CULTURALLY RESPONSIVE, FAMILY-CENTERED POSITIVE BEHAVIOUR SUPPORT
WITH A TAIWANESE FAMILY OF A CHILD WITH AUTISM IN TWO HOME SETTINGS

by

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ABSTRACT

Many studies have documented the effectiveness of positive behaviour support (PBS) as an empirical approach to supporting families of children with autism who engage in problem behaviour; however, there remains little research to date on supporting families of different cultural and linguistic backgrounds. The purpose of this study was to assess the effects of a culturally responsive, family-centered PBS approach to intervention on child problem behaviour and participation within two valued family routines, for a child with autism in a family of a diverse cultural and linguistic background. A quasi-experimental multiple baseline design across two routines was used to investigate the association between implementation of the intervention approach and child behaviour and routine participation. In addition, qualitative case study methods were employed to help gain a deeper understanding of the family’s cultural perspectives related to the design and implementation of a PBS plan and of the interventionist’s perspectives on providing behavioural services aimed at cultural responsivity. Quantitative results displayed evidence of two basic effects, in that substantial improvement in child behaviour and routine participation occurred at the point of intervention in both the dinner and sibling play routines. Qualitative results revealed five themes important to providing culturally responsive, family-centered PBS to a family of a diverse cultural and linguistic background. Global measures of child and family functioning also provided evidence of further positive outcomes associated with the intervention process, in terms of improvements in child behavioural and emotional functioning, family quality of life and parental stress as reported by the child’s mother, and family cohesion and flexibility as reported by the child’s father. All results are discussed in terms of contributions to the literature, implications for practice, cautions and limitations, and directions for future research.
PREFACE

This research was approved by the Behavioural Research Ethics Board at the University of British Columbia. The certificate number for the ethics certificate is: H11-00623.
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To Levi, as always, I dedicate this to you.
CHAPTER ONE

Introduction

Autism is a pervasive developmental disorder characterized by impairments in verbal and nonverbal forms of communication, abnormalities in reciprocal social interaction, and repetitive and stereotyped patterns of behaviour. It is among the most commonly occurring developmental disabilities, affecting all racial, ethnic, and socioeconomic groups; and the current prevalence in the United States is estimated at an average of 1 in 110 children (Centers for Disease Control and Prevention, 2010). Due to the nature of the associated deficits, problem behaviour in the form of physical and verbal aggression, disruption and non-compliance, and property destruction often result and persist into adulthood if not attended to early on.

A wealth of research now exists documenting the positive effects of early intervention based on the principles of applied behaviour analysis, including early intervention informed by a positive behaviour support (PBS) framework (Carr et al., 1999; Koegel, Koegel, & Dunlap, 1996; Lucyshyn et al., 2007; Smith, 2010; Utley, Kozleski, Smith, & Draper, 2002; Vaughn, White, Johnston, & Dunlap, 2005). However, little of this research to date has been conducted with families of diverse cultural and linguistic backgrounds. As the North American population becomes increasingly diverse, interventionists are more frequently required to provide behavioural services to these families. This is of particular concern due to the fact that families from non-dominant cultures often face three layers of difficulty during early intervention services, including cultural barriers, possible linguistic barriers, and uncertainties regarding their child’s disability and future level of functioning (Wilder, Dyches, Obiakor, & Algozzine, 2004).

Despite the growing cross-cultural diversity in North America however, relatively little is known about the effects of cultural and linguistic diversity on intervention service provision,
particularly in the context of family-centered, positive behaviour support services (Chen, Downing, & Peckham-Hardin, 2002; Wang, McCart, & Turnbull, 2007). Present and future research in this area is therefore critical, if providers of PBS are to become truly responsive to cultural and linguistic differences within families such that intervention outcomes for the child and family are maximized and maintained over the course of a lifetime.

**Positive Behaviour Support**

Positive behaviour support (PBS) is both an applied science and a collaborative assessment-based intervention approach that uses behavioural, educational and systems change methods to ameliorate problem behaviour and increase quality of life (Carr et al., 1999; Lucyshyn, Horner, Dunlap, Albin, & Ben, 2002). In particular, *positive behaviour* refers to the set of behaviours and skills that serve to increase success and personal satisfaction in valued home and community settings; the term *support* includes all behavioural and educational methods that improve or enhance positive behaviour as well as all systems change methods that increase opportunities to display such behaviour (Carr et al., 2002). As the science of PBS has evolved, there has been a shift in focus beyond reducing problem behaviour to increasing quality of life for all key stakeholders involved (Clarke, Worcester, Dunlap, Murray, & Bradley-Klug, 2002; Snell, Voorhees, & Chen, 2005). Thus, the implementation of PBS now has the potential to affect entire systems of people (i.e., families, schools, communities) in a manner that is comprehensive, meaningful, and sustainable.

As a philosophical practice, PBS has emerged from three major sources: (a) applied behaviour analysis, (b) the normalization/inclusion movement, and (c) person-centered values. The first of these, applied behaviour analysis, has contributed to PBS both a conceptual framework relevant to behaviour change, as well as evidence-based strategies for assessment and
intervention (Carr et al., 2002). For example, the process of functional assessment; the strategies of prompting, chaining, and fading; and the concepts of generalization and maintenance, derive solely from the science of applied behaviour analysis (Carr et al.).

The second source, the normalization/inclusion movement, has provided PBS with the ideal that all people with disabilities are entitled to the same opportunities as others, in terms of home, school, employment, and community participation (Carr et al., 2002). For example, the concept of social role valorization, which stresses the need for individuals to assume valued social roles in order to increase the likelihood of being accorded the same respect and share of resources as others (Wolfensberger, 1983; as cited in Carr et al.), has been influential in promoting the significance of improving quality of life during a process of PBS.

The final major source underpinning PBS philosophy is person-centered values, which puts forth the idea that science may tell us how to change things, but values tell us what is worth changing (Carr, 1996). In this simple statement, the technological contributions from applied behaviour analysis are merged with the values contributions from the normalization/inclusion movement, to produce a values-driven, technologically sound practice in which the individual is situated in the center of a systems change process. This, in essence, is the science of PBS.

Within PBS, there exist a number of features which are critical to upholding its philosophy. First and foremost, the focus of PBS rests on achieving comprehensive lifestyle change for the target individual as well as those who support them (Carr et al., 2002). In this way, the reduction or elimination of problem behaviour is viewed as a secondary goal, while improvements in social functioning, personal satisfaction, and self-determinism as well as other community-based skills, are seen as the primary objectives.
In order for PBS to truly improve quality of life, however, several other features are necessary. For example, PBS takes a lifespan perspective, which views intervention as a continual process in which challenges and transitions will continue to arise (Carr et al., 2002). As well, PBS as a science is concerned with both ecological and social validity, in that all strategies are applicable to real-life contexts and valued by relevant stakeholders, in terms of producing meaningful behavioural and lifestyle changes (Carr et al.). Furthermore, stakeholders are viewed not as passive recipients of intervention procedures, but instead as active participants throughout the course of intervention (Carr et al.). Thus, through collaboration with relevant stakeholders including family members, teachers, friends, and other professionals, who work together to implement a multicomponent intervention package, meaningful increases in quality of life can be established and maintained for the system as a whole.

Aside from the direct focus on increasing quality of life, PBS places a more general emphasis on the use of preventative strategies (Carr et al., 2002). For example, by altering deficient environmental conditions and intervening on problem behaviour before it occurs, PBS practitioners seek to engineer change before a challenging situation can arise (Carr et al.; Carr, 2007). For children with autism, this may be especially crucial, as impairments in communication often result in the use of problem behaviour that continues on into adolescence and adulthood.

From a theoretical standpoint, two final features have been critical to the formation of PBS as a science. First, researchers in the PBS discipline maintain a stance of methodological flexibility with respect to research practices, in that qualitative forms of data, including interviews, logs, and self-report measures, have been gathered alongside quantitative forms of data (Carr et al., 2002). In doing so, the science of PBS has maintained its ecological validity and
sidestepped the potential danger of narrowing the research lens toward isolated fragments of behaviour. Second, the amalgamation of multiple theoretical perspectives, including ecological, environmental, and community psychology, has allowed for a broad-minded approach to helping individuals and systems in need of support (Carr et al.).

All together, the features described above have shaped the theoretical underpinnings and functional practice of PBS, such that its applicability has been extended to new populations, intervention agents, behaviours, and contexts (Binnendyk & Lucyshyn, 2009; Clarke, Dunlap, & Vaughn, 1999; Clarke et al., 2002; Lucyshyn, Albin, & Nixon, 1997; Lucyshyn et al., 2007; Vaughn, Clarke, & Dunlap, 1997; Vaughn, Wilson, & Dunlap, 2002; Wang et al., 2007). For example, PBS has now been applied in home, school, and community settings; and intervention strategies have been employed by professionals, parents, and teachers alike, with challenging behaviour ranging from mild to severe.

**Epistemological Framework**

There exists a rich history of literature pertaining to culturally responsive practices within the field of special education and service provision (Danesco, 1997; Harry, 1997; Hanson, Lynch, & Wayman, 1990; Kalyanpur & Harry, 1999). Recently, practitioners of PBS have begun to consider how these practices may be incorporated into a PBS framework; however, to date there remains little to no empirical demonstration of this integration. In understanding why this gap remains between theory and practice, it is useful to consider the epistemological frameworks that researchers have adopted to promote their respective areas of knowledge. For example, in regard to culturally responsive service provision, methodology has remained largely qualitative in nature, due in part to the extensive history of ethnographic research in the field of cultural anthropology (e.g., Boas, 1911; Mead, 1935). In contrast, research on PBS has been largely
quantitative in nature, including in particular, the use of single-subject research methodology (Binnendyk et al., 2011; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991; Lucyshyn et al., 1997; Luiselli, 2008; Vaughn, Clarke, et al., 1997; Vaughn, Dunlap, Fox, Clarke, & Bucy, 1997). Given the divergent nature of the research methods that have been adopted by experts in these two areas of knowledge development, it is only natural that the conversation has just begun between members in both areas. As the field of special education moves forward, therefore, and behavioural services are provided to increasingly diverse populations, the need for research and practice that combine both types of methodology and bring together these two complementary areas of intervention research has become more critical than ever (Wang et al., 2007).

For example, to date PBS-based studies have used quantitative dependent measures such as time engaged in disruptive versus on-task behaviour, number of steps completed in a target routine, latency until termination of a routine, and implementation fidelity (Binnendyk & Lucyshyn, 2009; Buschbacher, Fox, & Clarke, 2004; Clarke et al., 1999; Clarke et al., 2002; Lucyshyn et al., 2007; Moes & Frea, 2000; Vaughn et al., 2002). Furthermore, quantitative assessment of supplemental variables such as social validity, goodness-of-fit, and quality of life, is almost unanimous across researchers, despite the fact that these variables lend themselves to a deeper level of qualitative analysis through the use of semi-structured interviews or written logs. One exception to this pattern is a recent article written by Vaughn and colleagues (2005), in which they describe a case example showing the indirect benefits of family-centered PBS on the lives of family members and teachers for a child with challenging behaviour. The authors used informal assessments and observations to assess reductions in child problem behaviour as well as improvements in quality of life for all stakeholders involved. Despite this exception, however, PBS intervention research remains strongly aligned with quantitative methodology.
In contrast, literature focused on culturally responsive service provision outside of the PBS paradigm has been mostly qualitative or ethnographic in nature (Cho, Singer, & Brenner, 2000; Danesco, 1997; Garcia, Mendez Perez, & Ortiz, 2000; Hanson et al., 1990; Harry, Allen, & McLaughlin, 1995; Rodriguez & Olswang, 2003). This is not surprising given that culture is a type of subjective qualitative knowledge, which naturally requires a methodology that is flexible and capable of subjective analysis. Furthermore, there has been a longstanding tradition in North American cultural anthropology in which ethnographic methods of participant observation and semi-structured interviewing were originally developed and implemented (Boas, 1911; Mead, 1935). Therefore, the application of ethnographic methodology to culturally responsive service provision has been accepted as the natural course of investigative practice.

Much of the research focusing on cultural responsivity has centered around qualitative descriptions of differences in child-rearing and disciplinary practices, expectations for behaviour, and perspectives on the source of disability (Anderson & Fenichel, 1989; Chen et al., 2002; Danesco, 1997; Forehand & Kotchick, 1996; Garcia et al., 2000; Groce & Zola, 1993; Hanson et al. 1990; Wang et al., 2007; Wayman, Lynch, & Hanson, 1991). In addition, several studies have relied on ethnographic interview data from professionals, parents and other key stakeholders, as a means of assessing cultural differences in parenting practices (Harry et al., 1995; Rodriguez & Olswang, 2003), adaptations made for children with disabilities (Cho et al., 2000), family interviewing methods (Dennis & Giangreco, 1996), and parent-professional collaboration (GeGangi, Wietlisbach, Poisson, Stein, & Royeen, 1994). In regard to culturally responsive PBS, Utley and colleagues (2002) provided a rich description of ways in which multicultural education and culturally influenced social behaviours can be incorporated into PBS programs; however, they provide no empirical verification for the effectiveness of their proposed strategies.
Despite the significant divide between quantitative PBS-based research and qualitative culturally-based research, there is some promise that a marriage between the two methodologies might yet occur, which would facilitate the development of an empirically-informed understanding of culturally responsive PBS practices. If this marriage is to occur, however, such that the strengths of quantitative analysis relevant to many behavioural variables can truly complement the strengths of qualitative analysis relevant to contextual and cultural fit, a practical approach must be taken toward combining the methodologies into a multi-method research design that addresses both quantitative and qualitative questions about culturally responsive PBS delivery.

Morgan (1998) described the use of a priority-sequence model, in which qualitative and quantitative methodologies are combined on the principle of complementarity in an effort to integrate corresponding strengths through a division of labour. In this model, a researcher begins by making a decision about which methodology will hold priority above the other, thus acting as the principal method. Once a decision has been made, a second decision regarding the sequencing helps to determine whether the secondary method will serve as a preliminary or a follow-up to the principal method. Thus, four basic research designs are possible: (a) principal quantitative with preliminary qualitative methods (qual → QUANT); (b) principal quantitative with follow-up qualitative methods (QUANT → qual); (c) principal qualitative with preliminary quantitative methods (quant → QUAL); and (d) principal qualitative with follow-up quantitative methods (QUAL → quant). Although this is only one approach to combining methodologies, Morgan emphasized the practical nature of this model, further stressing the importance of using the goals of the given research design as a guide for all methodological decisions. As well, Morgan noted that while the option of giving both methods equal priority is always available, it
is inadvisable to do so in most cases, given the question of how to coherently analyze such a combination of data.

Few studies addressing culturally responsive intervention have included the use of both types of methodologies. Fox, Vaughn, Dunlap, and Bucy (1997) made use of both types of analysis in a community-based, family-centered approach to PBS for a child with challenging behaviour; however, the resulting article included only qualitative analyses, while quantitative results were published separately in a companion article (Vaughn, Dunlap et al., 1997). Furthermore, there was no cultural focus to either set of analyses; therefore, it stands alone as a variant type of multi-method study on PBS. In a more recent article written by Wang et al. (2007), researchers addressed four key features of the PBS process in the context of providing suggestions for culturally responsive PBS to Chinese American families. In particular, although no empirical analyses were conducted, the investigators stressed the need for future research in both qualitative and quantitative domains in order to address the lack of empirical data supporting “culturally fitting” PBS practices.

In an answer to this call for research, a recent study conducted by Cheremshynski et al. (2011) served as the first example of combining qualitative and quantitative methodologies within a multi-method research design that focused on culturally responsive PBS. In this study, quantitative single-subject methods were employed to document a functional relation between implementation of a PBS plan and improvement in child behaviour, while qualitative methods complemented these findings by providing a rich description of the parent’s and interventionist’s perspectives throughout the process. This study provides a direct example of successfully combining two divergent methodologies, and serves as a starting point for future research involving the use of culturally responsive PBS.
Implementing Positive Behaviour Support in the Home

The implementation of PBS is influenced strongly by the context in which it is being used. While research continues to produce encouraging findings surrounding the use of PBS in school and community settings (Carr & Carlson, 1993; Carter & Norman, 2010; Dunlap et al., 1991; Sugai & Horner, 2010), recent research has expanded to include a focus on the implementation of PBS in natural family contexts (Binnendyk & Lucyshyn, 2009; Clarke et al., 1999; Lucyshyn et al., 2002; Moes & Frea, 2000; Moes & Frea, 2002; Vaughn, Clarke, et al., 1997; Vaughn et al., 2002). This motivation for family-centered PBS stems largely from the idea that the family serves as the child’s most valuable and durable resource; and in particular, is vitally important to the development, education, and behavioural support of a child with a disability (Lucyshyn et al.). Furthermore, PBS holds the view that parents and caregivers are experts when it comes to their child’s strengths, challenges, preferences, and learning history, in addition to the overall culture and ecology of the family (Chen et al.).

Beyond the role that the family serves in the life of the child, however, it is important to understand the impact of the child’s behaviour on the life of the family. For example, many children with autism continue to engage in problem behaviour to meet their needs long after the point at which typically developing children have developed other more acceptable means of getting their needs met. This long-term problem behaviour can result in a diminished quality of life for the child, given the natural loss of learning opportunities, social interaction, and community involvement (Lucyshyn et al., 2002). In addition, however, the family as a whole may suffer as daily routines and activities are disrupted, participation in the community decreases, and relationships become restricted or strained (Fox et al., 1997; Lucyshyn et al.; Moes & Frea, 2000; Moes & Frea 2002; Vaughn et al., 2002). Given the detrimental effects of
child problem behaviour on family quality of life, there is a tremendous need for PBS services that are family-centered.

In particular, Lucyshyn et al. (2002) have highlighted the importance of the following features of PBS that are critical to the success of family-centered implementation: parent-professional collaboration, family-centered principles, meaningful lifestyle outcomes, functional assessment, multicomponent intervention packages, contextual fit, activity setting as a unit of analysis, implementation support, continuous evaluation, and support with humility. These features are discussed in greater detail below.

Family-centered principles and practices guide the implementation of PBS in family contexts. Specifically, practitioners aim to build on family strengths, employ empowering techniques, maximize the use of available resources, and provide support in a flexible and responsive manner (Lucyshyn et al., 2002). In doing so, the goal is to take advantage of every asset the family has to offer, while simultaneously infusing the strengths of the service provider, such that an optimal outcome can be reached for the child and family. As well, by using the family ecology as a foundation for contextualized support, research has shown that meaningful lifestyle outcomes are more likely to result due to the increased acceptability, feasibility, and sustainability of the intervention components within child and family contexts (Albin, Lucyshyn, Horner, & Flannery, 1996; Lucyshyn et al., 1997; Lucyshyn, Kayser, Irvin, & Blumberg, 2002; Moes & Frea, 2000; Moes & Frea, 2002; Santarelli, Koegel, Casas, & Koegel, 2001). In particular, researchers noted that a behaviour support plan that possesses good contextual fit is more likely to be viewed as acceptable and important to the family, implemented with fidelity, and used over a long period of time (Buschbacher et al., 2004; Lucyshyn et al.; Vaughn et al., 2005). Moes and Frea (2000) also noted that the use of a contextualized support plan may
facilitate the process of generalization, as the child learns to expand the use of skills across all relevant environments and stimuli. The challenge, therefore, is to develop a support plan that is not only technically sound in its use of behavioural principles, but also consistent with the values and beliefs of the family and compatible with the features and culture of the environment (Albin et al.).

In addition to family ecology, parent-professional collaboration is viewed as essential to a comprehensive, family-centered PBS approach (Dunlap & Fox, 1999; Lucyshyn et al., 2002; Vaughn, et al., 1997). Lucyshyn et al. define a collaborative partnership as:

The establishment of a truly respectful, trusting, caring, and reciprocal relationship in which interventionists and family members believe in each other’s ability to make important contributions to the support process; share their knowledge and expertise; and mutually influence the selection of goals, the design of behavior support plans, and the quality of family-practitioner interactions. (pp. 12)

In a truly collaborative partnership, Turnbull and Turnbull (2001) noted that the dichotomy that exists between the professional and parent is transformed into a state of equality in which both parties offer complementary knowledge, solve problems and create meaningful lifestyle outcomes. The practical decision, however, of how much responsibility each party will hold, and the extent to which parents and caregivers will influence each component of intervention design and implementation, depends entirely on the individual family and their particular situation.

The ability of families and professionals to collaborate with one another, and the resulting benefits that ensue, have been documented extensively in recent intervention-based literature (Buschbacher et al., 2004; Cheremshynski et al. 2011; Fox et al. 1997; Lucyshyn et al., 1997; Vaughn, Dunlap, et al., 1997). For example, Lucyshyn et al. (2002) noted that in-depth
knowledge of the child and family is more likely to be acquired by practitioners during initial assessment activities if family members feel that a sense of trust and equality has been established. This information, in turn, is essential to creating an effective and contextually appropriate behaviour support plan and ultimately improving child and family quality of life. As well, Buschbacher and colleagues found that collaboration with the parents of a child with severe problem behaviour throughout a process of assessment and intervention implementation was associated with durable reductions in aggressive behaviour and increases in prosocial behaviour across three valued family routines. Finally, Vaughn and colleagues were successful in decreasing the problem behaviour of a young boy with Cornelia DeLange Syndrome across three community-based family routines, while simultaneously increasing positive parent-child interactions. Of significance was the particular emphasis placed on the added benefits of parent-professional collaboration, which in this case was associated with durable improvements in the family’s ability to participate in routines outside of the home.

One key aspect to developing behaviour support plans within the family ecology, in collaboration with key stakeholders, is to embed intervention components within valued family routines such that the implementation of intervention strategies feels natural to all family members (Lucyshyn et al., 2002). In the PBS literature, the term activity setting is synonymous with the term valued family routine. Implementers of family-centered PBS often use the activity setting as the unit of analysis around which intervention is based (Lucyshyn et al., 2002). Examples of activity settings within the home may include mealtimes, morning routines before school, evening routines before bedtime, visits with family members or friends, and independent playtime while caregivers are busy.
The importance of the activity setting as a unit of analysis stems from the idea that each activity setting represents a microcosm of family ecology, and that addressing problem behaviour in the context of an activity setting increases the likelihood that intervention strategies will be acceptable to the family, implemented with fidelity, and sustained over time (Lucyshyn et al., 2002; Moes & Frea, 2000). In addition, Gallimore (2005) noted that by analyzing an activity setting in terms of the people involved, the tasks required, the goals of the activity, and the nature of the resulting interactions, it becomes possible to assess ways in which a setting might be changed in order to ultimately change the behaviour within it. This is consistent with the PBS approach, which seeks to change problematic environments rather than characteristics of the person. Furthermore, Gallimore suggested that all activity settings are influenced by cultural feature, and that no matter how objectively defined a routine may be, there will always be a subjective component involved because of the cultural lens through which settings are viewed.

Recent research has shown the benefits of working within the context of activity settings, including: (a) the ability to simultaneously address child problem behaviour and family goals, as well as to facilitate cultural and contextual fit; (b) the practical manner in which it helps caregivers to support their child in the midst of other regular functions of family life; and (c) the benefits that accrue from changing a problematic routine into a successful routine, which reinforce caregivers for their efforts and promote the use of support strategies in other contexts (Lucyshyn et al., 1997; Lucyshyn et al., 2007; Moes & Frea, 2000; Moes & Frea, 2002).

The positive changes achieved through collaborative, routine-based PBS situated within family ecology are difficult to sustain, however, without the provision of support that allows family members to implement all behavioural strategies on their own (Clarke et al., 1999; Lucyshyn et al. 2002; Moes & Frea, 2000; Vaughn, Clarke, et al., 1997). For example, Lucyshyn
et al. noted that an implementation plan, which includes a summary of roles and responsibilities as well as a time-line for completing all training and support activities, can be helpful in achieving long-term maintenance of plan implementation by relevant stakeholders. In addition, continuous evaluation of intervention outcomes, as well as modifications to the existing plan, are often necessary for sustaining successful outcomes across the lifecycle of the child and family (Lucyshyn et al.). Regardless of how much support a family requires, it is important to remember that the goal of intervention is always to transfer control to the family, such that they are empowered to successfully support their child with autism in any situation, whether it be within or outside of the home.

**Diversity and Disability**

One aspect that has been largely ignored in the extant family-centered PBS literature is that of cultural responsivity, despite the fact that the concept of cultural fit is implied within the very nature of PBS. For example, the ideas of contextual and ecological fit implicitly include the notion of accounting for differing cultural variables. Furthermore, the idea of embedding intervention in valued family routines and providing continuous individualized support requires that the culture of the family be taken into account when defining target settings. Nevertheless, although PBS has become established as an effective means for supporting families of children with autism who engage in problem behaviour in family contexts, there remains little to no research to date on behavioural support to families of different cultural backgrounds (Chen et al., 2002; Wang et al., 2007).

The need for interventionists to consider the effects of culture on family-centered service provision becomes apparent when we consider the growing diversity of the United States and Canada. For example, as of 2006, 34.2% of the total population of the United States was reported
as having diverse cultural backgrounds (United States Bureau of the Census, 2006), with Hispanics (14.4%) and African-Americans (13.4%) making up the largest part of this population. In Canada, meanwhile, as of 2006, reports indicated that 20% of the total population was of diverse cultural backgrounds, with Asians constituting 10%, Aboriginals 3.8%, African-Americans 2.5%, and Latin Americans 1% (Statistics Canada, 2006). Furthermore, projections by Statistics Canada (2010) predict that by 2031, over 25% of the population of Canada could be foreign-born, with approximately 30% of Canadians belonging to a visible minority, and a vast majority of this population living in major metropolitan areas such as Toronto, Vancouver and Montreal.

Finally, it is reasonable to assume that a disproportionately large percentage of children from these groups will require early intervention programs given the economic and linguistic barriers many families face as well as the resulting decrease in opportunities available to their children (Hanson et al., 1990; Harry, 1992). This trend has already become apparent in the United States, in which African-American and Hispanic children are highly overrepresented in special education (Turnbull & Turnbull, 2001). In contrast, however, research has shown that the majority of educators are Caucasian (Banks, 1994; as cited in Dennis & Giangreco, 1996), which poses a particular challenge to the fields of special education and early intervention in that cultural differences are likely to become the norm between service providers and the families with whom they work. Thus, the need for culturally responsive, family-centered service provision has become increasingly apparent for children with disabilities in general, and for children of diverse backgrounds living in highly populated, diverse cities in particular.
The Effects of Culture on the Family System

Before culturally responsive intervention can become an effective reality, it is necessary to consider the effects of culture on an individual and family-systems level. Chen et al. (2002) argued that all behaviour is influenced by culture and context. In particular, they stated that culture, in addition to upbringing and community, molds one’s values, desires, and interactions; and that consideration of the appropriateness of behaviour depends on both the situation and its expectations (Chen et al.). For example, behaviour that may be considered appropriate and encouraged in one family, such as carrying on a conversation while eating dinner, may be deemed disrespectful in another. Furthermore, members of a mainstream culture may be particularly likely to pass judgment on the behaviour of others when it is seen as deviant, without pausing to consider the underlying cultural context in which it may be based. Given, therefore, that most service providers in North America belong to the mainstream American culture, it is imperative that a culturally sensitive approach to intervention be taken so as to avoid potentially misguided evaluations of behaviour that may, within the context of the family, be viewed as appropriate (Utley et al., 2002).

The first step toward understanding the effects of culture on the perspectives of both the family and the interventionist is to consider its various dimensions. Specifically, cultural identity is comprised of many factors, including ethnicity, race, gender, socioeconomic status, religion, age, language, geographic location, and other personal variables (Anderson & Fenichel, 1989; Gollnick & Chinn, 1994; Turnbull & Turnbull, 2001). In particular, to view culture as being restricted to any one combination of these factors is to neglect the fact that culture is dynamic by its very nature (Danesco, 1997; Kalyanpur & Harry, 1999; Turnbull & Turnbull). Thus, an individual may associate with many ‘cultures’ in his or her lifetime, depending on the situation.
and individuals present; and any one cultural framework must be viewed as a set of possibilities from which all behaviour emerges (Anderson & Fenichel). For example, a young Japanese woman in college may at first consider her cultural identity as being largely defined by her gender, race, and the school which she attends; while several years later, after giving birth to a son with Down Syndrome, she may feel her cultural identity has shifted to reflect her new status as a parent of a child with a disability. As illustrated by this example, some characteristics of culture are primary – that is, individuals are born with them and cannot change them easily, while other factors are secondary and transform over the course of a lifetime. Differences between family members and service providers along any one dimension can create barriers to implementation if not acknowledged and dealt with appropriately (Chen et al.).

Once an understanding of cultural identity has been reached at the individual level, further understanding of its effects on the family system can be highly beneficial for an interventionist working toward cultural responsivity within his or her practice. Perhaps the most well-documented effect that culture has on a family is on its structure, that is, whether the family is nuclear or extended in nature (Anderson & Fenichel, 1989; Chen et al., 2002; Groce & Zola, 1993; Hanson et al., 1990; Turnbull & Turnbull, 2001). For example, nuclear structures, in which only the immediate family members tend to comprise the central decision-making unit, are highly typical of Anglo-European American families, while extended or multigenerational structures are more characteristic of traditional Hispanic, Asian, Middle Eastern, African American, and Native American families (Groce & Zola; Hanson et al.). Furthermore, culture has been noted to influence the roles and responsibilities which are assigned to each family member, such as whether both parents are expected to work, whether mothers are responsible for domestic functions, and whether children are expected to help rear younger siblings (Chen et al.;
Hanson et al.). These cultural dimensions and structural aspects of the family are highly influential in determining the level of involvement that family members wish to achieve during a process of intervention as well as the type of relationship they wish to forge between themselves and service providers (Chen et al.; Hanson et al.).

One particularly illustrative example of the ways in which culture affects the values, beliefs, roles and responsibilities of family members within North America is the emphasis society places on independence and the belief in one’s ability to directly control oneself as well as the surrounding environment (Hanson et al., 1990; Kalyanpur & Harry, 1999). The implications of this direct approach are rarely acknowledged; however, they are reflected in the educational practices of early intervention in North America (Kalyanpur & Harry; Lynch & Hanson, 1992), and thus they have become an issue for the diverse set of families affected by such service provision. For example, many cultures aim toward a posture of interdependence between family members, in that the extended family is seen as the primary support system for each individual within, and family members are expected to rely upon one another in order to satisfy all basic needs (Chen et al., 2002; Hanson et al.). Thus to encourage a child’s independence from parents and other caregivers at a young age may be viewed as inappropriate by the family, in light of the cultural differences that exist toward the issue of independence. This, as well as other such “cultural clashes” can again result in barriers toward effective implementation and collaborative partnerships (Hanson et al.).

Although cultural awareness and sensitivity are important, there is one major caution that must be exercised by all interventionists wishing to establish a culturally respectful relationship with a family. Namely, it is important to distinguish between cultural sensitivity and cultural stereotyping. For example, as Anderson and Fenichel (1989) described, “there is no generic
entity which may be dubbed “the Southeast Asian family,” “the Native American family”, or “the European American family.” (p. 8). Instead, individual families, no matter what their ethnic background or cultural affiliations, will always abide by a slightly modified set of cultural beliefs and values. Furthermore, families within a particular culture will be found to lie along a continuum from traditional to fully bicultural (Anderson & Fenichel; Kalyanpur & Harry, 1999; Lynch & Hanson, 1992). Therefore, it is imperative that each family be approached as an individual entity with unique patterns of behaviour guided by similarly unique systems of belief (Wayman et al., 1991).

The Effects of Culture on the Approach to Disability

The effects of culture on the family system are especially apparent for families raising a child with a disability. Research has shown that the culturally-defined values, desires, and beliefs of a family are reflected in practical issues such as child-rearing practices, expectations for appropriate behaviour, methods of discipline, and the perspective taken toward disability as a whole (Anderson & Fenichel, 1989; Chen et al., 2002; Cho, Singer, & Brenner, 2000; Danesco, 1997; Garcia et al., 2000; Groce & Zola, 1993; Kalyanpur & Harry, 1999; Hanson et al., 1990; Rodriguez & Olswang, 2003). As service providers begin to work with families of differing cultural and linguistic backgrounds, the need to understand these underlying beliefs becomes essential if interventions are to possess ecological and cultural fit, such that meaningful lifestyle outcomes can be achieved for the child and family. Thus, after considering the effects of disability on the family system in general, the next step toward culturally sensitive intervention is to consider the effects of culture on the family’s approach to disability.

Of concern initially is the family’s view of disability and the beliefs they hold regarding its source or causation. As Anderson and Fenichel (1989) noted, “our basic definitions of
disabilities are cultural constructs, as are the deeper meanings we assign to disabilities” (p. 10); therefore, any attitude taken toward treatment for that disability will also reflect underlying cultural constructs. For example, for members of mainstream western culture, a common approach typically includes a belief in the physical causation of disability; that is, that disabilities are a product of genetic and environmental factors (Kalyanpur & Harry, 1999). In addition, early intervention is often concerned with identifying treatments that will allow the child to function as independently and ‘normally’ as possible (Hanson et al., 1990). This approach rests on the underlying assumption that change is possible and that the outcome for a child with a disability can be controlled; however, many families of nonwestern cultures do not take this same approach, and these differences in beliefs can derail even the most rigorous intervention plans if they are not well understood by service providers.

For example, many cultures stress the role of fate in determining a child’s outcome, and the idea of overcoming or escaping that fate is replaced instead with the notion of accepting it and working toward harmony in the present lifetime (Danesco, 1997; Green, 1982; Wayman et al., 1991). In other cultures, disability may be attributed to a person’s misfortune or to a divine plan that would ultimately benefit both the child and the family, and as such the individual remains free from the blame and guilt that is often associated with having a disability (Cho et al., 2000; Hanson et al., 1990). In other cultures still, a child’s disability may be viewed as punishment for past transgressions or sins of the parents or ancestors, and thus the family is believed to be largely accountable for the disability (Anderson & Fenichel, 1989; Groce & Zola, 1993). This approach is particularly common of Asian and Pacific-American families, as well as some Anglo families, and is often associated with great shame and stigma for the family as a whole (Anderson & Fenichel; Cho et al.; Wayman et al.). Regardless of the metaphysical cause,
the underlying assumption that change is possible may no longer hold true for some families, and these beliefs may influence their expectations for how the child should behave, the intervention goals they set for the child, and their participation in PBS service provision (Chen et al., 2002; Danesco).

With respect to expectations for child behaviour, the belief in the source of the disability, and the accompanying placement of responsibility within or outside of the child, may be highly influential in determining the opportunities available to that child as well as the boundaries for appropriate and desired behaviour. For example, Groce and Zola (1993) noted that in many societies, it is seen as unacceptable to make adults with disabilities work outside of the home; therefore, as children they are often exposed to correspondingly fewer opportunities for social participation in the community. As well, many cultural differences exist between expectations for appropriate behaviour for all children, independent of disability (Chen et al., 2002); therefore, service providers who find themselves unsure of whether a child with a disability is being treated unfairly within a family may benefit from observing interactions between the caregivers and their other nondisabled children.

One common example of this includes the tendency of Mexican-American mothers to value conformity and kindness versus the emphasis many American mothers place on self-direction and independence (Hanson et al., 1990; Rodriguez & Olswang, 2003). Thus, while voicing an opinion in an adult conversation may be punished by family members of one child, the same behaviour in a different family may be supported or even rewarded. The behavioural goals for children from differing cultural backgrounds may look different, therefore, regardless of whether or not they have a disability.
Child-rearing practices differ depending on the cultural background and belief system of the family, and unacknowledged differences between family and intervention practices may result in barriers to family-professional collaboration as well as reduced outcomes for the child (Chen et al., 2002; Kalyanpur & Harry, 1999). In particular, families may differ in their interactional style, with some caregivers assuming a strict posture while others choose to remain more relaxed and informal. Similarly, while for some cultures it is quite common for parents to act as sole caregivers to their children, in many others the supervision of children may fall to siblings, grandparents, and other members of the extended family (Anderson & Fenichel, 1989). Furthermore, the age at which children are expected to achieve independence in certain tasks and ultimately move away from home may vary widely from culture to culture (Anderson & Fenichel; Hanson et al., 1990). Finally, the use of a regimented schedule, typical of many American and Asian families, may be deemed irrelevant and even inappropriate in comparison to cultures that focus on natural biological rhythms (Chen et al.). These as well as other differences in child-rearing approaches must, therefore, be assessed and understood by service providers if intervention is to proceed in a culturally sensitive manner.

One important aspect of child-rearing concerns the use of discipline. Specifically, families differ not only in their views of appropriate and desired behaviour, but also in the forms of punishment they use for those behaviours they wish to discourage (Chen et al., 2002; Kalyanpur & Harry, 1999). For example, some families may resort mostly to guilt, shaming or loss of privileges, while others may deem spanking and other forms of physical punishment as acceptable and necessary. Thus, what might be considered abusive or unacceptable by one culture may be viewed as loving and dutiful by another (Kalyanpur & Harry). Service providers will need to identify a family’s individual practices in order to inform the development of a PBS
plan and possibly discuss alternatives in the event that disciplinary approaches do not coincide (Chen et al.).

**Cross-Cultural Competence**

The effect of culture on families, their values, beliefs, and behaviours, is unquestionably substantial; and the need for culturally responsive service provision has become more apparent than ever given the present diversity of North American society. Yet the question remains: How do we provide culturally responsive services? Interventionists and special educators alike agree that, first and foremost, such service provision requires the development of cross-cultural competence (Chan, 1990; Chen, Brekken, & Chan, 1997; Chen et al., 2002; Lynch & Hanson, 2004; Prater, Wilder, & Dyches, 2008; Santarelli et al., 2001; Turnbull & Turnbull, 2001). In particular, Cross and colleagues (1989), as cited by Cheremshynski et al. (2011), define cultural competence as a set of congruent behaviours, attitudes, and policies that come together in a system, agency, or among professionals and enables that system, agency or those professionals to work effectively in a cross-cultural situation. Lynch and Hanson described three essential components required for the development of cross-cultural competence: (a) awareness of one’s own culture; (b) knowledge specific to the target family’s culture; and (c) the ability to apply cultural knowledge and develop skills necessary to successfully work with the family. By developing cross-cultural competence, and approaching each family with compassion and knowledge, service providers may be able to succeed in implementing a culturally sensitive and responsive process of intervention that will likely occur during an emotionally trying time in the family’s life.

Before exploring the elements of cross-cultural competence, however, it is necessary to first consider the importance of such a process as well as the wider applications of cultural
responsivity. For example, North American demographics are changing to reflect a more multicultural society. Coupled with the enactment of laws such as U.S. PL 108-446 (Individuals with Disabilities Education Improvement Act of 2004), in which emphasis is placed on collaborative partnerships between families and professionals, the obligation increases for service providers to become aware of cultural differences and the ways by which participation in intervention may be affected (Lynch & Hanson, 2004). Furthermore, outside of the field of special education, an extensive body of research exists documenting the importance of the cultural sensitivity of professionals on family and individual use of therapeutic, mental health, psychological, and child-care services (Lynch & Hanson; Sue, Zane, Nagayama Hall, & Berger, 2009). For example, inattention to cultural and linguistic details has been associated with substantial underuse of mental health services by Asian Americans and Pacific Islander Americans in particular (Hernandez, Isaacs, Nesman, & Burns, 1998). Therefore, the development of cross-cultural competence is vital to the provision of many types of social services, and should be approached with an appropriate level of respect and appreciation.

The first step toward achieving cross-cultural competence is the development of self-awareness, and in particular, awareness of one’s own culture (Chan, 1990; Lynch & Hanson, 2004; Turnbull & Turnbull, 2001). As the process begins, Lynch and Hanson noted that as interventionists “we must lower our defenses, take risks, and practice behaviours that may feel unfamiliar and uncomfortable. It requires a flexible mind, an open heart, and a willingness to accept alternative perspectives” (p. 35). Although culture is all around, filling in the gaps between one experience and the next, it is not unusual for individuals to be unaware of its effects on their behaviour, customs, values, and beliefs. Particularly for members of a mainstream society, the cultural underpinnings of education, employment, and family life may go completely
unnoticed as the vast majority of individuals subscribe to the same values and customs. For example, Hanson et al. (1990) noted that one fundamental barrier many service providers encounter is the inherent cultural bias underlying the policies of the intervention program they serve. Thus the development of self-awareness becomes essential if sensitivity toward differences between cultures is going to arise.

This process begins with an exploration of one’s own heritage (Lynch & Hanson, 2004). This may include an investigation of one’s family’s place of origin, time of immigration, reason for immigration, spoken languages, and identification of aspects of one’s cultural identity, amalgamated from both the original and new cultures. Furthermore, an understanding of the values and customs which characterized the first immigrants of the original culture, as well as some understanding of subsequent generations, may enrich the awareness gained from such exploratory research. In the end, understanding one’s roots serves as the first step toward determining how culture has shaped our personal ways of thinking and behaving; and from here, the process of discovery and examination can proceed, in an attempt to understand ourselves on a deeper level (Hanson & Lynch).

Once a meaningful level of self-awareness has been developed, the next step is to develop awareness of the cultural perspectives of the family with whom intervention is planned (Chan, 1990; Lynch & Hanson, 2004). The information gained during this stage serves as a framework of possibilities to consider as cross-cultural interactions take place (Lynch & Hanson). More specifically, there is no recipe or template for understanding the thoughts or actions of the family (Kalyanpur & Harry, 1999); instead, service providers may use what they have learned as a guideline for interpreting interactions with the family, and as such, an individualized approach must still be taken in which cultural influences are mediated by family-
specific information. Lynch and Hanson suggested four ways to learn effectively about other cultures, including: (a) learning through books, the arts, and technology; (b) talking, socializing, and working with a cultural guide or mediator; (c) participating in daily rituals; and (d) learning the language. While there are benefits and drawbacks to each method, what is most important is to be exposed to as many aspects of the culture as possible, so as to gain a well-rounded perspective that is relatively free from bias.

The final step toward achieving cross-cultural competence is to apply the cross-cultural knowledge that has been gained thus far, and develop the skills necessary to work effectively with the family (Chan, 1990; Lynch & Hanson, 2004). This stage involves learning to communicate effectively, both verbally and through the use of body language; acknowledging cultural differences and working through them collaboratively with the family; working with a translator or interpreter if necessary; and incorporating culturally-based values and practices into intervention service components (Lynch & Hanson). In particular, this is the stage at which the cross-cultural competence that has been achieved on an intellectual level is put into practice, such that the family feels valued and understood throughout service provision. All together, this three-step process of developing cross-cultural competence may play a large or relatively minor role during intervention, depending on the nature of the family; and it is always important to bear in mind that other variables, such as socioeconomic status, educational experience, or religion, may play a more dominant role in the process of achieving meaningful lifestyle outcomes for the child and family.

Culturally Sensitive Service Provision

The development of cross-cultural competence has implications in many fields of study; however, of particular interest in this case is its application to early intervention for children with
autism. As intervention research and practice have progressed, a noteworthy tension has developed between researchers concerned with fidelity of implementation and those concerned with program adaptation (Castro, Barrera Jr., & Martinez Jr., 2004). In particular, prevention interventions have become so focused upon and judged by their scientific rigor, that the values and concerns of consumers have been ignored or misinterpreted by many service providers (Castro et al.). The solution to such a dichotomy is to combine the two concerns, such that intervention becomes both scientifically valid and socially meaningful. To do so, however, requires that service provision becomes culturally sensitive, such that the values and beliefs of consumers are included as guiding factors in the intervention process.

There are many components involved in culturally sensitive service provision, all of which are informed by a posture of cultural reciprocity and underlying cultural competence (Harry, 1997; Lynch & Hanson, 2004). In particular, culturally sensitive service provision requires: (a) adapting services to reflect the needs and values of the family, (b) empowering families such that family members strive to take control over the implementation of intervention strategies, (c) engaging in effective communication through the use of translators and interpreters as needed, (d) collaborating with family members in a cross-culturally competent manner, and (e) taking a culturally sensitive approach toward gathering functional assessment information. As well, although discussion of each component will proceed in the context of early intervention services in general, it is important to note that the information presented below pertains particularly to PBS practices, given the continuity between the features listed above and those described previously as belonging to a PBS approach.

In working toward culturally sensitive service provision, the underlying assumption is that interventionists must change service provision in order to reflect the values and needs of the
family. While many service providers already do this when they focus on ecological fit, it has now become imperative for changes to also reflect the need for cultural fit by honouring the cultural diversity of families (Chen et al., 2002). Boutte and DeFlorimonte (1998), as cited by Turnbull and Turnbull (2001), described honoring cultural fit as a means for establishing reliable alliances with people from different cultural backgrounds, ensuring that those alliances are characterized by nonstereotypical, respectful, and comfortable exchanges of communication, supports, and services, and creating empowering contexts. These alliances take into consideration the values, decision-making styles, family roles, language, background knowledge, and influences of significant others. (pp. 61)

Thus, interventionists have the challenging task of redesigning service practices such that they reflect the goals of each individual family, rather than their own motives and underlying agenda. Should they proceed with a lack of cultural understanding and awareness, however, difficulties may result in identifying behaviours of concern, designing appropriate intervention strategies, developing rapport with the family, and providing effective and meaningful training and support (Chen et al.).

One of the first steps toward providing culturally sensitive support is to determine who will provide the support and how it will be provided (Chen et al., 2002). In this way, the needs and values of the family are reflected in the action plan right from the beginning. From here, decisions regarding the context for support, ways in which support will reflect the specific challenges of the child, and methods by which implementers will approach support can be made, each reflecting the underlying cultural and individual values and routines of the family.
Harry (1997) described a particularly refreshing way of approaching cultural reciprocity with families, especially for service providers who may be in the process of developing cross-cultural competency, or for those working with families who hold especially different perspectives from their own. In essence, Harry suggested that if you feel as though you are bending over backwards to accommodate a family, there is likely something wrong with your approach to accommodation. More specifically, she proposed that service providers must begin by focusing on the fact that all values stem from belief systems, not fact, and that as such, they are relative to both time and place. From here, it becomes more difficult to disregard another’s point of view, in light of the relative nature of even the most entrenched values and perspectives.

Harry (1997) then went on to suggest a five-step process for service providers for developing a posture of reciprocity, in which the needs and values of the family significantly inform the intervention process. These steps include: (a) indentifying the issues that divide themselves and the family with whom they are working; (b) identifying the underlying beliefs and values that guide their own perspective; (c) identifying the values and beliefs that underlie the family’s perspective; (d) explicitly discussing both sets of beliefs with the family, taking care to present them as two different yet equal points of view; and (e) beginning the process of collaboration by seeking a shared point in the family’s value system. In following these steps, the purpose is to create a relationship in which collaboration is encouraged and the values of each are upheld, while finding as many shared points as possible along the road to meaningful family outcomes.

The second element involved in providing culturally sensitive service provision is the empowerment of family members in a culturally supportive manner. Research and subsequent practice in this area has been relatively scarce (Xu, 2007); however, the value of empowerment
as a means for supporting families and encouraging independent implementation of behaviour support strategies is well-documented outside of a cultural framework (Dunst, Trivette, & Deal; 1988; Turnbull & Turnbull, 2001). As well, the need for all families to assume responsibility for the behaviour support of their child is growing in light of the recognition that intervention outcomes are often most successful when continued throughout the lifespan (Carr et al., 2002). Thus, many families may benefit from a cultural approach to empowerment and implementation support, as they learn to assume control over the care and support of their loved one.

