology*, 89(1), 625-633.
- Kashdan, T. B., Pelham, W. E., Lang, A. R., Hoza, B., Jacob, R. G., Jennings, J. R., et al. (2002). Hope and optimism as human strengths in parents of children with externalizing disorders: Stress is in the eye of the beholder. *Journal of Social & Clinical Psychology*, 21, 441-468.
- Keller, D., & Honig, A. S. (2004). Maternal and paternal stress in families with school-aged children with disabilities. *American Journal of Orthopsychiatry*, 74(3), 337-348.
- Knussen, C., & Sloper, P. (1992). Stress in families of children with disability: A review of risk and resistance factors. *Journal of Mental Health*, 1(3), 241-256.
- Lardieri, L. A., Blacher, J., & Swanson, H. L. (2000). Sibling relationships and parent stress in families of children with and without learning disabilities. *Learning Disability Quarterly*, 23(2), 105-116.
- Lim, V. K. G., & Leng Loo, G. (2003). Effects of parental job insecurity and parenting behaviors on youth's self-efficacy and work attitudes. *Journal of Vocational Behavior*, 63(1), 86-98.

- Liwag, M. E. (1989). Mothers and fathers of autistic children: An exploratory study of family stress and coping. *Philippine Journal of Psychology*, 22, 3-16.
- Lucyshyn, J. M., Dunlap, G., & Albin, R. W. (2002). *Families and positive behavior support: Addressing problem behavior in family contexts*. Baltimore, MD: Paul H Brookes Publishing.
- Lucyshyn, J. M., Kayser, A. T., Irvin, L. K., & Blumberg, E. R. (2002). Functional assessment and positive behavior support at home with families: Designing effective and contextually appropriate behavior support plans. In J. M. Lucyshyn, G. Dunlap & R. W. Albin (Eds.), *Families and positive behavior support: Addressing problem behavior in family contexts* (pp. 97-132). Baltimore, MD: Paul H. Brookes Publishing.
- Lustig, D. C., & Akey, T. (1999). Adaptation in families with adult children with mental retardation: Impact of family strengths and appraisal. *Education and Training in Mental Retardation and Developmental Disabilities*, 34(3), 260-270.
- Mandleco, B., Olsen, S. F., Dyches, T.T., & Marshall, E. (2003). The relationship between family and sibling functioning in families raising a child with a disability. *Journal of Family Nursing*, 9(4), 356-396.
- McCubbin, H. I., Cauble, A. E., & Patterson, J. M. (1982). *Family stress, coping, and social support*. Springfield, IL: Charles C. Thomas.
- McCubbin, H. I., & Patterson, J. M. (1983). The family stress process: The double ABCX model of adjustment and adaptation. In H. I. McCubbin, M. B. Sussman & J. M. Patterson (Eds.), *Social stress and the family: Advances and developments in family stress theory and research* (pp. 7-37). New York: Haworth Press.
- McEwen, B. S. (1999). Stress and hippocampal plasticity. *Annual Review of Neuroscience*, 22, 105-122.

- Morison, J. E., Bromfield, L. M., & Cameron, H. J. (2003). A therapeutic model for supporting families of children with a chronic illness or disability. *Child & Adolescent Mental Health*, 8(3), 125-130.
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior*. Pacific Grove, CA: Brooks/Cole.
- Peery, Karolyn King, (2005). *Matthew's Gift: Teaching Parents of Children With Disabilities To Deal Effectively With Their Child's Problem Behavior*. Unpublished masters thesis, Brigham Young University, Provo, Utah, United States.
- Plant, K. M., & Sanders, M. R. (2007). Predictors of care-giver stress in families of preschool-aged children with developmental disabilities. *Journal of Intellectual Disability Research*, 51, 109-124.
- Quatman, T. (1997). High functioning families: Developing a prototype. *Family Therapy*, 24(3), 143-165.
- Rodebaugh, T. L. (2004). *The effects of cognitive preparation and video feedback on self-perception of performance, anxiety, and behavioral avoidance*. Univ Microfilms International.
- Roisman, G. I. (2005). Conceptual clarifications in the study of resilience. *American Psychologist*, 60(3), 264-265.
- Schwartz, L., Taylor, H. G., Drotar, D., Yeates, K. O., Wade, S. L., & Stancin, T. (2003). Long-term behavior problems following pediatric traumatic brain injury: Prevalence, predictors, and correlates. *Journal of Pediatric Psychology*, 28(4), 251-263.