In collaborating with families from diverse cultural and linguistic backgrounds, Xu (2007) noted that in general, professionals take a polarized approach to family support, either assuming authority over all decisions for the child with no thought for the perspectives of the family, or backing off completely due to fear of misunderstanding or lack of communication. Neither one of these approaches leads to effective empowerment however, in that very often, families remain unable to implement behaviour support strategies on their own, which leads to subsequent losses in meaningful outcomes for the child. Xu suggested, therefore, that service providers approach empowerment by helping families to develop effective coping strategies that are consistent with the family’s culture, for dealing with child-related stressors.

Turnbull and Turnbull (2001) have conducted an extensive amount of research on the topic of empowerment, with more recent research focusing on the impact of culture on the empowerment of families. Most importantly, within a special education framework, they describe empowerment as consisting of four major parts, including: (a) family resources, (b) professional resources, (c) collaboration for empowerment, and (d) education context resources. By moving in the direction of hopefulness and away from learned helplessness, and mobilizing resources from surrounding individuals and contexts, they encourage families to take control of
areas in which they want to achieve particular goals. Furthermore, Turnbull and Turnbull recognized the benefits of assuming a posture of cultural reciprocity, in which service providers remain open to the cultural perspectives and customs of the family. They suggest that in this way, empowerment is more likely to proceed in a manner that is consistent with the ecology of the family. For example, while some families may readily take control of support plan development and subsequent implementation, others may view assertiveness in the presence of a professional as disrespectful. Understanding this perspective from a cultural stance, and moving forward at a pace that is comfortable for the family, is likely to result in more meaningful empowerment than if interventionists were to disregard cultural values altogether.

In addition to empowerment of family members and the modification of services to reflect the values and needs of the family, culturally sensitive service provision also requires interventionists to communicate effectively with the family, while making use of translators and interpreters as warranted (Anderson & Fenichel, 1989; Chen et al., 2002; Hanson et al., 1990; Lynch & Hanson, 2004; Turnbull & Turnbull, 2001; Wayman et al., 1991). The need for effective communication, specifically within a PBS framework, stems from the underlying value placed on collaboration as well as the practice of conducting ecological and functional assessments to determine the context surrounding the behaviours of concern. Of primary importance for interventionists just beginning with a family is determining the communicative style and preferences regarding how the family shares information and makes decisions (Chen et al.; Lynch & Hanson; Wayman et al.). Related concerns in this area may include the degree of formality during meetings, the medium through which communication occurs, the pace of scheduling sessions, and the general conversational style. As well, cultural variations in nonverbal communication may be of importance, for families with differing expectations of eye
contact, touch, gestures, and sense of personal space (Anderson & Fenichel; Chen et al.; Lynch & Hanson).

In addition to the family’s communicative style, emphasis must be placed on communicating all ideas, both verbally and through writing, in a language in which caregivers are comfortable or fluent (Turnbull & Turnbull, 2001). For some families, this may mean involving a translator or interpreter even if the family has minimal proficiency in the language spoken by the service provider. This precaution helps to guard against potential misunderstandings between the interventionist and the family, and allows service provision to proceed in a family-centered, culturally supportive manner such that the needs of the family are prioritized above those of the service agency (Anderson & Fenichel, 1989).

When working with interpreters, research suggests that supplemental meetings between the interventionist and interpreter occur on a regular basis, in order to evaluate the interaction process with the family (Chen, Chan, & Brekken, 2000). As well, service providers must be aware that many literal translations are not possible from one language to another, and as such there is always the risk of losing a certain amount of information during the process of translation (Chen et al., 2000; Wayman et al., 1991). The use of a qualified and skilled professional is essential, therefore, and further elaboration of technical concepts such as “positive behaviour support plan”, as well as culturally-specific sayings, may be necessary in order for the family to fully understand the intervention process (Anderson & Fenichel, 1989). Finally, confidentiality must be maintained at all times between the service provider and the family, and it is the responsibility of the interventionist to emphasize the importance of this issue to any third party that becomes involved during the intervention process (Chen et al., 2002).
Closely related to the issue of communication is the matter of culturally sensitive family-professional collaboration. As illustrated by previous research, collaboration is an essential feature of service provision, both within and outside of PBS-based practices. It is both necessary for and critically affected by the degree of empowerment achieved by family members as well as the effective use of communication. The effect of collaborative efforts on meaningful family outcomes can be enhanced through cultural sensitivity on the part of the interventionist. In particular, Chen et al. (2002) argued that interventionists must work closely with families to address any concerns they have and design behaviour support plans that make use of agreed-upon strategies. For example, no matter how technically sound a behaviour plan may be, without collaborative input from the family, implementation will likely diminish over time and meaningful outcomes will dissolve.

In contrast, however, Rodriguez and Olswang (2003) cautioned interventionists against assuming a posture of complete equality with families of cultural backgrounds in which a hierarchical relationship between parents and professionals is typically valued. Specifically, they noted that although the Individuals with Disabilities Education Act (IDEA) promotes increased participation from family members, the underlying principles of individual rights and freedom of choice may not necessarily be understood or valued in the same manner by families of certain cultural orientations. For example, traditional Hispanic, Native American, and Asian families may view equity between parents and professionals as inappropriate, or they may not initially recognize their right to choose from a variety of intervention options (Lynch & Hanson, 2004). Regardless, it is the responsibility of professionals to discuss intervention options, and proceed in a manner that is understood and valued by the family.
The process of collaboration is especially relevant during initial functional assessments and ecology-related interviews, in which service providers are gathering information about the child and family in order to develop an effective behaviour support plan. Although this process is an essential component of the course of intervention, many families may not understand the purpose of this initial phase, and may construe such behaviour as inactivity on the part of the interventionist to provide an immediate solution to the behaviour problems (Chen et al., 2002). Furthermore, as in-depth questions of a personal nature often characterize such early assessments, families of certain cultural backgrounds may feel unwilling to disclose such information to a relative outsider (Chen et al.). Thus, collaborative efforts that are guided by the cultural parameters of the family may be particularly important at this point, as the purpose of ecological and functional assessments are explicitly explained to the family.

Further research on assessment and information gathering procedures also highlights the importance of cultural sensitivity when working with families (Anderson & Fenichel, 1989; Chen et al., 2002; Dennis & Giangreco, 1996; Salend & Taylor, 2002). For example, Dennis and Giangreco conducted a study in which 14 participants of diverse cultural backgrounds were interviewed regarding their opinions on what makes for culturally sensitive family interviewing practices. Among the many issues discussed, participants recommended that interventionists: (a) seek help from cultural interpreters, (b) carefully determine the literacy and language status of family members, (c) involve family members in the planning process, (d) preview the interview with family members, (e) be flexible and responsive to family interaction styles, (f) adapt the time frame as needed, and (g) examine the nature of the questions being asked. Furthermore, interviewers who seemed rushed or professionally distant, or who refused refreshment or initial small-talk, were seen as condescending and unfriendly, which worked against their goal of
collaboration. Finally, participants noted the importance of interventionists recognizing their own cultural biases, and operating through a position of genuine respect when encountering beliefs and values that are divergent from their own. In particular, they argued that interventionists must balance the need to provide efficient and effective services to families, with the need to remain culturally sensitive toward the expectations of appropriate interpersonal behaviour for each individual family.

**Culturally Responsive Positive Behaviour Support**

Despite the vast amount of research pertaining to aspects of culturally sensitive service provision, there remains a significant lack of research regarding the application of cultural sensitivity to the provision of PBS with families of diverse cultural and linguistic backgrounds. Theoretically, PBS has always subscribed to the view that cultural values are influential in directing empirical efforts (Carr et al., 2007); however, in practice, research has been slow to document the effect of explicit cultural responsivity during behaviour support. For example, in the PBS literature to date, there exist only two intervention-based studies, one of which remains unpublished as a master’s thesis, as well as one hypothetical case study, that involve the support of a family from a diverse cultural background. These three studies have begun to address the practical need for merging cultural competence with the scientifically rigorous principles of PBS.

The first data-based PBS study in which intervention was employed with a family of a diverse cultural background was conducted by Vaughn, Wilson, and Dunlap (2002). In this study, Vaughn et al. collaborated with a mother of Nigerian decent to implement a family-centered PBS plan for her son in the context of a fast food restaurant. The study used a multiple-baseline design across three problematic subroutines in the restaurant. Results provided a quantitative demonstration of the effectiveness of family-centered PBS with a family of a diverse
cultural background in a community setting. While the outcomes were encouraging for literature on community-based PBS, cultural factors did not appear to influence the design or implementation of the PBS plan. Thus, little information can be drawn as to the cultural responsivity and fit of the behavioural support and implementation process.

A more recent article written by Wang et al. (2007) focused on the implementation of PBS with Chinese-American families. This paper included neither qualitative nor quantitative analyses, but instead compared and contrasted the embedded cultural values underlying four critical features of PBS with the values and perspectives held by many traditional families of Chinese heritage. The features of interest included: collaborative partnerships, functional assessment, contextual fit, and meaningful lifestyle outcomes. To illustrate the strengths of combining PBS practices with a culturally responsive approach, the authors provided a hypothetical case study based on an amalgamation of their experiences in providing PBS to individuals of Chinese heritage. In this example case, the procedures and outcomes for a Chinese teenager with Attention Deficit Hyperactivity Disorder (ADHD) were described in relation to four features underlying PBS.

Of importance were the outcomes described by Wang et al. (2007) in the hypothetical case study, as well as additional discussion and recommendations provided for future research and practice in the field of PBS. In regard to outcomes, Wang et al. reported that problem behaviour in the home and at school decreased, and quality of life, in terms of involvement in the community and making new friends, increased. In regard to recommendations for future practice, the authors listed three key points for providing culturally responsive PBS: (a) understanding your own cultural values and beliefs as well as the embedded cultural values of PBS, (b) understanding families’ perspectives on PBS and placing them within the context of their culture.
and ecology, and (c) building trusting and respectful partnerships with families throughout the process of PBS.

In regard to future research, the authors recommended: (a) conducting qualitative analyses of PBS with Chinese-American families along the spectrum of acculturation, (b) conducting qualitative inquiry of PBS with families from other ethnic, cultural, and linguistic groups, and (c) conducting multiple single-subject-design case studies in order to examine the effectiveness of culturally responsive PBS with families of diverse cultural and linguistic backgrounds.

The final study that most recently focused on culturally appropriate, family-centered PBS in a home-based setting was conducted by Cheremshynski et al. (2011) with a family of Japanese heritage. A 5-year old boy with autism and his mother served as the primary participants. Single-subject quantitative methods were used to evaluate the effectiveness of a multicomponent behaviour support plan to reduce problem behaviour and improve child participation in a dinner routine. Qualitative case study methods were further used to gain a better understanding of the family’s cultural perspectives and beliefs as they related to improving child behaviour and implementing the behaviour support plan, and of the interventionist’s experience and perspectives on implementing a process of PBS that strove to be culturally responsive. Results of this study provided evidence of a functional relation between culturally appropriate PBS and reductions in child problem behaviour and successful participation in the target routine. Qualitative results documented the experiences and perspectives of both the interventionist and the parent, and brought to light culturally sensitive practices that were associated with the positive outcomes achieved.
Current Research Issue

The proposed study aims to replicate and extend the findings by Cheremshynski et al. (2011), adding to the literature on culturally responsive, home-based PBS with children with autism. Potential ways in which this study may extend the findings of Cheremshynski et al. include: (a) providing culturally responsive, family-centered PBS to a family of a different cultural and linguistic background; (b) working with a child of a different age or gender; (c) measuring quantitative and qualitative outcomes across two valued family routines; (d) measuring meaningful lifestyle outcomes through the use of a quantitative survey of family quality of life; and (e) assessing additional lifestyle outcomes through the use of self-report measures of child behaviour, parental stress, and family adaptability and cohesion.

The proposed study is important for three reasons. First, it will serve as a systematic replication of the study conducted by Cheremshynski et al. (2011). Second, it will extend the existing literature on culturally responsive, family-centered PBS. Third, it will combine quantitative and qualitative methodologies within a multi-method research design. The particular relevance of each point is discussed in further detail below.

In single-subject research methodology, the need for replication of studies is essential, particularly in a new area of research. In this case, the need is for research on culturally responsive PBS in family settings, the importance of which has been documented extensively by researchers in related fields (Castro et al., 2004; Chen et al., 2002; Sylva, 2005; Utley et al., 2002; Wang et al., 2007). Sylva, in particular, has cited the need for dissemination of empirical literature on cultural competence and natural environment approaches to early intervention, due to a growing gap between evidence-based research and effective intervention practices. Without multiple replications, a practice cannot be viewed as evidence-based. In order for cultural
responsivity to gain acceptance and attention from practitioners, current research must aim to substantiate the small yet important body of studies that do exist. It is for this reason that the present study has been undertaken.

The importance of extending PBS literature in new directions is just as valid as the importance of initial replication. The proposed study aims to extend the literature in four potential ways. First, through recruitment of a family that is not of European or Japanese heritage, the results of this study may extend the generalizability of existing findings to new populations. As early intervention crosses cultural boundaries, extension to new demographic characteristics is particularly relevant from a practitioner’s point of view. Second, the types of behaviours and activity settings of interest may differ from previous research, thereby extending the generalizability of culturally responsive PBS to other valued activity settings of family life. Once again, from a practical standpoint, it is important that family-centered PBS be proven to affect behaviour and quality of life across a wide diversity of family settings.

Third, by intervening across two valued routines, the proposed study will serve as its own form of direct replication, which contributes to the study’s internal validity. Finally, the quantitative and qualitative assessment of additional family and child variables may help to determine the extent and boundaries of the effects of culturally responsive PBS. For example, it may be helpful to assess whether generalized improvements in child behaviour occur beyond targeted routines to non-trained family settings in the home and community. In addition, a more complete picture of family outcomes may be gained through the use of measures of parental stress and global family cohesiveness. All together, these extensions may serve to promote further research into the area of culturally responsive, family-centered PBS.
The final reason why this study is important is that it will integrate two divergent methodologies in order to generate knowledge that is both quantitative and qualitative in nature. Although such multi-method studies are common in areas of health research (Morgan, 1998), they are largely uncommon in the PBS literature to date. The necessity of integrating these two divergent epistemologies becomes apparent when one’s purpose is to empirically examine how to provide culturally responsive PBS services. Quantitative research methods are clearly best suited to investigating the efficacy of a family-centered PBS process that also aims to be culturally responsive. Qualitative methods are clearly appropriate when seeking to understand the cultural dimensions of a family during a PBS process, and also for gaining insight into the experiences of an interventionist striving to promote culturally responsive PBS services.

Until now, there have been two parallel strands of research, equally important in regard to understanding and supporting families of children with autism and other developmental disabilities. Research on family-centered PBS has provided evidence of the efficacy, acceptability, and durability of the approach; while research on culturally responsive services has provided a wealth of information on the characteristics of different cultures as they relate to raising a child with a developmental disability, and on the qualities of service delivery that families view as culturally responsive (Garcia et al., 2000; Harry et al., 1995; Rodriguez & Olswang, 2003; Utley et al., 2002). This study will bring together these two strands of research by integrating quantitative single-subject methods with qualitative case study methods for the purpose of developing a science-based understanding of effective and culturally responsive PBS with families of children with autism.
Research Questions

The present study aims to address the following research questions:

1. Is there an association between implementation of a culturally responsive PBS approach and socially valid improvement in child problem behaviour during valued family routines for a child with autism in a family of diverse linguistic and cultural background?

2. Is there an association between implementation of a culturally responsive PBS approach and socially valid improvement in child participation in valued family routines for a child with autism in a family of diverse linguistic and cultural background?

3. Is the behaviour support plan socially valid, from the parent’s perspective?

4. Does the behaviour support plan possess good contextual and cultural fit, from the parent’s perspective?

5. Is there an association between implementation of a culturally responsive PBS approach to problematic yet valued family routines and meaningful improvements in family quality of life?

6. Is there an association between implementation of a culturally responsive PBS approach to valued yet problematic routines and generalized improvement in child behaviour, as evidenced by parent report?
CHAPTER TWO

Research Methodology

Preliminary Screening Process

Participants\(^1\). One family of a child diagnosed with autism was recruited to participate in this study. Mia was a healthy, energetic and affectionate girl, aged four years and six months at the beginning of the study in 2011, and aged five years and six months by its conclusion in 2012. Mia lived with her mother Liu, her father Jin and her older brother Daniel, in an average-sized house in British Columbia. All family members were of Taiwanese decent, with both parents having been born in Taiwan, while both children were born in North America. A combination of Mandarin and English was spoken in the home, although Mia did not speak Mandarin at all. Furthermore, neither parent was fluent in English, although the father was able to speak, read and write with reasonable proficiency. Overall, both parents conversed solely in Mandarin when alone or with their son; however, they attempted to speak English whenever their daughter was present. At the time the study began, Mia was able to speak in sentences, although her pronunciation, word order and grammar were often incorrect (e.g., ‘Watch dis it crack out does I eat it’). As well, Mia often resorted to the use of one-word phrases when distressed or when asking for something she wanted (e.g., ‘Nooooooo, no, no, no no. Yuck. Yuuuuuck. Yuuuuuuuuck.’). When the study began, Mia engaged in several problem behaviours throughout the day including: noncompliance and defiance, inappropriate verbal demands or requests, non-verbal food refusal, negative vocalizations (i.e., whining, crying and screaming), elopement, low intensity physical aggression (i.e., hitting and kicking), low intensity destructive behaviour (i.e., throwing objects), and low intensity self-injurious behaviour.

\(^1\) All names are pseudonyms
Mia and her family were recruited through contact with professional agencies providing referral and intervention services to families of children with autism in British Columbia. All agencies were asked to distribute a letter of initial contact (see Appendix A) providing an overview of the study and research procedures to families who met the recruitment criteria as described in the letter. Families who expressed interest in participating were then asked to contact the Principal Investigator or myself, or to provide their contact information such that they might be contacted in order to conduct a pre-screening phone interview to determine whether their child and family met the eligibility criteria for the study (see Appendix B).

Mia’s family was identified as being eligible to participate in the study. Her family met the following criteria: (a) the child was between the ages of three and six years old; (b) the child had a formal diagnosis of autism; (c) the child engaged in observable mild to moderate problem behaviour in a minimum of two documented family routines within the home; (d) the child was not receiving any early intervention outside of the study that specifically aimed to improve the behaviour within the two routines targeted for intervention in this study; (e) both parents were born in another country, and were therefore immigrants to Canada (although both children were born in North America); (f) both parents were able to read and speak English with adequate proficiency; (g) both parents consented to have an observer videotape parent-child interaction during the two target routines; (h) both parents were willing to act as an interventionist for their child throughout the intervention and research process; (i) neither parent perceived themselves to be in a “crisis” situation due to the child’s problem behaviour or due to other family issues unrelated to their child (e.g., marital strain, psychological or physical illness in an immediate family member); (j) the family was willing to participate in the study for a minimum of six
months; and (k) the family lived in the lower mainland of British Columbia, and was not planning to move away within the next 12 months.

Once the family was identified as potential participants, I conducted a pre-screening phone interview with the parents in order to determine whether the child and family met the eligibility criteria. During this meeting, the purpose and general procedures of the study were described, and the parents were asked to sign preliminary consent forms to allow for screening activities to begin (see Appendix C). After the parents signed the preliminary consent forms, I conducted an initial screening interview (see Appendix D) and several follow-up home observations to confirm that sufficient problem behaviour existed within the two target routines. Through the initial screening procedures described above, I determined that the family and child met the study's eligibility requirements, and the family was invited to participate in the study. At this time, I provided both parents with two informed consent forms, one for participation in the study which outlined the purpose, procedures, and timeline involved, and one for permission to videotape the child and family in the home and community as needed (see Appendix E). Once both parents signed the informed consent forms, the family was enrolled as participants in the study.

**Settings.** All intervention and data collection took place in the family’s home. Two valued yet problematic routines, and thus two settings, were collaboratively selected and defined with the family during the initial screening process. To do so, I used a family routine assessment protocol developed by Lucyshyn, Kayser et al. (2002) (see Appendix F). Target routines included: (a) a dinner routine; a routine which the family rarely engaged in due to problem behaviour, yet one that they valued highly and prioritized above all others for intervention; and (b) a sibling play routine; a routine which brother and sister engaged in frequently despite the
occurrence of problem behaviour, and which was also prioritized for intervention given its occurrence multiple times per day. For each targeted routine, intervention and training took place in a particular room in the house (i.e., the kitchen during the dinner routine, the playroom during the sibling play routine).

**Measurement**

This study used both quantitative and qualitative measures of data collection similar to the original study by Cheremshynski et al. (2011), upon which this study is based. The following sections describe the variables measured as well as the procedures used for measurement.

**Quantitative measures.**

*Data collection.* All experimental sessions were conducted in the home and recorded with a digital video camera by myself, the interventionist. Each session was scheduled at a time that was convenient to the family and consistent with the envisioned routine (e.g., all sessions pertaining to the dinner routine occurred at the allotted time in the evening, and all sibling play sessions occurred during the evening as desired, either before or after dinner). Experimental sessions were conducted during baseline and intervention phases, at regular intervals (i.e., once or twice a week during baseline, and every second to fourth training session during intervention). Mia and her family participated in a total of 26 experimental observation sessions spread across baseline and intervention phases within the dinner and sibling play routines. These sessions occurred over a span of nine months, and each session lasted for a maximum of 50 minutes. In order to ensure that Mia and her family members were safe, both physically and psychologically, during the observation sessions, a criterion level of problem behaviour was determined collaboratively with the family for each routine, the occurrence of which lead to an immediate termination of the videotaped observation.
During each experimental session, I followed a protocol that has proven to be successful in recent family-centered PBS studies (Binnendyk & Lucyshyn, 2009; Lucyshyn et al., 1997). This protocol involved: (a) confirming the time and place of the experimental session with the parents; (b) arriving approximately 15 minutes before the experimental session and ensuring that all necessary materials for the routine were present and functioning; (c) asking the relevant family members (i.e., Mia’s parents) to review the operational definition of the envisioned routine; (d) setting up the video camera such that the child and family members participating in the routine were in view; (e) asking the family members to initiate the target routine; and (f) videotaping for a minimum of 3 minutes or until the routine was completed successfully or terminated due to child problem behaviour meeting the pre-established criteria. All members were reminded that they were allowed to take a break at any time, and in such cases the video camera was turned off until such time as the family member was ready to try again. Furthermore, all members were reminded that they were free to end an observation at any moment, no matter what the reason. In the event that the child engaged in problem behaviour that exceeded the criterion for termination prior to 3 minutes, videotaping continued until the 3 minute mark in order to ensure that a sufficient amount of observation time had elapsed for later comparisons of interval data. Once a routine was terminated due to child problem behaviour, the camera was shut off and family members were provided with assistance as necessary. Finally, due to the fact that Mia showed reactivity to my presence, the camera was set up on a tripod and I left the room and remained out of view for the remainder of each observation session.

Seven baseline and nine intervention observations were conducted during the dinner routine, and seven baseline and three intervention observations were conducted during the sibling play routine. During each observation, percentage of intervals of child problem
behaviour, latency until termination or successful completion of the routine, and percentage of
steps completed were coded. Parent and sibling implementation fidelity were also coded for 33%
of all intervention sessions, for a randomly selected segment of 30 minutes within each
observation session. All data were later coded and analyzed in a research laboratory at the
University of British Columbia, with the help of another graduate student who acted as an
independent observer for interobserver agreement sessions (see Appendix G for data forms).

**Computer-based data coding.** All data collected during observation sessions were
transferred from a digital video camera onto the hard drive of a desktop computer, located in the
laboratory of the Principal Investigator within the Faculty of Education building at the University
of British Columbia. A software media program was used to play each video file, and a trained
coder (i.e., myself or another graduate student) coded interval data for child problem behaviour
and parent implementation fidelity, as well as additional data regarding steps completed and
latency to termination or successful completion of the routine. Data sheets (see Appendix G) and
a pencil were used for coding by the two coders.

**Dependent variables.** Three dependent variables were measured that relate to child
problem behaviour and routine participation: (a) the percentage of intervals containing problem
behaviour; (b) the percentage of successfully completed steps in each of the valued routines; and
(c) the latency to termination of each valued routine due to problem behaviour or successful
completion. Seven additional dependent variables assessed related family and child outcomes:
(a) the percentage of intervals containing accurate usage of the behaviour support strategies by
parents or other family members; (b) an average rating of social validity of the PBS approach; (c)
an average index of the support plan’s contextual and cultural fit within the family ecology; (d)
an index of family quality of life for each parent; (e) a global index of the child’s level of
behavioural and emotional functioning; (f) an index of parenting stress for each parent; and (g) an index of family functioning as assessed by each parent.

*Percentage of intervals of problem behaviour.* Child problem behaviour data were collected during each experimental observation session across baseline and intervention phases within the dinner and sibling play routines. Child problem behaviours were determined through collaboration with Mia’s parents, and were divided into the following categories: (a) physical aggression; (b) destructive, disruptive and dangerous behaviour; (c) inappropriate verbal demands or requests; (d) negative vocalizations; (e) elopement/leaving the assigned area; (f) non-verbal food refusal; (g) physical resistance; (h) inappropriate physical interference or restraint; (h) defiance; and (i) minor self-injurious behaviour. See table 2.1 for operational definitions of Mia’s problem behaviours.
### Table 2.1

**Operational Definitions of Mia’s Problem Behaviours**

<table>
<thead>
<tr>
<th>Category</th>
<th>Operational Definition</th>
<th>Child-Specific Examples</th>
</tr>
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<tbody>
<tr>
<td>Physical aggression</td>
<td>• Negative physical contact toward another person that causes distress, pain or injury</td>
<td>• Hitting, kicking, pushing/shoving, stomping, or throwing an object at another person</td>
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<tr>
<td>Destructive/disruptive/dangerous behaviour</td>
<td>• A very wide class of behaviours that include behaviours that are disruptive to family members and routine success, that are destructive to objects or that are dangerous to the target child’s physical health</td>
<td>• Grabbing items from another person, playing with another toy/game that is unrelated to the target routine, turning off the lights when another person is still in the room, throwing items, or climbing on furniture</td>
</tr>
<tr>
<td>Inappropriate verbal demands or requests</td>
<td>• A verbal request or demand that is clearly inappropriate to the circumstances</td>
<td>• Requesting three or more times that a parent eat her food or that a different food be served, asking to face backwards in her dinner chair, asking a family member to stop talking to her</td>
</tr>
<tr>
<td>Negative vocalizations</td>
<td>• Nonverbal vocalizations that are agitated, distressed, or negative in tone. They can range from low to high intensity</td>
<td>• Whimpering, whining, screeching, crying, screaming, nonsensical shouting, growling, or baby sounds</td>
</tr>
<tr>
<td>Elopement/leaving assigned area</td>
<td>• During a family routine, the child physically leaves the area that a parent designates as acceptable for the child, or runs away from a parent during a task or activity.</td>
<td>• Leaving the dinner table prior to finishing her meal, leaving the play room, moving more than one foot away from a board game, standing or kneeling in her chair at dinner</td>
</tr>
<tr>
<td>Category</td>
<td>Operational Definition</td>
<td>Child-Specific Examples</td>
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<tr>
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<tr>
<td>Non-verbal food refusal</td>
<td>• Physical actions that function to keep the child from having to eat non-preferred foods or drink non-preferred beverages</td>
<td>• Pushing away utensils or plate, turning head away from food, blocking access to her mouth, or spitting out food</td>
</tr>
<tr>
<td>Physical resistance</td>
<td>• Physical resistance to parent or sibling physical assistance or restraint</td>
<td>• Pushing or pulling away from parent or sibling, pulling an object away from a parent or sibling, sliding onto the floor or falling limp</td>
</tr>
<tr>
<td>Inappropriate physical interference or restraint</td>
<td>• A physical behaviour aimed at stopping a family member from carrying out an appropriate routine-related action</td>
<td>• Physically blocking a parent’s attempt to put non-preferred food on her plate, withholding games pieces such that the game cannot proceed, physically blocking an opponent’s move during a board game</td>
</tr>
<tr>
<td>Defiance</td>
<td>• Verbal refusal with a negative voice tone</td>
<td>• Saying or shouting “No!” “I don’t want to!”, whining “Nooooooo” or “Doooooone”</td>
</tr>
<tr>
<td>Non-compliance</td>
<td>• Failure to comply with a demand/request during the 10 second interval in which the demand/request is issued (i.e., no initiation of the response); may be accompanied by a verbal refusal that is neutral or positive in tone</td>
<td>• Saying “no thank you” “no” or “uh uh”; failing to initiate any type of response to a demand or request issued by a parent or sibling</td>
</tr>
<tr>
<td>Minor self-injurious behaviour</td>
<td>• Behaviours that the child inflicts upon herself, and that cause, or have the potential to cause, physical pain or tissue damage</td>
<td>• Hitting a body part, banging her head against a surface, biting or pinching her skin</td>
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</table>
The measurement of the percentage of intervals of problem behaviour involved a partial interval recording system, in which each interval was 10 seconds long. For each interval, an occurrence was scored if any of the target problem behaviours were observed, while a non-occurrence was scored if target problem behaviours were not observed. After scoring each interval as an occurrence or non-occurrence, the percentage of intervals of problem behaviour was calculated by dividing the number of intervals of problem behaviour by the total number of intervals and multiplying by 100.

*Percentage of steps successfully completed within a routine.* Envisioned steps for each routine were defined collaboratively with Mia’s parents prior to beginning baseline observations, including definitions for successfully completing each step to a socially significant extent. The procedure for defining each successful step included: (a) identifying each step within a target routine; (b) defining the number of times a step must occur, for steps that can occur more than once (e.g., engaging in conversation once during dinner; taking a turn appropriately for 80% or more of all opportunities during a board game); (c) defining a criterion for success for steps that involved a targeted level of performance (e.g., washing hands *with* soap prior to eating dinner; drinking one or more mouthfuls of water during dinner); (d) determining the level of child problem behaviour that would result in that step being completed unsuccessfully (i.e., three instances of minor problem behaviour such as defiance, noncompliance or minor negative vocalizations, or one instance of major problem behaviour such as physical aggression, crying or screaming); and (e) defining the level of independence required by the child in order to consider a step completed successfully (i.e., a step was considered successfully completed even if prompting occurred, so long as Mia did not engage in the criterion level of problem behaviour.
described above). Table 2.2 provides a list of the target steps for both the dinner and sibling play routines.

Table 2.2

**Target Steps for Mia’s Dinner and Sibling Play Routines**

<table>
<thead>
<tr>
<th>Routine Steps</th>
<th>Dinner Routine</th>
<th>Sibling Play Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Wash hands with soap when requested</td>
<td>1. Come to the playroom when called</td>
</tr>
<tr>
<td>2.</td>
<td>Sit in chair at dinner table</td>
<td>2. Choose/allow for choice of game</td>
</tr>
<tr>
<td>3.</td>
<td>Stay in seat throughout the meal</td>
<td>3. Review/listen to rules if necessary</td>
</tr>
<tr>
<td>4.</td>
<td>Use utensil when eating</td>
<td>4. Help to set up the game (1 or more pieces)</td>
</tr>
<tr>
<td>5.</td>
<td>Eat all non-preferred foods provided</td>
<td>5. Take turns (80% or more of opportunities)</td>
</tr>
<tr>
<td>6.</td>
<td>Eat all preferred foods provided</td>
<td>6. Follow the game rules</td>
</tr>
<tr>
<td>7.</td>
<td>Participate in conversation (1X)</td>
<td>7. Finish the game (until someone wins)</td>
</tr>
<tr>
<td>8.</td>
<td>Put all dishes in the sink</td>
<td>8. Remain in the game area throughout play</td>
</tr>
<tr>
<td>9.</td>
<td>Drink one or more mouthful of water from cup</td>
<td>9. Clean up the game (1 or more pieces)</td>
</tr>
<tr>
<td>10.</td>
<td>Ask to be excused from the table when finished</td>
<td>10. Repeat steps 2-9 for all subsequent games (each step remains separately defined)</td>
</tr>
</tbody>
</table>

All trained coders used a list of target steps for each routine, along with the definitions of successful and unsuccessful completion criteria, when coding the percentage of steps successfully completed within a routine. Any steps that did not occur due to the child meeting the criterion level of problem behaviour for terminating the routine were scored as ‘no opportunity’ for completion, and were counted towards the total number of steps in the routine when determining the total percentage of steps completed successfully (e.g., Mia’s behaviour
met the criterion for terminating the dinner routine after 3 minutes, such that she had no
opportunity to eat her meal and clean up as appropriate). A step that occurred, but was not
directly observed in the video tape was coded as ‘no opportunity’ to observe, and did not
contribute to the total number of steps in the routine when determining the total percentage of
steps completed successfully (e.g., camera malfunctioned such that Mia was not seen washing
her hands before dinner, although the step occurred). The percentage of steps successfully
completed within a routine was calculated by viewing the videotaped observation, recording the
number of steps completed successfully, dividing this number by the total number of steps in the
routine, and multiplying by 100.

*Latency in minutes to termination or to successful completion of the routine.* The measure
of latency in minutes to termination or successful completion of the routine was defined as the
number of minutes until termination of the routine due to a criterion level of problem behaviour
or until the successful completion of the routine (Carr & Carlson, 1994). A criterion level of
problem behaviour for terminating each routine was defined collaboratively with both parents in
order to ensure the physical, psychological, and sociological safety of the child and family. The
criterion was as follows: (a) two instances of aggressive or destructive behaviour; (b) five
instances of elopement from the room; or (c) ten instances of minor problem behaviour such as
noncompliance or defiance. In order to compare percentage of intervals data measuring the level
of problem behaviour across phases, a period of 3 minutes was set as a minimum amount of time
until termination of a given routine could occur. If the criterion level of problem behaviour was
reached before 3 minutes, the observation was terminated at the 3 minute mark. If the criterion
level of problem behaviour was reached after 3 minutes, termination of the routine took place at
that time. Latency to successful completion of the two routines was defined as follows: (a) in the
dinner routine, the number of minutes until all critical steps in the routine were completed without the occurrence of the criterion level of problem behaviour; and (b) in the sibling play routine, a 30 minute duration during which steps of the envisioned routine were carried out, while the criterion level of problem behaviour was not reached.

 *Parent and sibling use of behaviour support strategies.* Parent and sibling accuracy in the use of support plan strategies, a measure of treatment fidelity, was defined as the total percentage of intervals of the implementer’s use of core strategies as outlined in Mia’s behaviour support plan for each routine (see Table 2.3 and Table 2.4). Thirty-three percent of experimental observation sessions within the intervention phase were scored for parent accurate use of support strategies. A partial interval recording system was used in which each interval was 30 seconds in length, in order to ensure that all strategies employed could be accurately assessed within each interval. In any given interval, if the implementer accurately used one or more core strategies, the interval was scored as an occurrence of accurate use. If, however, one or more core strategies were not accurately used, the interval was scored as an occurrence of errorful use. Finally, if no core strategies were used at all during the interval, the interval was scored as a non-occurrence of use. A total percentage of intervals of accurate use of support plan strategies was calculated by dividing the number of intervals of accurate use by the total number of intervals, and multiplying by 100. In addition, the percentage of accurate use during intervals in which the implementer attempted to use one or more core strategies was calculated by dividing the number of intervals of accurate use by the number of intervals in which a strategy was attempted (i.e., number of intervals of accurate use plus number of intervals of inaccurate use) and multiplying by 100.
<table>
<thead>
<tr>
<th>Support Plan Strategy</th>
<th>Description of Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age-appropriate meal size</td>
<td>1. Mother prepares and serves a meal that is of an age-appropriate size for a five-year old girl</td>
</tr>
<tr>
<td>2. No toys in the dining area</td>
<td>2. Mother and father remove all toys from the dining area prior to dinner, with the exception of the IPAD which is used during break time</td>
</tr>
<tr>
<td>3. Advanced warning prior to dinner</td>
<td>3. Father provides Mia with a 5-minute countdown prior to dinner</td>
</tr>
<tr>
<td>4. Visual supports</td>
<td>4. Mother and father use visual supports created including: visual schedule, contingency diagram, ‘take a break’ card, and ‘chewing and swallowing’ visual</td>
</tr>
<tr>
<td>5. Positive contingency statements</td>
<td>5. Father and mother provide Mia with contingency statements outlining what behaviour is expected and the type of reinforcer that will follow contingent upon that behaviour</td>
</tr>
<tr>
<td>6. Safety signals</td>
<td>6. Father and mother provide Mia with contingency statements that ask Mia to endure a few more tasks before the task is terminated (e.g., “eat 2 more bites and then you are finished”)</td>
</tr>
<tr>
<td>7. Non-contingent reinforcement</td>
<td>7. Father and mother engage Mia in conversation that is unrelated to the dinner routine in order to prevent the occurrence of attention-motivated problem behaviour</td>
</tr>
<tr>
<td>8. Prompting</td>
<td>8. Father and mother provide physical, gestural and verbal prompts to Mia in order to help her to complete steps in the routine</td>
</tr>
<tr>
<td>9. Functional communicative phrases</td>
<td>9. Father and mother require/prompt use of</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>10. Preferred tangible</strong></td>
<td>10. Father or mother provides access to a preferred tangible contingent upon Mia completing the dinner routine successfully</td>
</tr>
<tr>
<td><strong>11. Praise</strong></td>
<td>11. Father or mother provides Mia with praise contingent upon appropriate behaviour</td>
</tr>
<tr>
<td><strong>12. 2-minute break</strong></td>
<td>12. Father provides Mia with a 2-minute break part way through the dinner routine contingent upon an appropriate request from Mia</td>
</tr>
<tr>
<td><strong>13. Escape extinction procedure</strong></td>
<td>13. Father and/or mother engages in the following procedure contingent upon the occurrence of minor problem behaviour: (a) block elopement from table, (b) maintain request, (c) prompt Mia to comply, (d) ignore minor behaviour that does not prevent compliance, (e) redirect Mia back to appropriate dinner-time behaviour</td>
</tr>
<tr>
<td><strong>14. De-escalation procedure</strong></td>
<td>14. Father and/or mother engages in the following procedure contingent upon the occurrence of major problem behaviour: (a) block harmful responses, (b) minimize reinforcement, (c) prompt/allow Mia to calm down, (d) ignore minor behaviour, (e) redirect Mia back to appropriate dinner-time behaviour while maintaining the request</td>
</tr>
</tbody>
</table>
Table 2.4

Core Behaviour Strategies in Mia’s PBS Plan – Sibling Play Routine

<table>
<thead>
<tr>
<th>Support Plan Strategy</th>
<th>Description of Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Snack</td>
<td>Mother prepares a snack for one or both children prior to play if they indicate they are hungry, in order to prevent hunger from acting as a setting event for problem behaviour</td>
</tr>
<tr>
<td>2. Visual supports</td>
<td>Mother and father use visual supports created including: visual schedule, contingency diagram, ‘play time rules’ visual, and ‘calm down’ procedure visual</td>
</tr>
<tr>
<td>3. Verbal pre-corrects</td>
<td>Father provides children with a verbal pre-correct for appropriate behaviour during play time prior to leaving the room each time</td>
</tr>
<tr>
<td>4. Choice</td>
<td>Father and sibling provide Mia with choice throughout the play routine</td>
</tr>
<tr>
<td>5. Review of rules</td>
<td>Father and/or sibling review the rules of game play with Mia prior to starting the game</td>
</tr>
<tr>
<td>6. Fair decision-making techniques</td>
<td>Father and sibling prompt use of ‘rock, paper, scissors’ whenever a decision must be made during game play and neither child can decide fairly</td>
</tr>
<tr>
<td>7. Positive contingency statements</td>
<td>Father and sibling provide Mia with contingency statements outlining what behaviour is expected and the type of reinforcer that will follow contingent upon that behaviour</td>
</tr>
<tr>
<td>8. Safety signals</td>
<td>Father provides both children with contingency statements informing them how much time they have left to play together prior to the routine ending and the delivery of a reinforcer</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>9. Prompting</strong></td>
<td>Father and sibling provide physical, gestural and verbal prompts to Mia in order to help her to complete steps in the routine</td>
</tr>
<tr>
<td><strong>10. Functional communicative phrases</strong></td>
<td>Father and sibling require/prompt use of functional communicative phrases (e.g., ‘Can I go first please?’)</td>
</tr>
<tr>
<td><strong>11. Preferred tangible</strong></td>
<td>Father provides access to a preferred tangible contingent upon Mia completing the play routine successfully</td>
</tr>
<tr>
<td><strong>12. Praise</strong></td>
<td>Father or sibling provide Mia with praise contingent upon appropriate behaviour</td>
</tr>
<tr>
<td><strong>13. Escape extinction procedure</strong></td>
<td>Father and/or sibling engages in the following procedure contingent upon the occurrence of minor problem behaviour: (a) ignore minor problem behaviour that does not prevent compliance with request, (b) prompt Mia to use the calm down procedure, (c) remind Mia of the play time rules by referencing the visual support, (d) prompt use of a functional communicative phrase when appropriate, (e) maintain request and prompt Mia to comply, and (f) redirect Mia back to appropriate play time behaviour</td>
</tr>
<tr>
<td><strong>14. De-escalation procedure</strong></td>
<td>Father engages in the following procedure contingent upon the occurrence of major problem behaviour: (a) block harmful responses, (b) minimize reinforcement, (c) prompt/allow Mia to calm down, (d) ignore minor behaviour, (e) redirect Mia back to appropriate play time behaviour while maintaining the request</td>
</tr>
</tbody>
</table>

**Social validity of PBS approach.** A social validity questionnaire was administered to both parents to assess their individual level of satisfaction with intervention goals, procedures, and outcomes. This questionnaire was adapted from an instrument created by Lucyshyn et al. (1997), which consisted of 10 items rated along a 5-point Likert scale from 1 (*disagree*) to 5 (*agree*). In
addition, below each question was an area reserved for additional comments. This measure was administered to each parent once during the intervention phase for each routine. Following each administration, an average was calculated to serve as a formative rating of social validity. At the conclusion of the study, a grand average was computed to provide a summative rating of social validity. The social validity questionnaire is presented in Appendix H.

Contextual and cultural fit index. An evaluation of contextual and cultural fit involved the same instrument used by Cheremshynski et al. (2011), which itself was adapted from an instrument created by Albin et al. (1996). This instrument consisted of 14 questions, each rated along a 5-point Likert scale (1 = little fit; 5 = a lot of fit). These questions addressed areas relevant to the contextual (e.g., “Are you comfortable with what you are expected to do?”) and cultural (e.g., “Does the plan recognize and build on your family’s strengths, values, and customs?”) fit of the PBS plan within the family’s cultural practices and values. In addition, below each question was an area reserved for additional comments. This measure was administered to both parents once during the intervention phase for each target routine. Following administration, an average was calculated to serve as a formative index of contextual/cultural fit. At the conclusion of the study, an average was calculated across all measures as a summative index of contextual/cultural fit. The contextual and cultural fit index is presented in Appendix I.

Family Quality of Life index. Family quality of life was assessed using the Family Quality of Life Survey (FQoL; Hoffman, Marquis, Poston, Summers, & Turnbull, 2006) which had been translated into Mandarin by Lucyshyn et al. (2011). This self-report questionnaire consisted of 25 items that assessed five domains of family quality of life including: (a) family interaction (e.g., “My family enjoys spending time together”), (b) parenting (e.g., “My family
members help the children learn to be independent”), (c) emotional well-being (e.g., “My family has the support we need to relieve stress”), (d) physical/material well-being (e.g., “My family members have transportation to get to the places they need to be”), and (e) disability-related support (e.g., “My family member with a disability has support to accomplish goals at home”). Each item was assessed along a 5-point Likert-type response scale ranging from 1 (very dissatisfied) to 5 (very satisfied). This measure has been shown to have good test-retest reliability in both importance and satisfaction responses for each of the subscales, as well as good convergent validity with the Family APGAR, a measure of family functioning, and the Family Resources Scale (Hoffman et al.). This measure was administered to both parents at three time points, once at the end of the initial baseline phase, once during the intervention phase, and once at the end of the intervention phase. A third party was asked on all occasions to deliver the measure, in order to minimize a social acceptability bias in parent responses. The Family Quality of Life survey is presented in Appendix J.

Index of Behavioural and Emotional Functioning. The Child Behaviour Checklist for ages 1½-5 (CBCL/1½-5; Achenbach & Rescorla, 2001) was administered to assess the child’s level of behavioural and emotional functioning. The CBCL/1½-5 is a self-report questionnaire completed by parents or other adults living with the child, which consists of 100 questions pertaining to a range of behavioural (e.g., “Can’t sit still, restless, or hyperactive”), emotional (e.g., “Easily frustrated”), and social (e.g., “Shows little affection toward people”) functioning issues. Of the 100 questions, 99 are closed-ended items while one is open-ended, which asks the respondent to add any additional problems not previously listed. The respondent is asked to rate each item based on his or her experiences within the past two months, along a 3-point scale from 0 (not true) to 2 (very true or often true). Scores on this measure were ordered hierarchically into
four levels: (a) the lowest level, comprised of the scores on all 100 items each assessing specific aspects of social, emotional, or behavioural functioning; (b) the second level, comprised of five psychiatric syndrome scales; (c) the third level, comprised of the Internalizing and Externalizing scales; and (d) the highest level, comprised of the Total Problem Scale. The Total Problem Scale score (TPS) was calculated by adding all responses of 0, 1, or 2 from each of the 99 closed-ended items, as well as the highest score of 1 or 2 on any additional problems cited in the final open-ended question, to yield a score ranging from 0 to 200. The CBCL/1½-5 has been shown to have very strong 8-day test-retest reliability ($r = 0.68-0.92$, mean $r = 0.84$) (Achenbach & Rescorla, 2000). This measure was administered to parents at the end of the initial baseline phase and again at the end of the intervention phase, in order to assess whether perceived changes in the child’s global level of behavioural and emotional functioning occurred in association with the behaviour support provided. At each time of administration, a translator was present to translate each question into Mandarin, prior to the parent circling the numerical answer on the sheet. The CBCL/1½-5 is presented in Appendix K.

Index of Parenting Stress. Parental stress was assessed using the Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995). This self-report measure consisted of 36 items which were divided into three subscales of 12 items each. Parents responded along a 5-point scale to indicate their level of agreement with each statement. The Parental Distress subscale generated a score indicating the level of distress resulting from personal factors as well as life restrictions due to the demands of raising a child. The Parent-Child Dysfunctional Interaction subscale yielded a score indicating the parents’ level of dissatisfaction concerning interactions with their children, as well as the degree to which they found their children unacceptable. Finally, the Difficult Child subscale provided a measure of parents’ perceptions of their children’s self-regulatory abilities.
A Total Stress score was then calculated by adding the scores from all three subscales. In addition to these scores, there also existed a 7-item scale within the Parental Distress subscale that measured Defensive Responding, which indicated the degree to which parents might have been trying to minimize or deny existing problems. This measure has been shown to have high internal consistency and adequate test-retest reliability (Abidin, 1990). This measure was administered to parents at the end of the initial baseline phase and again at the end of the intervention phase, in order to assess whether perceived changes in the level of parental stress occurred in association with the provision of behaviour support. At each time of administration, a translator was present to translate each question into Mandarin, prior to the parent circling the numerical answer on the sheet. The PSI-SF is presented in Appendix L.

Index of Family Functioning. The Family Adaptability and Cohesion Evaluation Scale, Version IV (FACES IV; Olson, Goralli, & Tiesel, 2006) was administered to parents in order to assess the overall level of family functioning. Specifically, this measure is designed to assess family cohesion and flexibility, as outlined by the Circumplex Model of Marital and Family Systems, in which _Cohesion_ refers to the degree of emotional bonding between family members while _Flexibility_ refers to the quality and expression of the family’s leadership and organization, role relationship, and relationship rules and negotiations (Olson, 2011). The FACES IV consists of 62 items pertaining to six main subscales (i.e., Balanced Cohesion, Balanced Flexibility, Disengaged, Enmeshed, Rigid, and Chaotic) and two additional scales (i.e., Family Communication and Family Satisfaction). All subscales have been shown to be both reliable and valid (Olson). Each item was rated along a 7-point Likert-type scale, and scores on the six main subscales were combined to create three ratio scores for cohesion, flexibility, and the Circumplex model as a whole. Similar to the previous measures described, this measure was administered to
parents at the end of the initial baseline phase and again at the end of the intervention phase, in order to assess whether perceived changes in family functioning occurred in association with the behaviour support provided. At each time of administration, a translator was present to translate each question into Mandarin, prior to the parent indicating the numerical answer on the answer sheet provided. The FACES-IV is presented in Appendix M.

**Interobserver agreement.** A graduate student in the Faculty of Education at the University of British Columbia participated with the first author as an independent observer during interobserver agreement (IOA) sessions. Dependent variables that were coded and reviewed include: (a) the percentage of intervals containing child problem behaviour; (b) the percentage of successfully completed steps in each of the valued routines; (c) the latency to termination of each valued routine due to problem behaviour or successful completion; and (d) the percentage of intervals containing accurate use of the behaviour support strategies by parents or other family members (i.e., older sibling). Training activities included review of a manual containing detailed operational definitions of each dependent measure and direct training in coding videotaped observation sessions. Such training took place at the end of the intervention phase, after which all IOA coding took place. For each dependent measure, experimental IOA data collection began after a criterion of 85% agreement or better was met on two consecutive observation files.

All videotaped sessions coded for IOA were watched and coded independently by myself and the other graduate student. IOA was assessed for each dependent measure using a total interval agreement equation during 33% or more of the observation sessions, balanced across settings and phases. The equation used to calculate IOA was as follows: \( A ÷ (A+D) \times 100\% \), where \( A = \) agreements and \( D = \) disagreements.
**IOA for percentage of intervals of problem behaviour.** Interobserver agreement for the percentage of intervals of problem behaviour was calculated for 34.6% of experimental observation sessions, balanced across settings and phases. For every 10 second interval, each observer indicated: (a) an occurrence, if target behaviours were observed at any point, or (b) a non-occurrence, if no target behaviours were observed. An agreement was then scored during each interval in which the observers agreed upon an occurrence or non-occurrence of problem behaviour, while a disagreement was scored if one observer indicated an occurrence while the other indicated a non-occurrence. The average interobserver agreement for the percentage of intervals of problem behaviour was 90% (range, 82%-97%) for the dinner routine, and 96% (range, 89%-100%) for the sibling play routine. The average agreement for both the dinner and sibling play routines combined was 92% (range, 82%-100%).

**IOA for percentage of steps successfully completed in the target routine.** Interobserver agreement for the percentage of steps successfully completed within a target routine was calculated for 34.6% of experimental observation sessions, balanced across settings and phases. The two observers independently observed the same video recording of an observation session. Using a checklist describing the steps of each routine, the observers recorded which steps were completed successfully (occurrences), which steps were not completed successfully (non-occurrences), and which steps were not completed due to a lack of opportunity (missed opportunity non-occurrences). An agreement was then scored each time both observers agreed upon an occurrence, a non-occurrence, or a missed-opportunity non-occurrence for a particular step in the routine. The average interobserver agreement for the percentage of steps successfully completed in a routine was 94% (range, 80%-100%) for the dinner routine, and 91% (range,
77%-100%) for the sibling play routine. The average agreement for both the dinner and sibling play routines combined was 93% (range, 77-100%).

IOA for latency to termination or successful completion of the target routine.

Interobserver agreement for the latency to termination or successful completion of the target routine was calculated for 38.5% of experimental observation sessions, balanced across settings and phases. The two observers independently observed the same video recording of an observation session. Using a checklist listing the steps of the routine, with a separate space to note the time at which the final step of the routine was completed, observers indicated if: (a) a criterion level of problem behaviour occurred, along with a description of the behaviour and the time at which it occurred; or (b) a criterion level of problem behaviour did not occur, along with the time at which the final step in the routine was successfully completed. A margin of ±5 seconds was used to assess the agreement between times noted by both observers.

Interobserver agreement for termination of the target routine due to child problem behaviour was calculated by dividing the number of agreements of behaviours/times to terminate a session by the number of agreements plus disagreements and multiplying by 100. Interobserver agreement for latency to successful completion of the target routine was calculated in two ways. First, nonoccurrence agreement for engagement in the criterion level of problem behaviour (i.e., both observers agreed that Mia did not engage in the criterion level of problem behaviour prior to completing the routine) was calculated by dividing nonoccurrence agreement by nonoccurrence agreement plus disagreement and multiplying by 100. Second, occurrence agreement for the total time taken to successfully complete all steps within the target routine (i.e., without the occurrence of the criterion level of problem behaviour) was calculated by dividing occurrence agreement by occurrence agreement plus disagreement and multiplying by 100. The average
interobserver agreement for the latency to termination due to problem behaviour was 85.7% for both the dinner and sibling play routines. The average nonoccurrence agreement for the latency to successful completion of the routine was 100% for both the dinner and sibling play routines. The average occurrence agreement for latency to successful completion of the routine was 100% for both dinner and sibling play routines.

**IOA for parent and sibling accurate usage of behaviour strategies.** Interobserver agreement for parent and sibling accurate usage of behaviour strategies was calculated for 33% of experimental observation sessions during the intervention phase for each routine. The two observers independently observed the same video recording of an observation session. For each 30 second interval, observers indicated whether: (a) the parent and/or sibling displayed accurate use of the core PBS strategies (occurrence); (b) the parent and/or sibling displayed inaccurate use of the core PBS strategies (an erroneous occurrence); or (c) the parent and/or sibling was not observed using any of the core strategies outlined in the PBS plan (a non-occurrence). An agreement was scored when both observers recorded an occurrence, an erroneous occurrence, or a non-occurrence of a PBS strategy during the same 30 second interval. The average interobserver agreement for parent accurate usage of support strategies was 90% (range, 88.3-91.7%) for the dinner routine, and 91.7% for the sibling play routine. The average agreement for both the dinner and sibling play routines combined was 90.4% (range, 88.3-91.7%).

**Qualitative measures.**

**Data collection.** Qualitative case study methods were employed throughout the duration of the study, with data collection coinciding with baseline and intervention phases. The case study was characterized as an *instrumental* case study in that the experiences of the interventionist and caregivers were examined with the purpose of gaining insight into the
provision of culturally responsive PBS services for the target family as well as for other families of diverse cultural and linguistic backgrounds (Stake, 2005). Qualitative measures included the use of a written journal maintained by myself, as well as a semi-structured interview conducted with Mia’s parents, focused on cultural aspects of the PBS process. These measures are described in greater detail below.

**Written journal.** I maintained a written journal documenting my thoughts, perspectives and experiences in order to reflect upon the process of culturally sensitive collaboration and behaviour support with a family of a diverse cultural and linguistic background. This process began during the baseline phase and continued throughout the baseline and intervention phases for each target routine. All reflections were guided by a cultural assessment tool that was used by Cheremshynski et al. (2011), and originally adapted from Chen et al. (2002). All together, I made 23 entries in my research journal, varying between one and 10 pages in length.

**Semi-structured interview.** One semi-structured interview was conducted with Mia’s parents at the beginning of the intervention phase for the first target routine, in order to understand and address cultural aspects of the behaviour support process. This interview consisted of open-ended questions from the family portion of the cultural assessment tool (Chen et al., 2002), and was conducted in the family’s home with the assistance of a translator. During the interview, I recorded all responses verbatim using a pencil and paper, and all responses were then used for the purpose of qualitative data analysis. All together, the interview took approximately 90 minutes to complete.

**Data analysis.** Qualitative data analysis of all interview notes and journal entries took place at the end of the intervention phase. Initially, an open coding approach, as described by Strauss and Corbin (1990), was used to analyze all qualitative data. At this time, interview notes
and journal entries were analyzed for preliminary descriptive and conceptual categories, through the use of the constant comparative method (Strauss & Corbin). All preliminary categories that were found to repeat in the data were then defined in terms of their properties and dimensions, and all data were organized into the appropriate categories. A total of 13 categories were revealed through open coding.

Following this, axial coding (Strauss & Corbin) was used to reorganize the content of all major categories and create links to other categories and subcategories that existed within the data. These subcategories represented properties of or relationships within the category, such as its context, antecedent or consequent events, factors that promoted or inhibited it in some way, or action/interaction strategies. Upon creating links between and amongst categories and subcategories, all relationships were verified through comparisons with actual data entries. Through inductive and deductive analysis, five themes emerged related to the concept of providing culturally responsive, family-centered PBS.

**Methodological credibility.** Three methods were used to enhance the methodological credibility of the qualitative data (Merriam, 1988), similar to those used by Cheremshynski et al. (2011). First, triangulation across research methods and sources of data were used to confirm all findings. Second, another qualitative researcher reviewed random samples from each of the defined themes and evaluated the accuracy of coding categories and category definitions. Finally, member checks were done with interview informants and observation participants (i.e., family members) in order to confirm the accuracy of the interpretations about cultural aspects of the family. All information reviewed was deemed accurate, both with respect to interpretations about the family’s culture and subsequent qualitative analysis and coding of the data.
Research Design

A multiple baseline design across two routines was used to assess the effects of a culturally responsive family-centered PBS approach to child behaviour and participation in two valued family routines. The design had two phases: (a) baseline, in which the parents attempted to implement their defined vision of successful routines; and (b) intervention, in which Mia’s parents and I collaborated to create a culturally sensitive PBS plan for each target routine, the strategies of which were implemented sequentially by the parents in the two routines. Due to the fact that two routines were selected for intervention, it was possible to document two basic effects; however, it was not sufficient to document a functional relation. In order to document a functional relation and establish experimental control, a third routine (i.e., intervention setting) would have been necessary. Therefore, this research design represented a quasi-experimental or empirical case study design.

Within each target routine, baseline data were initially collected until stability was established for each dependent measure to the greatest extent possible given the social acceptability of remaining in baseline from the perspective of Mia’s parents. In the first routine, baseline was terminated somewhat prematurely due to a request by Jin and Liu to move on to the intervention phase. In the second routine, baseline data were collected until stable data trends were documented. Collection of baseline data began simultaneously for the two routines, with the collaboratively established understanding that the dinner routine would be prioritized as the first routine for intervention. Upon completion of the baseline phase in the first routine, the intervention phase began, while baseline conditions continued to be maintained in the second routine. The intervention phase for the second routine began after stable change was documented.
in the first routine. Experimental observation sessions (i.e., probes) were conducted in both routines from that point on, until the completion of the intervention phase.

**Research and Intervention Procedures**

The overall sequence of research and clinical support procedures for the implementation of the culturally responsive, family-centered PBS approach to intervention proceeded as follows: (a) preliminary screening procedures and identification of two target routines; (b) baseline; and (c) intervention, including a comprehensive assessment and the development and implementation of a behaviour support plan in each of the target routines. Each of these phases is described below.

**Preliminary screening procedures.** Prior to baseline procedures, the family was involved in three additional screening activities: (a) a brief functional assessment; (b) a routine assessment, in which Mia’s parents identified two valued but problematic family routines and defined a vision of successful routines; and (c) behavioural observations, used to confirm the results obtained in the brief functional assessment. These preliminary procedures helped to identify the behaviours and routines of concern to Mia’s family, and provided an early understanding of the stimuli and consequences that controlled Mia’s problem behaviour.

During the family routine assessment, Mia’s parents were asked to describe their daughter’s daily and weekly routines in the home and community with her family members. For each routine, Mia’s parents provided the following information: (a) time of day/day of the week; (b) type of routine; (c) behaviours of concern; and (d) extent to which the routine was typical and valued. Mia’s parents were also asked to identify routines that they once engaged in with their daughter but no longer felt comfortable doing because of her problem behaviour. From this information, Mia’s parents and I collaborated in selecting and prioritizing two routines for
intervention, and in defining their vision for each routine. The elements of an activity setting, as defined by Gallimore (2005), guided definition of each routine. These elements included: (a) time/place; (b) people involved; (c) resources required and available; (d) tasks; and (e) goals and values associated with the routine. Once defined, the steps for each routine were operationalized and compiled into a checklist format (see Table 2.5). The final step consisted of defining a criterion level of problem behaviour in each routine that would result in termination of the routine upon the criterion level’s occurrence (see page 53).
Table 2.5

*Operational Definitions of Envisioned Routines*

<table>
<thead>
<tr>
<th></th>
<th>Dinner</th>
<th>Sibling Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time/length</td>
<td>5:30-6:00 PM; 30 to 40 minutes or less</td>
<td>After dinner; 30 minutes</td>
</tr>
<tr>
<td>Setting</td>
<td>At home in the kitchen, at the dinner table</td>
<td>At home, in the playroom</td>
</tr>
<tr>
<td>Participants</td>
<td>Mia, her brother, and both parents</td>
<td>Mia, her brother and her father</td>
</tr>
<tr>
<td>Resources</td>
<td>Tableware and utensils (e.g., bowl, cutlery, fork or spoon, cup and plate)</td>
<td>Age-appropriate board games</td>
</tr>
<tr>
<td></td>
<td>Table and chairs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dinner foods and water for all members</td>
<td></td>
</tr>
<tr>
<td>Child tasks</td>
<td>Wash hands when called for dinner</td>
<td>Come to the playroom when called</td>
</tr>
<tr>
<td></td>
<td>Come to the kitchen table and sit down</td>
<td>Choose a game or allow for sibling’s choice</td>
</tr>
<tr>
<td></td>
<td>Sit in her chair and wait for food to be served</td>
<td>Help set up the game</td>
</tr>
<tr>
<td></td>
<td>Eat her meal independently with proper utensils</td>
<td>Review/listen to the rules if necessary</td>
</tr>
<tr>
<td></td>
<td>Participate in family conversation</td>
<td>Take turns playing the game</td>
</tr>
<tr>
<td></td>
<td>Put dishes in the sink</td>
<td>Play by the rules as described in instructions</td>
</tr>
<tr>
<td></td>
<td>Drink water from her cup</td>
<td>Finish the game (i.e., until someone wins)</td>
</tr>
<tr>
<td></td>
<td>Ask to be excused from the table</td>
<td>Remain in the game area throughout play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Help clean up the game</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repeat as necessary until 30 minutes are up</td>
</tr>
<tr>
<td>Sibling tasks</td>
<td>Dinner</td>
<td>Sibling Play</td>
</tr>
<tr>
<td>---------------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>Father’s tasks</td>
<td>- Same as focus child</td>
<td>- Call the children to the playroom</td>
</tr>
<tr>
<td></td>
<td>- Call the children to the dinner table</td>
<td>- Prompt the children to choose a game</td>
</tr>
<tr>
<td></td>
<td>- Prompt children to wash their hands</td>
<td>- Help the children to set up the game if necessary and review the rules</td>
</tr>
<tr>
<td></td>
<td>- Participate in and initiate family conversation</td>
<td>- Check on the children every 5 minutes</td>
</tr>
<tr>
<td></td>
<td>- Assist Mia in using her utensil if necessary</td>
<td>- Prompt the children to clean up if necessary</td>
</tr>
<tr>
<td></td>
<td>- Excuse both children once they have finished and asked to be excused</td>
<td>- Help with subsequent set up/clean up</td>
</tr>
<tr>
<td></td>
<td>- Clean up remaining tableware and cutlery</td>
<td></td>
</tr>
<tr>
<td>Mother’s tasks</td>
<td>- Serve food and water before or soon after both children are seated for dinner</td>
<td>- N/A</td>
</tr>
<tr>
<td></td>
<td>- Participate in and initiate family conversation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Excuse both children once they have finished and asked to be excused</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Clean up remaining tableware and cutlery</td>
<td></td>
</tr>
<tr>
<td>Child-centered goals</td>
<td>- To broaden the range of foods she will accept</td>
<td>- To play properly with available board games</td>
</tr>
<tr>
<td></td>
<td>- To sit at the kitchen table and remain in her chair throughout the dinner routine</td>
<td>- To follow the rules and play until the game is completed</td>
</tr>
<tr>
<td></td>
<td>- To eat faster, and avoid holding food in her mouth</td>
<td>- To share and take turns with her brother</td>
</tr>
<tr>
<td></td>
<td>- To join in with family conversation</td>
<td>- To clean up each game as she is finished</td>
</tr>
<tr>
<td></td>
<td>- To increase compliance to parental requests</td>
<td></td>
</tr>
<tr>
<td>Family-centered goals</td>
<td>- To have a relaxing, enjoyable dinner together as a family with no TV in the background</td>
<td>- For parents to complete work without disruption while children are playing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- For children to relax and have fun together</td>
</tr>
</tbody>
</table>
**Baseline.** Prior to providing training and support, Mia’s parents attempted to perform the two routines during videotaped, experimental probe sessions conforming to a multiple baseline design across settings. During each probe session, all dependent variables related to child performance (i.e., percentage of intervals of problem behaviour, percentage of steps successfully completed within the routine, and latency to termination or successful completion of the routine) were measured. Prior to beginning each probe session, I read a one-page summary of the operational definition of the target routine to Mia’s mother and father, and all relevant family members were asked to execute the envisioned steps of the routine with Mia until such time as she completed the routine successfully, or engaged in the pre-determined criterion level of problem behaviour that resulted in termination of the routine. Probe sessions were conducted in each routine until stable data trends were evidenced through analysis of the graphed data, or until family members indicated they were no longer comfortable remaining in the baseline phase. In addition to behavioural probe data, the following self-report measures were administered to Mia’s mother and father: (a) the FQoL survey, to measure baseline levels of family quality of life; (b) the CBC-L, to measure baseline levels of child behavioural and emotional functioning; (c) the PSI-SF, to measure baseline levels of parenting stress; and (d) the FACES-IV, to measure baseline levels of family adaptability and cohesion.

**Intervention.** During the intervention phase, I began by conducting a comprehensive assessment with Mia’s parents, consisting of: (a) a family ecology assessment, and (b) a family cultural assessment, (c) a behavioural feeding assessment, and (d) a functional assessment. I then designed a culturally sensitive PBS plan in collaboration with Mia’s parents for each target routine, and taught her parents how to implement the strategies involved. Throughout the implementation process for each routine, I served as the interventionist in conjunction with Mia’s
parents. Intervention for both routines occurred in conformance with the multiple baseline design across settings. These procedures are described below.

**Comprehensive assessment.**

**Family ecology assessment.** I conducted an assessment of family ecology (see Appendix N) with Mia’s parents, using the interview protocol developed by Lucyshyn et al. (2002). During this assessment, Mia’s parents were asked a series of open-ended questions, in which they described their family’s goals, strengths, stressors, resources, and social supports (see Table 2.6), in order to aid in the development of a contextually appropriate PBS plan for each target routine. This assessment was conducted in the family’s home, at a time that was convenient for the family. It took approximately 1 hour to complete.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Family strengths         | • Family members are flexible and adapt easily to accommodate Mia’s changing needs  
• All family members are cohesive and enjoy being together (i.e., strong family bonds)  
• Mother and father are supportive of Mia’s intervention needs  
• All family members are loving and caring, both toward members inside and outside of their family  
• The family is able to travel, and is financially stable                                                                                                                                                   |
| Child contributions      | • Mia has broadened their notion of how children learn and how each child has different needs  
• The mother and father have learned to speak English as a result of Mia’s language delays and the subsequent decision to raise her using the language of the dominant culture  
• Mia’s happiness leads to the happiness of her family members  
• Mia requires all family members to follow rules and structure their daily activities  
• Mia has taught her parents to relax in their parenting and disciplinary styles  
• Mia has had a positive impact on her brother; he is more caring and protective of peers at school                                                                                                           |
| Resources                | • Mia attends three preschools throughout each week  
• Mia attends swimming, gymnastics, dance, drawing and academic classes outside of school  
• Mia and her family members go to church every Sunday  
• Mia receives behavioural consultation and intervention when possible  
• Mia has received intervention from an occupational therapist and a speech pathologist  
• Mia’s mother and father see a marriage counsellor on a regular basis  
• Daniel attends a sibling support group that addresses his ability to cope with his sister’s diagnosis and support her in meaningful ways                                                                 |
<table>
<thead>
<tr>
<th>Categories</th>
<th>Responses</th>
</tr>
</thead>
</table>
| Stressors          | • Behavioural issues – Mia’s problematic and rigid behaviour across all contexts (i.e., home, school and community) puts pressure on her parents as they struggle to resolve each situation  
                      • Marital conflict – Mia’s parents have difficulty agreeing on parenting practices, and tension arises when her mother attempts to communicate suggestions from various professionals to her father  
                      • Family strain – relationships between all family members are strained, due to the draining requirements of catering to Mia’s emotional needs above their own  
                      • Social isolation – Mia’s mother and father feel isolated from friends and family due to their daughter’s behaviour and diagnosis and the stigma they bring  
                      • Sibling issues – Mia’s brother feels that things are unfair, and that he receives less attention from both of his parents as a result of his sister’s special needs |
| Goals              | Child-centered goals:  
                      • For Mia to be able to take care of herself one day  
                      • For Mia to eat the foods that are given to her, and broaden her range of accepted foods  
                      • For Mia and Daniel to be able to play nicely together at home  
                      • For Mia to comply with her parents’ requests across all contexts  
                      • To reduce Mia’s behavioural rigidities and increase her flexibility  
                      • To improve Mia’s receptive language skills and teach her to understand other social perspectives  
                  
                      Parent-centered goals:  
                      • To have more time to themselves to pursue their own interests  
                      • To expand on their ability to teach Mia over the course of her lifetime  
                  
                      Family-centered goals:  
                      • To sit and eat dinner together as a family  
                      • To attain more balance between family members (e.g., so that Mia is not always in control)  
                      • To be as happy as other families with whom they interact |
Cultural assessment. The cultural assessment (see Appendix O), based on the cultural assessment tool developed by Chen et al. (2002), consisted of three phases: (a) planning; (b) family assessment; and (c) self-evaluation. During planning, I conducted informal observations of the family in their home, in order to gain an understanding of their communicative and interactional style. Following these observations, I answered questions related to my own interactional style with the family, in order to modify my behaviour and stay consistent with that of the family. All observations were scheduled at a time that was convenient to the family, and observation procedures were aimed to be as unobtrusive as possible. During family assessment, a semi-structured interview was conducted with Mia’s parents, in order to gather information relevant to the family’s resources, practices, beliefs and perspectives. This interview took approximately 90 minutes and was conducted in the home at a time that was convenient for the family. A translator was present during this interview, and all responses were recorded verbatim using paper and pencil. During self-evaluation, I answered questions related to my experiences with the family, in order to adapt my approach to service provision such that it was culturally responsive to the needs of the family. This process was ongoing, with the results of each reflection informing my practice with the family from that time forward. The entire cultural assessment process began during the baseline phase and continued throughout the study.

Feeding assessment. The feeding assessment consisted of an interview with Mia’s parents guided by use of the Behavioural Feeding Assessment Parent Interview form by Budd (1992). During the assessment, Mia’s parents provided information related to Mia’s eating habits across six main categories: (a) general developmental background, (b) feeding history, (c) mealtime habits, (d) current feeding problems, (e) current feeding techniques, and (f) treatment plans, including parents’ priorities for feeding. Mia’s parents reported that during dinner, their target
mealtime, she would eat dumplings, beef, pork, shrimp, noodles, rice, carrots, broccoli, and mushrooms. However, during each dinner meal, she would refuse to eat these foods and only do so if they were pea-sized and after persistent demands from Mia’s mother over the course of several hours. In regard to treatment planning, Mia’s parents indicated that target foods during dinner would include chicken, fish, corn, peas, bok choy, zucchini, green beans, spinach, egg, tomato, apple, grapes, strawberry, orange, banana and cantaloupe, in addition to those foods Mia would eat prior to intervention. The assessment was conducted in the family’s home and took approximately 30 minutes to complete.

Functional assessment. The functional assessment consisted of an interview and direct observations (see Appendix P). The functional assessment interview (FAI) developed by O’Neill et al. (1997) was conducted in the family’s home with Mia’s mother and father. This interview took approximately 90 minutes to complete. Once the interview had been completed, baseline observations were used to confirm the hypotheses regarding the functions of problem behaviour identified by the FAI. The results obtained from the FAI and observations, in conjunction with the findings from the cultural and ecology assessments, helped to guide the development of a culturally sensitive, ecologically valid PBS plan.

Three setting events were identified that set the stage for Mia’s problem behaviour, but did not act as direct antecedent triggers. These events included: (a) hunger (which was often a problem, as Mia typically refused to eat one to three meals per day); (b) fatigue (which was deemed a problem whenever Mia got less than 12 hours of sleep the night before); and (c) serving non-preferred foods (which set the stage for problems to occur in reaction to other meal-time related tasks that might normally be completed successfully). In the event that one or more
of these incidents occurred, the likelihood of Mia engaging in problem behaviour as a result of an antecedent stimulus was increased substantially.

Several antecedent events were identified that directly triggered Mia’s problem behaviour in the context of the dinner and sibling play routines. These events included: (a) Mia’s mother, father or sibling presenting a non-preferred request/demand (e.g., “Come to the table to eat your dinner” “Stay sitting in your chair for dinner until you’re finished” “Eat your fruit” “Play by the game rules, don’t make up your own” “Finish the game”); (b) Mia being told she cannot have something that she wanted (e.g., “You can’t have the blue game piece, I’m being blue today” “It’s Daniel’s turn to pick the game” “It’s Daniel’s turn to go first this game” “We’re eating noodles tonight, not dumplings” “You can’t sit backward in your chair at the dinner table”); (c) Mia’s mother or father interrupting a preferred activity (e.g., “Stop playing it’s time for dinner” “Stop playing in your room and come to the playroom with Daniel”); (d) Mia losing a game (e.g., Daniel winning and saying “I win you lose!”); and (e) Mia’s family members providing her with no attention for 5 minutes or longer (e.g., while sitting at the dinner table, talking to each other).

When asked about the consequences that typically followed Mia’s problem behaviour, Jin and Liu disclosed that they responded by: (a) removing the non-preferred demand/request; (b) giving Mia the desired toy, activity or preferred choice; (c) allowing Mia to continue her preferred activity (e.g., often throughout dinner as she was spoon fed by her parents or allowed to graze as she pleased); (d) comforting Mia and allowing her to ‘win’ the game as well, or requiring Daniel to let Mia win all the time to prevent her behaviour from escalating; and (e) providing Mia with attention in response to her problem behaviour by physically cuddling or verbally comforting her in soothing tones.
Three main hypotheses emerged as a result of the information gained during the functional assessment. Together, the family and I hypothesized that Mia engaged in problem behaviour to: (a) escape non-preferred demands/requests and situations that arose during the dinner and play routines; (b) gain new or continued access to preferred items or activities; and (c) get attention from family members during periods of conversational isolation at the dinner table.

**PBS plan development.** Once all information had been gathered during the comprehensive assessment (i.e., ecology, cultural, and functional assessments), this information was used to inform the design of a contextually and culturally responsive, technically sound PBS plan for each target routine (see Appendix Q for full-length versions of each plan). Plan development occurred in a time-lagged fashion, consistent with the multiple baseline design of this study. For each routine, Mia’s parents were asked to collaborate during four steps of support plan development. First, they were asked to help build summary statements and competing behaviour pathways diagrams for the functions of Mia’s problem behaviour (see Figure 2.1 and Figure 2.2 for competing pathways diagrams). The competing behaviour pathways diagrams helped to guide the design of a technically sound behaviour support plan that aimed to make problem behaviour irrelevant, ineffective, and inefficient in terms of achieving the desired functions (O’Neill et al., 1997).
Mia comes to the dinner table when called, sits appropriately and eats the foods that are presented, cleans up her dishes drinks some water, and asks to be excused from the table with no problem behaviour

desired Behaviour

Positive attention and verbal praise

Access to preferred toys or activities (e.g., IPAD)

New toy (for eating fruit)

Maintaining Consequence

Fatigue (less than 12 hours the night before)

Non-preferred foods served for dinner

Setting Event(s)

Mother or father presents a non-preferred request/demand to Mia

Mia is told she cannot have a preferred choice (e.g., food, seating arrangement)

Father interrupts Mia’s play to bring her to dinner

Family members provide Mia with no attention for 5+ minutes

Antecedent Trigger(s)

Negative vocalizations and inappropriate verbal requests

Food refusal

Defiance, noncompliance

Leaving assigned area/running away from the dinner table

Physical resistance

Disruptive/dangerous behaviour

Problem Behaviour

Mother or father withdraw their request/demand (functions as escape)

Father allows Mia to play with toys during dinner (functions as tangible)

Mother or father provide physical cuddling or verbal soothing (functions as attention)

Maintaining Consequence

Mia asks for a break (escape), for 5 more minutes of play (tangible) or initiates conversation (attention)

Alternative Replacement Behaviour

Figure 2.1 Competing behaviour pathways diagram for the dinner routine.
Mia will play with her sibling in the play room, abiding by the rules of each game and accepting the choices provided, as well as the act of losing, without problem behaviour occurring.

Positive attention and verbal praise
Access to preferred toys or activities after play (e.g., IPAD)

Desired Behaviour
Maintaining Consequence

Fatigue (less than 12 hours the night before)
Hunger (due to refusal to eat meals or snacks)

Father or sibling presents a non-preferred request/demand to Mia
Mia is told she cannot have a preferred choice (e.g., choice of game, first turn, choice of colour)
Mia loses a game, or sees that she is going to lose

Negative vocalizations
Defiance, noncompliance
Leaving assigned area
Physical resistance
Physical aggression
Disruptive/destructive behaviour

Father or sibling withdraws their request/demand (functions as escape)
Sibling allows Mia to have preferred item/activity (functions as tangible)
Sibling allows Mia to win all games (functions as tangible)

Problem Behaviour
Maintaining Consequence

Mia asks for a break to calm down (escape) or she asks nicely for desired item/activity (tangible)

Alternative Replacement Behaviour

Figure 2.2 Competing behaviour pathways diagram for the sibling play routine.
Second, Mia’s parents and I identified support strategies that were logically linked to each feature of the competing behaviour pathways diagram (i.e., setting events, antecedents, problem behaviour, and maintaining consequences). See Table 2.7 for a summary of the support strategies chosen for the dinner routine, and Table 2.8 for a summary of the support strategies chosen for the sibling play routine.
Table 2.7

** Behaviour Support Strategies for the Dinner Routine**

<table>
<thead>
<tr>
<th>Setting event strategies</th>
<th>Preventative strategies</th>
<th>Teaching Strategies</th>
<th>Consequence strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Use visual supports to increase predictability and promote use of functional communicative statements</td>
<td>1. Teach Mia to use functional communicative phrases to ask appropriately for the things she needs (e.g., ‘I need a break please’, ‘one more minute (of play) please’ and ‘Hey mommy...’ to gain attention)</td>
<td>1. Provide praise and preferred toys/activities contingent upon appropriate behaviour and completion of dinner routine steps</td>
</tr>
<tr>
<td></td>
<td>2. Provide Mia with a 5-minute countdown prior to dinner</td>
<td></td>
<td>2. Honour the use of alternative communicative phrase requests</td>
</tr>
<tr>
<td></td>
<td>3. Provide Mia with a choice of dinner foods</td>
<td></td>
<td>3. Actively ignore and redirect Mia to her task if minor problem behaviour occurs</td>
</tr>
<tr>
<td></td>
<td>4. Provide positive contingency statements</td>
<td></td>
<td>4. Engage in de-escalation procedure and redirect Mia to her task if major problem behaviour occurs</td>
</tr>
<tr>
<td></td>
<td>5. Provide Mia with safety signals toward the end of the meal</td>
<td></td>
<td>5. Note: no crisis plan necessary</td>
</tr>
<tr>
<td></td>
<td>6. Engage Mia in conversation every 2-4 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Provide prompts and fade prompts appropriately to avoid dependency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Use stimulus and duration fading to increase amount of food accepted, bite size, and latency to completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Target intervention goals in three stages (stage 1: appropriate meal time behaviour and 30 minute latency; stage 2: appropriate bite size; stage 3: extend food repertoire)</td>
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</tr>
<tr>
<td>2. Provide Mia with her preferred seating arrangement, and purchase new dining room furniture (this was the family’s idea)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Provide Mia with an age-appropriate sized meal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Remove all toys and excess materials from the dining area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Reduce task demands in the event that Mia is tired or sick</td>
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</tr>
</tbody>
</table>
Table 2.8

**Behaviour Support Strategies for the Sibling Play Routine**

<table>
<thead>
<tr>
<th>Setting event strategies</th>
<th>Preventative strategies</th>
<th>Teaching Strategies</th>
<th>Consequence strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide Mia and Daniel with a snack if necessary</td>
<td>1. Use visual supports to increase predictability and promote proper play behaviour (i.e., visual choice board, visual contingency, playtime rules visual, and calm-down visual)</td>
<td>1. Teach Mia to ask appropriately for the things she needs (e.g., ‘I need a break please’, ‘Can I go first please?’, ‘What is the rule?’)</td>
<td>1. Provide praise and preferred toys/activities contingent upon appropriate behaviour and completion of sibling play routine for 30 minutes</td>
</tr>
<tr>
<td>2. Prompt the children to play separately in the event that one child is tired or sick</td>
<td>2. Provide Mia with verbal pre-corrects at the beginning of the play session</td>
<td>2. Use social stories to teach Mia how to play together (e.g., ‘how to be a good sport’, ‘how to play with my brother’)</td>
<td>2. Honour the use of alternative communicative phrase requests when possible</td>
</tr>
<tr>
<td></td>
<td>3. Review the rules prior to playing each game</td>
<td>3. Teach Daniel how to support Mia in the sibling play routine (e.g., ignore minor inappropriate behaviour, praise appropriate behaviour, use a positive tone of voice, be a good sport)</td>
<td>3. Actively ignore and redirect Mia to her task if minor problem behaviour occurs</td>
</tr>
<tr>
<td></td>
<td>4. Provide Mia with choices as often as possible</td>
<td>4. Teach Mia to use a ‘calm-down procedure’</td>
<td>4. Engage in de-escalation procedure and redirect Mia to her task if major problem behaviour occurs</td>
</tr>
<tr>
<td></td>
<td>5. Use fair-decision making techniques (i.e., rock, paper, scissors) to make decisions</td>
<td>5. Teach Mia to use a 5-point scale for anger</td>
<td>5. Note: no crisis plan necessary</td>
</tr>
<tr>
<td></td>
<td>6. Provide positive contingency statements and safety signals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Provide prompts and fade prompts appropriately to avoid dependency</td>
<td></td>
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</tbody>
</table>
Third, Mia’s parents helped to finalize support strategies that were likely to be both technically sound and contextually and culturally appropriate given their family values, beliefs and practices. Table 2.9 presents a summary of the contextual and cultural fit considerations that were discussed collaboratively with Mia’s family. The resulting behaviour support plans were written and translated into Mandarin for Mia’s parents, such that they could refer to a copy of each plan in their native language despite the fact that intervention took place in English.
### Contextual and Cultural Fit Considerations

<table>
<thead>
<tr>
<th>Family or child issue</th>
<th>Contextual fit considerations</th>
<th>Cultural fit considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote positive spousal interactions</td>
<td>Mia’s mother and father reported increasing conflict and relationship strain due to Mia’s problem behaviour and parenting style decisions. The research team promoted positive, reciprocal interactions between the mother and father, and all information was presented to both parents to avoid the stressful situation in which one parent must relay information to the other.</td>
<td>Mia’s mother and father listed their close family bonds as strength, as well as their capacity to love, show affection, and support one another in difficult times. These strengths were brought to the forefront of parent training sessions in terms of building routines that utilized their strengths and minimized conflict or relationship strain</td>
</tr>
<tr>
<td>Establish equality between Mia and her brother</td>
<td>Daniel often felt that he was treated unfairly, due to the fact that his mother and father required that he always give in to Mia’s demands. This tension caused stress for the entire family. The research team created antecedent and consequence strategies that promoted fairness within the dinner and play routines, and both parents were taught how to use these strategies.</td>
<td>Mia’s mother and father listed equality between family members, happiness, politeness and respect as core cultural values. These values set the tone for intervention in each routine, particularly to help establish equality between siblings in the play routine.</td>
</tr>
<tr>
<td>Increase external supports for mother and father</td>
<td>Mia’s parents noted that they had limited external resources, and that they rarely had time to pursue their own interests. The research team attempted to seek support groups and other resources that would allow Mia’s parents to have time alone.</td>
<td>A translator was asked to participate throughout the course of the study, which allowed Mia’s parents to contribute openly to plan development and implementation, and provided them with an external support that was sensitive to their linguistic needs and cultural background.</td>
</tr>
</tbody>
</table>
Fourth, the strategies listed in the behaviour support plan for each target routine were condensed into a one or two page implementation checklist (see Appendix R), which differed for each parent depending on his or her role within the target routine. Each checklist was written in English. In addition, the checklists provided for the mother were translated into Mandarin as her ability to read English was not strong enough to allow her to use the English version of the checklist successfully. Mia’s parents used the implementation checklists throughout the intervention phase. Mia’s father was given a checklist for both the dinner and sibling play routines, due to his lead role in supporting Mia. Mia’s mother was given a checklist for the dinner routine only, as she had no role in the sibling play routine except to complete her cooking and housework in other parts of the house. Once the behaviour support plan and implementation checklists were created for each target routine, I created an implementation plan in collaboration with Mia’s mother and father (see Appendix S). The implementation plan included information regarding: (a) training and support activities led by the interventionist for the purpose of empowering Mia’s parents in their ability to support their daughter; (b) roles and responsibilities for every member of the research team; and (c) a timeline of implementation for completing the stages of the support process. See Table 2.10 for a summary of the implementation plan in the dinner and sibling play routines.
Table 2.10

Summary of Implementation Plan for the Dinner and Sibling Play Routines

<table>
<thead>
<tr>
<th>Plan Section</th>
<th>Dinner Routine</th>
<th>Sibling Play Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and support activities</td>
<td>• Written positive behaviour support plan</td>
<td>• Written positive behaviour support plan</td>
</tr>
<tr>
<td></td>
<td>• Development of training and support materials (e.g., visual schedule, visual contingency, ‘take a break’ card)</td>
<td>• Development of training and support materials (e.g., visual choice board, play time rules visual, ‘calm-down’ visual, visual contingency diagram)</td>
</tr>
<tr>
<td></td>
<td>• Creation of implementation checklists by student researcher (and translator)</td>
<td>• Creation of implementation checklists by student researcher (and translator)</td>
</tr>
<tr>
<td></td>
<td>• Intervention led by student researcher (until Mia reached performance criteria at each stage, at which point Mia’s parents took over the lead role)</td>
<td>• Intervention tutorials with Mia and Daniel led by student researcher</td>
</tr>
<tr>
<td></td>
<td>• Coaching and modelling sessions for parents and sibling, led by student researcher</td>
<td>• Coaching and modelling sessions for father and sibling, led by student researcher</td>
</tr>
<tr>
<td></td>
<td>• Team meetings to review progress and problem solve</td>
<td>• Team meetings to review progress and problem solve</td>
</tr>
<tr>
<td>Roles and responsibilities</td>
<td>• Mia’s parents – fill out the implementation checklist daily during initial training phase; implement behaviour support strategies during dinner routine</td>
<td>• Mia’s father – fill out the implementation checklist daily during initial training phase; implement behaviour support strategies</td>
</tr>
<tr>
<td></td>
<td>• Student researcher – review all data; train and support family members; make changes through consultation with family</td>
<td>• Student researcher – review all data; train and support family members; make changes through consultation with family</td>
</tr>
<tr>
<td></td>
<td>• Principal Investigator – advise as necessary</td>
<td>• Principal Investigator – advise as necessary</td>
</tr>
<tr>
<td>Timeline</td>
<td>• Five months of training and support</td>
<td>• Three months or less</td>
</tr>
</tbody>
</table>
Implementation support. During implementation support, the training and support activities of the implementation plan were initiated. There were two sub-phases of implementation support: (a) initial interventionist training; and (b) initial parent training and support.

Initial interventionist training (IIT). During intervention for the dinner routine, I initially served as the interventionist with Mia. I implemented all strategies within the behaviour support plan for dinner, until Mia met the performance criteria agreed upon for the first sub-stage (i.e., sub-stage 1: appropriate behaviour and latency to completion of dinner with age-appropriate portion size; sub-stage 2: increase in bite size; sub-stage 3: increase in range of foods accepted). The IIT phase was deemed necessary given Mia’s total lack of ability to take part in the steps of the dinner routine, and her aversion to nearly every food that was presented to her. In order to eliminate the behavioural history Mia had established with her family members during the dinner routine over the course of her life, such that appropriate stimulus control could replace the existing contingencies, Mia’s parents and I agreed that I should take the lead role prior to transferring stimulus control to each of them in turn. Before beginning IIT, I purchased and developed the necessary materials (e.g., visual supports, reinforcers). IIT sessions for sub-stage 1 took place one to three times per week for a total of 15 sessions over the course of nine weeks. Each session lasted between 10 and 90 minutes, with an average length of 37 minutes. The first IIT session consisted of Mia engaging in every step of the dinner routine, while eating a portion of food that was ¼ the size of an age-appropriate meal. Over a series of nine sessions, meal size was increased until Mia could complete the dinner routine with a full portion size, and within an appropriate length of time (i.e., 40 min or less). After finishing the 15 IIT sessions, stimulus control was gradually transferred over to Mia’s father and mother. Specifically, all family
members were gradually faded in one at a time, with inclusion of the father first, followed by the mother, and finally the sibling as well. Mia’s brother did not support Mia in this routine, or prompt her in any way; rather, he took part in the dinner routine with support from his mother, and Mia came to succeed in the routine in the presence of all three family members.

IIT sessions for sub-stages 2 and 3 were intermixed with initial parent training and support sessions, and began once all goals for sub-stage 1 had been met during the sole presence of Mia’s family members within the dinner routine (i.e., both parents and sibling, when I was not present). A total of three IIT sessions took place for sub-stages 2 and 3 combined, with sessions occurring over a span of three weeks. The purpose of these sessions was to provide Mia with additional practice focused on expanding the range of fruits she would accept, as well as the bite size for each fruit. Following these three sessions, one or both of Mia’s parents were included in the pull-out training sessions throughout the duration of intervention, which continued to focus on increasing Mia’s acceptance of target fruits, in addition to her ability to pace herself appropriately through the meal (i.e., to increase her pace).

Initial parent training and support (IPT). During the initial parent training and support sub-phase, I provided materials and conducted support activities one to three times per week with the family, with each session lasting for approximately 1 to 2 hours in the family’s home. I provided Mia’s parents with support and training in the context of each routine in a time-lagged fashion that was consistent with the multiple baseline design across two routines, with initial support being provided in the dinner routine. Prior to the beginning of the IPT sub-phase for the dinner routine, I provided Mia’s parents with a written behaviour support plan in both English and Mandarin. At the beginning of the IPT sub-phase for the dinner routine, I provided Mia’s parents with a routine-specific implementation checklist that served as a succinct version (i.e.,
one to two pages) of the PBS plan for that routine. Mia’s parents used this checklist to self-monitor and self-manage the implementation of support strategies in the target routine.

The IPT phase for the sibling play routine began once Mia attained stable levels of behaviour change in the dinner routine for sub-stage 1. At this time, we chose to move ahead with intervention for the sibling play routine in the interest of efficiency for the family, despite the fact that initial parent training had not been completed for sub-stages 2 and 3 in the dinner routine. In addition to the issue of efficiency, the research team agreed that all of our basic goals had been met in the dinner routine, with the exception of the higher order dinner-time goals. The basic goals included teaching Mia to successfully complete each step of the dinner routine in an appropriate amount of time (i.e., 40 min or less), while sitting nicely and eating the food that was presented with the exception of non-preferred vegetables and fruit. The higher order goals included increasing bite size and expanding her range of vegetables and fruit.

Upon beginning the IPT sub-phase for the sibling play routine, I once again presented Mia’s parents with a written copy of the PBS plan, specified to the play routine, which had been written in English and translated into Mandarin in the same fashion as the PBS plan for the dinner routine. Along with the presentation of the PBS plan for sibling play, I also provided Mia’s father with a routine-specific implementation checklist, to be used for self-monitoring and self-management in the use of support plan strategies as both parents continued to do in the dinner routine. Due to the nature of the sibling play routine, it was deemed unnecessary for me to provide initial intervention training involving only myself as an interventionist. Instead, at the beginning of each IPT session, I provided training and support to Mia’s father and brother, in order to facilitate their use of the support plan strategies for the sibling play routine.
At this point we had entered sub-stages 2 and 3 for IPT within the dinner routine, and two events of note occurred which informed alternative approaches to intervention that had not originally been included in the PBS plan. First, in attempting to teach Mia to accept and eat fruit, I came up against a barrier. The first use of non-removal of spoon procedure to eat a small piece of apple, as outlined in the PBS plan, occasioned an extinction burst that lasted for two hours and involved Mia crying, screaming, and eventually falling asleep at the table. Out of concern for the acceptability of these procedures to Mia’s parents, and in consultation with my advisor, we created an alternative procedure that was based on principles of modeling, respondent conditioning, and positive reinforcement, without the use of an escape-extinction procedure. A game format was used involving turn-taking by Mia, me, and the other game participants (i.e., father, mother, sibling). Touching, putting to the lips, and eating small pieces of fruit was modeled, motivation was enhanced through use of verbal and visual contingencies that predicted highly preferred toys, and praise and tangible reinforcement were delivered contingent on eating small bits of fruit which were gradually increased in size. The result of this procedure was Mia errorlessly accepting and eating slices of apple and small pea-sized bits of grape, orange, banana, strawberry and melon. When Mia reliably ate a fruit of a particular size, that fruit was reintegrated into the dinner routine and stimulus control was transferred to Mia’s father.

Second, upon gradually increasing bite size of all food presented to Mia, such that she was eating age-appropriate sized bites, it became clear that her ability to chew and swallow each bite within a reasonable amount of time had been compromised due to her poor oral motor skills. Specifically, Mia began to require a much longer period of time to finish her meal, which meant that she no longer completed the dinner routine within the acceptable amount of time as defined by her parents (i.e., 40 minutes or less). The use of a timer at this point became the primary
strategy; however, I quickly realized that the timer served only to increase Mia’s anxiety, without having any consistent effect on her ability to eat faster. From here a ‘pacing’ visual was created, in which Mia would earn a token for every bite that she was able to chew and swallow within a measured count to 10. At the end of the meal, Mia was able to redeem her tokens for minutes of play on her IPAD (i.e., a highly preferred reinforcer). This visual proved to be very helpful in providing Mia with practice, and served to improve her oral motor skills over the course of intervention; however, its use quickly became restricted to ‘pull-out’ practice sessions with me, due to a significant increase in problem behaviour that accompanied its initial use by Mia’s father.

Training activities during the IPT sub-phase in both target routines included: (a) modeling of intervention strategies by me, for Mia’s mother, father and sibling; (b) role play of problematic scenarios arising in the dinner and sibling play routines; (c) coaching of all family members as they were actively engaged in the target routines with Mia; and (d) problem solving discussions following IPT sessions in which one or more problems occurred that prevented Mia from successfully completing a part of a target routine. The IPT sub-phase for the dinner routine took place across 15 weeks, with nine observation probes collected during this time. The IPT sub-phase for the sibling play routine took place over five weeks, with three observation probes collected during this time.