- Senel, H. G., & Akkök, F. (1995). Stress levels and attitudes of normal siblings of children with disabilities. *International Journal for the Advancement of Counseling, 18*, 61-68.
- Smith, T. B., Oliver, M. N. I., & Innocenti, M. S. (2001). Parenting stress in families of children with disabilities. *American Journal of Orthopsychiatry, 71*(2), 257-261.
- Smith-Bird, E., & Turnbull, A. P. (2005). Linking positive behavior support to family quality-of-life outcomes. *Journal of Positive Behavior Interventions, 7*(3), 174-180.
- Summers, J. A., Behr, S. K., & Turnbull, A. P. (1989). Positive adaptation and coping strengths of families who have children with disabilities. In G. H. S. Singer, & L. K. Irvin (Eds.), *Support for caregiving families: Enabling positive adaptation to disability* (pp. 27-40). Baltimore, MD: Paul H. Brookes.
- Summers, J. A., Poston, D. J., Turnbull, A. P., Marquis, J., Hoffman, L., Mannan, H., et al. (2005). Conceptualizing and measuring family quality of life. *Journal of Intellectual Disability Research, 49*(10), 777-783.
- Stoneman, Z. (2005). *Siblings of children with disabilities: Research themes*. *Mental Retardation, 43*, 339-350.
- Umbreit, J., Ferro, J. B., Liauspin, C. J., & Lane, K. L. (2007). *Functional behavioral assessment and function-based intervention*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Walton-Moss, B., Gerson, L., & Rose, L. (2005). Effects of mental illness on family quality of life. *Issues in Mental Health Nursing, 26*(6), 627-642.
- Ward, W. D. (1991). *Applied behavior analysis in the classroom: The development of student competence*. Springfield, IL: Charles C. Thomas.
- Wilder, L. K., King-Peery, K., Dyches, T. T., Bowman, P., Tribble, A., & Morse, F. (2002). *Mom, catch me a rainbow: Improving family life for families of children with disabilities by*

*teaching parents to deal effectively with inappropriate behaviors (family studies grant).*

Provo, UT: Brigham Young University.

Williams, P. D. (1997). Siblings and pediatric chronic illness: A review of the literature.

*International Journal of Nursing Studies, 34*, 312-323.

Woolfson, L., & Grant, E. (2006). Authoritative parenting and parental stress in parents of pre-school and older children with developmental disabilities. *Child: Care, Health and*

*Development, 32*(2), 177-184.

Zimmerman, B. J. (1998). Academic studying and the development of personal skill: A self-regulatory perspective. *Educational Psychologist, 33*(2), 73-86.

Zirpoli, T. J., & Melloy, K. J. (1993). *Behavior management: Applications for teachers and parents*. New York: Macmillan Publishing Company.

## APPENDIX A

Limit Setting survey questions from the Parent-Child Relationship Inventory. All questions are rated on a Likert scale: 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

I have trouble disciplining my child.

I have a hard time getting through to my child.

My child is more difficult to care for than most children are.

I sometimes give in to my child to avoid a tantrum.

I wish I could set firmer limits with my child.

My child is out of control much of the time.

I wish my child would not interrupt when I'm talking to someone else.

I often lose my temper with my child.

My child really knows how to make me angry.

I sometimes find it hard to say not to my child.

I often threaten to punish my child but never do.

Some people would say that my child is a bit spoiled.

Parental Support survey questions from the Parent-Child Relationship Inventory. All questions are rated on a Likert scale: 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

When it comes to raising my child, I feel alone most of the time.

I worry a lot about money.

I sometimes wonder if I am making the right decisions about how I raise my child.

I get a great deal of enjoyment from all aspects of my life.

I sometimes feel if I don't have more time away from my child I'll go crazy.

My life is very stressful right now.

I sometimes feel overburdened by my responsibilities as a parent.

I'm generally satisfied with the way my life is going right now.

My spouse and I work as a team in doing chores around the house.