**Additional measures.** In addition to PBS plan development and implementation, I administered a measure of contextual and cultural fit, as well as a measure of social validity, to both of Mia’s parents, once during the IPT phase for each valued family routine. As well, at the end of the intervention phase, a third party (i.e., the translator) re-administered all measures that were originally administered to Mia’s parents during the baseline phase (i.e., FQoL; CBCL/1½-
5; PSI-SF; and FACES-IV). A third party did so for two reasons: (a) to translate the measures from English to Mandarin as Mia’s parents answered each question; and (b) to avoid a possible social acceptability bias in their answers that may have been present had I administered the measures myself.
CHAPTER THREE

Results

The present study employed quantitative methods to investigate the extent to which: (a) there existed an association between implementation of a culturally responsive PBS approach and socially valid improvement in child problem behaviour and participation in two valued family routines for a child with autism in a family of diverse cultural and linguistic background; (b) the family viewed the culturally responsive, family-centered PBS approach to be socially valid, and the behaviour support plan to possess a good contextual and cultural fit with their ecology and culture; and (c) there existed an association between implementation of the culturally responsive, family-centered PBS approach and meaningful improvements in generalized child and family functioning, as evidenced by parent report. The study employed qualitative methods to gain an understanding of: (a) the family’s cultural perspectives related to family life, raising a child with a disability and living as relatively recent Chinese immigrants to Canada, and (b) an interventionist’s perspectives on the process of becoming a culturally competent practitioner as well as the themes, properties and dimensions of this effort with a Chinese immigrant family raising a young daughter with autism.

Quantitative results gained from direct observation of child behaviour in the target routines, and from parent report regarding generalized measures of child and family functioning as well as social validity and contextual and cultural fit, are presented in this chapter. Qualitative results gained from analysis of the interventionist’s on-going journal entries as well as the cultural interview conducted with the family members are also described in this chapter, and further analysis related to all quantitative and qualitative outcomes is provided.
Quantitative Results

A total of 10 dependent variables were examined in this study including: (a) percentage of intervals of problem behaviour; (b) percentage of successfully completed steps in each routine; (c) latency to termination of each valued routine due to problem behaviour or successful completion; (d) percentage of intervals of accurate use of the behaviour support strategies by the parents or sibling; (e) average rating of social validity of the family-centered PBS approach; (f) average index of the behaviour support plan’s contextual and cultural fit; (g) index of family quality of life for each parent; (h) global index of the child’s level of behavioural and emotional functioning; (i) index of parenting stress for each parent; and (j) index of global family functioning as assessed by each parent. Analysis related to each of these variables, within the context of the research design, is described in detail below.

Results of multiple baseline design. A multiple baseline design across two valued yet problematic family routines was used to explore whether the culturally responsive, family-centered PBS approach led to socially significant changes in child problem behaviour and participation in the target routines. This design was quasi-experimental in nature, and allowed for examination of two basic effects through visual analysis of graphed data representing percentage of problem behaviour, steps completed in target routines and latency to termination or successful completion of the target routine. Visual analytic procedures as outlined by Horner et al. (2005) and Kennedy (2005) were used to examine the level, trend, and variability of probe data, within and across baseline and intervention phases for each target routine. Analysis of basic effects, each representing an association between implementation of support and positive child outcomes, involved systematic visual examination of the change in the level, trend, and variability of problem behaviour and steps completed when comparing the baseline phase to the
intervention phase in each target routine. In general, success within target routines was defined as: (a) a decrease to near-zero levels of child problem behaviour (i.e., less than 10% of intervals) during the intervention phase; (b) an increase in the percentage of steps completed to a level of 80% or higher in the intervention phase; (c) successful completion of the routine within an allotted time period (i.e., 40 minutes or less for dinner, 30 minutes for sibling play); (d) documentation of social validity as reported by each parent during the intervention phase; and (e) documentation of contextual and cultural fit as reported by each parent during the intervention phase.

Figure 3.1 presents a visual representation of the results obtained in the two target routines, across baseline and intervention phases, pertaining to: (a) percentage of intervals of child problem behaviour, and (b) percentage of steps successfully completed. The intervention phase is divided into initial interventionist training (IIT) and initial parent training (IPT) sub-phases for the dinner routine, with IIT representing implementation of support strategies by me, and IPT representing transfer of implementation to Mia’s parents and sibling. Superscript numbers placed above the data points in the intervention phase for the dinner routine represent successive stages of transfer of implementation support (i.e., stimulus control) to Mia’s family members as well as incremental increases in expectations for Mia, including: 1 = father as implementer; 2 = father and mother as implementers; 3 = father and mother as implementers with sibling present; 4 = father and mother as implementers with sibling present, increased bite size of food and inclusion of non-preferred vegetables and fruit; 5 = father and mother as implementers with sibling present, increased bite size of food, inclusion of non-preferred vegetables and fruit, and focus on pacing and chewing ability. Due to a regression in child behaviour during one observation session, the use of a particular pacing visual support strategy
was removed from IPT. The sibling play routine did not require an IIT subphase, thus all intervention was labeled as IPT. Analysis of these data is presented below.
Figure 3.1. Percentage of intervals of problem behaviour and percentage of steps successfully completed in the dinner and sibling play routines. Note. IIT = Intensive Interventionist Training; IPT = Initial Parent Training.
**Percentage of intervals of child problem behaviour.** Figure 3.1 shows the percentage of intervals of child problem behaviour across baseline and intervention phases within the dinner and sibling play routines. Results across the two routines show marked improvement from baseline to intervention phases, with particularly dramatic change documented at the point of intervention in the dinner routine.

**Dinner routine.** Baseline data for intervals of child problem behaviour in the dinner routine show high yet somewhat variable levels over the first four probe sessions, with an average of 90.5%, before dropping to a mid-range level at which point a new baseline level was established at an average of 66.4%. Given this drop, a modest decreasing trend in the data is evident across the baseline phase; however, the stability of problem behaviour was re-established over the final three probe sessions such that a slight increasing trend is evidenced prior to the point of intervention. In total, the average percentage of intervals of child problem behaviour during baseline within the dinner routine was 80.2% (range, 61.1 - 100%).

Intervention data show dramatic improvement in child problem behaviour at the point of intervention, with the establishment of stable, low levels of problem behaviour across the majority of observations in the intervention phase. The average percentage of intervals of child problem behaviour decreased to 8.2% (range, 0.6 - 20.0%). The percentage of non-overlapping data with the baseline phase was 100%. Substantial improvements in child behaviour were particularly evident during the first sub-phase of initial parent training for the dinner routine (i.e., superscripts 1, 2, and 3; \( M = 5.7\% \)), in which stimulus control was transferred to Mia’s mother and father, with no additional demands placed on increasing bite size of food or eating non-preferred vegetables and fruit (i.e., superscripts 1, 2, and 3). A small regression in child behaviour was observed upon entering the second and third sub-phases of initial parent training.
(i.e., superscripts 4 and 5; $M = 11.6\%$), with a regression to a level of 20.0\% during the observation in which a new visual tool was introduced targeting Mia’s ability to chew and swallow her food at a faster pace. Child problem behaviour decreased during subsequent probes ($M = 7.6\%$), with a level of 4.1\% during the final observation. Overall, a basic effect was documented for percentage of intervals of problem behaviour in the dinner routine, as evidenced by the dramatic decrease in child problem behaviour at the point of intervention, coupled with stable, low levels of problem behaviour and 100\% non-overlapping data as compared to baseline.

**Sibling play routine.** Baseline data for percentage of intervals of child problem behaviour in the sibling play routine were highly variable during the first four observations, with behaviour falling in the mid-range level on average ($M = 61.7\%$, range, 24.4 - 100\%). This variability was due to Mia’s ability to play cooperatively with her brother up until a point, at which she would engage in high levels of problem behaviour that would result in termination of the routine. The point at which this occurred varied according to the games played, the outcomes of the games (i.e., whether or not she won), and who was given their choice of game, game piece or taking the first turn. Baseline observations in this routine continued until stability of the data was established, with an average of 26.9\% intervals of child problem behaviour evidenced across the final three observations. Although a moderate decreasing trend in problem behaviour was evident across the seven baseline observations, the final three observations showed a slight increasing trend. Furthermore, variability in the data subsided such that the final three observations prior to intervention reflected relative stability. Overall, the average percentage of intervals of child problem behaviour during baseline within the sibling play routine was 55.0\% (range, 19.1 - 100\%).
Intervention data showed marked improvement in child problem behaviour at the point of intervention. Across the three probe sessions, stable, low levels of problem behaviour are evident, with a decrease in the average percentage of intervals of child problem behaviour to 6.8% (range, 3.3 – 9.9%). Overall, a basic effect was documented for percentage of intervals of problem behaviour in the sibling play routine, as evidenced by the marked decrease in child problem behaviour at the point of intervention, coupled with stable, low levels of problem behaviour and 100% non-overlapping data as compared to baseline.

**Percentage of steps successfully completed.** Figure 3.1 shows the percentage of steps successfully completed by Mia across baseline and intervention phases in the dinner and sibling play routines. Results across the two routines show substantial improvement from baseline to intervention phases, with marked change documented at each point of intervention.

_Dinner routine._ Baseline levels of steps successfully completed by Mia in the dinner routine were low and relatively stable, with a slightly increasing trend evidenced toward the end of the baseline phase. As described above, this improvement in percentage represented Mia’s enhanced ability to wash her hands prior to dinner (i.e., the first step in the dinner routine). A decrease in steps successfully completed during the final observation prior to intervention was observed, which provided initial evidence that Mia’s ability to participate in the dinner routine during baseline was not continuing to improve as we proceeded into intervention. Further verification of this trend was desired by myself and the Principal Investigator; however, due to a request from Mia’s parents to end the baseline phase, and out of concern for their psychological safety, baseline observations were discontinued. In total, the average percentage of steps successfully completed by Mia during baseline within the dinner routine was 8.6% (range, 0-20%). In regard to food acceptance, across the seven baseline observation probes, Mia did not
successfully accept any of the foods presented to her prior to engaging in the criterion level of problem behaviour resulting in termination of the routine.

Intervention data show dramatic improvement in steps successfully completed by Mia at the point of intervention. The average percentage of steps successfully completed increased to 79.2% (range, 30-100%). The percentage of non-overlapping data with the baseline phase was 100%. Improvement in steps completed was particularly substantial during the first four observations ($M = 94.5\%$), in which stable, high levels of steps completed characterized the first sub-phase of initial parent training for the dinner routine (i.e., superscripts 1, 2, and 3). A modest regression in steps successfully completed was observed upon entering the second and third sub-phases of initial parent training (i.e., superscripts 4 and 5), with a substantial regression to a level of 30.0% during the observation in which a new visual tool was introduced targeting Mia’s ability to chew and swallow her food at a faster pace (i.e., session 6). The percentage of steps successfully completed in the dinner routine recovered to mid to high levels across the final three observations ($M = 75.5\%$), with outcomes approaching a successful level of change within the routine as established by Mia’s parents (i.e., 80% or higher). Across the course of intervention, a modest decreasing trend was evident in the data. In regard to food acceptance, across training sessions and probe observations, Mia successfully accepted the following foods: beef, pork, chicken, fish, dumplings, noodles, rice, carrots, broccoli, mushrooms, corn, peas, bok choy, zucchini, green beans, spinach, tomato, egg, apple, grapes, strawberry, orange, banana and cantaloupe.

Overall, a basic effect was documented for percentage of steps successfully completed in the dinner routine, as evidenced by the dramatic increase in steps completed at the point of intervention, coupled with moderate to high levels maintained across the majority of intervention
sessions, with 100% non-overlapping data as compared to baseline. These results, however, are moderated when examining the percentage of observation probes in which the criterion for a successful routine (i.e., 80% or more of steps successfully completed) was achieved. Across the nine observation sessions, six either met or closely approached this criterion, while three did not. Although the increasing trend across the final four observations is encouraging, caution is required in that three of the four final dinner routine observation probes fell below the criterion of 80% of steps successfully completed. Thus, although a basic effect was clearly established, stable, socially valid outcomes had not yet been established in the dinner routine with respect to steps successfully completed.

**Sibling play routine.** Baseline data for steps successfully completed by Mia in the sibling play routine varied markedly from low to mid-range levels, with a modest increasing trend evidenced across all seven observation sessions. Data across the final three observations in particular was mid-range, with no evidence of improvement beyond the level achieved in the third observation. As well, the percentage of steps successfully completed across the final three baseline observations were moderately stable, with no evidence of an increasing or decreasing trend. In total, the average percentage of steps successfully completed by Mia during baseline within the sibling play routine was 25.3% (range, 0 - 57.1%).

Intervention data evidenced marked improvement in steps successfully completed by Mia at the point of intervention, with improvements largely maintaining across the three observations ($M = 94.2\%, \text{ range, } 86.4 - 100\%)$. The percentage of non-overlapping data with the baseline phase was 100%. A slight downward trend was evident in the intervention data, with the third observation falling below 90% (i.e., 86.4%) as a result of Mia failing to complete the routine 3 minutes prior to its 30 minute requirement. This regression was associated with a regression in
the sibling’s ability to support his sister during the routine, rather than regression in Mia’s behaviour itself. Despite this slight trend, data showed relative stability over the course of intervention, with the result that socially valid, successful levels of change were achieved with respect to Mia’s ability to complete the routine successfully (i.e., 80% or more steps completed across the three observations). Overall, a basic effect was documented for percentage of steps successfully completed in the sibling play routine, as evidenced by the marked increase in steps completed at the point of intervention, coupled with high levels maintained across all three intervention sessions, with non-overlapping data for 100% of the observation probes within the intervention phase as compared to baseline.

**Latency to termination or successful completion.** Figure 3.2 shows the results for latency until termination or successful completion of the dinner routine and sibling play routine. Latency data for all probe observations collected across baseline and intervention phases are displayed, with shaded bars representing routines that were completed successfully and unshaded bars representing routines that were terminated early due to Mia engaging in the criterion level of problem behaviour. Horizontal dotted lines within the baseline graph for the dinner routine represent outer limits for latencies that were considered to be socially valid (i.e., all latencies between 10 and 40 minutes in length), as determined by Mia’s parents. Superscript numbers placed above each bar in the intervention phase for the dinner routine represent: (a) successive stages of transfer of implementation support (i.e., stimulus control) to Mia’s family members, and (b) incremental increases in expected behaviour for Mia within the routine including: 1 = father as implementer; 2 = father and mother as implementers; 3 = father and mother as implementers with sibling present; 4 = father and mother as implementers with sibling present, increased bite size of food, and inclusion of non-preferred vegetables and fruit; 5 = father and
mother as implementers with sibling present, increased bite size of food, inclusion of non-preferred vegetables and fruit, and focus on pacing and chewing ability. The horizontal dotted line within the baseline graph for the sibling play routine represents the target latency for the routine (i.e., 30 minutes). Results across the two routines show substantial improvement from baseline to intervention phases, with marked change at the point of intervention in both routines, and some deterioration during the latter part of the intervention phase for each routine.
Figure 3.2. Latency to termination or successful completion in the dinner and sibling play routines. Horizontal dotted lines in the dinner routine represent the upper and lower limits for socially valid latencies. The horizontal dotted line in the sibling play routine represents the maximum length of the routine. Note. IIT = Intensive Interventionist Training; IPT = Initial Parent Training.
*Dinner routine.* Baseline data for latency to termination or successful completion of the dinner routine show low, stable levels across all seven observations. Of the seven observations conducted, four observations were terminated at the 3 minute cut-off point due to Mia engaging in the criterion level of problem behaviour at or before the 3 minute mark. As well, of the seven observation sessions conducted, 0% were completed successfully as a result of child problem behaviour. In total, the average latency to termination of the dinner routine during baseline was 1 minute, 27 seconds (range, 51 sec – 3 min, 30 sec).

Intervention data show dramatic improvement in latency to termination or successful completion of the dinner routine at the point of intervention, with improvements largely maintained across all nine observation sessions ($M = 32$ min, $42$ sec; range, $14$ min, $10$ sec – $48$ min, $51$ sec). The percentage of non-overlapping data with the baseline phase was 100%. Particular success was evident during the first sub-phase of initial parent training for the dinner routine ($M = 25$ min, $10$ sec), in which stimulus control was transferred to Mia’s family members, with no additional demands placed on increasing bite size of food or eating non-preferred vegetables and fruit (i.e., superscripts 1, 2, and 3). During the second and third sub-phases of initial training, bite size was increased, two or more non-preferred vegetables and fruit were included in Mia’s meal (i.e., superscripts 4 and 5), and focus was directed toward Mia’s ability to chew and swallow her food at an acceptable pace (i.e., superscript 5 only). This increase in expectations was associated with a regression in latency data in which latency during the fifth observation probe (48 min, 50 sec) extended beyond the acceptable upper limit of 40 minutes. This regression was due to Mia’s difficulty in chewing age-appropriate bite sizes of the foods presented. This was determined to be an issue of oral motor ability rather than behavioural non-compliance.
Further regression was evident during the following observation in which intervention efforts focused explicitly on Mia’s ability to chew and swallow her food at a faster pace, (i.e., superscript 5). For the first time since starting intervention, Mia did not complete the routine successfully. This was associated with the father’s use of a visual tool that was designed to prompt eating at a faster pace. For this reason, the visual tool was not used during the final three observation probes. Recovery of latency to within the socially acceptable time frame, in combination with completing the routine successfully, was not achieved during the final three observation sessions ($M = 39$ min, $12$ sec; range, $24$ min, $20$ sec – $48$ min, $51$ sec) in the dinner routine. Across the course of intervention, a modest increasing trend was evident. Variability in latency data across the nine observations was associated with the incremental increases in stimuli and expectations. Mia successfully completed the dinner routine in six of nine observation sessions (66.7%). The three observation sessions that were unsuccessful due to the criteria for termination being met before completing all of the steps in the routine was associated with the use of a visual strategy designed to promote a faster pace of eating (session 6) and the introduction of a pea-sized piece of a second fruit to eat during dinner which was not yet firmly a part of Mia’s repertoire for accepted fruit (sessions 7-9).

Overall, a basic effect was documented for latency to termination or successful completion in the dinner routine, as evidenced by the dramatic increase in latency to successful completion at the point of intervention, mid to high levels of latency maintained across the nine intervention sessions, and 100% non-overlapping data as compared to baseline. These results, however, are moderated by latency data in three of the last five observation probes exceeding the socially acceptable level established by Mia’s parents, and three of the final four dinner routine observations being unsuccessful due to the criteria for termination being met.
Sibling play routine. Baseline data for latency to termination or successful completion of the sibling play routine were low to mid-range across all seven observations, with modest variability and a slight increasing trend evident across the baseline phase. Of the seven observations conducted in baseline, two observations were terminated at the 3 minute cut-off point due to Mia engaging in the criterion level of problem behaviour at or before the 3 minute mark. In addition, Mia failed to complete the routine successfully in all seven observations, due to engaging in the criterion level of problem behaviour prior to completion of the routine. Overall, the average latency to termination or successful completion of the sibling play routine during baseline was 7 minutes, 41 seconds (range, 51 sec – 16 min, 0 sec).

Intervention data evidence substantial improvement in latency to termination or successful completion of the sibling play routine at the point of intervention, with stable improvements largely maintained across the three intervention observations \((M = 28 \text{ min}, 59 \text{ sec}; \text{ range}, 26 \text{ min}, 58 \text{ sec} – 30 \text{ min}, 0 \text{ sec})\). The percentage of non-overlapping data with the baseline phase was 100%. Across the three observations, a slight decreasing trend was evident, in that Mia successfully completed the routine twice but did not do so during the final observation when she met the criterion for termination due to problem behaviour with 3 minutes remaining in the routine. This slight regression was due to a lapse in Mia’s brother’s ability to support her during the play routine rather than her own ability to participate in the routine, as evidenced by the percentage of steps successfully completed during this final observation (i.e., 86.4%). Despite this slight trend however, latencies during intervention were highly stable. Mia successfully completed two of three sibling play routine sessions (66.7%). Overall, a basic effect was documented for latency to termination or successful completion in the sibling play routine, as evidenced by the substantial increase in latency to successful completion at the point of
intervention, high latency levels across the three intervention sessions, and 100% non-overlapping data as compared to baseline. These results are somewhat moderated by the slight regression in successful completion in the final sibling play routine session.

**Percentage of intervals of parent/sibling accurate use of support plan strategies.**

Parent and sibling implementation fidelity data were scored during 30 minute segments for 33% of the observation sessions during the intervention phase for the dinner and sibling play routines. For the dinner routine, Mia’s mother and father were responsible for supporting Mia throughout the routine; therefore, implementation fidelity was scored based on their actions alone, and not for Mia’s brother. For the sibling play routine, Mia’s father and brother were responsible for supporting Mia throughout the routine; therefore, implementation fidelity was scored based on their actions, and not for Mia’s mother (who was not a part of the routine). A total of four 30 minute segments were scored (three within the dinner routine, one within the sibling play routine) out of the 12 intervention observations that took place across the dinner and sibling play routines. Within the dinner routine, the average percentage of intervals of parent accurate use of support plan strategies was 83.7% (range, 78.3-86.7%), and the average percentage of intervals of parent inaccurate use was 5.0% (range, 1.7-10.0%). Within the sibling play routine, the percentage of intervals of parent and sibling accurate use of support plan strategies was 83.3%, and the percentage of intervals of inaccurate use was 5.0%. Across both routines, the percentage of intervals of non-occurrence of use of support plan strategies was 11.4%. Within the dinner routine, the non-occurrence of use was associated with the father and mother eating their own food during dinner. During the sibling play routine, non-occurrence of use was associated with Mia’s brother taking his turn each game.
Social validity ratings. An index of social validity was administered twice to each of Mia’s parents, once during the intervention phase for the dinner routine and again at the end of the intervention phase for the play routine. Results indicated that Mia’s mother and father found the goals, strategies and procedures, and outcomes related to the provision of culturally responsive, family-centered PBS to be acceptable and beneficial to their child and family. The average rating of social validity during intervention in the dinner routine was 4.60 for Mia’s father and 5.00 for Mia’s mother (1 = disagree; 5 = agree). The average rating of social validity during intervention in the sibling play routine was 4.80 for Mia’s father and 5.00 for Mia’s mother. Within the comments sections provided, Mia’s mother and father added the following statements:

- “It improve[d] our family life” (mother)
- “She [Mia] did not eat fruits before. Now she can eat fruit. We think this is amazing! This is good for her health, very important to us” (mother)
- “In the beginning of the process, the researchers discussed with us about our vision of a successful dinner routine. I feel very respected and the plan really generated what we wanted” (mother)
- “Now we don’t have to yell to get the kids to eat. This really improved the harmony. With play, now they don’t fight every few minutes, so their sibling relationship has also improved. This in turn increase[d] our family harmony” (mother)
- “It suits…my child[‘s] need[s]. The plan depends on my family goals and values” (father)

Overall, the summative average social validity rating across both routines was 4.70 for Mia’s father and 5.00 for Mia’s mother.
**Contextual and cultural fit ratings.** Mia’s parents completed an evaluation of contextual and cultural fit once during the intervention phase for the dinner routine and once at the end of the intervention phase for the play routine. The average rating of contextual and cultural fit reported during intervention for the dinner routine was 4.86 for Mia’s father and 4.79 for Mia’s mother (1 = little; 5 = a lot). The average rating of contextual and cultural fit reported during intervention for the sibling play routine was 4.29 for Mia’s father and 4.86 for Mia’s mother. Within the comments sections provided, Mia’s mother and father added the following statements:

- “The plan started with the preferred foods which helped make eating into a preferred activity. This was because the researcher had an understanding of our child’s perspective” (mother)
- “Our main goal was for Mia to sit and eat dinner. Now she does that. So our priority was met” (mother)
- “She [Cathryn] broke down each step and taught us little by little. [She] didn’t ask us to do the entire thing right away, and she was very quick to make changes to the plan if we ran into trouble” (mother)
- “We will use all of the strategies for the rest of our life” (father)

The summative average goodness of fit index across both routines was 4.58 for Mia’s father and 4.83 for Mia’s mother. Overall, the results indicated that Mia’s mother and father were comfortable with their role in implementing the intervention strategies, and that they believed that the support plan fit well with their daily routines, and cultural and family strengths, goals, values and beliefs.
**Additional child and family measures.** Additional measures related to general child and family functioning were administered to Mia’s mother and father twice, once at the end of the initial baseline phase and once during the intervention phase, with the exception of the FQoL, which was also administered once more at the end of the intervention phase. Four measures were administered to each parent including: (a) the FQoL (Hoffman, Marquis, Poston, Summers, & Turnbull, 2006), (b) the CBCL/1½-5 (Achenbach & Rescorla, 2001), (c) the PSI-SF (Abidin, 1995), and (d) the FACES-IV (Olson, Gorall, & Tiesel, 2006). In general, results indicate substantial increases in child behavioural and emotional functioning, as reported by both parents. In addition, Mia’s mother reported minor decreases in parenting stress and minor increases in family quality of life, accompanied by a slight decline in family functioning, while Mia’s father indicated a slight decrease in family quality of life and minor improvement in family functioning. Detailed results for each assessment are described further below.

**Family Quality of Life Survey (FQoL).** Table 3.1 and Table 3.2 display average ratings of family quality of life for Mia’s mother and father respectively. Ratings are assessed within five domains (i.e., family interaction, parenting, emotional well-being, physical and material well-being, and disability-related support), where satisfaction scores range from 1 (very dissatisfied) to 5 (very satisfied), in addition to a total score which represents an average index of family quality of life across all five domains. Overall, the data show that there was a marked decrease in the total score representing family quality of life across all domains from baseline to the first administration during the intervention phase, as indicated by Mia’s mother (baseline = 3.28, intervention 1 = 2.64) and Mia’s father (baseline = 3.76, intervention 1 = 2.76). Due to the concerning nature of these declines and in an attempt to determine whether additional family-centered supports might be necessary and helpful, Mia’s parents were asked if they might
describe what events led them to report these ratings. Jin and Liu disclosed that their ratings were highly affected by setting events that occurred at that point in their lives, including: (a) a loss of services for Mia due to government funding ending the week before FQoL administration; and (b) resulting spousal arguments over purchase of services, use of expenses, and overall approach to seeking out new service providers for their daughter come the fall.

As a result of the confounding nature of these events, which resulted in scores reflecting momentary experiences versus global perceptions, the FQoL was re-administered to both parents at the end of the initial parent training phase, to gain a more accurate rating of their family quality of life. Upon re-administration, results show moderate increases across four of the five domains for Mia’s mother (i.e., all except family interaction), resulting in a total increase from an average baseline rating of 3.28 to an average intervention rating of 3.60. This increase suggests that across the course of intervention, Liu’s perception of family quality of life went from being “Neither satisfied nor dissatisfied” to being “Satisfied” in general. Mia’s father, however, reported a slight decrease in family quality of life, with a rating of 3.76 in baseline, and a rating of 3.62 at the end of intervention. Overall, his perception remains closer to feeling “Satisfied”, although significant decreases in physical and material well-being (baseline = 4.40, post-intervention = 4.00) and family interaction (baseline = 4.00, post-intervention = 3.50) indicate that the loss of services for Mia may have resulted in long-term loss of overall satisfaction as compared to Mia’s mother. For both Jin and Liu, the largest increase between baseline and intervention scores occurred within the domain of emotional well-being (Liu: baseline = 2.25, intervention 2 = 3.25; Jin: baseline = 2.00, intervention 2 = 2.75), with baseline ratings in the range of feeling “Dissatisfied” and intervention ratings falling in the range of “Neither satisfied nor dissatisfied”.
**Table 3.1**

*Family Quality of Life Ratings - Mother*

<table>
<thead>
<tr>
<th>Family Quality of Life survey domain</th>
<th>Baseline</th>
<th>Intervention 1</th>
<th>Intervention 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family interaction</td>
<td>3.50</td>
<td>2.83</td>
<td>3.50</td>
</tr>
<tr>
<td>Parenting</td>
<td>3.67</td>
<td>2.33</td>
<td>4.00</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>2.25</td>
<td>1.25</td>
<td>3.25</td>
</tr>
<tr>
<td>Physical and material well-being</td>
<td>3.40</td>
<td>2.40</td>
<td>3.50</td>
</tr>
<tr>
<td>Disability-related support</td>
<td>3.25</td>
<td>3.00</td>
<td>3.75</td>
</tr>
<tr>
<td>Total score</td>
<td>3.28</td>
<td>2.64</td>
<td>3.60</td>
</tr>
</tbody>
</table>

**Table 3.2**

*Family Quality of Life Ratings – Father*

<table>
<thead>
<tr>
<th>Family Quality of Life survey domain</th>
<th>Baseline</th>
<th>Intervention 1</th>
<th>Intervention 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family interaction</td>
<td>4.00</td>
<td>3.17</td>
<td>3.50</td>
</tr>
<tr>
<td>Parenting</td>
<td>4.00</td>
<td>3.50</td>
<td>3.83</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>2.00</td>
<td>1.25</td>
<td>2.75</td>
</tr>
<tr>
<td>Physical and material well-being</td>
<td>4.40</td>
<td>2.60</td>
<td>4.00</td>
</tr>
<tr>
<td>Disability-related support</td>
<td>4.00</td>
<td>2.75</td>
<td>4.00</td>
</tr>
<tr>
<td>Total score</td>
<td>3.76</td>
<td>2.76</td>
<td>3.62</td>
</tr>
</tbody>
</table>

*Index of Behavioural and Emotional Functioning.* Table 3.3 and Table 3.4 present T scores and percentile rankings representing Mia’s behavioural and emotional functioning across
baseline and intervention phases as reported by Mia’s mother and father respectively. All scores on this measure are presented hierarchically across three levels: (a) second level scores, consisting of all 100 items grouped within five psychiatric syndrome scales (i.e., affective problems, anxiety problems, pervasive-developmental problems, attention deficit/hyperactivity problems, and oppositional defiant problems); (b) third level scores, consisting of the internalizing and externalizing scales; and (c) the highest level, comprised of the total problem scale. In general, Mia’s mother indicated a substantial increase in Mia’s total level of behavioural and emotional functioning (baseline = 91-C, intervention = 70-C), although her scores remained within the clinical range over the course of intervention. Mia’s father also indicated a considerable improvement (baseline = 72-C, intervention = 63-B), reflecting a drop in Mia’s scores from the clinical to the borderline range over the course of intervention. Particular decreases were reported by both parents in the affective (Liu: baseline = 75-C, intervention = 63; Jin: baseline = 70-C, intervention = 56) and anxiety (Liu: baseline = 81-C, intervention = 73-C; Jin: baseline = 73-C, intervention = 57) problem scales, reflecting general improvement from scores within the clinical range to scores within the normative range. Furthermore, improvements across the five psychiatric syndrome scales resulted in vast over-arching improvements in externalizing problems (baseline = 86-C, intervention = 62-B) as reported by Liu, with scores dropping from well within the clinical range to firmly within the borderline range. Overall, these results indicate that Mia’s mother and father perceived robust improvements in Mia’s behavioural and emotional functioning across the course of intervention.
Table 3.3

*Child Behaviour Checklist Ratings - Mother*

<table>
<thead>
<tr>
<th>Child Behaviour Checklist scale</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T Score</td>
<td>%ile</td>
</tr>
<tr>
<td>Affective problems</td>
<td>75-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Anxiety problems</td>
<td>81-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Pervasive developmental problems</td>
<td>96-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Attention deficit/hyperactivity problems</td>
<td>76-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Oppositional defiant problems</td>
<td>80-C</td>
<td>&gt;97</td>
</tr>
<tr>
<td>Internalizing problems</td>
<td>86-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Externalizing problems</td>
<td>86-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Total problem scale</td>
<td>91-C</td>
<td>&gt; 97</td>
</tr>
</tbody>
</table>

*Note.* B = Borderline clinical range; C = Clinical range; No notation = normative range.
Table 3.4

Child Behaviour Checklist Ratings - Father

<table>
<thead>
<tr>
<th>Child Behaviour Checklist scale</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T Score</td>
<td>%ile</td>
</tr>
<tr>
<td>Affective problems</td>
<td>70-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Anxiety problems</td>
<td>73-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Pervasive developmental problems</td>
<td>81-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Attention deficit/hyperactivity problems</td>
<td>52, 58</td>
<td></td>
</tr>
<tr>
<td>Oppositional defiant problems</td>
<td>55, 69</td>
<td></td>
</tr>
<tr>
<td>Internalizing problems</td>
<td>72-C</td>
<td>&gt; 97</td>
</tr>
<tr>
<td>Externalizing problems</td>
<td>59, 81</td>
<td></td>
</tr>
<tr>
<td>Total problem scale</td>
<td>72-C</td>
<td>&gt; 97</td>
</tr>
</tbody>
</table>

Note. B = Borderline clinical range; C = Clinical range; No notation = normative range.

Index of Parenting Stress. Table 3.5 and Table 3.6 present average ratings of parenting stress for Mia’s mother and father respectively. Ratings are assessed within three subscales (i.e., parental distress, parent-child dysfunctional interaction, and difficult child) in addition to a total stress score which represents an average index of parenting stress across all three subscales. In general, Mia’s mother indicated a considerable decrease in total parenting stress over the course of intervention (baseline = 141, intervention = 120) while Mia’s father indicated no change (baseline = 115, intervention = 115). These results, although encouraging for the mother, do not represent socially significant change in that any score above 86 places the parent above the 85th
percentile (i.e., above the normative range). Within each subscale however, scores for the mother decreased from the 99+ percentile to between the 95th and 99th percentile within the parent-child dysfunctional interaction and difficult child subscales. Overall, these results indicate that Mia’s mother and father continued to experience clinically significant levels of parenting stress throughout the course of intervention, although the mother’s stress level did decrease markedly.

Table 3.5

*Parent Stress Index Ratings – Mother*

<table>
<thead>
<tr>
<th>Parenting stress subscale</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental distress</td>
<td>48</td>
<td>45</td>
</tr>
<tr>
<td>Parent-child dysfunctional interaction</td>
<td>41</td>
<td>31</td>
</tr>
<tr>
<td>Difficult child</td>
<td>52</td>
<td>44</td>
</tr>
<tr>
<td>Total stress score</td>
<td>141</td>
<td>120</td>
</tr>
</tbody>
</table>

Table 3.6

*Parent Stress Index Ratings – Father*

<table>
<thead>
<tr>
<th>Parenting stress subscale</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental distress</td>
<td>42</td>
<td>40</td>
</tr>
<tr>
<td>Parent-child dysfunctional interaction</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>Difficult child</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>Total stress score</td>
<td>115</td>
<td>115</td>
</tr>
</tbody>
</table>
**Index of Family Functioning.** Table 3.7 and Table 3.8 display percentile rankings and ratio scores related to generalized levels of family cohesion and flexibility across baseline and intervention phases, as reported by Mia’s mother and father respectively. Scores are assessed along six subscales, including two balanced subscales (cohesion and flexibility), in which higher scores are considered to be healthy and four unbalanced subscales (disengaged, enmeshed, rigid, and chaotic), in which higher scores are considered to be unhealthy. Scores on two additional scales related to family communication and family satisfaction are also included, for which higher scores indicate healthy responses, and dimension scores for family cohesion and flexibility reflect family functioning as a whole. Finally, ratio scores for family cohesion and flexibility represent the level of balance versus unbalance in the family system, with scores ranging between 0 and 10 (the higher the score above 1, the more balanced the system), and 1 indicating an equal amount of balance and unbalance in the system. Overall, Mia’s mother indicated a moderate decline in family cohesion (baseline ratio = 2.86, intervention ratio = 2.55) and a minor decline in family flexibility (baseline ratio = 1.86, intervention ratio = 1.82), representing a slightly less balanced and healthy system than described in baseline (baseline total ratio = 2.36; intervention total ratio = 2.19). Despite the decrease, however, interpretations of these scores remained within the same category, in that at each time point, scores reflected a balanced family that was “very connected” and “flexible” as determined by the Circumplex Model of Marital and Family Systems. In contrast, Mia’s father indicated an increase in both family cohesion (baseline ratio = 1.87, intervention ratio = 2.13) and flexibility (baseline ratio = 1.62, intervention ratio = 1.87), representing a more balanced and healthy system than described in baseline (baseline total ratio = 1.74; intervention total ratio = 2.00). Once again, however, these increases were not significant in terms of changing the overall classification of the level of
family functioning as determined by the Circumplex model (i.e., balanced family that is “very connected” and “flexible”).

Noteworthy changes were reported by both parents within the “chaotic” subscale (Liu: baseline %ile = 30, intervention %ile = 13; Jin: baseline %ile = 34, intervention %ile = 26), with both parents indicating a substantial decrease in this area, reflecting a perception of less chaos within their family environment. In addition, Jin reported a marked decrease in the “enmeshed” subscale (baseline %ile = 45, intervention %ile = 32), indicating that a healthier level of family cohesion was reached over the course of intervention. In contrast to these positive changes, Liu reported a sizeable increase in family rigidity (baseline %ile = 40, intervention %ile = 55) over the course of intervention, which contributed to the overall decline in her ratings of family cohesion and flexibility. Finally, within the two additional scales, improvements in family communication and satisfaction were reported by Liu, while opposite trends were reported by Jin. Overall, these results indicate that Mia’s mother perceived mild declines in family functioning, while Mia’s father perceived mild increases in family functioning, although these changes did not significantly affect their family functioning profile as outlined by the Circumplex model.
<table>
<thead>
<tr>
<th></th>
<th>FACES-IV scale</th>
<th>Baseline %ile</th>
<th>Intervention %ile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balanced subscales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td>70</td>
<td>65</td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td><strong>Unbalanced subscales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disengaged</td>
<td></td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Enmeshed</td>
<td></td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>Rigid</td>
<td></td>
<td>40</td>
<td>55</td>
</tr>
<tr>
<td>Chaotic</td>
<td></td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td><strong>Additional scales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Communication</td>
<td></td>
<td>20</td>
<td>50</td>
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<tr>
<td>Family Satisfaction</td>
<td></td>
<td>10</td>
<td>28</td>
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<tr>
<td><strong>Dimension scores</strong></td>
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<td></td>
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</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td>79.5</td>
<td>75.5</td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td>60</td>
<td>41</td>
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<tr>
<td><strong>Ratio Scores</strong></td>
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<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td>2.86</td>
<td>2.55</td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td>1.86</td>
<td>1.82</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2.36</td>
<td>2.19</td>
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</tbody>
</table>
Table 3.8

*Family Adaptability and Cohesion Evaluation Scale Ratings – Father*

<table>
<thead>
<tr>
<th></th>
<th>FACES-IV scale</th>
<th>Baseline %ile</th>
<th>Intervention %ile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balanced subscales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td>70</td>
<td>68</td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td>55</td>
<td>58</td>
</tr>
<tr>
<td><strong>Unbalanced subscales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disengaged</td>
<td></td>
<td>30</td>
<td>32</td>
</tr>
<tr>
<td>Enmeshed</td>
<td></td>
<td>45</td>
<td>32</td>
</tr>
<tr>
<td>Rigid</td>
<td></td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>Chaotic</td>
<td></td>
<td>34</td>
<td>26</td>
</tr>
<tr>
<td><strong>Additional scales</strong></td>
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</tr>
<tr>
<td>Family Communication</td>
<td></td>
<td>58</td>
<td>28</td>
</tr>
<tr>
<td>Family Satisfaction</td>
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<td>35</td>
<td>30</td>
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<tr>
<td><strong>Dimension scores</strong></td>
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<td>Cohesion</td>
<td></td>
<td>77.5</td>
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<tr>
<td>Flexibility</td>
<td></td>
<td>55</td>
<td>53</td>
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<tr>
<td><strong>Ratio Scores</strong></td>
<td></td>
<td>Baseline</td>
<td>Intervention</td>
</tr>
<tr>
<td>Cohesion</td>
<td>1.87</td>
<td>2.13</td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>1.62</td>
<td>1.87</td>
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</tr>
<tr>
<td>Total</td>
<td>1.74</td>
<td>2.00</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative Results

A parent assessment interview and the journal entries I maintained throughout the course of the study, comprise the two methods by which qualitative results were collected. These methods were utilized in an effort to provide a deeper level of understanding related to: (a) the key features of the family’s culture, and (b) the important qualities necessary for providing culturally responsive PBS to a family of a different cultural and linguistic background in the context of the family’s home. Through open and axial coding of the data (Strauss & Corbin, 1990), five main themes were revealed: (a) partnership with a translator; (b) development of a therapeutic alliance; (c) understanding and accepting shared and divergent cultural perspectives; (d) identifying and rectifying errors and barriers; and (e) continually reflecting on, developing knowledge of, and taking steps toward cultural competence. All findings are described in detail below.

Parent assessment interview. One semi-structured interview was conducted with Jin and Liu at the beginning of the intervention phase for the first (i.e., dinner) routine, in order to aid in the creation of a positive behaviour support plan for each target routine that was both technically sound and culturally sensitive. This interview was conducted with the aid of a translator, and all responses were verbally translated simultaneously prior to being transcribed in English for the purpose of data analysis. Questions targeted three areas: (a) family structure, (b) resources, and (c) family perceptions and attitudes.

With regard to family structure, Jin and Liu noted that in general, Liu acted as the decision maker in the house, in that she often made a plan as to how they would proceed toward a goal, and once made she would convince Jin to accept and support the decision. Although both parents noted that joint decisions were also common, most of the time Jin perceived that
decision-making was individual, rather than group-oriented, and that Liu would take charge with some input from himself. Partly as a result of this structure, and partly as a result of personality differences, Jin and Liu reported that conflict related to child-rearing practices erupted on a daily basis, with Liu noting “I am stricter about achievements, Jin is more relaxed. I like to have explanations for my kids’ progress, while Jin says ‘Just try again’. I need reasoning for things, not just an explanation of what to do. I want to know the theory behind it”. Furthermore, Jin described how “being on time is important to Liu; she likes to be early and often rushes the kids as a result. I see being late as okay, since often we are on time and others are not. When this happens, our kids get upset at being rushed for nothing”. Overall, both parents noted that their hierarchical structure was based on personality rather than gender or age, and that Liu held approximately 70% of the power, while Jin held approximately 30%.

With respect to resources, Jin and Liu noted that they had few outside resources. In particular, both parents reported that they had few family members or friends to whom they could turn to for social support, and several community resources they had sought out turned out to be a poor fit for their family needs, language and culture. For example, Liu described how “we became part of a Facebook group for Chinese parents of kids with autism. We went to one group session to see what it was like, but we found it was not applicable because it was about high school transitioning. We also tried another support group for Chinese parents; however, it was conducted mostly in Cantonese so we couldn’t understand”. In addition, Liu disclosed that they had switched churches during the past year, due to the stigma associated with her daughter’s behaviour, and the feeling of being ostracized by members of their own culture. They sought out a new church that was English-speaking, so that Mia would be able to go to Sunday school and learn about religion; however, both parents commented that they had few friends there as a result.
of their own language barriers. One resource they viewed as beneficial to their family was a peer group that Daniel had recently joined, for siblings of kids with disabilities of all kinds. Liu noted that “Jin goes with him [Daniel] and participates a lot. I think it has really helped him [Jin] to accept the diagnosis more”.

Related to family perceptions and attitudes, Jin and Liu described several values they believed were important to their family including: (a) equality between family members, (b) happiness over money or wealth, (c) health and safety of all family members, (d) finishing what you start, and (e) politeness and respect for elders. They noted in particular that they held no values or customs associated specifically with their religion, although many of their values arising from Taiwanese culture had been set aside as their views had shifted in light of their daughter’s diagnosis and behaviour. For example, both parents described how “we feel it is respectful to make eye contact and say hello when you walk in a room. We have just started to work on this with Mia, but we never asked her to do it before. We also think it’s respectful to sit down for dinner and finish your meal. We let Mia run around when she wants to though because we think the exercise is good for her”. As well, with respect to their view of Mia’s disability, both Jin and Liu believed that they were partially at fault, and both parents admitted to feelings of guilt that persisted even to the present day. In particular, Jin described how “in the beginning, I feel like I didn’t spend a lot of time with Mia. When she should have started talking, I worry that I missed many opportunities to further her development”. Liu also noted that “I often worry that it was something I did during pregnancy. Everyone has told us different things, we don’t know what the cause is. But I worry that certain tests I had done contributed to her disability”.

In addition to family values and beliefs, Jin and Liu described several family strengths and stressors that facilitated or hindered their level of family functioning on the whole. For
example, both parents described their family as being flexible, cohesive, supportive and cooperative. They believed that each member was loving and caring, both within the family and to members within the community (e.g., friends, service providers, teachers), and that in general they were financially stable and able to cover all necessary costs. In contrast, both parents agreed that Mia’s behaviour served as an important stressor to all members of the family, in that her behaviour put pressure on Liu (as the primary caregiver), which would then transfer to Jin and create stress for everyone. They further noted that “relationships between the whole family are often very tense, and highly dependent on Mia’s mood and behavioural rigidities”.

**Interventionist journal.** A summary of my journal entries written over the course of the nine months in which baseline and intervention phases took place is provided below. These reflections are ordered chronologically according to four stages of support: (a) initial baseline, (b) development of behaviour support plan for the dinner routine, (c) implementation support for the dinner routine, and (d) development of behaviour support plan and subsequent implementation support for the sibling play routine.

**Initial baseline phase.** Baseline observations for the dinner and sibling play routines took place over the course of six weeks. During this time, I reflected upon answers to the questions listed in the planning section of the cultural assessment tool by Chen et al. (2002). These questions served to guide my progress with the family in terms of building my knowledge of their interactional and communication styles, preparing me for situations in which their practices might conflict with the values or goals of the mainstream intervention process, and helping me to respond in a manner that was culturally responsive and conducive to developing our family-interventionist relationship. In particular, as the baseline phase began, I got a sense right away that this family was “respectful, loving and committed”, and that they communicated in an
“open, friendly manner which put me, as the interventionist, at ease right from the beginning”.
Due to language barriers with both parents, and the fact that Jin showed more competence with
the English language than Liu, I determined that partnership with a translator would be necessary
to some degree, and that during sessions without the translator, I would communicate primarily
with Jin who would then act as a translator between myself and Liu.

As I began to interact with the family more and more, I started to build an understanding
of cultural differences in the way in which we communicated emotions through verbal and non-
verbal aspects of our interactional styles. For example, I noticed that “Liu will laugh when she is
unhappy, upset, or embarrassed about something”. At first, I interpreted this as signifying a lack
of stress in relation to her daughter’s behaviour, and thought that her conduct was inappropriate
given the serious nature of the work we were setting out to do. Upon further interaction with Liu,
in combination with reflection upon my own cultural upbringing and research on Taiwanese
culture, I came to understand that Liu “did not find her daughter’s behaviour funny, nor was she
trying to make light of it. In fact, she was raised in a culture in which it was appropriate to laugh
in the face of unpleasantness”. Armed with this knowledge, I was able to respond in a way that
conveyed regretful understanding of and respect for her situation with her daughter. As a result
of this, and many other such interactions, I thought that our relationship grew stronger and my
ability to respond with cultural competence was deepened.

During this phase of support, I also had my first experience in working with a translator,
the result of which turned out to be important in terms of building my understanding of what it
was like to be a member of a non-dominant culture with little to no understanding of the
dominant language being used. In particular, upon meeting the translator, both Jin and Liu began
to interact in a manner that was much more relaxed than anything I had observed so far. I began
to see just how little trust had been established at that point in our relationship due to our linguistic and cultural barriers. As the family continued to get to know the translator, I began to feel left out and awkward, as I did not understand what was being discussed. In particular, I noted that I felt “silly, confused, disinterested and unintelligent”, and I began to wonder if this was at all how Liu felt when Jin and I would discuss detailed plans for the intervention process ahead. In reflecting back, I saw what a beneficial experience this first meeting was, in that it allowed me to experience this process through the eyes of Mia’s mother, and forced me to take action to prevent her from ever feeling this way by attempting to communicate with her in a manner that was as culturally sensitive as possible. This included providing verbal or written translation as often as possible, and modifying my discussions with the parents by using simple language and slower, more exaggerated speech. I also made more of an attempt to engage Liu in “small-talk”, which although minimal at first became an important part of our relationship over the course of the study.

As baseline observations continued, and I had a chance to observe the interactions taking place between Mia and her family members, it became apparent that coercive processes of interaction were dominating family relationships, and that in order to ameliorate these patterns (Lucyshyn et al., 2011; Patterson, 1982), certain cultural expectations would have to be accounted for if constructive patterns of parent-child interaction were ever to emerge and take root. In particular, it became apparent that Liu was trapped in a coercive process with her daughter, due in large part to her love for and desire to please her, which reflected her cultural expectation that mothers should never control their young children or make them unhappy. This attitude was noted as a potential barrier to implementation, and it became the focus of collaborative dialogue in later phases of the study.
Development of behaviour support plan for dinner routine. As the initial baseline phase came to an end, and we began to develop the behaviour support plan for the dinner routine, I continued to document and reflect upon information that was gained through the assessments and collaborative dialogue that took place during the development of the behaviour support plan. I did so to maintain and further develop my own cultural competence as a service provider and interventionist. In particular, I found that as I progressed through the ecology, cultural and functional assessments, I continued to learn new things about the family’s cultural identity, their level of acculturation, and the degree to which cultural values and practices had been surrendered in order to accommodate their daughter’s problem behaviour. In particular, I reflected on the ways in which one’s culture can affect the upbringing of a child (with or without a disability). In addition, I began to gain a deeper understanding of the ways in which a child’s behaviour can in turn affect a family’s culture. For example, Liu had described several ways in which she and Jin had relaxed their parenting style and cultural expectations for their children due to Mia’s behaviour and the label of autism attached to her condition. In reflecting upon this, I noted that “without realizing it entirely or acknowledging it explicitly, important underlying aspects of their family’s culture were dismissed and replaced with values that are not consistent with their true feelings. What is more staggering however, is that both parents seemed okay with this, as though they believed it could not be otherwise with such a challenging child”.

At this point, I realized that I had been approaching cultural differences as a potential barrier to implementation, and believed that I needed to constantly find ways to compromise with the family in order to find common ground on which to base our intervention. Instead, I realized that “the process of providing culturally responsive PBS may in fact allow us to reunite the family with their cultural roots” essentially making cultural differences a strength rather than
an obstacle to implementation success. Thus, I began to envision ways in which I might aid the family in rediscovering aspects of their native culture, in response to their stated desire to reconnect with cultural values and practices that were let go of over the past five years.

I also became aware of the critical role that the marital relationship would play throughout the provision of behaviour support over the coming months, as both Jin and Liu disclosed that they were having some trouble maintaining a close relationship in the face of their daughter’s rigid and problematic behaviour. In particular, as our relationship developed and our alliance became stronger and more trusting, both Jin and Liu became more comfortable in describing stressors within their family and doubts they had about intervention. One of these stressors, which was something I had also noticed during observations in the family home, was the difference in parenting approaches that each parent took with their son and daughter. I began to reflect on the ways in which these differences might lead to poor implementation fidelity, if one parent was not truly in agreement with the plan we created. In particular, I considered that potential problems could arise if one parent thought that the plan did not reflect their values and practices. To prevent this potential problem I sought to promote equality, not only between myself as a professional and Jin and Liu as parents, but also between Jin and Liu themselves as equal contributors to the behaviour support effort. My aims were to ensure that plan strategies were equally acceptable to all members, and to minimize potential conflict and stress within the marital relationship.

I sat down with the family and presented a summary of my findings from the assessments and observations that had been conducted within the dinner routine. I took steps to create a behaviour support plan in collaboration with both Jin and Liu. To my delight, I found that the process of finalizing the support plan strategies was one of joy as a result of the strong
therapeutic alliance that had been forged thus far through efforts to act in ways that were culturally responsive. In particular, I noted that often when working with a family, there was a feeling of “pushing and pulling, a power imbalance that constantly flips back and forth as both sides struggle to get their point across, and both sides hold steadfastly to their claims and attitudes”. Instead, what I experienced with Jin and Liu was “open and respectful” communication, and in effect, true collaboration as we were able to come together to form a plan that fit all of our needs.

Implementation support for dinner routine. As we began intervention in the dinner routine, I believed that the family and I had established a strong alliance, and that together we were ready to address their daughter’s food refusal, which up until that point had never been intervened upon successfully. Throughout the course of initial parent training in this routine, I attempted to continue to improve my ability to provide services that reflected cultural competence, by engaging in frequent cultural self-reflection and reflection on the family’s cultural identity. In addition, I spent time researching information related to general cultural values and practices within Taiwanese and other Asian cultures, and I engaged in self-evaluation, guided by the questions in the self-evaluation portion of the cultural assessment tool (Chen et al., 2002).

Through cultural self-reflection described in my journal, I became aware of several biases I was holding onto as a service provider of Canadian and European heritage who was also surrounded by other professionals of mainstream cultural background. I began to consider ways in which these biases might hinder my ability to remain culturally responsive during service provision with the family. For example, I realized that I had been raised in a family in which competition to improve oneself was highly valued, and in which I was constantly expected to
strive for individual success in every area of my life. This individualistic perspective is common in Western culture, and very much informed my initial professional behaviour with the family. I found it difficult not to take charge of the behaviour support process, at the expense of collaboration with and empowerment of Jin and Liu. In particular, we had decided that I would act as the sole interventionist for the first phase of initial training, in order to establish stimulus control over meal-time behaviour prior to transferring that control to Jin and Liu. The danger with this plan was that Jin and Liu might feel cut off from the support process all together, and I might usurp control over the positive changes that resulted. Through further self-reflection and planning related to ways of preventing this individualistic perspective from guiding my actions toward a culturally insensitive stance; however, I managed to continue my development of cultural competence and further my alliance with the family in a way that maintained parent/professional equality and promoted family empowerment throughout the initial training subphase.

As the intervention process moved forward, I began to see the dinner routine actually take shape, and took time to reflect upon the steps that had been taken to assist the family in getting to a point where they could envision such a routine. In particular, as I reflected back over the baseline phase of the study, I realized just how difficult it had been for Jin and Liu to envision a successful dinner routine for their daughter, due to their disbelief that anything could truly be done to resolve her severe food refusal behaviour. At this point, I came to understand the valuable role that our parent-professional relationship had played, in allowing them to rediscover certain cultural values and practices that had been discarded within the dinner routine. It became clear to me that we had been deeply successful in creating a routine that matched the ecology and culture of the family given the level of success we had achieved thus far.
As intervention implementation was transferred to Mia’s parents, I began to encounter situations in which the family’s strengths and values began to shape the course of intervention for their daughter. For instance, the family’s ability to express gratitude and approach intervention from an optimistic perspective were very important in strengthening our therapeutic alliance, even when setbacks in implementation occurred or I thought that I had made an error in providing services that were culturally responsive to their needs. When barriers to implementation success or sustainability arose, we were able to work through them by looking at the situation through a cultural and family-centered lens and engaging in problem-solving discussions together. For example, at one point, it became apparent that Liu was not following the setting event strategy of providing Mia with an age-appropriate portion size for dinner. Had we simply treated this as an error in treatment fidelity, we might have resolved the issue for the short-term, but failed to effect meaningful change for the long-term. Instead, with the help of my advisors, I viewed the issue within the context of Taiwanese culture. I came to the understanding that her pattern of providing too much food to her daughter stemmed from “her desire to be a good Taiwanese mother, in that she felt it was her duty alone to always provide for her child and to make her happy in every way possible”. This was especially so in light of the fact that for the first time in her life, Mia was able to sit down and eat an appropriate amount of food during one meal of the day.

In addition to overcoming barriers and resolving set-backs that occurred, I also began to engage in discussions with Liu about differences between my cultural perspective and her own. In a sense, we began educating one another about our respective cultures, in order to better understand our different points of view. This process of information sharing led to the realization of how my relationship with each parent had changed over the course of intervention, as I had
gone from being viewed as an outsider, with whom Jin would act as the primary communicative link, to being viewed as an insider (i.e., within the family), with whom Liu now took over as the primary communicative agent. It was amazing to reflect on how much trust had been developed with the family over the course of intervention thus far, and how much that trust served to fortify the therapeutic alliance and allow the family to accept the science-based approach that was taken to promote positive change for their daughter and family within the dinner routine.

**Development of behaviour support plan and implementation support for sibling play routine.** During the final phase of the support process, in which we entered intervention for the sibling play routine, I continued to reflect upon cultural and linguistic barriers that arose during service provision. I also began to focus my attention on ensuring maintenance of the change we had promoted over the course of the years to come in which I would no longer be supporting the family. As the initial training process came to an end, and I re-administered measures of child and family functioning that had been presented during the initial baseline phase, I also reflected back upon the degree to which I was able to provide services in a culturally responsive manner, and noted ways in which I might have been more responsive to the needs of the family such that global changes in all domains might have been achieved for Mia and her family members.

As intervention in the play routine began, I started to identify new barriers to implementation success and sustainability, which had not been clear before. The first of these barriers concerned the ability of Mia’s mother and father to support Mia by clearly and correctly modeling communicative phrases as a language prompt for Mia during situations in which she would normally engage in problem behaviour to meet her needs. In particular, while Jin and Liu were fluent in Mandarin, they had made the decision to raise Mia with English as her only language, given her language delays and the need for a common language between herself and
her service providers (e.g., behavioural interventionist, consultant, educational assistant, speech language pathologist). This difference in language made it difficult, however, for either of her parents to promote her language development and prevent problem behaviour from occurring. For example, misunderstandings between Mia and her mother or father often led to the occurrence of problem behaviour due to Mia’s frustration in attempting to make her needs and wants known in a language in which neither parent was fluent.

The second barrier, which threatened maintenance of implementation fidelity, was Liu’s difficulty in following through in the face of problem behaviour exhibited by her daughter. We had reviewed in detail the four-step pattern of coercive versus constructive processes of interaction. In addition, I had engaged in a process of cognitive reframing with both Liu and Jin, with particular reference to cultural values they had described previously as a means for creating a frame in which following through with demands/requests in the face of problem behaviour might take root and sustain over years to come. At this point, Liu disclosed that she was still uncomfortable following through with her daughter, because of her fear that Mia did not love her as her son did, and that maintaining the demand to eat the food presented would push her away and she would never come back. During the final few weeks of intervention, I worked at understanding this view and helping Liu to resolve this dissonance in a manner that might allow long-term maintenance of the positive changes we had effected. For example, I provided Liu with examples of situations in which I had followed through with a demand, only to result in an extinction burst of high-intensity child problem behaviour (i.e., crying and screaming). From here, I asked Liu to describe how that had affected my relationship with Mia (i.e., it hadn’t) and how Mia behaved toward me now (i.e., in a caring positive manner). Through such question-driven dialogue, in addition to providing information related to autism and how it can affect a
child’s capacity to love and respond to her parent, Liu was slowly able to increase her understanding of her daughter’s behaviour, and respond in a manner that minimized reinforcement when behaviour was problematic.

At the end of the intervention phase, all measures of child and family functioning were re-administered, and I reflected upon the positive and negative outcomes that were associated with the process of culturally responsive service provision. In particular, despite select improvements reported via global measures of child and family functioning, I felt that in the end, I had not succeeded in resolving other issues related to family quality of life which had been indicated during the cultural and ecology assessments. In particular, both Jin and Liu had expressed concern about their lack of an external support system. They had no outside resources that fit within their cultural and linguistic needs as well as in their need for support surrounding their daughter’s behaviour. For example, I noted that “although we focused on improving their daughter’s behaviour and general level of compliance in the two target routines, we did not directly target strategies for reducing parent stress, and their daughter still has compliance issues outside of these two routines”. Overall, I came to the realization that cultural competence is a holistic approach to service provision, one that must address the needs of the family beyond the activity settings in which change is being affected. Such a conclusion has led to an understanding that I must continue to develop cultural competence over the course of my career, and with each new family with whom I work.

**Themes.** Five themes emerged through coding and analysis of qualitative data obtained from the parent assessment interview and written journal entries. A summary of the results relating to each theme is described below.
Partnership with a translator. Over the course of baseline and intervention phases within each target routine, partnership with a translator proved to be an important component of providing culturally responsive PBS that promoted meaningful changes in child behaviour and family quality of life. Properties relating to this theme included: (a) understanding the perceived need for a translator throughout each phase of the study, (b) development of a strong relationship between the translator and the interventionist, (c) development of a strong relationship between the translator and the family members, and (d) the importance of balance and open communication during times when the translator acted as a link between the interventionist and the family.

As the baseline phase began for the dinner and sibling play routines, my initial perception was that it would not be necessary to partner with a translator during most phases of the study. I was aware, of course, of the extensive language differences between the family and me; however, I believed we would need a translator only when it came time to create the PBS plan for each target routine. Over the course of the first week of baseline observations, it became apparent to me that I was mistaken. During one of my first journal entries I noted that I had “underestimated the importance of working with such a person” due to the fact that “speaking directly [with the family] is difficult and potentially frustrating at times” and that partnership “with a translator or cultural guide would be beneficial to the therapeutic alliance”. Upon meeting with the translator for the first time, my thoughts were confirmed, and I reflected in my journal that “it was apparent from the moment we stepped in the door that both parents, in particular the mother, were excited and relieved to have someone there who speaks the same language”. Understanding the need for a translator was the first step toward forming a
partnership with the translator that ultimately proved to be an important element in the provision of culturally responsive PBS with this family.

Once it was established that there was a need for a translator, I began to cultivate a deeper relationship with the translator, who was in fact a colleague and friend of mine prior to beginning the research study. This relationship served us well over the course of our work together with the family, as I always felt comfortable approaching her for help and working as a team to transmit information to Mia’s family. In particular, I noted in one journal entry how “we work together to provide examples and explanations in English and Mandarin” and that “the translation process is difficult at times, however…I trust that [the translator’s] extensive knowledge of the fields of applied behaviour analysis and positive behaviour support increases her ability to effectively translate even the most abstract and complex concepts”.

In conjunction with developing my relationship with the translator, it also was equally important that the family feel comfortable with her, and develop a similarly strong relationship such that they could communicate openly and honestly through her. Across the course of the study, the translator helped the parents contribute to the design of the behaviour support plans, participate in decisions about changes during implementation support, and answer questions related to global measures of child and family functioning. From the very first meeting, through to the last conversation, it was clear that Liu in particular was very comfortable with the translator, and that both parents were actually able to communicate in a manner that was more open and honest, given their ability to express themselves more accurately in their native language. In particular, I described at one point during the baseline phase how “conversation immediately sprung up between my translator, …, and the mother, and it continued on until the moment we began administration of the measures. It was as though the tension was gone from
the mother’s shoulders, and even her facial expressions were slightly less exaggerated and likely more truthful as she spoke with [the translator]”.

Despite the positive nature of the relationships that developed between the translator and each member of the research team in turn, it was still difficult at first to find a balance between the various relationships and roles during sessions in which the translator acted as a link between family members and me. For example, at first I allowed family members to converse with the translator for some time, in order to allow them to build a relationship and establish a level of trust between them. Upon speaking with my supervisor, however, I became aware of the possibility that my therapeutic alliance with the family might be put in jeopardy if they were to become overly dependent upon and close to the translator instead of me. In particular, I noted in my journal that “from now on, I will take the lead, with the translator acting merely as a vessel for communication, without allowing the attachment I’ve formed with the family to shift and take form with the translator instead”. Taking this approach was effective in maintaining the therapeutic alliance, and in promoting a continuous and successful relationship with the translator such that our shared effort to provide culturally responsive PBS was aided over the course of intervention.

*Development of a therapeutic alliance.* The second component necessary for the provision of culturally responsive PBS to a family of a diverse cultural and linguistic background was the development of a strong therapeutic alliance between Mia’s mother and father and myself as the interventionist. Properties underlying this theme included: (a) understanding and cultivating the ingredients for a strong alliance, (b) establishing and maintaining the value of parent-professional equality, (c) responding as a team throughout the behaviour support process, (d) understanding and reflecting upon the progression of the parent-interventionist relationship,
and (e) promotion of a family member to status of cultural liaison at times when cultural or linguistic barriers prevent positive change from occurring.

Over the course of the baseline and intervention phases, my goal was to develop a strong relationship with Mia’s mother and father, such that in times of difficulty in which progress was slow, our relationship would aid in the achievement of our goal of realizing positive change for Mia and her family. In order to do so, it was necessary to identify and cultivate certain ingredients that would allow for development of such a strong alliance. These ingredients included trust, respect, gratitude, hope, compassion and open communication. Constant effort to promote and further the development of each ingredient occurred throughout the study, both through identifying and celebrating times in which the family displayed behaviour reflecting these ingredients toward me, and by shaping my interactions with the family such that I consistently strove to strengthen our alliance through promotion of one or more of these ingredients. For example, on separate occasions I remarked in my journal that “I will attempt to consistently work towards an open and trusting relationship that stands upon a foundation of effective communication and interaction” and that “by taking a stance of openness and humility from the beginning, I feel as though I have been able to set aside some of my own personal and cultural biases, and in doing so, I have encouraged the family to communicate in a way that is open and respectful as well”.

In addition to cultivating ingredients for a strong alliance over the course of the study, I also attempted to maintain a value of parent-professional equality, such that our alliance was based on mutual respect for the knowledge we each possessed, as well for the values we held and the practices to which we were attached. This value became particularly important during the baseline phase, in which the creation of a vision for the sibling play routine proved to be difficult
given the distinct needs of the family versus those of our research design. In particular, a sort of compromise was worked out such that “we ended up with a structure that fit both the family’s need for interconnectedness and cooperation, while meeting the needs of our data collection”. This would not otherwise have been achieved had I taken the approach that as the professional, the family should comply with my direction as is sometimes the case when service providers abide by a “professional-as-expert” model (Rau & Kalyanpur, 2002). Cultivation of parent-professional equality continued throughout the intervention phase, and was an important contributor to the ultimate level of collaboration achieved between Mia’s parents and me, which further served to strengthen our therapeutic alliance.

In line with our view of parent-professional equality, I also attempted to foster a team approach to planning and problem solving discussions throughout the provision of culturally responsive PBS with the family. More specifically, at times I would take the lead in the support process and guide the family through a particularly tough phase, while at other times I would step back and allow the family to guide the process, such that the resulting change reflected their values, beliefs and practices, and both parents felt empowered by what we had accomplished. For example, at one point during baseline, I described how when creating a successful vision of the dinner routine, neither Jin nor Liu could envision a time when this routine would be anything but a nightmare. Therefore “very slowly, and with respect for the difficulties that the parents were facing and the limitations under which they laboured, I began to peel away the layers of fog that clouded any future visions of success”. At another point, however, during creation of the PBS plan for the dinner routine, I described how “I was floored at how both parents seemed to take ownership of the plan to the point that they could explain something to their partner when the other was confused or unsure. They took my words from weeks gone by and turned them
around in beautiful ways before handing them back to me. Only now they were no longer my
words, but theirs”. Ultimately, Mia’s parents and I were able to find a balance over the course of
the study, such that eventually, neither party led, and instead, we worked together “as one unit at
all times”.

As our relationship matured, I found that the roles we had typically adopted up until that
point began to shift and our therapeutic alliance reached a new level both in terms of its strength
and the level of equality that was forged. One particular example of this arose over the course of
intervention in the dinner routine. At first, after a particularly difficult session with Mia, I would
provide counseling to her parents as a way of overcoming their fears and giving them strength to
move forward with the intervention process. This was quite natural to me as a service provider,
and was something I never thought twice about until the day the roles were reversed, and it was
Mia’s mother who began to counsel me. We had just had our most difficult session during the
entire course of the study, and I felt very upset with how it had gone and the outcomes that
resulted from implementation of the non-removal of spoon procedure, an evidence-based
consequence strategy for problem behaviour, and a component of the PBS plan for the dinner
routine. At this point, I described in my journal how “what astounds me is the mother’s reaction
after the session was over. She was so understanding and reassuring. It was as though the roles
were reversed, and I was the parent and she the interventionist”. This new development in our
relationship proved to be powerful in fortifying our therapeutic alliance, and directly contributed
toward our success in effecting meaningful change within the target routines.

The final element of developing a strong therapeutic alliance with the family was one
family member – the father - taking on the role of cultural liaison between myself and the other
team members, in order to improve our ability to work together and effect positive change. This
occurred several times, when Jin acted as liaison between the mother and I during sessions when the translator could not be present. More specifically, when the study began, Liu was unable to understand or speak English with fluency, and as a result I perceived that our relationship suffered whenever the translator was not present. As I noted in my journal however, “his [Mia’s father’s] proficiency has allowed for direct communication to a large degree between [us], and his ability to translate has allowed his wife and me to form an increasingly stronger bond as time has gone on”. This element proved to be critical during the initial stages of the study, helping to create a foundation upon which a strong therapeutic alliance could develop. It is important to note that Jin’s role as cultural liaison became less critical as the intervention process progressed, as Liu by that time had significantly increased her proficiency in use of the English language.

*Understanding and accepting shared and divergent cultural perspectives.* The third component underlying successful provision of culturally responsive PBS was my ability to understand and accept shared and divergent cultural perspectives held by me and family members. Properties related to this theme included: (a) constructing an understanding of the family’s cultural identity, including values, beliefs, practices, and communication and interaction patterns, and determining how this identity changed over time; (b) building an understanding of Taiwanese culture and reflecting on how the family’s culture fit into that general understanding; (c) engaging in cultural self-reflection as it relates to interventionist bias and cultural competence; (d) identifying cultural and linguistic similarities and differences between members of the research team; and (e) undertaking a stance of intent to be culturally responsive to promote acceptance of divergent perspectives.

Throughout the process of culturally responsive, family-centered PBS, I continually strove to better understand the cultural identity of Mia’s family, in terms of the values and beliefs
they adhered to, the practices they engaged in, the communication and interaction styles that characterized their relationships, and the ways in which all of these aspects had changed over time since coming to Canada six years ago. Through family assessments of culture and ecology, and through further observation of and interaction with each family member, I slowly gained an understanding of the strengths, stressors, roles, attitudes and overall cultural identity that characterized the family. Furthermore, through illuminating dialogue with Mia’s parents, I began to understand the ways in which they had surrendered their culture since coming to Canada and having a child with autism, as well as the ways in which they still held fast to their cultural roots from Taiwan. This continually emerging understanding of the family’s cultural identity was the first step in being able to understand and accept our shared and divergent cultural perspectives, which ultimately improved my ability to provide PBS in a manner that was culturally responsive to the needs of the family.

Once I had begun to gain a deeper understanding of the family’s cultural identity, I began to conduct research surrounding traditional cultural beliefs and practices within Taiwanese culture, and subsequently, to reflect upon the ways in which my perceptions of their cultural identity fit within the traditional description of Asian culture. For example, during the intervention phase for the dinner routine, I noted that “this family has attempted to adopt a Western lifestyle in many ways, primarily for the sake of their children, and yet values of family cohesion and interdependence, honour and reputation, harmony and reciprocity, are all evident in their actions toward one another and towards myself”. The accumulation of such knowledge related to the family in comparison to traditional culture proved to be important in promoting my ability to respond in a manner that was culturally responsive, in addition to acting as the second
step toward understanding and accepting shared and divergent cultural perspectives between myself and the family.

In response to my increased understanding of the family’s cultural identity, I decided it was time to investigate and reflect upon my own cultural roots, such that any biases I have might be illuminated, and my development of cultural competence might be further promoted. Self-reflection consisted of both purposeful effort to answer questions from a cultural self-awareness guide, as outlined by Turnbull and Turnbull (2001), and spontaneous comparisons to my cultural up-bringing while attempting to understand differences in cultural values or practices between Mia’s family and me. Such reflections varied, from accounts of my childhood in Canada, to descriptions of my European cultural heritage and my ancestors from Holland and Germany, to reflections on my present-day cultural identity as an amalgamation of my past history and experiences with Canadian and European culture. Overall, this self-reflection proved to be essential in allowing me to identify my core values, beliefs, biases and prejudices. Combining this knowledge with my knowledge of the family’s cultural identity, I was now ready to find similarities and differences within and between our cultural perspectives, which would ultimately aid in my development of cultural competence and my ability to provide culturally responsive PBS to the family.

The identification of cultural and linguistic differences proved to be quite simple. The identification of cultural and linguistic similarities on the other hand was difficult at first, but soon became as easy as identifying our differences. In particular, from the moment I met Mia’s family, it was apparent that our communication styles were quite different, in addition to the fact that we spoke different languages. For example, as described above, the common practice in Taiwanese culture in situations of unpleasantness is to laugh and smile, to put the other person at
ease and diminish the nature of one’s own grief. In Canada, however, and specifically in my family, I have been raised to be open and expressive of my feelings, with the view that hiding one’s feelings will not allow others to help you through these feelings and regain a sense of happiness. Furthermore, in my family, it would be considered rude to laugh about something that is unpleasant. This cultural difference was identified quickly, and served to increase my understanding of how I might better serve the family in a manner that was culturally responsive. With respect to cultural similarities, continuity was identified with respect to disciplinary practices, as well as within the structure of Mia’s immediate and extended family in comparison to my own. Further similarities were identified in that I came to understand that we shared many underlying values, including a focus on academic achievement, the value of providing a loving and stable home environment in which to raise children, and the need to create happiness for all family members to the greatest extent possible.

The acceptance of divergent cultural perspectives is not always easy, both for service providers and for human beings in general. What allowed me to continually accept the divergent perspectives of Mia’s family members, however, was my intent from the beginning of the study to act in a manner that was culturally responsive. Although it may seem obvious and therefore unnecessary to state that intent to be culturally responsive is necessary for the development of cultural competence, it is important nevertheless to identify intention as being of utmost importance. This intention may very well distinguish the culturally responsive service provider from the service provider who seeks to provide intervention with no additional attention to cultural content. Overall, it is this intent which allowed me to accept, commit, and continually recommit to the process of culturally responsive PBS with the family, as reflected through statements in journal such as “I look forward to our next session and the new insights I might
gain, and I will do my best to remain open to and aware of our cultural and linguistic differences that may serve to facilitate or challenge us along the way”.

Identifying and rectifying errors and barriers. The fourth theme resulting from the qualitative data analysis, which proved to be an important component to providing culturally responsive PBS to the family, was my ability to identify and rectify errors and barriers associated with cultural competence and intervention implementation. At times these errors and barriers had already occurred, and required immediate correction before further progress could be made. At other times, potential errors and barriers were identified prior to their occurrence, such that they were prevented and positive change was maintained. Properties underlying this theme included: (a) maintenance of a beginner’s mind throughout the process of service provision, such that cultural, linguistic and ecological errors and barriers could be identified, (b) interventionist adaptation in the face of error recognition, (c) constant perseverance to gain deeper levels of knowledge related to family ecology and culture, and (d) utilization of knowledge gained to prevent or correct errors and barriers.

A beginner’s mind is a state of mindfulness in which one is prepared to accept new knowledge (Kabat-Zinn, 2012). A person who possesses a beginner’s mind assumes that knowledge is ever-changing and thus must remain open to and ready for whatever new experiences arise. Throughout the study, assuming a beginner’s mind was very important in allowing me to recognize error and achieve continually deeper levels of understanding with regard to the intervention process. For example, during one journal entry I noted “It’s easy to fall into a pattern with a family, when you think you know them well and understand them perfectly, but this is when cultural clashes tend to arise due to lack of sensitivity or responsivity between parties”. This willingness to view the intervention process through a beginner’s lens helped to
uncloud my vision and perceive what truly lay before me, which in some cases, was an error or barrier that required attention before positive outcomes could be achieved or sustained.

During the initial phases of the study, as I was getting to know Mia’s family and learning about their communicative and interactional style, there were times during which I realized I had made an error with respect to my communicative and /or interactional style. I had conducted myself in a way that was not responsive to the family’s culture, or made an error in judgement that might have affected the development of my therapeutic alliance with the family. One such example occurred during the baseline phase. As described previously, I had decided that Jin would act as my primary communicative partner, given Liu’s minimal proficiency with the English language. Based on this decision, I had begun to address most of my conversation to the father, and looked over to Liu occasionally as a way to let her know that I still valued her presence despite the fact that I could converse only with her husband. Over time however, Liu’s English skills began to improve, and she began to feel more comfortable expressing her thoughts directly to me, rather than through her husband or the translator. At this point, I realized it was necessary to adapt the interactional style that I had adopted, and “I began to address both parents equally”. In response to this shift, Liu seemed to open up more and more with each passing visit, such that I noted in my journal “I find that now, I look to both [parents], and it is equally as likely that I will get a direct response from the mother, followed by input from the father, as it is that I will receive a response from the father alone”. Had I not adapted my style of interacting with Mia’s parents, Liu might have felt left out of the process, and our strong therapeutic alliance might never have developed.

In addition to assuming a beginner’s mind, and adapting as necessary in response to new knowledge, I often needed to dig deeper within the family’s culture or ecology, in order to reach
a new level of insight that would allow me to correct or prevent an error or barrier. I found that this was especially necessary with Mia’s family due to two reasons. First, as all families do to some extent, I found that Mia’s family had hidden certain information from me at first, or perhaps had not been comfortable enough to share this information with me. Over time, as trust was established, new knowledge became available to me as I became more of an “insider” in her family. Second, Jin and Liu sometimes did not realize the importance of a particular piece of information. Rather than hiding it from me, they simply did not think it relevant to mention. For example, the dinner routine, which became our first-priority routine, was not even considered for intervention at first, when we conducted the screening assessments with Mia’s parents. As I described in my journal, “when we first began, dinner time was mentioned as a difficult time of day, but it was dismissed with what I later realized was a deep-seated fear that nothing could truly be done for this routine”. Had I allowed them to dismiss the routine, and thought no more about it, we might never have intervened, and Mia’s family might never have participated in this research study at all.

By persevering and continually striving to penetrate through the surface culture and ecology of Mia’s family, that is, the culture and ecology that is presented to an “outsider”, I found I often obtained knowledge that could be utilized to our advantage in terms of correcting or preventing some error or barrier standing in the way of family and child progress. For example, in-depth knowledge of family strengths and stressors, of family relationships and cultural values, beliefs and practices, led to new ways of approaching certain aspects of the dinner and sibling play routines, and of strengthening the support outcomes that were achieved. For instance, during intervention for the sibling play routine, I described in my journal how “the father knows it is important to provide praise for appropriate behaviour whenever it occurs,
either during dinner or sibling play…he values the happiness of his family, and he values a home that runs smoothly. Yet, during times at which he is fatigued, his need for rest and relaxation may override those values…piece by piece, the support strategies might fall away…[until] they are stuck in a vicious loop, a coercive process…knowing all of this is crucial to our success in preventing its occurrence through appropriate training with [Mia’s] parents over the coming weeks”.

Continually reflecting on, developing knowledge of, and taking steps toward cultural competence. The final component necessary for the successful provision of culturally responsive PBS to a family of a different cultural and linguistic background was my ability to continually reflect on, develop knowledge of, and take steps toward cultural competence. Properties related to this theme included: (a) maintaining intent to be culturally responsive, (b) engaging in culturally responsive reflection, (c) posing and answering culturally responsive questions, (d) building a concept of culture in general, (e) reflecting on the role of cultural responsivity in the context of a research design, and (f) reflecting on the role of cultural responsivity in the context of the field of PBS in general.

In order to achieve any meaningful level of cultural competence, I first had to take up a position of culturally responsive intent. As described previously, this intent made all the difference, in that I was prepared throughout the study to gather and reflect upon cultural content within the process of intervention for Mia’s family. In working toward a place of cultural competence, I found that my main intent was to learn about the family’s culture, in addition to reflecting upon my own cultural roots. In doing so, my intent was to reach a standard of knowledge whereby I could respond in ways that were sensitive to the family’s cultural values, beliefs and practices, while understanding my own cultural perspectives as well, and the way in
which they might influence how I perceived and/or responded to a situation. For example, at one point in the dinner routine, we had gotten to a place where both Jin and Liu had mastered the ability to praise both their son and daughter when appropriate, and I was looking to move toward having all members of the family praise each other. In particular, my goal was to teach Liu and Jin to praise each other, in an effort to strengthen their marital relationship, which was under strain due to their daughter’s behaviour. At this point in my journal, I noted “the thing I am ultimately trying to accomplish here is to cultivate not only loving relationships between all four family members, but also relationships full of open acknowledgement of that love. This may perhaps be a stretch, given the differences in my cultural upbringing versus those of both parents in this family, and so I will have to tread carefully, never imposing my views or practices but rather, exposing [the family] to the benefits that behavioural science has shown which result from praise and reinforcement of desired and acceptable behaviour”.

Once I had determined that I would take a stance of culturally responsive intent, I began to think of ways in which I could increase my cultural competence, aside from observations of and interactions with family members. Two such ways were culturally responsive reflection, and posing questions related to cultural responsivity. First, as situations arose with Mia’s family in which I thought I had responded with cultural responsivity, I reflected upon these actions in my journal. I analyzed my actions more fully so that new knowledge might become available and increase my understanding of their culture or allow me to respond more sensitively next time. Second, upon discovering new knowledge, or facing a challenge I had not faced before, I would often pose questions related to cultural responsivity, such that I might look for answers through research of Taiwanese culture, or through further interaction with Mia’s family. Examples of such questions include “What is it that has allowed them [the family] to adopt these scientific
practices [related to ABA and PBS] so readily?” “What components are necessary to include to ensure this [relapse prevention] training is done in a manner that is culturally sensitive?” and “Can success be achieved if the family members feel embarrassed or left out of the process? Can it be achieved if they don’t understand the proceedings, and lose interest in the process as a whole?”.

In posing these questions and reflecting upon my own actions with the family, I began to form a more general concept of what culture really entails, and how deep its roots extend. In particular, I began to examine how individual members of a family can shape the culture of the family as a whole, in addition to how culture further shapes each member. I also began to reflect upon the dangers of making assumptions based on culture, and I noted in particular that “each family abides by its own set of cultural rules to some extent, and by making assumptions about the family prior to gaining an understanding of where they are coming from or why they engage in a certain practice or hold to a certain belief, we run the risk of conducting PBS in a manner that is culturally stereotyping, which may be far more destructive than PBS conducted without a cultural piece at all”. Furthermore, I began to understand the depth of culture, and the degree to which it affects a person such that “it may not even be recognized by the individual themselves”.

By building a generalized understanding of what culture meant to me, I was able to gain more insight into how it was shaping the actions of Mia’s family members as well as my own.

In addition to forming a concept of culture as it pertained to all families and individuals in general, I also began to reflect on the role cultural responsivity played within the context of a research study, and within the context of the wider field of PBS. More specifically, I found that certain aspects of the research design may have actually assisted my ability to be culturally responsive to the needs of Mia’s family. For example, at one point in my journal, I reflected
upon the process of creating a culturally responsive vision of the sibling play routine with Mia’s parents. At first, they had had trouble envisioning a routine in which cooperative play was the focus, despite the fact that family cohesion and interconnectedness was highly valued by both Mia’s mother and father. At the time, we were ready to move forward with a vision based heavily on parallel play between Mia and her brother, when it became clear that this vision would not support the need to measure stable and substantial problem behaviour. During parallel play child problem behaviour was not observed to a reliable extent. At this point, I reflected that “at the time, I thought to myself ‘I don’t like the idea of the data driving this process, even though it is research, I would rather that the cultural beliefs, values and customs drive this process.’” What I didn’t realize at the time was how lucky we were that the data intervened in what was shaping up to be a sub-par and even hazardous vision of the routine. Once it became clear that a vision of sibling play in which both siblings played in parallel…would not support the data collection needs…we began to take a deeper look at what was really going on in this routine”. What we found was that a vision based on cooperative play not only satisfied the needs of our data collection, but it also fit better with the values of the family in that cooperative play improved the sibling relationship and appeared to promote cohesiveness and flexibility on the part of both Mia and her brother.

Within the context of the field of PBS in general, I reflected upon the urgent need for cross-cultural competence, given the current demographic profile of North America and the predictions for an increasingly diverse population. In particular, I noted at one point that “cultural values and beliefs related to family and child-rearing, education and socialization, and in our case medical care and disability, can heavily impact the intervention service process,
making collaboration truly difficult when the core values of the family do not match those of the dominant culture and service provider”.
CHAPTER FOUR
Discussion

This study served to replicate and extend the study conducted by Cheremshynski et al. (2011), adding to the literature on culturally responsive, family-centered PBS with families of children with autism. The present study employed quantitative methods of data collection and analysis to address three primary research questions: (a) Is there an association between implementation of a culturally responsive, family-centered positive behaviour support approach and socially valid improvement in child problem behaviour and participation during two valued family routines for a child with autism in a family of diverse cultural and linguistic background; (b) Did the behaviour support plan possess social validity and a good contextual and cultural fit, from the perspective of the parents; and (c) Is there an association between implementation of a culturally responsive positive behaviour support approach to problematic yet valued family routines and meaningful improvements in generalized child and family functioning, as evidenced by parent report. The study employed qualitative methods to gain an understanding of: (a) the family’s cultural perspectives related to family life, raising a child with a disability and living as relatively recent Chinese immigrants to Canada, and (b) an interventionist’s perspectives on the process of becoming a culturally competent practitioner as well as the themes, properties and dimensions of this effort with a Chinese immigrant family raising a young daughter with autism.

Summary of Results

With respect to the first primary research question, quantitative results from the multiple baseline design across two routines showed two basic effects, indicating an association between implementation of the culturally responsive PBS approach and improvement in child behaviour and participation within each target routine. During the baseline phase across the two routines,
Mia engaged in moderate to high levels of problem behaviour ($M = 67.6\%$), while successfully completing few, if any, steps in the routines during the majority of observations ($M = 16.9\%$). As well, 11 of 14 observations were terminated at or just beyond the 3 minute mark ($M = 4$ minutes, 34 seconds), due to Mia engaging in the criterion level of problem behaviour. During the intervention phase across the two routines, the level of child problem behaviour decreased substantially to an average of 7.8\%, and Mia successfully completed an average of 82.9\% of the steps within the target routines. In addition, Mia participated in the routines for a substantially longer length of time ($M = 31$ minutes, 47 seconds), with successful completion of the entire routine occurring in eight of 12 observations.

These results, however, are moderated by the data for steps successfully completed and latency to completion during the latter sessions in both routines. Within these data: (a) three of the final four dinner routine observations fell below the criterion of 80\% of steps successfully completed., with the result that stable, socially valid outcomes were not established in the dinner routine; (b) there was a slight regression in successful completion in the final observation for the sibling play routine; and (c) latency data in three of the final five dinner routine observation probes exceeded the socially acceptable level established by Mia’s parents (i.e., 40 min or less), and three of the final four dinner routine observations were unsuccessful due to the criteria for termination being met. These results can be attributed to: (a) still developing the oral motor skills that would allow Mia to eat a bowl of food at a more acceptable pace during the dinner routine, (b) requiring Mia to eat types of fruit that were not firmly in her repertoire of acceptance during the dinner routine, and (c) Mia’s older brother faltering in the final observation probe of the sibling play routine in regard to positively supporting his sister. These shortcomings in the outcomes achieved, however, did not appear to diminish the parents’ perception of the
acceptability and importance of the goals, procedures, and outcomes (i.e., social validity) that they achieved with Mia across both routines.

In regard to the second primary research question, ratings of social validity indicated that both Jin and Liu found the procedures and outcomes associated with the PBS approach to be highly acceptable and important across implementation in both target routines ($M = 4.85$). Furthermore, ratings of contextual and cultural fit indicated that Mia’s mother and father believed that both support plans fit within the ecology of their family, and remained consistent with their cultural values and practices ($M = 4.71$). Taken together with the multiple baseline data, this suggests that the culturally responsive, family-centered approach to intervention with Mia’s family was effective in reducing her problem behaviour and increasing participation in two valued family routines, socially valid and a good contextual fit with the culture and ecology of the family.

In relation to the third primary question, ratings on additional child and family measures indicated variable outcomes for family members, with positive change occurring for generalized child behavioural outcomes, and mixed results occurring for generalized family functioning outcomes. In particular, both Jin and Liu reported considerable improvements in behavioural and emotional functioning for Mia over the course of intervention, with notable decreases in affective and anxiety-related problems. With respect to parent and family outcomes, at the conclusion of intervention Liu reported decreases in parental stress and an increase in overall family quality of life. In contrast, Liu also reported a slight decline in family functioning with respect to both cohesion and flexibility. In comparison, Jin reported modest improvements in family functioning, in contrast with minor deterioration in family quality of life and no change in parental stress as compared to baseline levels.
With respect to gaining an understanding of the parents’ perspectives throughout the provision of culturally responsive, family-centered PBS, qualitative analyses revealed several important findings. First, Jin and Liu held different beliefs with regard to parenting practices, which often resulted in marital conflict. While Liu preferred to take a strict approach and seek out explanations for her children’s performance, Jin preferred instead to take a relaxed approach in which the children were encouraged to ‘try again’. Second, Jin and Liu had few outside resources that fit with the needs and culture of their family. They had surrendered several ties to their Taiwanese community (e.g., friends, church) due to their daughter’s problem behaviour and they believed that most of their friends and family members did not understand autism, which resulted in feelings of ostracism from their own culture. Finally, both Jin and Liu believed that their family had many strengths, and that their daughter had contributed to their happiness and growth in several ways. In particular, both parents believed that family members were loving, caring, and flexible, and that as a family unit, they were interconnected and supportive of one another. Despite these strengths, both Jin and Liu believed that their daughter’s behaviour was a major source of stress to the family, and that relationships were often strained as a result of her behavioural rigidities and unpredictable moods.

With respect to gaining an understanding of the perspectives of an interventionist attempting to provide culturally competent, family-centered PBS to a family of a different cultural and linguistic background, five themes emerged through qualitative analysis of the data. Partnership with a translator proved to be the first important element of providing behavioural intervention in a way that was sensitive to the family’s cultural and linguistic needs. Doing so allowed both Jin and Liu to communicate their opinions effectively, and improved our ability to develop each behaviour support plan as a team through collaborative dialogue both in English.
and in Mandarin. Development of a therapeutic alliance with Jin and Liu represented a second component in my ability to provide culturally responsive, family-centered PBS. The level of trust in, respect for and open communication with Mia’s parents allowed us to move forward as a team. Each member supported the others in turn, and this approach contributed to our ability to overcome cultural and ecological barriers as they arose. Understanding and accepting shared and divergent cultural perspectives between myself and family members was a third factor, that contributed to my development of cultural competence and my ability to respond in a manner that was culturally appropriate. My ability to identify and rectify errors in cultural competence, and cultural or ecological barriers to implementation, was a fourth contributor to my emerging capacity to provide culturally responsive, family-centered PBS with the family. Finally, the process of continually developing my cultural competence through research, reflection and subsequent action appeared to be the fifth element necessary for culturally responsive service provision. Throughout the study, I continually acted from a stance of culturally responsive intent, and used the information I gained to improve my own understanding of the family’s culture and take steps toward achieving meaningful child and family outcomes in the context of that culture.

Contributions to the Literature

The study offers five contributions to the literature on culturally responsive, family-centered PBS. First, the study replicates and extends the findings by Cheremshynski et al. (2011). Second, the study contributes to the nascent literature on culturally responsive, family-centered PBS with families of children with developmental disabilities. Third, the study contributes to empirical knowledge about the features of culturally sensitive service provision, including ways in which cultural differences can facilitate or hinder the ability of interventionists to effect positive and meaningful changes for the child and family. Fourth, the study adds to the
literature on multi-method research, by illustrating the use of quantitative and qualitative methodologies to analyze the processes and outcomes of a family-centered PBS approach designed to be effective, acceptable, and culturally responsive with a family of Taiwanese heritage raising a young child with autism. Finally, the study brings together two areas of research, each important to understanding how to effectively support families of children with developmental disabilities from diverse cultural and linguistic backgrounds: (a) research on family-centered PBS, and (b) research on culturally responsive services. Discussion of each contribution is provided below.

**Replication and extension of original findings.** The study offers a systematic replication of the findings by Cheremshynski et al. (2011) in two ways. First, the study provides evidence of an association between a culturally responsive, family-centered PBS approach and improvement in child behaviour and participation in two valued family routines with a family of a diverse cultural and linguistic background, raising a young child with autism. Second, the use of quantitative and qualitative research methods replicates the multi-method research of Cheremshynski et al. In this study, a single-subject multiple baseline design across two routines was used to address quantitative research questions, while in Cheremshynski et al.’s study a single-subject withdrawal design was employed. Qualitative methods employed in this study closely matched those used in the Cheremshynski et al. study. A cultural assessment tool developed by Chen et al. (2002) and a reflective journal used by the interventionist documented cultural information that provided an understanding of the family’s cultural perceptions and experiences and yielded themes relevant to the provision of culturally responsive, family-centered PBS. Overall, three of the five themes that emerged from the qualitative analysis were similar to those found by Cheremshynski et al.: (a) the benefits of having a translator and/or
cultural guide, (b) the necessity of forming a strong, collaborative partnership with family members, and (c) the importance of identifying and accommodating cross-cultural values, beliefs and practices. As noted by Sylva (2005), the replication of single-subject research studies is vital if such research is ever to have practical implications for behavioural intervention in clinical settings.

The study also extends the findings of Cheremshynski et al. (2011). In the Cheremshynski et al. study, a Japanese mother of a young boy with autism taught her son to successfully participate in a dinner routine in the home. In this study, a Taiwanese father and mother taught their young daughter with autism to eat dinner with her family, and the child’s father and older brother taught her to cooperatively play table games. In this comparison, the extension of findings can be seen in the gender of the focus child (i.e., female), among the routines selected for intervention (i.e., sibling play routine), and the family members directly involved (i.e., father, mother and sibling).

The study also extends the measurement of outcomes and the results of quantitative and qualitative analyses in comparison to the Cheremshynski et al. (2011) study. First, a measure of social validity was included in this study. Parent ratings offered preliminary evidence of the acceptability and importance of the goals, procedures, and outcomes of the culturally responsive, family-centered PBS from the family’s point of view. Measurement of social validity reflects the commitment of practitioners of PBS to promote socially valid change in natural settings with natural agents (i.e., parents) (Carr et al., 2002).

Second, measures of global child and family functioning were included in this study to investigate the generality of effects of the culturally responsive, family-centered PBS approach within the family system. Indices of family quality of life, child behavioural and emotional
functioning, parenting stress, and family cohesion and adaptability indicated several positive outcomes for Mia and her family that were associated with intervention, varying from minor to substantial in terms of their overall level of change. The biggest change was the substantial improvement in Mia’s global level of behaviour and emotional functioning, providing correlational evidence of an association between implementation of the approach in two valued family routines and improvements in Mia’s ability to function appropriately outside of the target routines. In addition, modest improvements in family quality of life and parental stress for Mia’s mother, and modest improvements in family functioning as reported by Mia’s father suggest that the culturally responsive, family-centered PBS approach was associated with generalized positive outcomes for Mia’s family members as well. This finding is especially important considering the focus of PBS on achieving systems change, in terms of improving entire ecologies rather than focusing efforts on improving child problem behaviour in isolation of their contexts (Carr et al, 2002).

Third, through qualitative analysis of journal entries and the results of the family assessment interview, two new themes emerged in this study which went beyond those revealed in the Cheremshynski et al. (2011) study: (a) identifying and rectifying errors and barriers, and (b) continually reflecting on, developing knowledge of, and taking steps toward cultural competence. The importance of the first theme as a component of culturally responsive services with a family of diverse cultural and linguistic background lies mainly in the position of open-mindedness and readiness to recognize when errors were made with respect to cultural competence or when barriers to implementation existed (i.e., either real or potential). In this way, action could be taken to resolve the situation before the therapeutic alliance was harmed, or before intervention outcomes were compromised. The importance of the second theme to
culturally responsive service provision was extensive, in that my development of cultural competence, combined with my ability to understand and accept the shared and divergent cultural perspectives I held with the family, led directly to my ability to act in ways that reflected cultural responsivity. More specifically, I found that the intent to respond in a culturally sensitive manner was paramount to my success in providing family-centered PBS services to Mia’s family in a way that was responsive to their cultural and ecological needs. Together, these two additional themes extend the findings of Cheremshynski et al. (2011) by adding to the knowledge base on learning to be a culturally responsive service provider.

**Contributions to literature on culturally responsive PBS.** The study contributes to the existing body of research on the provision of culturally responsive PBS to families of diverse cultural and linguistic backgrounds. At present, only four studies have described the implementation of PBS with a family of a diverse cultural and linguistic background. In addition to the Cheremshynski et al. (2011) study, Wang et al. (2007) described a hypothetical case study of a child and family of Chinese heritage and considerations for developing a culturally appropriate PBS plan for the child and family. However, no quantitative data were gathered. Vaughn et al. (2002) implemented a multiple baseline design across three sub-routines in a community fast-food restaurant with a Nigerian family of a child with autism; however, cultural factors did not appear to explicitly affect the approach to intervention as in the current study. Finally, Binnendyk and Lucyshyn (2009) conducted an empirical case study examining the implementation of family-centered PBS with an Egyptian family of a young boy who engaged in food refusal behaviour; however, cultural factors relevant to intervention design and implementation were not presented.
In their hypothetical case study of PBS with a Chinese-American family, Wang et al. (2007) noted the need for: (a) qualitative inquiry of PBS with families of Chinese-American heritage as well as other diverse cultural and linguistic backgrounds, and (b) single-subject research in which culturally responsive PBS is provided to families of diverse cultural and linguistic backgrounds. The current study answered this call by conducting a single-subject research study in which qualitative data and analysis was included as a method of inquiry for assessing a culturally responsive PBS approach to intervention with a family of Taiwanese heritage.

Furthermore, Wang et al. described three important points for providing culturally responsive PBS, all three of which were verified by the themes that emerged through qualitative analysis in this study. These elements included building an understanding of one’s own cultural perspective, building an understanding of the family’s cultural perspective within the context of service provision, and building a trusting partnership with family members and maintaining that partnership over the course of intervention. As described in Chapter 3, I, too, found these elements to be of vital importance in my ability to respond in culturally sensitive ways with Mia’s family. In particular, I described achieving these elements through cultural self-reflection, reflection on the family’s culture, and cultivating essential ingredients over the course of intervention, which led to a strong therapeutic alliance with Mia’s mother and father.

Beyond contributing to the literature related specifically to culturally responsive PBS with families, the study also contributed to the literature related to family-centered PBS in general. An emerging body of empirical research exists surrounding the use of family-centered PBS with families of children with developmental disabilities in natural family contexts (Binnendyk & Lucyshyn, 2009; Clarke et al., 1999; Lucyshyn et al., 2007; Moes & Frea, 2000;
Moes & Frea, 2002; Vaughn, Clarke, et al., 1997; Vaughn et al., 2002). These studies differ in participant characteristics, the targeted routines chosen for intervention, the dependent measures assessed across child and family outcomes, and the research designs employed to document quantitative change in the variables of interest. The present study served to replicate and extend this research by: (a) using the activity setting as a unit of analysis to document change in two family routines (i.e., dinner and sibling play); (b) measuring global child and family outcomes associated with the intervention process, including quality of life as assessed by Binnendyk and Lucyshyn, as well as parenting stress, child behavioural and emotional functioning, and family adaptability and cohesion, which were not assessed in any of the previous studies; and (c) employing qualitative analytic methods alongside quantitative methods to document subjective aspects of service provision that may have contributed to positive child and family outcomes.

**Contributions to culturally sensitive service provision.** This study served as an application of several recommendations for best practice documented within the literature on cultural reciprocity and cultural competence in the context of providing early intervention to families of children with developmental disabilities. Researchers have suggested that culturally sensitive service provision is affected by the ability of the interventionist to engage in effective communication with the family and collaborate in a cross-culturally competent manner (Harry, 1997; Lynch & Hanson, 2004). Within the context of this study, I found that my ability to form and sustain a partnership with Mia’s mother and father, in which parent-professional equality was established and all members were able to communicate openly and effectively in order to approach intervention as a team, was directly facilitated by the inclusion of a translator. For example, at first Mia’s mother rarely communicated directly with me, instead choosing to have her husband act as a cultural interpreter and translator during sessions in which our actual
translator could not be present. This meant that all of her communications were transmitted through Mia’s father, allowing for possible miscommunications to take place as he attempted to translate his wife’s words into a language in which he himself was not entirely fluent. Furthermore, open communication was not truly established until the translator began to facilitate our conversations, due to the concerns of both parents that their spouse would judge what they said and begin to argue about their differences in opinion. This finding corroborated research described by Turnbull and Turnbull (2001), that emphasized the importance of allowing family members to communicate in a language in which they are both comfortable and fluent, such that misunderstandings do not arise. As well, use of a translator in the current study helped to ensure that service provision proceeded in a manner that was both family-centered and culturally responsive in terms of prioritizing the cultural and linguistic needs of the family above my own needs as an interventionist, which is consistent with research by Anderson and Fenichel (1989).

With respect to ensuring collaboration proceeded in a manner that was culturally sensitive to the needs of Mia’s family, I found that through constant reflection on my own cultural perspective as well as that of the family, in addition to reflecting on my interactions with the family as they transpired through a lens of cultural competence, my own cultural competence continually improved. I naturally began to adapt my communication and interaction style such that my efforts to collaborate with the family grew more sensitive to their cultural values and practices. This finding aligns with past research and recommendations both within and outside of the field of PBS stipulating the importance of parent-professional collaboration during the intervention process (Carr et al., 2002; Dunlap & Fox, 2007; Harry, 1997; Lucyshyn et al., 2007), and further highlights the importance of cultural responsivity as an aid to collaboration.
with families of diverse cultural and linguistic backgrounds (Chen et al., 2002; Wang et al., 2007).

**Contributions to literature on multi-method research designs.** The present study also contributes to literature on multi-method research by adding an empirical demonstration of the benefits of including both quantitative and qualitative methodologies within a single study. In this way, single-subject quantitative dependent variables can be measured alongside ethnographic data related to subjective perspectives and experiences throughout the intervention process. Such demonstrations have occurred in past research within the field of PBS, although these studies are rare and do not always make use of each type of methodology as a means to augment findings from the other set of analysis. For example, Vaughn et al. (1997) and Fox et al. (1997) published companion articles in which quantitative and qualitative analyses were conducted during an investigation of community-based, family-centered PBS with a family of a boy with severe disabilities and problem behaviour. Although multiple methods of data collection were gathered concurrently, quantitative and qualitative results were published in separate studies, thereby preventing conclusions from one set of analysis to help inform interpretations of the other.

The present study, in contrast, combined the findings from both methods of data collection and analysis. Quantitative results documented improvements in child problem behaviour and routine participation for Mia in the dinner and sibling play routines. These quantitative outcomes along with measures of social validity, contextual and cultural fit, and global measures of child and family functioning, were further illuminated through qualitative analysis. This analysis highlighted the components of providing family-centered PBS in a culturally responsive manner. For example, high ratings of social validity and contextual and
cultural fit were substantiated by qualitative analysis of journal entries and the parent assessment interview. These data documented the interventionist’s effort to create PBS plans in a collaborative fashion with Mia’s parents, to consider ecological and cultural variables relevant to plan design, and to ensure that support goals and strategies were a good fit with the family’s values, beliefs and practices. Similarly, qualitative analyses were enhanced by the inclusion of quantitative data. Themes emerging from the qualitative data, claiming cultural competence and positive outcomes for Mia and her family, were supported by empirical data showing improvements in child behaviour and routine participation, in addition to quantitative indices verifying high levels of social validity and contextual and cultural fit. The central contribution of this study with respect to multi-method research, therefore, was its demonstration of the cumulative strength that inclusion of both quantitative and qualitative methodologies lend to each other when their separate advantages are combined to augment one another.

Consolidation of parallel strands of research. By including quantitative and qualitative methodologies and combining their relative strengths, the study contributes to the literature by merging two parallel but related fields of research. Doing so allowed for the empirical study of the provision of family-centered PBS services in a culturally responsive manner. Divergent epistemologies have emerged over time with respect to the fields of PBS and culturally responsive service provision. Quantitative methods of data analysis have predominantly been used within single-subject studies of family-centered PBS (Binnendyk & Lucyshyn, 2009; Dunlap et al., 1991; Lucyshyn et al., 1997; Luiselli, 2008; Vaughn, Clarke et al., 1997; Vaughn, Dunlap et al., 1997) while qualitative methods of data analysis have predominantly been used in studies pertaining to culturally responsive service provision (Cho et al., 2000; Garcia et al., 2000; Harry et al., 1995; Rodriguez & Olswang, 2003). This study succeeded in bringing together these
parallel strands of research. A single-subject multiple baseline design was employed to analyze quantitative measures of child problem behaviour and routine participation. Concurrently, a qualitative case study design was used to analyze ethnographic data focused on the perceptions and experiences of an interventionist striving to provide culturally responsive PBS services to a family of a diverse cultural and linguistic background. Bringing these two parallel strands of research together in the context of one study has important implications for future research investigating culturally responsive PBS with families of diverse cultural and linguistic backgrounds. This study, in combination with the study by Cheremshynski et al. (2011), may help to promote a shift in the epistemological framework underlying the PBS literature, such that it becomes acceptable and even expected that qualitative inquiry will complement and support quantitative analyses of child and family outcomes.

**Implications for Practice**

The study offers three implications for the practice of family-centered PBS that is likely to be experienced as culturally responsive with families of diverse cultural and linguistic backgrounds. These are: (a) the value of using a cultural assessment tool during initial family assessment that precedes or accompanies functional assessment, (b) the advantages of including evaluations of social validity and contextual and cultural fit periodically throughout the process of intervention, and (c) considerations for providing family-centered PBS in a manner that is not only effective but also culturally responsive to the needs of the family.

The use of the cultural assessment tool adapted from Chen et al. (2002) proved to be essential in building an understanding of the family’s culture, in addition to my own. This tool provided guidance for developing cultural competence during planning, family assessment, and self-evaluation portions of the intervention process. It prompted self-reflection in addition to
reflection related to the family’s cultural identity, and provided information about the family that was critical to creating support plans that fit within the culture and ecology of the family in a way that was efficient and practical given the restrictions on time and resources that are generally present within clinical practice. For example, the entire assessment interview was completed in one session with the family, and questions in the family assessment portion blended well with those on the ecology assessment. As well, answers provided during the initial assessment interview were updated and changed as new information was gathered relevant to the family’s culture, or as aspects of the family’s culture shifted over the course of the study. Researchers and clinicians alike will find this a useful tool, whose gains far outweigh the time it takes to administer to the family.

The use of social validity measures and evaluations of contextual and cultural fit at separate time points throughout the course of intervention proved to be vital in determining the extent to which service provision proceeded in a manner that was responsive to the culture and ecology of the family. Mia’s mother and father provided illuminating comments on each evaluation, which helped to guide subsequent intervention efforts by focusing on those areas in which less satisfaction was reported regarding the intervention approach. For example, Mia’s mother indicated during intervention for the dinner routine that certain strategies might be difficult to sustain once initial parent training was terminated and the amount of direct training decreased. Upon reading this comment, the Principle Investigator and I were able to take steps to fortify strategies that had been tenuously mastered, and adapt strategies that did not fully fit within the ecology and culture of the family. Use of such formative evaluations in clinical practice would not only be feasible, given the short amount of time it takes for family members to complete the questionnaire (i.e., 10 to 15 minutes), but also beneficial in terms of the amount
of useful information they provide that can productively shape the course of intervention as you move forward.

Finally, the five themes that were revealed through qualitative analysis, pertaining to provision of culturally responsive, family-centered PBS with a family of diverse cultural and linguistic background, may serve as a preliminary guide to clinicians in ensuring that their approach to service provision is as culturally responsive as possible. First, the use of a translator was deemed essential to providing services in a culturally responsive manner. Family interventionists may want to consider employing a translator whenever possible when working with families for whom direct communication in English is not realistic. For myself, I began this study by underestimating the need for a translator, and came to understand the importance of being able to communicate openly and effectively with all family members involved. Illuminations such as this have implications for other practitioners, who may also undervalue the need for such resources.

Second, the continual effort to develop cultural competence and assume a posture of cultural responsivity such that I could understand and accept the cultural perspectives of the family that differed from my own, proved to be critical in my development as a culturally responsive practitioner. This attitude allowed me to recognize errors in my own cultural competence as they occurred, and improved my ability to overcome cultural barriers with the family through reflection related to my own cultural perspectives in addition to those of the family. Such insight may have implications for practitioners who believe that such a posture is not necessary, and that cultural competence develops automatically as a result of being family-centered.
Third, the development of a strong therapeutic alliance with the family was critical to the success we achieved both within and outside of the target routines. This therapeutic alliance was strengthened by my attempt to provide culturally responsive PBS to the family, and my inclusion of a translator. My continual reflections on the family’s culture and communication and interaction style, as well as the subsequent adaptations I made with respect to my own conduct with the family, led to the establishment of trust, respect, and open communication. These ingredients were necessary for reaching a deeper level of connectedness with Mia’s mother and father. As well, the inclusion of a translator across the course of intervention promoted equality in the parent-professional relationship, by providing Jin and Liu with the opportunity to express their ideas and concerns in the language in which they were comfortable. The resulting alliance with Mia’s parents proved to be important when setbacks arose in the intervention process. This insight has implications for practitioners in terms of highlighting the importance of building a strong partnership with the family when the goal is to engender socially valid change in natural family contexts.

Overall, in synthesizing the quantitative results associated with the science-based single-subject research design with the qualitative results gained from analysis of the interventionist journals and family assessment interview, it is clear that none of the outcomes would have been achieved were it not for an underlying level of professional competence. Specifically, professional competence in the areas of PBS and applied behaviour analysis was important in that it served as the foundation upon which culturally responsive services were provided to Mia’s family. Cultural competence on its own would lead to important and most likely valued discussions with the family; however, without the knowledge of how to proceed such that positive changes in child behaviour and routine participation are achieved, the effort to be
culturally responsive alone is unlikely to effect positive child and family outcomes. To be a successful provider of culturally responsive, family-centered PBS, one must first be professionally competent in the technical areas of behaviour analysis and PBS. Once this foundation has been established, the ability to be culturally competent and culturally responsive to the needs of a family will serve to enhance one’s ability to achieve meaningful outcomes for both the child and family.

Limitations

It is important to note that the design, analysis and procedures within this study were limited in four ways: (a) lack of experimental control; (b) absence of maintenance and follow-up data; (c) use of a multicomponent intervention package, preventing interpretation of which component led to documented changes; and (d) limited external validity.

Lack of experimental control. In order to document a functional relation such that experimental control is established, wherein manipulation of the independent variable produces predicted changes in the dependent variables of concern, a basic effect must be documented at three or more points in time (Kennedy, 2005). A basic effect is documented when substantial changes in level, trend and/or variability occur at the point of intervention in one baseline, such that treatment onset is associated with desirable outcomes. In the context of a multiple baseline design across settings, a basic effect must therefore be documented at the point of intervention in three or more settings (i.e., three or more baselines), for experimental control to be established. The multiple baseline design employed in this study consisted of only two baselines (i.e., the dinner and sibling play routines), which prevented documentation of experimental control. This design could not control for all threats to internal validity, in particular maturation and history effects. Despite this limitation, however, it is important to note that studies documenting one or
two basic effect have contributed significantly to the behaviour analytic literature in various domains (Binnendyk & Lucyshyn, 2009; Dunlap et al., 1991; Luiselli, 2008; Vaughn, Clarke, et al., 1997). Non-experimental single-subject research studies based on the continuous assessment of objective data, in which the basic effects are both substantial and immediate, allow for a reasonably strong inference of treatment efficacy (Kazdin, 1992).

**Absence of maintenance and follow-up data.** Maintenance and follow-up phases were not conducted due to the amount of time it took to carry out the initial training phase within the dinner routine and the overall time constraints of conducting this study in the context of a master’s degree. Collection of maintenance and follow-up data would have provided evidence as to the durability and sustainability of the culturally responsive, family-centered PBS approach to intervention with the child and family. The absence of such data prevents any conclusions from being drawn related to long-term outcomes for Mia and her family members within the dinner and sibling play routines.

**Multicomponent intervention package.** The use of a multicomponent intervention package in both the dinner and sibling play routines prevented identification of the individual contributions of each component within the treatment package toward the changes evidenced in child behaviour and routine participation. This is of particular importance when considering the additional steps taken to provide family-centered PBS in a manner that was culturally responsive. The multicomponent nature of the intervention precluded knowing whether the added focus on cultural content led to significantly better outcomes for the child and family. The call for research on culturally responsive PBS with families suggests that a focus on cultural competence and the assumption of a posture of cultural reciprocity is in fact important when the culture of the family does not match that of the interventionist (Chen et al., 2002; Wang et al., 2007).
Therefore, although it is probable that the added focus on cultural content assisted in producing the positive outcomes evidenced for both Mia and her family, further research in this area is necessary in order to determine the degree to which cultural responsivity is integral to achieving meaningful intervention outcomes for children and families of diverse cultural and linguistic backgrounds.

**Limited external validity.** The inclusion of only one child with autism in a family of Taiwanese culture limits the extent to which results can be generalized to other populations, settings, and different behavioural challenges. Cultural themes related to provision of the culturally responsive services were based on experiences with a family of Taiwanese culture who immigrated to North America over five years ago. It is possible that such themes would not apply, or would vary in their interpretation, within the context of families of other cultures, languages or levels of acculturation. In addition, the use of two home-based activity settings as the unit of analysis for change limits the degree to which findings can be generalized to other settings within or outside of a family’s home. Further research conducted with families of Taiwanese culture, as well as with families of other cultural and linguistic backgrounds, in addition to research conducted across a variety of family settings and with children exhibiting alternative forms of behavioural difficulties, will assist in establishing the external validity of the culturally responsive, family-centered PBS approach.

**Cautions**

Four cautions should be considered when interpreting the results from this study. First, stability of all intervention outcomes in the dinner and sibling play routines was not established due to time parameters that were determined prior to the beginning of the study. Second, the assessment and intervention process cannot be deemed efficient due to the number of hours and
sessions that were required to effect changes in both child behaviour and routine participation. Third, the improvement in child behaviour and participation within the two target routines was associated with mixed results in terms of global measures of child and family functioning. Finally, outcomes from the qualitative measures used in this study may have been influenced by bias, in that I acted as both the interventionist and the researcher. These cautions are discussed in detail below.

**Stability of child outcomes.** Stability of the data for steps successfully completed and for latency to completion of routines was not established in either target routine within the intervention phase due to time constraints outlined in advance related to my participation in the research project. Specifically, from the time the baseline phase within the first target routine came to an end, the Principal Investigator and I had established that I would dedicate six months toward intervention with the family, at which point he would take over as primary interventionist if necessary. This time frame was established in order to ensure that a reasonable amount of time was devoted to the study due to the fact that this is a master’s thesis and not a dissertation. The resulting data should therefore be interpreted with caution, due to: (a) three of the final four dinner routine observation probes falling below the criterion of 80% of steps successfully completed, with the result that stable, socially valid outcomes were not yet established in the dinner routine; (b) the slight regression in latency to successful completion in the final observation probe for the sibling play routine; (c) latency data in three of the final five dinner routine observations exceeding the socially acceptable level established by Mia’s parents (i.e., 40 min or less); and (d) three of the final four dinner routine observations being unsuccessful due to the criteria for termination being met.
Efficiency of the intervention process. Substantial improvements in child problem behaviour and routine participation were achieved through provision of the culturally responsive, family-centered PBS approach to intervention for Mia in the dinner and sibling play routines. Despite these positive outcomes, however, the assessment and intervention process cannot be regarded as efficient, given the number of hours and sessions required to effect the change.

The intervention phase for both the dinner and sibling play routines took place over the course of eight months, including all parent and child assessments, initial interventionist training (IIT) and initial parent training (IPT) sessions. A total of 4 hours spread across three meetings was required for completion of all assessments with Mia’s parents, including the ecology, cultural and functional assessments. Within the dinner routine, a total of 13.7 hours of IIT across 18 sessions was required (i.e., 15 sessions prior to beginning IPT, and 3 sessions interspersed with IPT sessions during the latter part of the intervention phase), in order to improve Mia’s ability to participate in each step of the routine to a socially significant extent prior to transferring stimulus control to Mia’s parents. As well, across both the dinner and sibling play routines, a total of 21.9 hours of IPT across 23 sessions (16.2 hours in the dinner routine, 5.6 hours in the sibling play routine) was further required in order to transfer intervention implementation skills to Mia’s parents. This resulted in a total of 39.6 hours for the entire assessment and intervention process, the length of which might be ascribed to two causes in particular.

First, Mia’s success in the dinner routine depended not only upon improving her meal time-related behaviour, but also on overcoming issues of food refusal which had been reinforced over the course of her lifetime, resulting in a behavioural history which was both long and entrenched. In particular, Mia had never before eaten a piece of fruit, and had only recently (i.e.,
within the past year) begun to eat solid foods from other food groups, including a limited range of foods appropriate for dinner time. This meant that although we described certain foods as being “preferred” and “nonpreferred”, with “nonpreferred” foods targeted for intervention through use of general case programming in sub-stages 2 and 3 of the dinner routine, Mia in fact did not prefer any foods at first, and only over time did she come to like the meals she was served. Due to the nature of her food refusal, and consistent with other studies of food refusal in which children with developmental disabilities served as participants within home-based, center-based and hospital-based treatment programs (Binnendyk & Lucyshyn, 2009; Buckley, Strunck, & Newchok, 2005; Freeman & Piazza, 1998; Kahng, Tarbok, & Wilke, 2001), an extensive amount of intervention was necessary to overcome the problems Mia experienced within the dinner routine, and to train Mia’s parents to effectively manage her behaviour once positive intervention outcomes had been achieved.

Second, intervention strategies were developed in the context of two activity settings, which represented valued yet problematic routines within the family’s ecology that Mia’s parents prioritized for intervention. The use of the activity setting as a unit of analysis for change meant that I did not create a comprehensive PBS plan targeting behavioural strategies across Mia’s entire day, but instead, created two routine-specific PBS plans requiring distinct protocols for parent training. This approach was necessary in order to remain consistent with the multiple baseline design across two routines. Furthermore, it helped to control for drift across baselines and allowed for analysis of the effect of intervention at two separate time points, as intervention was initiated within each target routine. However, at the same time, the multiple baseline design may have contributed to the relative inefficiency of the change process because intervention occurred in only one routine at a time.
Mixed results for global outcome measures. The spread effects associated with the culturally responsive, family-centered PBS approach to intervention were somewhat variable, with positive changes in child behavioural and emotional functioning indicated by both of Mia’s parents, and a divergent mixture of parent and family outcomes reported by each parent. While Mia’s mother indicated an increase in family quality of life and a decrease in parental stress by the end of the intervention phase, she also reported a minor decrease in family cohesion and flexibility, reflecting less balance in the family system. Mia’s father, on the other hand, indicated minor increases in family cohesion and flexibility, indicating more balance within the family system, while reporting slight decreases in family quality of life and no change in parental stress. Of note, scores on the PSI-SF (Abidin, 1995) related to parental stress for each parent remained above the 99th percentile, despite the considerable improvement indicated by Mia’s mother. Interpretations of family functioning remained in the same category (“very connected” and “flexible”) despite improvements reported by Mia’s father. Overall, these results suggest that parent and family functioning did not improve to a socially significant extent over the course of the study, although child behavioural and emotional functioning improved both within and outside of the two target routines. Possible explanations for these results are described below.

First, improvements in Mia’s overall level of behavioural and emotional functioning likely resulted from the choice of routines targeted for intervention, in terms of the priority these routines held for Mia’s mother and father, and the vast difference in behavioural skills that were trained across the two routines. Mia’s mother and father ranked the dinner and sibling play routines as the two highest priority routines for intervention, due to their daily occurrence and the intolerably high level of problem behaviour that took place within each routine. As well, behaviours targeted for intervention in the two routines varied from food refusal to cooperative
play skills, such that improvements across routines meant improvements across a wide range of child behaviours.

In contrast, the decision to provide intervention within the context of two routines, instead of comprehensively across all parts of their day, may also have resulted in a lack of significant global parent and family outcomes. Specifically, while Mia’s father may have perceived an increase in family functioning within the two target routines, it is possible that he did not perceive improvements in family cohesion and flexibility outside of those settings in which intervention was provided, resulting in a modest increase in this area overall. As well, Mia’s mother may have perceived that her level of parental stress had declined in the dinner and sibling play routines; however, across the rest of her day she may not have experienced substantial improvements in parental stress. Provision of a comprehensive behaviour plan in which the use of support strategies are generalized to all parts of the day may help to further reduce her ratings of parental stress.

Second, family-centered support targeting parent and family functioning outside of the target routines was limited, due to difficulties in locating appropriate resources that fit within the family’s linguistic and cultural needs (i.e., Mandarin speaking, for families of Chinese/Taiwanese heritage), and difficulty for Mia’s mother and father to find time within their busy family schedule for extra support to take place. As well, within the target routines, support provided did not directly target parental stress reduction, although decreases in child behaviour and increases in routine participation were expected to have collateral effects in terms of improving functioning for the entire family.

**Bias in the qualitative findings.** Interpretations of data from the qualitative methods used in this study should be considered with caution. In analyzing the data through the use of
open and axial coding (Strauss & Corbin, 1990), it is possible that a certain level of bias was introduced due to my dual role acting as both the interventionist writing the journal entries and the researcher analyzing the resulting data. The use of triangulation, member checks and peer review of all themes and categories served to help reduce this potential source of bias (Merriam, 1988).

**Future Research**

Future research in the area of culturally responsive, family-centered PBS is necessary, with particular focus on three important areas: (a) replication and extension of the present findings to new populations and different family structures, (b) exploration of different methods for achieving cultural responsivity within the context of family-centered PBS, such that the most effective and efficient practices are identified for future use, and (c) investigation into the extent to which cultural responsivity contributes to the outcomes achieved for the family and child.

This study provides the first systematic replication of the findings of Cheremshynski et al. (2011) as a data-based study in which both quantitative and qualitative analyses were conducted in the area of culturally responsive, family-centered PBS. As such, further systematic replication of these findings is necessary to verify the knowledge gained in these two preliminary studies as well as additional knowledge about what is required to provide family-centered PBS in a way that is responsive to the cultural and linguistic background of the family. Such replication should be conducted with families of similar and different cultural backgrounds in comparison to the families included so far. For example, future studies may want to include families of Chinese heritage, varying in their level of acculturation (i.e., when they moved to North America). Future studies also may want to include families of non-Asian descent, including families of First Nations, Hispanic, East Indian, and African American cultures. Furthermore, studies including
families with variant family structures (i.e., including grandparents or other extended family members) may help to extend our knowledge about what is required to provide culturally responsive services in more complex family environments. All together, future research with families of varying demographic characteristics will assist in determining what components are necessary for achieving a good cultural fit during a process of behavioural support with a family in the context of their daily lives in the home and community.

Once additional replications of the present findings have been conducted, and a significant body of knowledge has been established in the area of culturally responsive PBS, future research may want to focus on determining the most efficient and effective way for achieving cultural responsivity with a family, such that practitioners are able to incorporate these methods into their repertoire in the most practical way possible. For example, the use of alternative cultural assessment tools might be explored, varying in the number and types of questions included, until an empirically established tool becomes considered best practice, as in the case of the functional assessment (O’Neill et al., 1997). As well, additional tools for interventionists might be created that promote the development of cultural competence in a manner that is as efficient as possible given the realities of an interventionist’s busy schedule. Such research would help to ensure that cultural responsivity becomes an established part of service provision with families across North America.

Finally, future research also may focus on assessing the extent to which an explicit attempt to be culturally responsive adds to the positive outcomes for both the child and family. Given the extant literature to date, the efficacy of family-centered PBS is reasonably well-established, in terms of leading to improvements in child problem behaviour and routine participation. However, future studies including a control group, such that some families would
receive culturally responsive, family-centered PBS while others would receive family-centered PBS with no explicit cultural content, may help to determine the extent to which cultural responsivity promotes intervention that is not only effective, but also socially valid, contextually and culturally fitting, and durable over time.
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Appendix A

Letter of Initial Contact

August 29, 2012

Dear Parent/Guardian:

The purpose of this letter is to inform you of an opportunity to participate in a research study whose purpose is to help families of young children with autism who engage in problem behaviour during valued family routines. The study is entitled, “Culturally Responsive Positive Behaviour Support for Children with Autism in Home Settings.” The study will be conducted by the University of British Columbia. The Principal Investigator (PI) of the study is Joseph Lucyshyn, Associate Professor in the Faculty of Education of the University of British Columbia. The graduate student researcher is Cathryn Schroeder. The research study is for the fulfillment of degree requirements for the Master of Arts degree.

The purpose of the study is to examine the acceptability and effectiveness of a culturally responsive and family centered approach to behaviour support with families of children with autism who engage in problem behaviour in the home. The approach is based on best practice in positive behaviour support with families of children with developmental disabilities. Furthermore, the approach emphasizes the development of a collaborative partnership with family members and the design of positive behaviour supports that are both effective and a good fit with family culture and lifestyle. The study will evaluate the extent to which the approach:

1) improves child behaviour during the two target routines
2) promotes the child’s successful participation in the two target routines;
3) helps family members successfully support the child with a disability; and
4) improves the quality of life of the child with a disability and the family as a whole.

Participation in the study will involve you and your family collaborating with members of the research team in four steps of the family support process, and in five research activities. The steps of the family support process are:

1) comprehensive assessment of child problem behaviour and family culture and ecology;
2) collaborative development of a culturally responsive positive behaviour support plan;
3) implementation support to help the family use behaviour supports in the target routines; and
4) follow-up support.

Research activities will include:

1) preliminary assessment to define the target routines and to confirm child problem behaviour;
2) videotaped observations in the target routines, under conditions that may produce problem behaviour, to confirm the purpose of problem behaviour;
3) videotaped observations in the target routines;
4) assessment of family quality of life, child behavioural and emotional functioning, parental stress, and family functioning; and
5) two additional interviews assessing family members’ perspectives and experiences during a process of culturally responsive positive behaviour support.

Research and family support activities will occur over a 6 month period. During the first 4 to 5 months, your child and family will be involved in support and research activities for approximately 2 to 4 hours per week. This will vary based on your family’s availability and need. During the final 1 or 2 months of the study, the child and family’s involvement will decrease to approximately 1 to 2 hours per week. Support activities will include conducting assessments, collaboratively designing a behaviour support plan, and helping family members to implement the plan in the target routines. All activities will be scheduled on a day and at a time that is convenient for family members.

Families who choose to participate may experience four benefits. First, the child’s problem behaviour may decrease to near zero levels in the target routines. Second, the child may develop new behaviours and skills that help him or her participate in the target routines. Third, family members may enhance their parenting skills. A potential fourth benefit is that other families of diverse cultural and linguistic background, who have children with disabilities, may be helped through the sharing of knowledge gained in this study.

If you are interested in participating in the study, or learning more about the study, please contact Joe Lucyshyn. You may also contact Cathryn Schroeder. Alternatively, you also may contact the agency representative who gave or sent to you this introductory letter. At that time, if you give the agency representative permission to release your name and phone number, Cathryn Schroeder will contact you by telephone to answer any questions that you may have. In any event, thank you for your time and consideration.

Sincerely,

Joseph M. Lucyshyn, Ph.D.
Associate Professor
Faculty of Education
University of British Columbia

Cathryn Schroeder, B.A.
Graduate Student Researcher
Faculty of Education
University of British Columbia
Appendix B

Culturally Responsive Positive Behaviour Support for Children with Autism
Telephone Pre-Screening Interview

Parent name: ___________________________  Phone #: __________________

Date contacted: _______________________

This is a six month research project designed to investigate a cultural approach to behavioral family intervention that seeks to improve behaviour problems and quality of life for children with autism.

The study is recruiting a family that meets the following criteria:

- Have a child with a formal diagnosis of autism
- Focus child is between three and six years old
- Both parents/guardians can read and speak English
- Focus child engages in observable mild to moderate problem behavior during a minimum of two family routines
- Parents do not perceive themselves to be in a “crisis” due to the child’s behaviour or other family problems
- Parents/guardians agree to videotaped observations in the two target routines
- Parents/guardians are willing to act as interventionists with their child
- Family is willing to participate in the study for at least six months
- Family lives in the Lower Mainland and is planning to stay in the same locale over the next year

Do you have questions about these criteria? Does your child and family meet the criteria I’ve described?

I’d like to ask some questions about your child, your family and your reasons for wanting to participate in this study

<table>
<thead>
<tr>
<th>Please describe your child: age, disability, school program or other services</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>Answer</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>Please describe your family: members, occupations, ability to participate in a study</td>
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<tr>
<td>Briefly describe the problem behaviors your child displays</td>
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</tr>
<tr>
<td>Briefly describe the routines during which problem behaviors are most likely to occur</td>
<td></td>
</tr>
<tr>
<td>Briefly describe your reasons for wanting to participate in this study</td>
<td></td>
</tr>
<tr>
<td>Tell us about any questions or concerns you have about participating in a study</td>
<td></td>
</tr>
</tbody>
</table>

The next step is screening; screening involves a researcher making an appointment to visit your home, obtain your consent to conduct interviews and observations that will help us confirm that your child and family are eligible candidates for participation in the study.

Following screening, one family will be selected to participate in the study.

The research activities will consist of the following:
• A comprehensive functional assessment of the focus child’s problem behavior will be conducted.
• An assessment of valued yet problematic routines will be conducted. Family members will be asked to describe aspects of each routine that are currently not going well, but which they would like to improve. The family will then be asked to prioritize the two routines in which intervention is desired the most. These routines will likely be targeted for intervention.
• The researchers will work with family members to develop a culturally responsive behavioral support plan through additional cultural and ecological assessments, and will train family members to implement the plan.
• The researchers will videotape the target routines before and after the behavior support plan is implemented and will collect other data about how the plan is working, and how it affects child and family functioning in general. Note: only the researchers will view the videotapes and they will be stored in a secure location, no confidential information will be shared with anyone outside the research team.
• Behavioral support strategies will be updated and improved as needed.
• Two additional interviews will be conducted with family members to assess their perspectives and experiences throughout the process of culturally responsive behavioural support.
• A benefit of participation in this study is that the family will receive a minimum of six months of behavioral consultation and support in the target routines identified.

Do you have any questions?

Are you interested in participating in the screening process?

Thank you for participating in this pre-screening interview. A researcher will contact you within the next 7–10 days.
Appendix C

CONSENT FORM FOR PARTICIPATION IN SCREENING PROCESS
Culturally Responsive Positive Behaviour Support for Children with Autism

Principal Investigator: Joseph M. Lucyshyn, Ph.D.
Faculty of Education
University of British Columbia

Graduate Student Researcher: Cathryn Schroeder

Dear Parent/Guardian:

The purpose of this form is to request consent for your, for your child with a disability, and for other family members’ (focus child’s brother or sister) participation in a screening process for a research study. The study will be conducted in the Faculty of Education of the University of British Columbia. Joseph Lucyshyn is the Principal Investigator. The Graduate Student Researcher is Cathryn Schroeder. The research study is for the fulfillment of requirements for the Master of Arts degree. I am inviting your family to participate in the screening process because a representative of a local social service agency has recommended your child and family’s participation. After reading the consent form, if you have any questions, I will be happy to answer them to ensure that the screening procedures are fully understood.

PURPOSE OF STUDY

The purpose of the study is to examine the acceptability and effectiveness of a comprehensive and culturally responsive approach to behaviour support with a family of a child with autism, who also displays problem behaviour in two or more valued family routines. The approach is based on best practices in positive behaviour support (PBS) with families, as well as current recommendations for supporting families of diverse cultural and linguistic background. It emphasizes a collaborative process in which family members and the graduate student researcher work together in equal partnership to improve the behaviour of the child with autism, and the quality of life of the family as a whole. The study will evaluate the extent to which a culturally responsive positive behaviour support approach:

1) improves child behaviour during the two target routines;
2) promotes the child’s successful participation in the two target routines;
3) helps family members successfully support the child with a disability; and
4) improves the quality of life of the child with a disability and the family as a whole.

SUMMARY OF FAMILY SUPPORT AND RESEARCH ACTIVITIES
Participation in the project will involve parents and other family members collaborating with members of the research team in four family support activities and four research activities.

The four family support activities are:

1) Comprehensive assessment of child problem behaviour and family culture and ecology;
2) Development of a positive behaviour support plan for two target routines;
3) Implementation support to help parents and other family members implement the behaviour support plan in the target routines; and
4) Follow up support.

The five research activities are:

1) preliminary assessments to define the target routines and to confirm child problem behaviour;
2) videotaped observations in the target routines, under conditions that may produce problem behaviour, to confirm the purpose of problem behaviour;
3) videotaped observations in the target routines;
4) assessment of family quality of life, child behavioural and emotional functioning, parental stress, and family functioning; and
5) two additional interviews assessing family members’ perspectives and experiences during a process of culturally responsive positive behaviour support.

Research and family support activities will occur over a 5 to 6 month period. During the first 4 to 5 months your child and family will be involved in support and research activities for approximately 2 to 4 hours per week. This will vary based on available time and need. During the final month of the study, the child and family’s involvement will decrease to approximately 1 to 2 hours per week. Research and family support activities are described below:

CRITERIA FOR PARTICIPATION IN STUDY

Before a family can participate in the study, we first need to confirm that the child and family meet the criteria for participation. A total of one (1) family will participate in the project. The family will meet the following criteria:

- Have a child with a formal diagnosis of autism
- Focus child is between three and six years old
- Both parents/guardians can read and speak English
- Focus child engages in observable mild to moderate problem behavior during a minimum of two family routines
- Parents do not perceive themselves to be in a “crisis” due to the child’s behaviour or other family problems
- Parents/guardians agree to videotaped observations in the two target routines
- Parents/guardians are willing to act as interventionists with their child
- Family is willing to participate in the study for at least six months
• Family lives in the Lower Mainland and is planning to stay in the same locale over the next year

SCREENING PROCESS

We have developed a screening process to find out if your child and family are eligible to participate in the study. We will first contact you by telephone, review the criteria for participation, and answer any questions you may have. We will then decide together whether to proceed with the screening process. The specific steps in the process are described below.

1. Preliminary interview. We will first meet with you in your home or a place that is more convenient for you and conduct a preliminary interview. The interview is focused on understanding your child’s problem behaviours in the home. The interview will take approximately one hour.

2. Preliminary observations. If the interview indicates that your child is a good fit for the study, then we will request permission to conduct observations in the home. With your permission, I will observe you and your child during the target routines in which problem behaviour regularly occurs. During the observation, I will use an observation form to gather data about child problem behaviours. A minimum of 2 to 4 observations will be conducted. Each observation will last between 3 and 15 minutes.

3. Informed consent for study participation. If the observations confirm the presence of durable problem behaviours in the target routines in the home, then we will invite you to participate in the study. At that time, we will ask you to read and sign an informed consent letter for participation.

POTENTIAL RISKS AND SAFEGUARDS

If you agree to participate and permit your child and family to participate in the screening process, you will need to consider four potential risks: (1) physical; (2) psychological; (3) legal; and (4) loss of confidentiality.

1. Physical Risk Because your child engages in problem behaviour, there is more than a minimal risk that you, your child, or another family member may experience a physical injury during the screening process. Every precaution will be taken to minimize this risk:
   a. Members of the project team have extensive experience working with children who engage in problem behaviour in home and community settings.
   b. Observations will be terminated if your child begins to engage in medium or high intensity problem behaviour.
   c. As needed, project staff will be available to assist you, your child, and other family members during observations.

2. Psychological Risk Because your family will be observed during home and community routines, you, your child, or other family members may experience psychological risk.
That is, you, your child, or other family members may feel some discomfort or stress during this activity. Several steps will be taken to guard against this risk:

a. During observations, the observer will maintain a low profile and not call attention to him or herself.
b. You or other family members can terminate an observation at any time.
c. Preliminary interviews will be conducted at a time and place that is convenient for you and your family.

3. **Legal Risk** A potential but minimal risk relates to the legal requirements around reporting abuse if it is witnessed. If members of the research team witness any abuse of the focus child by any person, they will have to report it to the appropriate provincial authorities.

This risk will be guarded against in the following ways:

a. If abuse is observed, you will be informed and invited to participate in reporting the incident. The research team also will offer your family counselling support

4. **Loss of Confidentiality** There is a risk that you, your child, or another family member may experience a loss of confidentiality. To guard against this risk we will:

a. change the names of all persons, places, and programs described on assessment forms;
b. allow access to information only to members of the research team;
c. keep all data, notes, and videotapes in a locked file in a secure office; and
d. destroy all data, collected solely for the purposes of screening, 5 years after the study is completed.

**POTENTIAL BENEFITS**

By participating in the screening process, you and your child will experience one of two potential benefits. These are listed below.

1. **Participation in family support research study.** If the screening process indicates that your child is a good fit for the family support study, you will be invited to participate in the research study. There are five specific benefits of participation:

a. your child’s behaviour problems may decrease to near zero levels during the target routines.
b. your child may develop new skills that help him or her participate in the target routines.
c. the quality of parent-child interactions may improve and your knowledge and skills in supporting your child may be enhanced.
d. through participation, other families who have children with disabilities may also benefit. This will occur by describing the study’s results in journals and at conferences.

However, because behavioural and quality of life improvements cannot be assured, it is possible that you and your family may not experience all of the benefits listed above.

2. **Assessment report and recommendations.** If the screening process does not indicate that your child is a good fit for the study, then we will provide you with three benefits:
a. summary of the preliminary interview and/or observations;
b. recommendations for behaviour support that are based on the interview and/or observations; and
c. referral to appropriate, alternative sources for family and behavioural support in your community.

ALTERNATIVES

If during the screening process, you choose not to participate in the study, we will refer you to appropriate, alternative sources for family and behavioural support in your community.

RIGHTS AS A RESEARCH PARTICIPANT

Your participation and that of your child and other family members in the screening process is voluntary. Your decision whether or not to participate and to allow your child and other family members to participate will not have any effect on your child’s education, the provision of support from a community agency, or future opportunities for behaviour consultation and support. If you agree to participate and allow your child and other family members to participate, you are free to withdraw consent and refuse to continue your participation and that of your child and family. You may do so at any time without penalty or loss of benefits to which you, your child, or other family members are otherwise entitled. By signing the consent form, you do not waive any of your legal rights. If you have any questions, please contact Dr. Joseph Lucyshyn, Faculty of Education, University of British Columbia. Alternatively you can also contact Cathryn Schroeder, Graduate Researcher. If you have any concerns about your rights or treatment as a research participant, you may contact the Research Subject Information Line in the UBC Office of Research Services. Your signature below indicates that you have received a copy of this consent form for your records. Your signature indicates that you consent to your, your child with a disability and other family members (i.e., siblings) participation in the study.

Sincerely,

Joseph M. Lucyshyn, Ph.D.
Principal Investigator
Faculty of Education
University of British Columbia
CONSENT FORM FOR PARTICIPATION IN SCREENING PROCESS
Culturally Responsive Positive Behaviour Support for Children with Autism

Study Title: Culturally Responsive Positive Behaviour Support for Children with Autism in Home Settings (the “Study”)

Principal Investigator: Joseph Lucyshyn, Ph.D. Faculty of Education, UBC
Graduate Student Researcher: Cathryn Schroeder, B.A., Faculty of Education, UBC

I have read and received a copy of this consent form and have had an opportunity to ask questions about the research project and the screening process. I have received an adequate description of the purpose, goals, and procedures of the screening process, and I consent to participate in the screening process. I understand that all information will be kept confidential, that my participation is voluntary, and that I may withdraw consent at any time and discontinue participation at any time without penalty or loss of benefits to which I am otherwise entitled, and that I am not waiving any legal claims, rights, or remedies. By signing below, I agree to participate in the screening process of the research study on culturally responsive positive behaviour support with families of children with autism under the terms stated above.

_________ YES, I consent to participate in the screening process and give permission for my child with a disability and other family members (i.e., focus child’s brother and/or sister) to participate in the screening process.

_________ NO, I do not consent to participate in the screening process, and my child with a disability and other family members do not have my permission to participate in the screening process.

Focus Child’s Name:_______________________

Siblings’ Names_______________________________________________________________

Parent/Guardian Signature:________________________________ Date:__________

Parent/Guardian Signature:________________________________ Date:__________

Witness:_________________________________________ Date:__________

PLEASE RETURN THIS PAGE TO:
Joseph Lucyshyn, Ph.D.
Faculty of Education
University of British Columbia
BROTHER OR SISTER ASSENT FORM: SCREENING PROCESS
Culturally Responsive Positive Behaviour Support for Children with Autism

We are interested in learning how to help your parents support (name of focus child) at home. We plan to do this by conducting a study. Before we can begin the study, we need to find out if ________ is eligible to participate in the study. We wish to do so by conducting a screening process with your family. We will interview your parents and observe ________ and other family members during the target routines.

We would also like to ask you to participate if you usually participate in the target routines at the same time that ________ participates. If you agree to participate, we will ask you to do what you typically do during the target routines; that is, listen to your parents and cooperatively do the routines. We will make sure that while you and your family are doing the routines together, you and your family are safe and your privacy is respected.

When we begin, a person will visit your home to observe ________, your parents, and possibly you in the target routines. We will observe once or twice to find out if ________ engages in problem behaviour in the routines. When an observer is observing the routines and collecting data on problem behaviour, he or she will do his or her best to stay out of the way. Also, the screening data will only be shared with members of the research team.

If the screening process shows that ________ is a good fit for the study, then we will invite your family to participate in the study. During the study, we will help your family create a happier routine for ________ and your family. We will do so by helping your family successfully support ________ in each target routine. If the screening process does not show ________ to be a good fit for the study, then we will give your parents a summary of the information that we gathered, and suggest to them some ways that they can support _________ ‘s participation in target routines.

While we are observing ________, you, and other family members, if you do not want to participate, just tell us. You won't get into any trouble. If you don't want to participate at all, you don't have to. Just say so. Also, if you have any questions about what you will be doing, or if you cannot decide, just ask us if there is anything you would like us to explain. If you want to try, please sign your name on the line below. Your parent(s) have already told us that it is alright with them if you want to participate in the screening process. Remember, you don't have to, and once you start you can rest or stop whenever you like.

Name of participant: ___________________________

_________ YES, I agree to participate
_________ NO, I do not agree to participate.

Signed: ___________________________ Date: __________
Witness: ___________________________ Date: __________
**Appendix D**

**Initial Screening Interview**  
Culturally Responsive Positive Behaviour Support for Children with Autism

Family: ___________________________ Date: ___________________________

A. **Description of Behaviors of Concern**

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Topography</th>
<th>Frequency</th>
<th>Duration</th>
<th>Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
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</tbody>
</table>
Predictors

Time of day (When)

2. Setting (Where)

3. People (With whom)

4. Activity (What activity)

Possible Functions of Behavior

<table>
<thead>
<tr>
<th>Behavior</th>
<th>What does s/he get?</th>
<th>What does s/he avoid?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
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<tr>
<td>3.</td>
<td></td>
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<tr>
<td>4.</td>
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</tbody>
</table>
D. Child’s typical schedule of daily activities (home routines and community activities)

<table>
<thead>
<tr>
<th>Time Day</th>
<th>Weekday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td></td>
<td></td>
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<tr>
<td>Mid day</td>
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<tr>
<td>Afternoon</td>
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<td></td>
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<tr>
<td>Evening</td>
<td></td>
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</tbody>
</table>
Appendix E

CONSENT FORM FOR STUDY PARTICIPATION
Culturally Responsive Positive Behaviour Support for Children with Autism

Principal Investigator: Joseph M. Lucyshyn, Ph.D.
Faculty of Education
University of British Columbia

Graduate Student Researcher: Cathryn Schroeder

Dear Parent/Guardian:

The purpose of this form is to request consent for your, for your child with autism, and for other family members’ (i.e., focus child’s brother and/or sister) participation in the research study. The study will be conducted in the Faculty of Education of the University of British Columbia. Joseph Lucyshyn is the Principal Investigator. The Graduate Student Researcher is Cathryn Schroeder. The research study is for the fulfillment of requirements for the Master of Arts degree. I am inviting your family’s participation because a representative of a local social service agency has recommended your child and family’s participation. After reading the consent form, if you have any questions, I will be happy to answer them to ensure that the procedures are fully understood.

PURPOSE OF STUDY

The purpose of the study is to examine the acceptability and effectiveness of a comprehensive and culturally responsive approach to behaviour support with a family of a child with autism, who also displays problem behaviour in two or more valued family routines. The approach is based on best practices in positive behaviour support (PBS) with families, as well as current recommendations for supporting families of diverse cultural and linguistic background. It emphasizes a collaborative process in which family members and the graduate student researcher work together in equal partnership to improve the behaviour of the child with autism, and the quality of life of the family as a whole. The study will evaluate the extent to which a culturally responsive positive behaviour support approach:

1) improves child behaviour during the two target routines;
2) promotes the child’s successful participation in the two target routines;
3) helps family members successfully support the child with a disability; and
4) improves the quality of life of the child with a disability and the family as a whole.

FAMILY SUPPORT AND RESEARCH ACTIVITIES

Participation in the project will involve you and your family collaborating with the graduate student researcher in family support and research activities. Research and family support
activities will occur for up to 6 months. During the first 4-5 months your child and family will be involved in support and research activities for approximately 2-4 hours per week. During the final month of the study, the family will be involved in support and research activities for approximately 1-2 hours per week. Research and family support activities are described below:

Preliminary Assessment. Preliminary assessment activities will involve two interviews with you and other family members, with each interview lasting 1-2 hours. The purpose of the interviews is to develop a preliminary understanding about your child’s problematic behaviours. Following the interviews, we will conduct two to four pilot observations during the target routines. The purpose of these observations will be to verify the occurrence and purpose of problematic behaviours. Each observation will last up to 15-20 minutes.

Comprehensive Assessment. First, a functional assessment interview (FAI) will be completed. This will involve one meeting of 1-2 hours in length. The assessment will help us develop a comprehensive understanding of the conditions that occasion problematic and positive behaviours. Second, we will complete family culture and ecology assessments. This will involve one or two meetings of approximately 1 to 2 hours in length in which we will learn about your family’s strengths, social supports, resources, stressors and goals, as well as your family’s cultural values, practices and beliefs. Finally, family members will be asked to complete four additional self-report measures of child and family functioning. These measures will take 2 to 3 hours to complete.

Positive Behaviour Support Plan Design. Following each of the above assessment activities, we will collaborate with you to build a culturally responsive positive behaviour support plan for the problematic routines. This will involve one meeting of 1-2 hours in length. During the planning meeting, family members and the graduate student researcher will review assessment information for two routines and build a support plan that fits well with the routines. The plan will be designed to improve child behaviour, family quality of life, and the success of the routines.

Implementation Support. Training and support to help you and other family members implement the support plan during the target routines will occur approximately twice per week and involve 1-2 hours. During these meetings, the graduate student researcher will teach you and other family members how to implement support strategies with your child, as well as how to gather behavioural data in one of the targeted routines. You will then be asked to gather and communicate this data to the graduate student researcher approximately twice per week, until implementation support for the second routine begins. At this time, data will be gathered and communicated approximately once every 2 to 3 weeks.

Maintenance Support. After you have succeeded in improving child behaviour in both target routines, we will transition to a phase of research called maintenance support. During maintenance support, we will provide training and support as needed for one additional month. At the end of this phase, family members will be asked to complete four additional measures of child and family functioning. These measures will take 2 to 3 hours to complete.
Videotaped Observations in Family Routines. Videotaped observations in the first routine will occur, on average, once every 3 weeks, for approximately 10 weeks. During observation sessions, an observer will videotape your child and family’s participation in the target routine. Each observation session will last for a total of approximately 2 hours. Videotaped observations in the second routine will occur an average of 2 times per week over a period of 10 weeks. During observation sessions, an observer will videotape your child and family’s participation in the target routine. Each observation session will last between 20-30 minutes.

POTENTIAL RISKS AND SAFEGUARDS

If you agree to participate and permit your child and family to participate, you will need to consider four potential risks: (1) physical; (2) psychological; (3) legal; and (4) loss of confidentiality.

(1) Physical Risk. Because your child engages in problematic behaviour, there is more than minimal risk that you, your child, or another family member may experience physical injury during the study. Every precaution will be taken to minimize this risk, namely:

(a) members of the research team have extensive experience working with children who engage in problem behaviour in the home;
(b) behaviour support strategies will focus on preventing behaviour problems and on teaching positive behaviours that are designed to replace problem behaviours; and
(c) observation sessions and training support activities will be terminated if your child begins to engage in medium or high intensity problem behaviour.

(2) Psychological Risk. Because your family will be observed during the target routines and will participate in training and support activities, you, your child, and other family members may experience or feel some discomfort or stress during activities. Several steps will be taken to minimize this risk, namely:

During observation sessions, the observer will maintain a low profile and not call attention to him or herself. You or other family members can terminate an observation session at any time. “Family-friendly” features of the support process should help to reduce stress that may be associated with the study.

(3) Legal Risk. A potential but minimal risk relates to the legal requirements around reporting abuse if it is witnessed. If members of the research witness any abuse of the focus person by any person, they will have to report it to the appropriate provincial authorities. This risk will be minimized in the following ways:

The study focuses on providing family members with positive, non-punitive ways to prevent and manage child problem behaviour. Family members who develop these skills are unlikely to engage in child maltreatment. If abuse is observed you will be informed and invited to participate in reporting the incident. The research team will also offer your family counselling support.
(4) Loss of Confidentiality. There is a risk that you, your child, or another family member may experience a loss of confidentiality. This risk will be guarded against by:

(a) changing the names of all persons, places, and programs described in the study;
(b) allowing access to information only to members of the research team; and
(c) keeping all data, notes and videotapes in a locked file in a secure office.

POTENTIAL BENEFITS

By participating in the study, you, your child with autism and other family members may experience three direct benefits and one indirect benefit. These are listed below:

(1) Your child’s behaviour problems may decrease to near zero levels during the target routines.
(2) Your child may develop new skills that help him or her participate in the target routines.
(3) The quality of parent-child interactions may improve and your knowledge and skills in supporting your child may be enhanced.
(4) Through participation, other families who have children with disabilities may also benefit. This will occur by describing the study’s results in journals and at conferences.

However, because behavioural and quality of life improvements cannot be assured, it is possible that you and your family may not experience all of the benefits listed above.

Your participation and that of your child and family members is voluntary. Your decision whether or not to participate and to allow your child to participate will not have any effect on your child’s education, provision of support from a community agency, or future opportunities for behaviour consultation and support. If you choose not to participate in the study, we will refer you to appropriate, alternative sources of family and behavioural support in the community. If you agree to participate and allow your child and other family members to participate, you are free, at any time, to withdraw consent and refuse to continue your participation and that of your child and family. Terminating participation in the study will have no negative impact on the graduate student’s thesis research whatsoever. If you withdraw early in the research, the graduate student will recruit another family for the study. If you withdraw later, the graduate student will complete her thesis using the data gathered up to the point of study termination. By signing the consent form, you do not waive any of your legal rights. If you have any questions, please contact Dr. Joseph Lucyshyn at (604) 822-1904 or Cathryn Schroeder at (778) 847-7174. If you have any concerns about your rights or treatment as a research participant, you may contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598. Your signature indicates that you consent to your, your child with autism, and other family members (i.e. siblings, if any) participation in the study.

Sincerely,

Cathryn Schroeder, B.A.
Graduate Student Researcher
Faculty of Education, University of British Columbia
CONSENT FORM

Study Title: Culturally Responsive Positive Behaviour Support for Children with Autism in Home Settings (the “Study”)
Principal Investigator: Joseph Lucyshyn, Ph.D. Faculty of Education, UBC
Graduate Student Researcher: Cathryn Schroeder, B.A., Faculty of Education, UBC

Consent: I have read and fully understand the contents of the attached letter of request to participate in the Study, and I hereby consent to participate and hereby give permission for my child with autism and his or her siblings (as identified below) to participate in the Study.

I hereby consent to and authorize the release to the Investigators, from time to time, of the information contained in my child’s biographical records documenting birth date, most recent IQ score and test, diagnostic information and medical records, and such other information as the Investigators may request from time to time, for the purposes of the Study. I understand that all such information will be kept confidential except that the results of the Study may be published for academic purposes and in such event, the identity of the child and family will be kept confidential at all times.

I further understand that the Study will involve the Investigators video recording my family in our home. However, I also understand that I may request that the researchers stop such video recording at any time. I also understand that only the Investigators will have access to this material unless I give my specific permission for it to be viewed by any other person.

I fully understand that my participation in the Study and that of my family is entirely voluntary and that I, on behalf of my family, may withdraw this consent and terminate our participation in the Study at any time. I also understand that I will receive a copy of this signed consent form for my own records.

Focus Child’s Name: ________________________________

Sibling’s Names (if any): ________________________________

Parent/Guardian Signature: ____________________________ Date: ____________

Parent/Guardian Signature: ____________________________ Date: ____________

Witness: ______________________________ Date: ____________

PLEASE RETURN THIS PAGE TO:
Cathryn Schroeder, B.A., Graduate Student Researcher
VIDEOTAPING CONSENT FORM

Study Title: Culturally Responsive Positive Behaviour Support for Children with Autism in Home Settings
Principal Investigator: Joseph Lucyshyn, Ph.D., Faculty of Education, University of British Columbia
Student Researcher: Cathryn Schroeder, Masters Student (Graduate), Faculty of Education, University of British Columbia

Consent: I understand that my participation in this study will involve videotaping of me, my child with autism, and other family members in our home and in community settings. I also understand that I may request that the researchers stop the videotaping at any time if I, or a member of my family does not want to be videotaped. I also understand that all researchers will have access to this material, unless I give my specific permission for it to be viewed by any other person.

My consent regarding the videotaping of my child`s participation and that of my family in this study is indicated below. I understand that I will receive a copy of this consent form for my personal records.

_______, Yes, I consent to the videotaping of my child and family.

_______, No, I do not consent to the videotaping of my child and family.

Focus Child`s Name: _____________________
Sibling`s Name: _________________________
Sibling`s Name: _________________________
Parent Signature: ________________________     Date: _________________
Parent Signature: ________________________     Date: _________________
Witness: _______________________________     Date: _________________

If I have questions or concerns about videotaping of my child or family, I may contact:

Cathryn Schroeder       OR       Joseph Lucyshyn
Appendix F

Family Routine Assessment

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B. Home routines in which problem behaviours typically occur, and your priorities for improvement.

C. Community activities in which problem behaviours typically occur and your priorities for improvement.

D. Home or community routines that you have significantly altered or no longer do because of problem behaviour, and your priorities for improvement.

E. Across home and community routines, and valued routines that you no longer do, what would your priorities be?
F. Based on results from the functional assessment (FA) and from the family routine assessment, summarize the priority routines for intervention with regard to FA results.

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### Appendix G

Partial Interval Recording Form for Scoring Percentage of Intervals of Problem Behaviour

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Data Form for Steps Completed in a Target Routine

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Number/Percentage of Steps Completed

Interobserver Agreement (%)

√ = Completed  O = No Opportunity  X = Not Completed
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<td>Prospective, Preventive Strategies</td>
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<td>Teaching Strategies</td>
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<td>Consequence Strategies</td>
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Appendix H

Social Validity Evaluation of Culturally Responsive PBS Plan

Family: ________________________

Date: ________________________

Family members completing evaluation: _______________________________

Note: The purpose of this questionnaire is to obtain information that will aid in: (a) the selection and improvement of behavioural support strategies implemented in the home by family members; and (b) the improvement of our process for providing families with behavioural consultation and support. Please circle the number that best describes your agreement or disagreement with each statement (1=disagree, 5=agree). You also have space to write comments or suggestions for change or improvement.

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Comments:

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<td>2. The goals of the plan are consistent with my family’s goals, values, and beliefs.</td>
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Comments:

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<td>3. The strategies and procedures used are difficult to carry out in the home or community.</td>
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Comments:

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<td>4. The strategies and procedures used are effective in improving my child’s behaviour.</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>The person(s) providing technical assistance has shown respect for our family’s values and beliefs.</th>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comments:</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Overall, this behavioural support effort has strengthened our family.</th>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comments:</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Appendix I

Contextual and Cultural Fit Evaluation for Treatment Plan Used by Family

Name of family:

Family member(s) completing checklist:

Date:

Introduction: This survey is for use by families working with consultants to improve the behaviour and lifestyle of their son or daughter. The survey is based on our experience that the success of a support plan depends a great deal on whether the plan “fits” with the cultural values and lifestyle of a family. Your responses will help us: (a) improve the quality of the plan, (b) understand better how to build support plans that are most helpful. Below are 14 questions about the plan and its prospects for success. Please answer each question by rating the number that most closely matches your current view. The rating is from 1 (little) to 5 (a lot). If you can’t tell or don’t know then circle the question mark (?).

<table>
<thead>
<tr>
<th>Question</th>
<th>Little</th>
<th>A lot</th>
<th>Can’t Tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Do you believe that the treatment plan takes into account your understanding of your child (e.g., strategies that encourage positive behaviour, child preferences)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Comments:

<table>
<thead>
<tr>
<th>Question</th>
<th>Little</th>
<th>A lot</th>
<th>Can’t Tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) Does the plan address your highest priority goals (e.g., level of independence, communication of needs)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Comments:

<table>
<thead>
<tr>
<th>Question</th>
<th>Little</th>
<th>A lot</th>
<th>Can’t Tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) Do you understand what you are expected to do within this plan?</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Comments:

<table>
<thead>
<tr>
<th>Question</th>
<th>Little</th>
<th>A lot</th>
<th>Can’t Tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>4) Are you comfortable with what you are</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
5) Do you understand what others are expected to do within this plan (i.e., Cathryn, other family members)?  
Comments:

6) Are you comfortable with what others are expected to do?  
Comments:

7) Does the treatment plan recognize and support your needs as a parent?  
Comments:

8) Overall, how does the support plan fit with the daily routines of your family, including cultural routines (e.g., meals, social events, bed time)?  
Comments:

9) Does the plan for the target routine disrupt that time of day to the point that stress or hardship will be created?  
Comments:

10) Does the plan recognize and build on your
family’s strengths, values and customs?

Comments:

11) Was the support plan respectful of your family’s cultural background?  

Comments:

12) All things considered, how difficult will it be for you to use this treatment plan for the target routine?  

Comments:

13) Do you believe the treatment plan will be effective?  

Comments:

14) If the plan is effective, do you believe you can keep using the strategies for a long time (e.g., over one year) even though Cathryn will not be available as much (little to no contact with Cathryn, some assistance by phone)?  

Comments:
Appendix J

Family Quality of Life Survey

**FAMILY QUALITY OF LIFE SURVEY**

*Developed by the Beach Center on Disability*
*The University of Kansas*
in partnership with families, service providers and researchers.

For information, contact:
Jean Ann Summers, Ph.D.
Research Director, Beach Center on Disability
jsummers@ku.edu

Suggested reference for reports utilizing this instrument:


**Beach Center on Disability**

Making a Sustainable Difference in Quality of Life
Family Quality of Life Survey 家庭生活水平調查

Survey Information and Instructions 意見調查資料和指示

Thank you for agreeing to complete this survey. This survey has questions about:

- the services you and your child need and/or receive,
  您和您的小孩需要以及獲受/獲收/接受/接收的服務，
- the things that make your life together as a family good,
  讓家庭生活美滿的事件，
- you and your family in general.
  您和你的家庭。

We will use your answers to help us improve policies and services for children with disabilities and their families.
你所提供的資料將幫助我們為殘障孩童和家庭創造更好的服務和政策。

All the information you give us is confidential. Your name will not be attached to any of the information you give us. It is important that you answer as many questions as you can, but please feel free to skip those questions that make you feel uncomfortable.
您給我們的所有資料是機密的。您給我們的任何資料上都不會附有您的名字。重要的是請您盡可能回答越多個問題越好。但也請放心跳過使您難堪的問題。

When answering these questions, please think about your experiences over the last 6 months. Please use a pencil to shade completely the circles for your answers. If you change any answers, please erase completely any previous answers or any extra pencil marks on the pages. Please do not make any stray marks, including comments, on the form, except where you are asked (for example, in the general information section).
當您回答這些問題時，請只考慮你在前六個月這期間的經驗。作答時，請用鉛筆將所選的答案格完全塗滿。如果您改變任何答案，請將先前的答覆或任何額外鉛筆標記完全擦乾淨。除了在您被要求答覆的地方上，（例如，在總說明部分），請不要在紙面上做任何離題標記，包括評論。

Thank you so much for sharing your opinion with us!
非常謝謝您與我們分享意見和看法！

By completing this survey, you indicate that you have been informed of the important aspects of this study and you are willing to participate.
由完成這次意見調查，
您表明已被告知這項研究的重要方面並且願意參與。

Family Quality of Life

234
家庭生活水平

In this section of the survey, we want you to tell us how you feel about your life together as a family. We will use what we learn from families to improve policies and services for children with disabilities and their families.

在這個部分的問卷調查，我們希望您告訴我們您的家庭生活的感受。您所提供的資料將幫助我們為殘障孩童和家庭創造更好的服務和政策。

Your “family” may include many people – mother, father, partners, children, aunts, uncles, grandparents, etc.

您的“家庭”也許包括多人：母親、父親、夥伴、孩子、伯母、伯父、祖父母等等。

For this survey, please consider your family as those people

在這次問卷調查裡，請把您的家庭成員視為

- Who think of themselves as part of your family (even though they may or may not be related by blood or marriage), and
  哪些認為自己是你家庭的一部分（無論有或沒有血緣或婚姻關係），以及
- Who support and care for each other on a regular basis.
  哪些經常支持和關心你家庭的人。

For this survey, please DO NOT think about relatives (extended family) who are only involved with your family every once in a while. Please think about your family life over the past six months.

在這次問卷調查裡，請不要考慮平時不會涉入您的家庭生活的遠房親戚。當您回答這些問題時，請只考慮你在過去六個月期間的家庭生活經驗。

Step 1: Importance – First, please shade in the circle in the first set of columns to show how important you think that statement is.

步驟1：重要性 首先，請在第一套專欄塗選您認為能顯示句子有多重要的選項。

- Shading the first circle means you think the statement is only a little important.
  塗選第一選項表明您認為句子只屬有點重要。
- Shading the fifth circle means you think that statement is critically important.
  塗選第五個選項表明您認為句子屬非常重要。

Step 2: Satisfaction – Please shade in the circle in the next set of columns to show how satisfied you are with that statement.

步驟2：滿意程度 請在下一套專欄塗選能顯示您對句子有多滿意的選項。

- Shading the first circle means you are very dissatisfied.
  塗選第一選項表明您認為非常不滿意。
- Shading the last circle means you are very satisfied.
  塗選最後一個選項表明您認為非常滿意。

Family Quality of Life (cont.)
Please remember to answer both IMPORTANCE and SATISFACTION for each question.
講述為各項目回答重要和滿意度的問題。

Thank you so much for sharing your opinion with us!
非常謝謝您與我們分享意見和看法

<table>
<thead>
<tr>
<th>For my family to have a good life together…</th>
<th>How important is it that…</th>
<th>How satisfied am I that…</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My family enjoys spending time together.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家享受一起共度時光</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>2. My family members help the children learn to be independent.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家成員幫助兒童學習獨立</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>3. My family has the support we need to relieve stress.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家擁有解除壓力的支持</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>4. My family members have friends or other who provide support.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家成員有朋友或其他人提供支持</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>5. My family members help the children with schoolwork and activities.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家成員給予孩子功課和活動的幫助</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>6. My family members have transportation to get to the places they need to be.</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
<tr>
<td>我家成員有能力去他們需要去的地方</td>
<td><img src="image" alt="Importance Scale" /></td>
<td><img src="image" alt="Satisfaction Scale" /></td>
</tr>
</tbody>
</table>

Family Quality of Life (cont.)

家庭生活水平
<table>
<thead>
<tr>
<th>For my family to have a good life together…</th>
<th>A little important</th>
<th>Important</th>
<th>Critically important</th>
<th>Very dissatisfied</th>
<th>Neither</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7. My family members talk openly with each other.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>8. My family members teach the children how to get along with others.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9. My family members have some time to pursue their own interests.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10. My family solves problems together.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>11. My family members support each other to accomplish goals.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>12. My family members show that they love and care for each other.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>13. My family has outside help available to us to take care of special needs of all family members.</strong></td>
<td>O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For my family to have a good life together…</td>
<td>A little important</td>
<td>Important</td>
<td>Critically important</td>
<td>Very dissatisfied</td>
<td>Neither</td>
<td>Very satisfied</td>
</tr>
<tr>
<td>-------------------------------------------</td>
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<td>------------------</td>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td>14. Adults in my family teach the children to make good decisions.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. My family gets medical care when needed.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. My family has a way to take care of our expenses.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Adults in my family know other people in the children’s lives (friends, teachers, etc.).</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. My family is able to handle life’s ups and downs.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Adults in my family have time to take care of the individual needs of every child.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. My family gets dental care when needed.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Family Quality of Life (cont.)

<table>
<thead>
<tr>
<th>Question</th>
<th>A little important</th>
<th>Important</th>
<th>Critically important</th>
<th>Very dissatisfied</th>
<th>Neither</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>For my family to have a good life together...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. My family feels safe at home, work, school, and in our neighborhood.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. My family member with a disability has support to accomplish goals at school or workplace.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. My family member with a disability has support to accomplish goals at home.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. My family member with a disability has support to make friends.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. My family has good relationships with the service providers who provide services and support to our family member with a disability.</td>
<td>O O O O O O O O O O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix K

Child Behavior Checklist for Ages 1½-5

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>Aches or pains (without medical cause; do not include stomach or headaches)</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>Acts too young for age</td>
</tr>
<tr>
<td>0</td>
<td>3</td>
<td>Afraid to try new things</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>Avoids looking others in the eye</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
<td>Can't concentrate, can't pay attention for long</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>Can't sit still, restless, or hyperactive</td>
</tr>
<tr>
<td>0</td>
<td>7</td>
<td>Can't stand having things out of place</td>
</tr>
<tr>
<td>0</td>
<td>8</td>
<td>Can't stand waiting; wants everything now</td>
</tr>
<tr>
<td>0</td>
<td>9</td>
<td>Chews on things that aren't edible</td>
</tr>
<tr>
<td>0</td>
<td>10</td>
<td>Clings to adults or too dependent</td>
</tr>
<tr>
<td>0</td>
<td>11</td>
<td>Constantly seeks help</td>
</tr>
<tr>
<td>0</td>
<td>12</td>
<td>Constipated, doesn't move bowels (when not sick)</td>
</tr>
<tr>
<td>0</td>
<td>13</td>
<td>Cries a lot</td>
</tr>
<tr>
<td>0</td>
<td>14</td>
<td>Cruel to animals</td>
</tr>
<tr>
<td>0</td>
<td>15</td>
<td>Defiant</td>
</tr>
<tr>
<td>0</td>
<td>16</td>
<td>Demands must be met immediately</td>
</tr>
<tr>
<td>0</td>
<td>17</td>
<td>Destroys his/her own things</td>
</tr>
<tr>
<td>0</td>
<td>18</td>
<td>Destroys things belonging to his/her family or other children</td>
</tr>
<tr>
<td>0</td>
<td>19</td>
<td>Diarrhea or loose bowels (when not sick)</td>
</tr>
<tr>
<td>0</td>
<td>20</td>
<td>Disobedient</td>
</tr>
<tr>
<td>0</td>
<td>21</td>
<td>Disturbed by any change in routine</td>
</tr>
<tr>
<td>0</td>
<td>22</td>
<td>Doesn't want to sleep alone</td>
</tr>
<tr>
<td>0</td>
<td>23</td>
<td>Doesn't answer when people talk to him/her</td>
</tr>
<tr>
<td>0</td>
<td>24</td>
<td>Doesn't eat well (describe):</td>
</tr>
<tr>
<td>0</td>
<td>25</td>
<td>Doesn't get along with other children</td>
</tr>
<tr>
<td>0</td>
<td>26</td>
<td>Doesn't know how to have fun; acts like a little adult</td>
</tr>
<tr>
<td>0</td>
<td>27</td>
<td>Doesn't seem to feel guilty after misbehaving</td>
</tr>
<tr>
<td>0</td>
<td>28</td>
<td>Doesn't want to go out of home</td>
</tr>
<tr>
<td>0</td>
<td>29</td>
<td>Easily frustrated</td>
</tr>
<tr>
<td>0</td>
<td>30</td>
<td>Easily jealous</td>
</tr>
<tr>
<td>0</td>
<td>31</td>
<td>Eats or drinks things that are not food—don't include sweets (describe):</td>
</tr>
<tr>
<td>0</td>
<td>32</td>
<td>Feeds certain animals, situations, or places (describe):</td>
</tr>
<tr>
<td>0</td>
<td>33</td>
<td>Feelings are easily hurt</td>
</tr>
<tr>
<td>0</td>
<td>34</td>
<td>Gets hurt a lot, accident-prone</td>
</tr>
<tr>
<td>0</td>
<td>35</td>
<td>Gets in many fights</td>
</tr>
<tr>
<td>0</td>
<td>36</td>
<td>Gets into everything</td>
</tr>
<tr>
<td>0</td>
<td>37</td>
<td>Gets too upset when separated from parents</td>
</tr>
<tr>
<td>0</td>
<td>38</td>
<td>Has trouble getting to sleep</td>
</tr>
<tr>
<td>0</td>
<td>39</td>
<td>Headaches (without medical cause)</td>
</tr>
<tr>
<td>0</td>
<td>40</td>
<td>Hits others</td>
</tr>
<tr>
<td>0</td>
<td>41</td>
<td>Holds his/her breath</td>
</tr>
<tr>
<td>0</td>
<td>42</td>
<td>Hurts animals or people without meaning to</td>
</tr>
<tr>
<td>0</td>
<td>43</td>
<td>Looks unhappy without good reason</td>
</tr>
<tr>
<td>0</td>
<td>44</td>
<td>Angry moods</td>
</tr>
<tr>
<td>0</td>
<td>45</td>
<td>Nauseous, feels sick (without medical cause)</td>
</tr>
<tr>
<td>0</td>
<td>46</td>
<td>Nervous movements or twitching (describe):</td>
</tr>
<tr>
<td>0</td>
<td>47</td>
<td>Nervous, highstrung, or tense</td>
</tr>
<tr>
<td>0</td>
<td>48</td>
<td>Nightmares</td>
</tr>
<tr>
<td>0</td>
<td>49</td>
<td>Overeating</td>
</tr>
<tr>
<td>0</td>
<td>50</td>
<td>Overtired</td>
</tr>
<tr>
<td>0</td>
<td>51</td>
<td>Shows panic for no good reason</td>
</tr>
<tr>
<td>0</td>
<td>52</td>
<td>Painful bowel movements (without medical cause)</td>
</tr>
<tr>
<td>0</td>
<td>53</td>
<td>Physically attacks people</td>
</tr>
<tr>
<td>0</td>
<td>54</td>
<td>Picks nose, skin, or other parts of body (describe):</td>
</tr>
</tbody>
</table>

Be sure you answered all items. Then see other side.
Please print your answers. Be sure to answer all items.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

<p>| | | | | | |</p>
<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>0</td>
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<td>2</td>
<td>55. Plays with own sex parts too much</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>56. Poorly coordinated or clumsy</td>
<td>57. Problems with eyes (without medical cause) (describe):</td>
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<tr>
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<td>58. Punishment doesn’t change his/her behavior</td>
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<td>1</td>
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<td>59. Quickly shifts from one activity to another</td>
<td>80. Rashes or other skin problems (without medical cause)</td>
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<td>2</td>
<td>60. Refuses to eat</td>
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<tr>
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<td>2</td>
<td>61. Refuses to play active games</td>
<td>62. Refuses to play active games</td>
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</tr>
<tr>
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<td>2</td>
<td>63. Repeatedly rocks head or body</td>
<td>64. Resists going to bed at night</td>
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<tr>
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<td>65. Resists toilet training (describe):</td>
<td>66. Screams a lot</td>
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<tr>
<td>0</td>
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<td>2</td>
<td>67. Seeks unresponsive to affection</td>
<td>68. Self-conscious or easily embarrassed</td>
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<tr>
<td>0</td>
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<td>2</td>
<td>69. Selfish or won’t share</td>
<td>70. Shows little affection toward people</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>71. Shows little interest in things around him/her</td>
<td>72. Shows too little fear of getting hurt</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>73. Too shy or timid</td>
<td>74. Sleeps less than most kids during day and/or night (describe):</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>75. Smears or plays with bowel movements</td>
<td>76. Speech problem (describe):</td>
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<tr>
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<td>1</td>
<td>2</td>
<td>77. Stares into space or seems preoccupied</td>
<td>78. Stomachaches or cramps (without medical cause)</td>
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<td>0</td>
<td>1</td>
<td>2</td>
<td>79. Rapid shifts between sadness and excitement</td>
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<tr>
<td>0</td>
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<td>2</td>
<td>80. Strange behavior (describe):</td>
<td>81. Stubborn, sulky, or irritable</td>
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</tr>
<tr>
<td>0</td>
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<td>2</td>
<td>82. Sudden changes in mood or feelings</td>
<td>83. Sucks a lot</td>
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<tr>
<td>0</td>
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<td>2</td>
<td>84. Talks or cries out in sleep</td>
<td>85. Temper tantrums or hot temper</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>86. Too concerned with neatness or cleanliness</td>
<td>87. Too fearful or anxious</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>88. Uncooperative</td>
<td>89. Underactive, slow moving, or lacks energy</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>90. Unhappy, sad, or depressed</td>
<td>91. Unusually loud</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>92. Upset by new people or situations (describe):</td>
<td>93. Vomiting, throwing up (without medical cause)</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>94. Wakes up often at night</td>
<td>95. Wanders away</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>96. Wants a lot of attention</td>
<td>97. Whining</td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>98. Withdrawn, doesn’t get involved with others</td>
<td>99. Worries</td>
<td></td>
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<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>100. Please write in any problems the child has that were not listed above.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Does the child have any illness or disability (either physical or mental)? □ No □ Yes—Please describe:

What concerns you most about the child?

Please describe the best things about the child:
Appendix L

Parenting Stress Index – Short Form

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>NS</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I often have the feeling that I cannot handle things very well.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>2. I find myself giving up more of my life to meet my children’s needs than I ever expected.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>3. I feel trapped by my responsibilities as a parent.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>4. Since having this child, I have been unable to do new and different things.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>5. Since having a child, I feel that I am almost never able to do things that I like to do.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>6. I am unhappy with the last purchase of clothing I made for myself.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>7. There are quite a few things that bother me about my life.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>9. I feel alone and without friends.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>10. When I go to a party, I usually expect not to enjoy myself.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>11. I am not as interested in people as I used to be.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>12. I don’t enjoy things as I used to.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>13. My child rarely does things for me that make me feel good.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>14. Sometimes I feel my child doesn’t like me and doesn’t want to be close to me.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>15. My child smiles at me much less than I expected.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>17. When playing, my child doesn’t often giggle or laugh.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>18. My child doesn’t seem to learn as quickly as most children.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>19. My child doesn’t seem to smile as much as most children.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>20. My child is not able to do as much as I expected.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>21. It takes a long time and it is very hard for my child to get used to new things.</td>
<td>SA</td>
<td>A</td>
<td>NS</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>

For the next statement, choose your response from the choices “1” to “5” below.

22. I feel that I am: 1. not very good at being a parent 2. a person who has some trouble being a parent 3. an average parent 4. a better than average parent 5. a very good parent

23. I expected to have closer and warmer feelings for my child than I do and this bothers me. 

24. Sometimes my child does things that bother me just to be mean. 

25. My child seems to cry or fuss more often than most children. 

26. My child generally wakes up in a bad mood. 

27. I feel that my child is very moody and easily upset. 

28. My child does a few things which bother me a great deal. 

29. My child reacts very strongly when something happens that my child doesn’t like. 

30. My child gets upset easily over the smallest thing. 

31. My child’s sleeping or eating schedule was much harder to establish than I expected.

For the next statement, choose your response from the choices “1” to “5” below.

32. I have found that getting my child to do something or stop doing something is: 1. much harder than I expected 2. somewhat harder than I expected 3. about as hard as I expected 4. somewhat easier than I expected 5. much easier than I expected
For the next statement, choose your response from the choices "10+" to "1-3."

33. Think carefully and count the number of things which your child does that bother you.
   For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.
   10+  8-9  6-7  4-5  1-3
   SA  A  NS  D  SD

34. There are some things my child does that really bother me a lot.
   SA  A  NS  D  SD

35. My child turned out to be more of a problem than I had expected.
   SA  A  NS  D  SD

36. My child makes more demands on me than most children.
   SA  A  NS  D  SD
Appendix M

FACES IV Protocol
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FACES IV: Background Information

Subject ID: ___________  Age: ___________  M: ____  F: ____  Date: ____________

Education:
(a) ____ Some High School  (b) ____ Completed High School
(c) ____ Some College  (d) ____ Completed College  (e) ____ Advanced Degree

Income: (If relevant)
(a) ____ Less than $10,000  (b) ____ $10-20,999  (c) ____ $21-30,999
(d) ____ $31-40,999  (e) ____ $41-50,999  (f) ____ $51-60,999
(g) ____ $61-70,999  (h) ____ $81-90,999  (i) ____ $100,000 or more

Ethnic Background: (check all that apply)
(a) ____ Asian American  (b) ____ Hispanic/Latino  (c) ____ White/Caucasian
(d) ____ African American  (e) ____ Mixed Race  (f) ____ Hawaiian or Pac. Islander
(g) ____ Native American

Current Relationship Status:
(a) ____ Single, never married  (b) ____ Married, not first marriage
(c) ____ Single, divorced  (d) ____ Life-partnership
(e) ____ Single, widowed  (f) ____ Living together
(g) ____ Married, first marriage  (h) ____ Separated

Current Living Arrangement:
(a) ____ Alone  (b) ____ With others
(c) ____ With parents  (d) ____ With children
(e) ____ With partner  (f) ____ With partner and children

Family Structure:
(a) ____ Two parents (biological)  (b) ____ Two parents (same sex)
(c) ____ Two parents (step family)  (d) ____ One parent
(e) ____ Two parents (adoptive)

Family Member:
(a) ____ Father  (b) ____ Mother  (c) ____ First child
(d) ____ Second child  (e) ____ Third child  (f) ____ Fourth or younger child

Number of Children in Family:
(a) ____ None  (b) ____ One  (c) ____ Two
(d) ____ Three  (e) ____ Four  (f) ____ Five or more
FACES IV: Questionnaire

Directions for Family Members:
1. All family members over the age of 12 can complete the FACES IV.
2. Family members should complete the instrument independently, not consulting or discussing their responses until they have been completed.
3. Fill in the corresponding number in the space on the provided answer sheet.

<table>
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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Generally Disagree</td>
<td>Undecided</td>
<td>Generally Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

1. Family members are involved in each other’s lives.
2. Our family tried new ways of dealing with problems.
3. We get along better with people outside our family than inside.
4. We spend too much time together.
5. There are strict consequences for breaking the rules in our family.
6. We never seem to get organized in our family.
7. Family members feel very close to each other.
8. Parents equally share leadership in our family.
9. Family members seem to avoid contact with each other when at home.
10. Family members feel pressured to spend most free time together.
11. There are clear consequences when a family member does something wrong.
12. It is hard to know who the leader is in our family.
13. Family members are supportive of each other during difficult times.
14. Discipline is fair in our family.
15. Family members know very little about the friends of other family members.
16. Family members are too dependent on each other.
17. Our family has a rule for almost every possible situation.
18. Things do not get done in our family.
19. Family members consult other family members on important decisions.
20. My family is able to adjust to change when necessary.
21. Family members are on their own when there is a problem to be solved.
22. Family members have little need for friends outside the family.
23. Our family is highly organized.
24. It is unclear who is responsible for things (chores, activities) in our family.
25. Family members like to spend some of their free time with each other.
26. We shift household responsibilities from person to person.
27. Our family seldom does things together.
28. We feel too connected to each other.
29. Our family becomes frustrated when there is a change in our plans or routines.
30. There is no leadership in our family.
31. Although family members have individual interests, they still participate in family activities.
32. We have clear rules and roles in our family.
33. Family members seldom depend on each other.
34. We resent family members doing things outside the family.
35. It is important to follow the rules in our family.
36. Our family has a hard time keeping track of who does various household tasks.

37. Our family has a good balance of separateness and closeness.
38. When problems arise, we compromise.
39. Family members mainly operate independently.
40. Family members feel guilty if they want to spend time away from the family.
41. Once a decision is made, it is very difficult to modify that decision.
42. Our family feels hectic and disorganized.

43. Family members are satisfied with how they communicate with each other.
44. Family members are very good listeners.
45. Family members express affection to each other.
46. Family members are able to ask each other for what they want.
47. Family members can calmly discuss problems with each other.
48. Family members discuss their ideas and beliefs with each other.
49. When family members ask questions of each other, they get honest answers.
50. Family members try to understand each other’s feelings.
51. When angry, family members seldom say negative things about each other.
52. Family members express their true feelings to each other.

How satisfied are you with:

53. The degree of closeness between family members.
54. Your family’s ability to cope with stress.
55. Your family’s ability to be flexible.
56. Your family’s ability to share positive experiences.
57. The quality of communication between family members.
58. Your family’s ability to resolve conflicts.
59. The amount of time you spend together as a family.
60. The way problems are discussed.
61. The fairness of criticism in your family.
62. Family members concern for each other.
FACES IV: Answer Sheet

Subject ID: ________  Age: ______  M: _____  F: _____  Date: ____________

<table>
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<tr>
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<td>Generally Disagree</td>
<td>Undecided</td>
<td>Generally Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>1</td>
<td>___</td>
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<td>3. ___</td>
<td>4. ___</td>
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<td>39. ___</td>
<td>40. ___</td>
<td>41. ___</td>
</tr>
<tr>
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<td>A. ___</td>
<td>B. ___</td>
<td>C. ___</td>
<td>D. ___</td>
<td>E. ___</td>
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<td>46. ___</td>
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<td>50. ___</td>
<td>51. ___</td>
<td>52. ___</td>
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</tbody>
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SUM _____ = _____%

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<td>Generally Satisfied</td>
<td>Very Satisfied</td>
<td>Extremely Satisfied</td>
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Appendix N

Family Ecology Assessment

Note: The purpose of this interview is to gain information about your family’s ecology that can help us develop a positive behavior support (PBS) plan that is a good fit for your family; that is, a plan that you would find to be acceptable, feasible, and sustainable within the context of your family life’s. A well designed PBS plan should (a) build on family and child strengths; (b) utilize, as may be relevant and helpful, informal and formal resources that you are currently using or that are available to you; (c) strengthen, as may be relevant and helpful, the social support that you receive in your role as a parent; (d) diminish stressors related to your child problem behavior and contribute to the diminishment of other stressors in your life that may interfere with your implementation of a PBS plan; and (e) help you achieve your goals for your child and your family as a whole.

1. What would you characterize as the strengths of your family?

2. What might be some positive contributions that your child makes or has made to the family?

3. What formal or informal resources have you used to improve the situation (e.g., respite care; help with child-care and household chores from other family members; participation in a parent support group).

4. What are your sources of social support (i.e., someone with whom you discuss problems and find solutions; someone with whom you do leisure activities; someone who validates your worth as a person?)

5. What are sources of stress in your family?
   a. What is the effect of your child’s problem behaviors on you as a parent?
   b. What is the effect of your child’s problem behaviors on the family as a whole?
   c. What are other sources of stress in the family that might affect your ability to implement a positive behavior support plan?

6. What are your goals for your child? What are your goals for yourself as a parent? What are your goals for the family as a whole?

7. What are daily or weekly family routines/activities in the home or community that you would like to improve? How would you prioritize them?

Appendix O

Cultural Assessment Tool
Adapted from Chen et al. (2002)

Planning

1. How do I learn about the family’s interactions and communication styles?

2. How does the family communicate with each other in a direct or indirect manner?

3. Does the family tend to interact in a quiet manner or a loud manner?

4. How do I ensure that the meaning of words I use are translated accurately from English into the family’s language?

5. How will I discuss differences with the family when their practices conflict with the program or mainstream values?

6. What is the most efficient way for the family to collect data (e.g., writing, videotaping, audiotaping)?

Family Assessment

Family Structure:

1. Who are members of the family, including the extended family?

2. Who makes decisions in the family?

3. Is decision making individual or group oriented?

4. Who is the primary caregiver(s)?

5. Is there conflict between caregivers regarding appropriate practices?

6. What is the hierarchy within the family? Is status related to gender or age?

Resources:

1. To whom does the family turn for support, assistance, and information?

2. What are some sources of social support to the family (i.e., someone with whom to discuss problems and find solutions, someone with whom to do leisure activities)?
3. What community resources can I use to better serve this family (e.g., respite care, parent support groups, cultural support groups)?

Family Perceptions and Attitudes:

1. What does the family characterize as its major strengths?

2. What are some sources of stress to the family?

3. What are the family’s values and customs? Are there cultural or religious factors that would shape family perceptions?

4. What is considered respectful and disrespectful in the family?

5. What are the family’s childrearing practices (e.g., feeding and sleeping patterns), forms of discipline, and expectations of children?

6. What is the family’s approach to medical needs?

7. What are the family’s concerns and priorities related to their child with a disability?

8. To what/who/where does the family assign responsibility for their child’s disability?

9. How does the family view their role in intervening with their child?

Self-Evaluation

1. What information do I need to help this family?

2. Have I clarified what the family expects of me and other service providers?

3. Have I discussed the roles and responsibilities of family members and service providers in a process of PBS?

4. Have I provided information on the family’s legal rights regarding their child’s educational program?

5. Are there concerns about my interaction with the family that need to be discussed or clarified?
FUNCTIONAL ASSESSMENT INTERVIEW (FAI)

Person of concern _____________________________  Age ________________  Sex  M  F
Date of interview ______________________________  Interviewer ______________________
Respondents ____________________________________________

A. DESCRIBE THE BEHAVIORS.
   1. For each of the behaviors of concern, define the topography (how it is performed),
      frequency (how often it occurs per day, week, or month), duration (how long it lasts when
      it occurs), and intensity (how damaging or destructive the behaviors are when they
      occur).

      | Behavior | Topography | Frequency | Duration | Intensity |
      |----------|------------|-----------|----------|-----------|
      | a.       |            |           |          |           |
      | b.       |            |           |          |           |
      | c.       |            |           |          |           |
      | d.       |            |           |          |           |
      | e.       |            |           |          |           |
      | f.       |            |           |          |           |
      | g.       |            |           |          |           |
      | h.       |            |           |          |           |
      | i.       |            |           |          |           |
      | j.       |            |           |          |           |

   2. Which of the behaviors described above are likely to occur together in some way? Do
      they occur about the same time? In some kind of predictable sequence or “chain”? In
      response to the same type of situation?

      ____________________________________________
      ____________________________________________
B. DEFINE ECOLOGICAL EVENTS (SETTING EVENTS) THAT PREDICT OR SET UP THE PROBLEM BEHAVIOUR

1. What medications is the person taking (if any), and how do you believe these may affect his or her behavior?

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________________________________________________________________________

________________________________________________________________________

2. What medical or physical conditions (if any) does the person experience that may affect his or her behavior (e.g., asthma, allergies, rashes, sinus infections, seizures, problems related to menstruation)?

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3. Describe the sleep patterns of the individual and the extent to which these patterns may affect his or her behavior.

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4. Describe the eating routines and diet of the person and the extent to which these may affect his or her behavior.

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5a. Briefly list below the person’s typical daily schedule of activities. (Check the boxes by those activities the person enjoys and those activities most associated with problems).

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<th>Problems</th>
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5b. To what extent are the activities on the daily schedule *predictable* for the person, with regard to what will be happening, when it will occur, with whom, and for how long?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

5c. To what extent does the person have the opportunity during the day to *make choices* about his or her activities and reinforcing events? (e.g., food, clothing, social companions, leisure activities)

________________________________________________________________________

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________________________________________________________________________

6. How many other persons are typically around the individual at home, school, or work (including staff, classmates, and housemates)? Does the person typically seem bothered in situations that are more *crowded and noisy*?

________________________________________________________________________

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________________________________________________________________________

C. DEFINE SPECIFIC IMMEDIATE ANTECEDENT EVENTS THAT PREDICT WHEN THE BEHAVIORS ARE *LIKELY* AND *NOT LIKELY* TO OCCUR.

1. *Times of Day*: When are the behaviors most and least likely to happen?

   Most likely: _____________________________________________________________

   _____________________________________________________________

   Least likely: _____________________________________________________________

   _____________________________________________________________
2. **Settings:** Where are the behaviors most and least likely to happen?
   Most likely: ________________________________________________________________
   ________________________________________________________________
   Least likely: ________________________________________________________________
   ________________________________________________________________

3. **People:** With whom are the behaviors most and least likely to happen?
   Most likely: ________________________________________________________________
   ________________________________________________________________
   Least likely: ________________________________________________________________
   ________________________________________________________________

4. **Activity:** What activities are most and least likely to produce the behaviors?
   Most likely: ________________________________________________________________
   ________________________________________________________________
   Least likely: ________________________________________________________________
   ________________________________________________________________

5. Are there particular or idiosyncratic situations or events not listed above that sometimes seem to “set off” the behaviors, such as particular demands, noises, lights, clothing?
   _______________________________________________________________________
   _______________________________________________________________________

6. What one thing could you do that would most likely make the undesirable behaviors occur?
   _______________________________________________________________________
   _______________________________________________________________________

7. Briefly describe how the person’s behavior would be affected if . . .
   a. You asked him or her to perform a difficult task.
      _______________________________________________________________________
      _______________________________________________________________________
   b. You interrupted a desired activity, such as eating ice cream or watching TV.
      _______________________________________________________________________
      _______________________________________________________________________
   c. You unexpectedly changed his or her typical routine or schedule of activities.
      _______________________________________________________________________
      _______________________________________________________________________
d. She or he wanted something but wasn’t able to get it (e.g., a food item up on a shelf).

________________________________________________________________________

________________________________________________________________________

e. You didn’t pay attention to the person or left him or her alone for a while (e.g., 15 minutes).

________________________________________________________________________


1. Think of each of the behaviors listed in Section A, and try to identify the specific consequences or outcomes the person gets when the behaviors occur in different situations.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Particular situations</th>
<th>What exactly does he or she get?</th>
<th>What exactly does he or she avoid?</th>
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E. CONSIDER THE OVERALL EFFICIENCY OF THE PROBLEM BEHAVIORS. EFFICIENCY IS THE COMBINED RESULT OF (A) HOW MUCH PHYSICAL EFFORT IS REQUIRED, (B) HOW OFTEN THE BEHAVIOR IS PERFORMED BEFORE IT IS REWARDED, AND (C) HOW LONG THE PERSON MUST WAIT TO GET THE REWARD.

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<th>Low Efficiency</th>
<th>High Efficiency</th>
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F. WHAT *FUNCTIONAL ALTERNATIVE* BEHAVIORS DOES THE PERSON ALREADY KNOW HOW TO DO?

1. What socially appropriate behaviors or skills can the person already perform that may generate the same outcomes or reinforcers produced by the problem behaviors?

   ____________________________________________
   ____________________________________________
   ____________________________________________

G. WHAT ARE THE PRIMARY WAYS THE PERSON COMMUNICATES WITH OTHER PEOPLE?

1. What are the general expressive communication strategies used by or available to the person? These might include vocal speech, signs/gestures, communication boards/books, or electronic devices. How consistently are the strategies used?

   ____________________________________________
   ____________________________________________
   ____________________________________________

2. On the following chart, indicate the behaviors the person uses to achieve the communicative outcomes listed:

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<thead>
<tr>
<th>Communicative Functions</th>
<th>Complex speech (sentences)</th>
<th>Multiple-word phrases</th>
<th>One-word utterances</th>
<th>Echolalia</th>
<th>Other vocalizing</th>
<th>Complex signing</th>
<th>Single signs</th>
<th>Pointing</th>
<th>Shakes head</th>
<th>Grabs/reaches</th>
<th>Gives objects</th>
<th>Increased movement</th>
<th>Moves close to you</th>
<th>Moves away or leaves</th>
<th>Fixed gaze</th>
<th>Facial Expression</th>
<th>Aggression</th>
<th>Self-injury</th>
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3. With regard to the person’s receptive communication, or ability to understand other persons...
   a. Does the person follow spoken requests or instructions? If so, approximately how many?
      (List if only a few.)
      ____________________________________________________________________________
      ____________________________________________________________________________

   b. Does the person respond to signed or gestural requests or instructions? If so,
      approximately how many? (List if only a few.)
      ____________________________________________________________________________
      ____________________________________________________________________________

   c. Is the person able to imitate if you provide physical models for various tasks or activities?
      (List if only a few.)
      ____________________________________________________________________________
      ____________________________________________________________________________

   d. How does the person typically indicate yes or no when asked if she or he wants
      something, wants to go somewhere, and so on?
      ____________________________________________________________________________
      ____________________________________________________________________________

H. WHAT ARE THINGS YOU SHOULD DO AND THINGS YOU SHOULD AVOID IN
   WORKING WITH AND SUPPORTING THIS PERSON?

1. What things can you do to improve the likelihood that a teaching session or other activity
   will go well with this person?
   ____________________________________________________________________________
   ____________________________________________________________________________

2. What things should you avoid that might interfere with or disrupt a teaching session or
   activity with this person?
   ____________________________________________________________________________
   ____________________________________________________________________________

I. WHAT ARE THINGS THE PERSON LIKES AND ARE REINFORCING FOR HIM OR
   HER?

1. Food items: ________________________________________________________________
   _________________________________________________________________________
2. **Toys and objects:** ______________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

3. **Activities at home:** ___________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

4. **Activities/outings in the community:** __________________________________
   _______________________________________________________________________
   _______________________________________________________________________

5. **Other:** _________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

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**J. WHAT DO YOU KNOW ABOUT THE HISTORY OF THE UNDESIRABLE BEHAVIORS, THE PROGRAMS THAT HAVE BEEN ATTEMPTED TO DECREASE OR ELIMINATE, AND THE EFFECTS OF THOSE PROGRAMS?**

<table>
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<tr>
<th>Behavior</th>
<th>How long has this been a problem?</th>
<th>Programs</th>
<th>Effects</th>
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K. DEVELOP SUMMARY STATEMENTS FOR EACH MAJOR PREDICTOR AND/OR CONSEQUENCE.

<table>
<thead>
<tr>
<th>Distant Setting Event (Predictor)</th>
<th>Immediate Antecedent (Predictor)</th>
<th>Problem Behavior</th>
<th>Maintaining Consequence</th>
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A. Summary Statement/Competing Behaviour Pathways Diagram

Setting Event(s) → Antecedent Trigger(s) → Problem Behaviour → Maintaining Consequence → Alternative Replacement Behaviour

B. Positive Behaviour Support Plan

Strategies that Make Problem Behaviours Irrelevant, Ineffective, and Inefficient

<table>
<thead>
<tr>
<th>Setting Event Strategies</th>
<th>Preventative Strategies</th>
<th>Teaching Strategies</th>
<th>Consequence Strategies</th>
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# Functional Assessment Observation Form

<table>
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<tr>
<th>Name:</th>
<th>Starting Date:</th>
<th>Ending Date:</th>
<th>Perceived Functions</th>
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## Behaviors
- Physical/Social
- Delayed Entry
- Issuance
- Joining/Leaving

## Predictors
- Attention
- Control
- Resistance
- Self-Initiation
- Self-Direction
- Availability
- Provision

## Get/Obtain
- Orientation

## Escape/Avoid
- Orientation

## Time

## Totals

### Events:
- 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

### Date:
Appendix Q

Positive Behaviour Support Plan – Dinner Routine

Summary of Focus Person and System Strengths/Concerns

E. is a healthy, energetic five-year-old girl who currently lives at home with her mother, father and older brother. Her home environment is warm and loving and her family is highly supportive in terms of fostering her growth both socially and academically. E. is very creative and affectionate, with strong receptive language and imitation skills. Despite these strengths, E. struggles to participate successfully in several valued family routines, including dinner time. In particular, although E. is very caring and has close bonds with each member of her family, she is quite rigid and controlling of the family’s activities and routines. At times she escalates quickly into states of anger or discontent, and she often has trouble expressing her wants and needs.

The main goal for E. at this time is to teach her how to participate successfully during the envisioned dinner routine with her family. Specifically, priorities include: (a) reducing the amount of time it takes her to eat her meal; (b) teaching her to sit and eat at the table without leaving to play with toys; (c) expanding the range of foods she will accept; (d) increasing the bite size of certain foods she currently accepts; and (e) teaching her to participate in conversation with family members during dinner. Currently, E. is able to eat her dinner while playing with her toys or watching TV. It generally takes her 1-2 hours or longer to finish her meal, and she refuses to eat most vegetables, all fruit, and several other valued family foods. When asked to sit at the table, or provided with nonpreferred foods, she will refuse, run away, or engage in tantrum behaviour. The consistent occurrence of such problem behaviour has made necessary the creation of this positive behaviour support plan for the dinner routine.

Description of Problem Behaviours within the Dinner Routine

Currently, the dinner routine begins every evening at approximately 5:30 p.m., and lasts for 1-3 hours depending on E.’s behaviour and the speed at which she eats. Several behaviours of concern exist during this routine, most of which serve the function of escaping the routine itself. Certain behaviours however, are also maintained by attention or access to tangibles. In particular, when asked to sit at the table, take a bite, or complete other steps in the dinner routine, E. will engage in noncompliance or food refusal in order to escape the demand. As well, when E. is seated at the dinner table while receiving no direct attention for a period of a few minutes or more, she will stand up or turn around in her chair in order to gain attention from her family members. Finally, when interrupted during a preferred play activity prior to or during the dinner routine, E. will engage in noncompliance, whining or crying in order to escape the demand and gain further access to the toys or activity she is currently playing with. Lack of sleep or the provision of nonpreferred foods, combined with her deficits in expressive language and her behavioural rigidities and sensitivities related to certain foods, have all been found to exacerbate these problems.

Behaviours of Concern
1. *Escape-motivated behaviour*: Elopement from the dinner table, food refusal (e.g., spitting out food, turning her head away, pushing the bowl away, etc.), whining, crying, screaming, noncompliance, physical resistance.
2. *Attention-motivated behaviour*: Turning around in her seat, shouting to be turned around.

**Vision of a Successful Dinner Routine**

The vision for this routine is that E. will wash her hands and come to the table when asked, sit at the dinner table with her mother, father and older brother, and eat the foods presented to her in 30 minutes or less, while participating in conversation with the rest of the family. At the end of the meal, the expectation is that she will put her dishes in the sink, drink a glass of water, and ask to be excused before going to play with her toys. Initially, we will work on each goal in three separate stages targeting: (a) duration of the mealtime, latency between bites and appropriate mealtime behaviour; (b) acceptance of preferred foods in age-appropriate bite sizes; and (c) acceptance of nonpreferred foods. Each stage will begin with intervention directed by the student researcher, before transferring control to E.’s parents. Eventually, we will work towards having E. participate in the envisioned dinner routine, meeting all specified goals, with minimal support from her parents.

**Positive Behaviour Support Plan**

**Lifestyle/Ecological Strategies**

1. **Target intervention goals in three separate stages.** In order to ensure that all goals will be met, while minimizing the demands on E. within each successive session, the intervention phase will proceed in the following three stages.
   a. **Stage 1: 30 minute duration, with a focus on short latency between bites as well as appropriate mealtime behaviour**
      i. Requirements: E. will engage appropriately in every step of the dinner routine with minimal to no prompting (i.e., wash hands, sit at the table, eat meal, clean up, drink water, and ask to be excused). E. will eat the foods served to her, and she will finish her meal in 30 minutes or less. All foods will be cut up as small as she likes, and foods presented will be preferred (as determined by the research team prior to intervention).
   b. **Stage 2: Age-appropriate bite size of preferred foods**
      i. Requirements: E. will meet all the requirements of stage 1, with the additional requirement that all of her foods be served and consumed in age-appropriate bite sizes.
   c. **Stage 3: Extension of food repertoire**
      i. Requirements: E. will meet all the requirements of stage 2, with the additional requirement that she accepts two or more target nonpreferred food items each meal including: chicken, fish, corn, peas, bok choy, zucchini, green beans, spinach, egg, tomato, apple, grapes, strawberry, orange, banana and cantaloupe.

Within each stage, stimulus and response fading procedures will be used to gradually work toward the final requirements (this strategy is listed under preventative strategies).
As well, each stage will begin with intervention that is carried out by the student researcher. Once E. masters the final requirements (or criteria) of a particular stage, control will be transferred to E.’s parents. This structure will help to neutralize the impact of certain setting events, including: E.’s behavioural rigidities and sensory sensitivities to certain foods and her aversive response to the presentation of nonpreferred foods.

2. **Preferred seating arrangement and dining room furniture.** The purchase of new dining room furniture, specifically chosen by E., and subsequent choice of seating arrangement each dinner time, will help to make the dinner routine environment more motivating and reinforcing for E. In addition, the chairs chosen as part of this new arrangement have the added advantage that they prevent her from turning around and sitting backwards in them, with her legs hanging through the back of the chair. Note: preferred dishes may also be used (particularly during stage 3 when foods are nonpreferred), in an effort to increase the reinforcing value of being at the table and consuming the target foods. Decisions related to this strategy will be made at the appropriate time.

3. **Age-appropriate meal size.** With the exception of the beginning sessions in stage 1, when meal size will increase gradually with each session until an appropriate amount is achieved, E. will be presented with a portion of food that is nutritionally appropriate for her age. This strategy will reduce the likelihood that she becomes full part way through the meal, which might otherwise lead to problem behaviour.

4. **No toys allowed in the dining area.** At the beginning of the dinner routine, all toys will be removed from the table and dining area, with the exception of those used for scheduled breaks during stage 1 of intervention. This strategy will reduce the level of distraction for E. and her sibling, in addition to minimizing tangibly-motivated behaviours that may otherwise occur at the table.

5. **Reduce task demands and increase reinforcement for appropriate behaviour in the event that E. has had a poor sleep the night before and is tired at the beginning of the research session.** In particular, tasks demands related to the amount or type of food she is required to eat, the length of time she has to finish her meal, or the size of bite she is required to ingest, will remain consistent with the previous session (as opposed to increasing gradually). As well, each break she earns will be longer than usual, verbal praise will be issued for all appropriate behaviour (even those that are fluent) and she will be allowed to choose 1 extra reinforcer upon finishing her meal.

**Preventative Strategies**

1. **Use of visual supports.** The following visual tools will be included during the intervention process:
   a. Visual schedule for the dinner routine – outlining the sequence of steps involved in the routine
   b. Contingency diagram – outlining behaviours required prior to receiving reinforcement
   c. ‘Take a break’ card – for use at the table when a short break is needed before taking the next bite
The visual schedule will be referred to at the beginning of the meal, and then placed on
the table above E.’s bowl, such that she is able to refer to it when necessary. This tool
will help to provide structure to the routine, and it will provide E. with a prompt as to
what step comes next in the sequence. The contingency diagram will be referred to
throughout the meal, in order to minimize escape-motivated behaviour by ensuring that
E. understands the requirements and in order to motivate her to continue until she reaches
her goal and receives her reinforcer for the day. The ‘take a break’ card will be made
available to E. throughout the meal by setting it on the table above her contingency
diagram. This card will act as a prompt for taking a short break from eating when she
needs it. All visual supports will be faded out gradually as appropriate.

Addendum: New visual tool

A new visual tool has been added, to help prompt E. to chew her food 10 or fewer
times before swallowing (i.e., to eat at a faster pace). This visual tool is also placed
above her placed on the table above E.’s bowl of food.

2. Use of advanced warnings prior to dinner. A verbal 5-minute countdown will begin prior
to dinner, in order to prevent problem behaviour from occurring during the transition
from play time to dinner. The countdown will begin at 5 minutes, and continue down to 0
in increments of 1 minute. When time is up, E. will be instructed to leave her toys and to
go wash her hands and sit at the table for dinner. As she proceeds to wash her hands and
approach the table, verbal reminders will be given as to what should be done and what
she will receive once she is seated at the table (i.e., a sticker).

3. Choice of food. E.’s mother will provide E. with a choice of two dinner foods each
afternoon prior to preparing dinner for that evening. The choices given will involve
vegetables or meat that might be mixed into the rice or noodles served. All choices
provided will be determined by the student researcher and E.’s mother the night before an
intervention session. If E. makes a choice when offered, the choice will be honoured, in
an effort to increase motivation to participate in the dinner routine and prevent problem
behaviour from occurring. If E. does not make a choice when offered, E.’s mother will
make the choice for her.

4. Positive contingency statements. Adults supporting E. will tell her what behaviour she
needs to engage in (e.g., eating her food, staying at the table) in order to get her reinforcer
for that day. These statements will act as supplements to the visual contingency diagram,
in order to make the expectations clear for E., and in order to motivate her to comply with
the demands of the dinner routine.
   a. Positive example statements include: ‘Go wash your hands and sit at the table,
and then you can pick a sticker!’ , ‘If you finish the food in your bowl, you can
take a break to play with the IPAD’, ‘The faster you finish your meal, the sooner
we can go play with the ___(reinforcer)___ you chose’, and ‘Once you ask to be
excused you can go play with the ___(reinforcer)___!’
   b. Negative example statements include: ‘If you don’t finish your meal, we can’t
play with the ___(reinforcer)___’ and ‘If you keep whining I can’t give you a
sticker. Stickers are only for nice listening and following the instructions before dinner’.

5. **Safety signals.** Adults supporting E. will provide her with safety signals, which will help to prevent escape-motivated behaviour by warning her when she is almost done a specified step in the routine and making it clear that reinforcement will be delivered soon.
   a. For example, if E. has almost finished the bowl of food provided, yet she is beginning to whine when told to take a bite, or if she is slowing down significantly while chewing her food, you might say ‘you’re almost done your bowl! Once you finish the next bite we can take a break together and play with the ____ (reinforcer) ____!’.

6. **Provide noncontingent reinforcement** to E. in the form of conversation (i.e., attention) every 2-4 minutes while seated at the dinner table. This attention will prevent attention-motivated problem behaviour from occurring, and it will reduce the need for E. to make bids for attention/conversation.

7. **Prompting and prompt fading.** Throughout the dinner routine, E. will be prompted as necessary to complete the next step in the sequence. This may include:
   a. Physical prompting
      i. Physically assisting E. to take a bite, to sit down in her chair, or to walk to the bathroom, the dinner table, or the sink.
   b. Gestural prompting
      i. Pointing or otherwise gesturing to E. to take a bite, to walk to a desired destination, to sit appropriately in her chair, or to reference her visual tools.
   c. Verbal prompting
      i. Verbally prompting E. to take a bite, to sit down, to walk to a desired destination, to refer to her visual schedule, or to ask to be excused at the end of the meal.
Any prompt that is used will later be faded out as appropriate given her level of ability to complete the task, in order to avoid prompt dependency. Prompts will be faded physically (i.e., from hand-over-hand guidance, to partial physical guidance, to gestures and demonstrations) and temporally (i.e., immediate prompting, to a 1 second delay, to a 2 second delay, to a 3 second delay). These prompts will serve as proactive strategies in that they will be used prior to problem behaviour occurring, in order to prevent its occurrence by ensuring successful completion of each step in the routine.

8. **Stimulus fading** will occur with respect to the amount of food consumed as well as the size of each piece of food within each bite.
   a. Amount of food:
      i. Stage 1: To begin, E. will be required to eat one bite of preferred food, before taking a break to play or draw at the table. This procedure will be repeated twice more during the meal, before she is asked to clean up and she receives her reinforcer. As she progresses, she will gradually be required to eat more of a preferred food (i.e., two bites, three bites, etc.)
before a break is granted, with the result that she will eventually eat a full-sized portion that has been divided in 3, such that 1/3 of the full portion is served at a time, with breaks in between each serving. At this point, the breaks will be faded out, until she is eating an entire bowl in one sitting before gaining access to reinforcement.

ii. Stage 2: Amount of food remains constant.

iii. Stage 3: To begin, adults supporting E. will present her with a pea-sized portion (or slightly more) of a new nonpreferred food item. If she accepts the designated portion three sessions in a row, the portion will increase by a specified amount, until she consumes a portion size that is nutritionally and age-appropriate.

b. Bite size:

i. Stage 1: All foods will be cut up into small pieces consistent with E.’s preferences. Bite size will remain constant.

ii. Stage 2: Adults supporting E. will begin by cutting up all foods served into bites slightly larger than her preference. If all food is consumed at this size for three consecutive sessions, the size of each piece of food (i.e., bite) will increase by a specified amount. This process will continue until all food is served in bite sizes that are proportionate to her sibling.

iii. Stage 3: To begin, new nonpreferred foods will be cut up into small pieces consistent with E.’s preference during stage 1. Once the amount of food has increased to the appropriate portion (as described above), the size of each piece of food will be increased gradually using the same procedure as outlined above during stage 2.

9. Durational fading. During stage 1, once E. learns to eat a full meal without taking breaks, while behaving appropriately (e.g., sitting at the table, accepting each bite), the next goal will be to eat her meal appropriately within 30 minutes or less. At this point, if necessary, a timer will be used in order to proactively encourage her to eat at the appropriate pace. In addition, reinforcement may be made contingent upon her finishing within the designated time period. The allotted time period will begin at a duration in which she is currently able to finish her meal. Each time she finishes her meal within the time period three days in a row, the time period will decrease according to a specified amount. This procedure will continue until E. is able to finish her meal within 30 minutes.

Teaching Strategies

1. Use functional communication training to teach E. alternative ways of asking for the things that she wants. Examples are listed below:

a. To replace tangibly-motivated problem behaviour that often occurs when a preferred activity is interrupted, teach E. to verbally ask for ‘one more minute’ by providing full echoic prompts for E. to imitate, and fading those prompts until she is able to ask spontaneously.

b. To replace escape-motivated problem behaviour that may occur at the dinner table, teach E. to verbally or gesturally ask for a break, by prompting her to say ‘I need a break please’ and/or using a ‘take a break’ card. During such breaks, she
will be required to remain at the table; however, all demands for taking a bite will cease for the allotted break time (i.e., 30 seconds).

c. To replace attention-motivated problem behaviour that tends to occur when E. is receiving no direct attention at the dinner table, teach E. to say ‘Hey look ________! I’m eating!’ by providing full echoic prompts for E. to imitate, and fading those prompts until she is able to ask for attention spontaneously. As well, E.’s parents will be taught to respond to these bids for attention by engaging her in subsequent conversation.

2. General case programming. During stage 3, adults supporting E. will present new nonpreferred dinner foods that sample the range of properties (e.g., texture, taste, food group, ease of chewing and swallowing) that are present within the set of dinner foods that E.’s parents would like her to eat. This set consists of various fruits, vegetables, meats and dairy products. Those foods that will be targeted include: bok choy, sushi, apple, pepper, cheese, banana, peas, eggs, grapes, salmon and cantaloupe. During each dinner session, adults will present E. with foods from at least two food groups.

3. Teach E. conversational skills. The student researcher will conduct 3 or more tutorials with E.’s parents that are focused on how to respond to E.’s bids for conversation at the dinner table. In particular, these tutorials will focus on: (a) how to recognize different bids for conversation; (b) how to respond in a manner that is reinforcing; and (c) how to extend the conversation in a way that builds up E.’s conversation skills. Teaching techniques will include: modeling and coaching, role play, and verbal instruction.
   a. For example, E.’s parents will learn that when E. uses the phrase ‘Look ______! I’m eating my meal!’, she is making a request for attention. They will be taught to respond by praising her behaviour and initiating a conversation about the meal, about her day at school, or about something that is coming up in the near future. While engaging in conversation, they will learn how to prompt E. as necessary to respond, and to keep the conversation short and simple so that E. will not be overwhelmed with demands.

   These tutorials will take place during the parent coaching and modelling sessions that will facilitate the transfer of intervention skills from the student researcher to the parents each time E. masters the established criteria for a particular stage of intervention.

4. Teach E.’s brother how to support E. during the dinner routine. The student researcher will conduct 3 or more tutorials with E.’s brother on how to support his sister during the dinner routine. In particular, these tutorials will focus on basic ways of: (a) how to model appropriate dinner time behaviour; (b) how to encourage and reinforce E.’s appropriate behaviour during the dinner routine through praise and conversation; and (c) how to respond in a manner that is not reinforcing, if E. engages in problem behaviour during the dinner routine. Teaching techniques will include: modeling and coaching, role play, and verbal instruction.
   a. For example, if E. stands up in her chair or runs from the table, her brother will be taught to keep eating his meal quietly (i.e., modeling appropriate behaviour) and engage in conversation with his mother if he would like to (i.e., withholding reinforcement in the form of attention). Once E. is engaging in appropriate
behaviour once more, he will be taught to praise her and/or engage in conversation with her (i.e., provide attention for good behaviour). These tutorials will take place during the coaching and modelling sessions that will facilitate the transfer of intervention skills from the student researcher to E.’s family members each time E. masters the established criteria for a particular stage of intervention.

**Consequence Strategies**

1. **Provide access to preferred toys or activities contingent upon E. completing all steps in the dinner routine.** In particular, this includes: (a) washing her hands; (b) sitting at the table; (c) eating 100% of the foods presented to her; (d) putting her dishes in the sink; (e) drinking a glass of water; and (f) asking to be excused from the table. During intervention sessions, new toys will be purchased by the student researcher, and E. will have a choice of which toy she would like every session. Note: each session, provide E. with a sticker contingent upon washing her hands and coming to the table appropriately.

2. **Provide praise contingent upon appropriate behaviour.** In particular, appropriate behaviours include taking a bite, eating at a pace that is typical for her age, sitting properly on her chair at the table, listening to and following an instruction, independently completing any step in the dinner routine, appropriately asking for a break or one more minute of play, making a bid for conversation at the table, and participating appropriately in conversation with family members.

3. **Provide E. with a break, with attention/conversation, or with one more minute of play contingent upon appropriate requesting (i.e., verbal requests or requests using the ‘take a break’ card).**
   a. In the case of asking for a break, E. must remain seated at the dinner table; however, no demands will be placed on her to take another bite of food. No tangibles should be given to E. at this time, and conversation should be limited.
   b. In the case of asking for one more minute of play before coming to dinner, comply with the request once and then repeat the instruction for E. to wash her hands and sit at the table for dinner. This will help to minimize tangible-motivated problem behaviour, while avoiding continuous requests for one more minute of play.
   c. In the case of asking for attention/conversation, respond to E.’s bid (as taught in the parent tutorial) and extend upon the bid as appropriate to engage E. in conversation at the dinner table.

4. **If minor problem behaviour occurs:** engage in escape extinction procedure, provide minimal attention, and redirect to the task once behaviour has stopped. The escape extinction procedure includes:
   a. Blocking elopement from the table or designated area
   b. Maintaining the request for taking a bite by holding the spoon or prompting E. to hold the spoon close to her mouth until she takes a bite (i.e., non-removal of spoon procedure)
c. Presenting another bite of food if the previous bite was expelled

d. Physically prompting E. to comply with a task step instruction (e.g., walking to the bathroom to wash her hands). Note: Physical assistance to take a bite will not be provided. Instead, the non-removal of spoon procedure will be used.

During the escape extinction procedure, a minimal amount of attention is provided, in order to avoid reinforcing attention-motivated behaviour. Providing minimal attention includes:

   a. Minimizing eye contact
   b. Repeating an instruction or demand once and minimizing verbal attention otherwise (until appropriate behaviour occurs, in which case verbal praise may be given)
   c. Ignoring any inappropriate behaviour that does not prevent E. from complying with the instruction
   d. Keeping a neutral facial expression

Once behaviour has ceased, redirect E. to the task by using the type of prompt appropriate to the task (as noted above) in order to move E. through the request that was given prior to the occurrence of problem behaviour. Minor problem behaviour includes: whining, crying, inappropriate or rude comments, visual agitation, food refusal (e.g., spitting out food, pushing plate away, turning around, noncompliance) and elopement from the designated area.

5. If major problem behaviour occurs: engage in de-escalation procedure and redirect E. to the task once she has calmed down. The de-escalation procedure consists of:

   a. Blocking any responses that may be harmful to E. or another person around her
   b. Minimizing reinforcement by moving away from E. and limiting the amount of attention she receives (i.e., limit eye contact and verbal attention) once it is safe to do so
   c. Ignoring the occurrence of minor problem behaviour
   d. Allowing E. to calm down on her own until she is engaging in mild problem behaviour or no problem behaviour at all

Once E. is calm, quietly redirect her to the task and provide praise contingent upon appropriate behaviour. Major problem behaviour includes: hitting, kicking, pushing throwing objects or food, self-injury and screaming. If E. escalates two times during a session, the meal is terminated.

Addendum: In addition to regular training sessions during dinner, E. will participate in training sessions specific to the targets of: (a) expanding the range and bite size of fruits that she will accept; and (b) increasing her pace of chewing and swallowing.

   a. To expand her range and bite size of fruits, E. and her family members will participate in playing a ‘fruit game’ with the interventionist, in which E. is required to eat one piece of 6 different types of fruit (apple, orange, strawberry, banana, melon and grapes) prior to completing the game. This game proceeds in a turn-taking format, and each player is granted access to
the IPAD for 10-30 seconds as reinforcement for touching/eating a piece of fruit. For each piece of fruit E. consumes, she is allowed access to her IPAD for 1 minute, and she is able to pick a toy from a selection purchased by the interventionist. In addition, each fruit is associated with a particular picture of a preferred toy for E. When a piece of fruit is consumed, a token bearing the associated picture is provided to the turn-taker and they add it to their token board until they have all 6 types of tokens (at which point they win the game). Each player is provided with 3 ‘no thank you’ tokens, such that they may skip their turn and take a break without having to engage in problem behaviour. When these tokens are gone, they must eat a piece of fruit every round until they have filled up their token board. The game finishes when every member has filled up their token board and eaten all 6 fruits.

b. To target pacing, E. will participate in ‘pull-out’ sessions with the interventionist. During these sessions, E. will be given a portion half of the regular size. For each bite E. takes, the interventionist will count (out loud and/or on her fingers) to 10 during which time E. must chew and swallow her food. Each time that E. is successful, she earns a token toward a token board provided which represents 1 minute of IPAD time after dinner. Each time E. is unsuccessful, she earns no token. Note: this procedure is NOT used during dinner time with her family.

Monitoring and Evaluation

1. Clinical data: The student researcher will collect clinical data during each dinner session. This data will include measures of:
   a. Food acceptance – number of bites accepted spontaneously versus number of bites accepted with prompts
   b. Duration of meal – total duration of the research session and total duration of the time spent eating
   c. Steps completed in the dinner routine
   d. Number of breaks requested
   All data will be reviewed on an on-going basis in order to make changes to the PBS plan that foster improvement and overall success in the dinner routine.

2. Implementation checklist: An implementation checklist will be created and provided to E.’s parents for use during the intervention phase. This checklist can be used to: (a) remind E.’s parents of the strategies to implement during the process of supporting E. in the dinner routine; (b) evaluate the level of implementation, (c) assess the level of problem behaviour, and (d) evaluate the social validity of the plan. The checklist is to be filled out on a weekly basis by E.’s parents, in order to monitor the use of core strategies as well as the maintenance of any gains E. may make.
Positive Behaviour Support Plan – Sibling Play Routine

Summary of Focus Person and System Strengths/Concerns

E. is a healthy, energetic five-year old girl who currently lives at home with her mother, father and older brother. Her home environment is warm and loving and her family is highly supportive in terms of fostering her growth both socially and academically. E. is very creative and affectionate, with strong receptive language and imitation skills. Despite these strengths, E. struggles to participate successfully in several valued family routines, including sibling play time. In particular, although E. is very caring and has close bonds with each member of her family, she is quite rigid and controlling of the family’s activities and routines. At times she escalates quickly into states of anger or discontent, and she often has trouble expressing her wants and needs.

The main goal for E. at this time is to teach her how to successfully play board games with her brother for a period of 30 minutes or longer. Specifically, priorities include: (a) to play properly with the games made available to her; (b) to follow the rules while playing a game, and continue playing until the game is finished (i.e., there is a winner); (c) to share and take turns with her brother; (d) to allow for her brother to choose a game without engaging in problem behaviour; and (e) to clean up her toys/games as they finish playing with them, and put them back where they belong. Currently, E. is able to play a variety of board games with her brother, sharing, taking turns, and following the rules for approximately 75% of the time. When told she cannot choose the game, particularly if she has already made a decision beforehand, she will often whine and yell and refuse to play. This behaviour often continues on for several minutes, and effectively ends play time with her brother. As well, she will often stop playing a game before it is finished (i.e., there is a winner), and move onto another game of her choice without asking her brother or helping to clean up the previous game. When asked to continue to play the game, she will often refuse which results in fighting between both children, and once again effectively ends their play time together. The consistent occurrence of such problem behaviour has made necessary the creation of this positive behaviour support plan for the sibling play routine.

Description of Problem Behaviours within the Sibling Play Routine

Currently, the sibling play routine takes place most evenings either before or after dinner (or sometimes both), and lasts between 15 minutes to an hour in length. Several behaviours of concern exist during this routine, most of which serve the function of gaining access to tangibles or escaping an undesirable request. In particular, when told she cannot have access to an item or activity that she wants (e.g., she cannot choose the game, she cannot go first, she cannot play the game a certain way), E. will engage in whining, crying, screaming, yelling, elopement, and noncompliance in order to gain access to the item or activity of her choice. As well, when asked to play a non-preferred game, to follow a non-preferred rule in a game, or at times, when she is losing the game, E. will engage in whining, crying, yelling, screaming, ignoring, elopement, noncompliance, and defiance in order to escape the demand. Fatigue or hunger, combined with her deficits in expressive language and social play skills, have all been found to exacerbate these problems.
Behaviours of Concern

1. *Escape-motivated behaviour*: Whining, crying, yelling, screaming, elopement from the game area, ignoring, noncompliance, and defiance.

2. *Tangibly-motivated behaviour*: Whining, crying, yelling, screaming, elopement from the game area towards the item/activity of her choice, and noncompliance.

Vision of a Successful Sibling Play Routine

The vision for this routine is that E. will play cooperatively with her brother, sharing and taking turns with the same toy set, while her mother and father complete their work and cook dinner. This routine takes place in the playroom upstairs, and one parent will check in on the children every 3-5 minutes. During this time, both children will remain in the play room, sharing the same toy set. If one child leaves the room, or stops playing with their sibling, a parent will prompt them to return to their sibling and continue to play together. As well, parents will prompt the children to clean up each game/activity before moving on to the next activity. This routine will begin between 4:30 p.m. and 6:00 p.m. and last for 30 minutes.

Positive Behaviour Support Plan

Lifestyle/Ecological Strategies

1. Provide E. and D. with a snack prior to playing together if they indicate that they are hungry or if E. did not eat her lunch or snacks earlier in the day. This snack should be small, and provided one hour or more in advance of dinner if possible. If provided within an hour of dinner, juice or other liquids might substitute for a snack, so as not to interfere with E.’s appetite for dinner. If necessary, a snack schedule may be devised, particularly for use on weekends.

2. If one child is tired or sick, prompt the kids to play separately in different rooms of the house. Both children have toys to play with in their bedrooms, and they are both capable of playing alone for long periods of time (i.e., 30 minutes or more). If one child is tired due to a poor sleep the night before, or if one child is sick, encourage both children to play separately that day in order to minimize the likelihood that problem behaviour will arise due to fatigue or sickness acting as a setting event.

Preventative Strategies

1. Use of visual supports. The following visual tools will be included during the intervention process:
   a. Visual choice board/schedule - complete with space for indicating the order in which all games will be played that day
   b. ‘General rules for playing board games’ visual – to be posted on the wall in the playroom in view of both children
c. ‘Calm down procedure’ and 5-point scale for anger visuals – for use when E. or D. is upset and needs to calm down prior to play continuing

The visual choice board will be posted on the wall of the playroom, with pictures for all possible choices of board games included in a pouch. This visual will be referred to (by a parent and the children themselves) at the beginning of every play session, in order to provide structure, by helping the children decide which games to play and the order in which they will be played. Furthermore, it will serve as a reminder of their choices later on in the session, and it will increase predictability for E. as both children move from game to game throughout the play session. The rules visual will also be posted on the wall of the playroom, in clear view of both children. This visual will be referred to by a parent at the beginning of the session, once the order of games has been chosen, prior to setting up the first game. By referencing this visual prior to game play, this will act as a pre-correction for both children, reminding them of the expectations during the play routine. As well, by posting the visual on the wall, both children can continue to reference the rules throughout the play session. The ‘calm down’ and 5-point scale visuals will be posted on the wall, with Velcro attachments so that they might be removed and brought to E. or D. as necessary when he or she becomes upset and needs to calm down in order for the routine to continue. This visual will serve as an additional prompt to E. for how to proceed when she is denied access to an item or activity, or when she is asked to play with a non-preferred item or activity. All visual supports will be faded out gradually as appropriate.

Addendum: New visual tool added

A visual contingency diagram for appropriate play has been added. Both children should have their own visual tool, with separate rules for play, and separate choices for what they would like to work for that session. These diagrams are left on the table in the playroom, for the children and/or the father to refer to throughout the play session.

2. Use of verbal pre-corrects at the beginning of the play session. Adults supporting the children in this routine will remind both children of the rules when playing together, by referencing the ‘general rules for playing board games’ visual at the beginning of the play session, in a positive and encouraging tone of voice (i.e., this isn’t a demand or warning, simply a reminder of what the expectations are). As adults check in on the children approximately every 5 minutes throughout the session, more verbal pre-corrects can be given as necessary.

3. Review the rules prior to playing each game. Family members supporting E. will review the rules prior to playing each game. Although D. may say they already know the rules, this step should be taken in order to ensure that both children know the rules equally, and in order to prevent issues that arise due to incomplete understanding of game play rules. Furthermore, if there is a dispute over the rules during the game play, D. will get the attention of a parent, or read the rules himself, in order to ensure they follow the rules as stated.
Addendum: This strategy is no longer necessary as both children know the rules to all games played. Occasionally a child may need to double-check a rule; however, they no longer review the rules prior to play.

4. Provide choices throughout the play routine. Family members supporting E. will provide choices in terms of the games selected, the order of selection and game play, and the privilege to make other small choices throughout the play routine. For example, if E. does not want to allow D. to make the first choice, E. can be given the choice ‘Either D. gets to pick the first game and you can pick the next one, or D. gets to pick all of the games today’. As well, if E. is engaging in appropriate behaviour during the routine, D. might provide her with choices (e.g., choice of token colour, choice of game play order, etc.) as reinforcement for playing nicely.

5. Make use of fair decision-making techniques whenever both children want to make a decision and cannot agree on the outcome. For example, ‘rock, paper, scissors’ will be taught to both children, as a way of deciding who gets to choose the game first, who gets to take the first turn, who gets to choose their game piece colour first etc. whenever both kids want to have the first choice. Other techniques can be taught as well, so long as they are fair and each child understands how to use the technique.

6. Positive contingency statements. All family members supporting E. will tell her what behaviour she needs to engage in (e.g., follow the rules, finish the game) in order to gain access to her next choice in item or activity. These statements will act as supplements to the ‘general rules for playing board games’ visual, in order to make the expectations clear for E., and in order to motivate her to comply with the demands of the play routine.
   a. Positive example statements include: ‘Finish this game and we’ll play ______ just like you wanted!’, ‘First we’ll play my choice, then we’ll play your choice!’; ‘First help me clean up the game, then we can set up your game’, ‘Play nicely together and then we will all _______ together’, and ‘This time I’ll be blue, and next time you can be blue!’.
   b. Negative example statements include: ‘If you don’t finish playing the game, we can’t play ______(E.’s choice in game)____’ and ‘If you don’t allow D. to have his choice first, you won’t get to choose a game at all today’.

7. Safety signals. All family members supporting E. will provide her with safety signals, which will help to prevent escape-motivated behaviour by warning her when she is almost done a specified step in the routine and making it clear that reinforcement will be delivered soon.
   a. For example, if E. has almost finished playing a board game, yet she is beginning to whine when told to take her turn, you might say ‘we’re almost done the game! Once we get to the finish line we can play ______(next game)____’.
   b. E.’s father will also provide safety signals to both children in the form of a countdown describing when play is finished. For example “20 more minutes to go!” “Only 10 more minutes to play!” etc.
8. **Prompting and prompt fading.** Throughout the play routine, E. will be prompted as necessary to complete the next step in the sequence. This may include:

   a. **Physical prompting**
      i. Physically assisting E. to move a game piece, orient towards a game, help to set up or clean up, or follow a rule in the game.

   b. **Gestural prompting**
      i. Pointing or otherwise gesturing to E. to take a turn, roll the dice, help set up or clean up a game, follow a specified rule, or orient towards the game board.

   c. **Verbal prompting**
      i. Verbally prompting E. to choose a game, take a turn, follow a specified rule, help set up or clean up a game, orient towards the game board, or calm down when necessary.

Any prompt that is used will later be faded out as appropriate given her level of ability to complete the task, in order to avoid prompt dependency. Prompts will be faded physically (i.e., from hand-over-hand guidance, to partial physical guidance, to gestures and demonstrations) and temporally (i.e., immediate prompting, to a 1 second delay, to a 2 second delay, to a 3 second delay). These prompts will serve as proactive strategies in that they will be used prior to problem behaviour occurring, in order to prevent its occurrence by ensuring successful completion of each step in the routine.

**Teaching Strategies**

1. **Use functional communication training** to teach E. alternative ways of asking for the things that she wants. Examples are listed below:

   a. To replace tangibly-motivated problem behaviour that often occurs when E. is told she cannot have access to a preferred item or activity, teach E. to verbally ask for her choice by providing full echoic prompts for E. to imitate, and fading those prompts until she is able to ask spontaneously. Example of phrases include: ‘Can I pick first today please?’; ‘Can I go first please?’; ‘What is the rule?’ and ‘Can I have the _________ please?’.

   b. To replace escape-motivated problem behaviour that often occurs when E. is asked to play a non-preferred game, when she is asked to play by a non-preferred rule, or when she is losing a game, teach E. to verbally ask for a break, by prompting her to say ‘I need a break please’, or to request a new game by prompting her to say ‘Can we play the next game please?’. During such breaks, she will be required to remain in the play room; however, all demands for taking a turn will cease for the allotted break time (i.e., 30 seconds).

2. **Use social stories to teach E. about playing with her sibling and being a good sport.** Adults supporting E. will read through the social stories prior to each play session (this will be faded back as appropriate) in order to teach her about appropriate ways of playing with her brother, how her actions affect her brother and the games they play, and what she can do instead of resorting to problem behaviour. Each social story will be written at
a level that is appropriate for E.’s level of language development, and all stories will be accompanied by pictures to help E.’s comprehension. In addition to printing out the stories, all stories will also be added to E.’s IPAD using an appropriate App, in order to increase E.’s motivation to read and engage with the material.

Note: Additional stories may be created as necessary. As well, a social story for ‘calming down’ will be written specifically for D., and this story will be transferred to his IPAD in addition to being printed as well.

3. Teach E. and D. to use a calm-down procedure whenever they feel upset and need to calm down before the routine can continue. This calm-down procedure will include the following steps:
   a. Stop
   b. Take a deep breath
   c. Count to 5 (in a whisper or in your head)
   d. Repeat steps b and c until you feel calm
   e. Use nice words to ask for what you want

   or

   Think to yourself: ‘that’s okay, maybe next time!’ and continue playing

Note: a ‘calm-down’ visual will be posted on the wall, for E. and D. to reference whenever they need it. Family members supporting E. can reference this visual or prompt her verbally whenever she needs to calm down. As well, initial teaching of the procedure will occur with the student researcher, at a time when both children are feeling calm. Once mastered in this setting, practice will occur when a child is beginning to feel upset during the play routine. Use of the ‘calm-down’ procedure will occur simultaneously with use of the 5-point scale for anger (see below).

4. Teach E. and D. to use a 5-point scale for anger. The student researcher will create a 5-point scale for anger, to be used with both E. and D. during the sibling play routine. A visual diagram of the scale will be posted on the wall of the playroom, to be referenced when needed by the children themselves or by the adults supporting this routine. Initial teaching sessions for use of this scale will occur at a time when both children feel calm, and training sessions with parents on how to make use of the scale will also occur, led by the student researcher. This scale will include the following five levels:
   a. Level 5: Out of Control – Find a parent, no more sibling play today
   b. Level 4: Very angry – Find a parent, take a break in my bedroom to calm down
   c. Level 3: Angry – Use calm down procedure and/or go find a parent
   d. Level 2: Annoyed – Use calm down procedure
   e. Level 1: Happy/Calm – Keep playing

5. Teach E. and D. social play skills. The student researcher will conduct bi-weekly tutorials with E. and D. to teach social play skills necessary for playing with siblings (and friends) successfully. Targeted lessons will include: using fair decision-making techniques (i.e., rock, paper, scissors; eeny-meeny-miny-mo; one potato two potato); choosing games to play and allowing for the choices of others; playing by the rules; finishing games once
you start them; being a good sport; asking to join/leave a game; etc. Each tutorial will take approximately 15 minutes, and topics will change every week. Teaching techniques will include: verbal instruction, visual animation, modeling and coaching, role play and verbal review of lessons after play sessions.

6. Teach D. how to support E. during the play routine. The student researcher will conduct 3 or more tutorials with E.’s brother on how to support his sister during the play routine. In particular, these tutorials will focus on basic ways of: (a) how to model appropriate play time behaviour; (b) how to encourage and reinforce E.’s appropriate behaviour during the play routine through praise and preferred choices; and (c) how to respond in a manner that is not reinforcing if E. engages in problem behaviour during the play routine. Teaching techniques will include: modeling and coaching, role play, and verbal instruction.
   a. For example, if E. whines when denied a preferred choice, her brother will be taught to continue on with game play quietly (i.e., modeling appropriate behaviour) and remind E. of the rules of game play as necessary. Once E. is engaging in appropriate behaviour once more, he will be taught to praise her and/or engage in conversation with her (i.e., provide reinforcement for good behaviour).

Consequence Strategies

1. Provide praise and tangible reinforcement contingent upon appropriate behaviour. All family members supporting E. in the play routine will provide praise contingent upon appropriate behaviour, whether it occurs at the beginning of the routine during initial set-up, during the routine when a parent is checking in on the children, or if D. witnesses E. playing nicely, or at the end of the routine as the children are cleaning up. In addition to providing praise, a parent will provide a tangible reinforcer (i.e., a preferred item or activity) for both children contingent upon their playing appropriately throughout the session. This tangible reinforcer should be something simple, and may only take a minute or two to deliver if desired. The student researcher will help to create a menu of reinforcers for such use.

   Appropriate behaviours include: choosing a game or allowing for D.’s choice of game, helping to set up a game, listening to the rules, allowing for D. to go first or to choose a game piece first, taking a turn, waiting for D. to take a turn, following the rules of the game, listening to an instruction or following a command, finishing a game, and helping to clean up after a game is done.

2. Honour the use of functional communicative phrases if used in a manner that is polite and appropriate to the situation. If E. asks for a break, she must remain seated near the game; however, no demands will be placed on her to take another turn. No tangibles should be given to E. at this time, and conversation should be limited. If E. asks to clean up the current game and play a new game, the request should be honoured with minimal attention and reinforcement being provided during her choice in game. Once the game
has been played through once, play will proceed to the next scheduled game (or to one of
D.’s choice).

Communicative phrases should be honoured if:
(a) rock, paper, scissors has not been conducted, asking for a preferred choice in
game, playing order, or game piece colour
(b) both children have been playing a game for 5 minutes or longer, and E.
wishes to move on to the next game
(c) E. is unsure of a rule or wishes to play by different rules. In this case, she may
ask ‘What is the rule?’ in order to make sure they are playing properly, and rules
should be restated as a reminder to follow the stated rules instead of making up
her own.

Communicative phrases should not be honoured if:
(a) rock, paper, scissors has been conducted the choice has been made as to who gets
the first choice
(b) if a game has just begun (of D.’s choice especially) and E. wishes to skip the
game and move on to her choice
(c) after referring to a rule, E. asks to play by her own rules instead
(d) if her request is not made in a way that is polite and appropriate to the situation
(i.e., do not honour a request if she whines or cries while making it. Prompt her to
calm down first before asking using a nice tone of voice).

3. If minor problem behaviour occurs: engage in extinction procedure, provide minimal
attention, and redirect to the task once behaviour has stopped. The extinction procedure
includes:
   a. Ignoring minor behaviour that does not prevent continuation of the routine
   b. Prompting E. to use the calm down procedure by referring her to the visual tool
   and verbally prompting her through it
   c. Reminding E. of the rules for playing board games by referring to the ‘general
   rules for playing board games’ visual tool
   d. Prompting the use of a communicative phrase when appropriate (i.e., E. what can
   you ask me now?)
   or
   e. Prompting E. to continue with the routine as necessary and redirecting her to the
task while maintaining the request

During the extinction procedure, a minimal amount of attention is provided, in order to
avoid reinforcing attention-motivated behaviour. Providing minimal attention includes:
   e. Minimizing eye contact
   f. Repeating an instruction or demand once and minimizing verbal attention
   otherwise (until appropriate behaviour occurs, in which case verbal praise may be
given)
   g. Ignoring any inappropriate behaviour that does not prevent E. from complying
   with the instruction
   h. Keeping a neutral facial expression
Once behaviour has ceased, redirect E. to the task by using the type of prompt appropriate to the task (as noted above) in order to move E. through the request that was given prior to the occurrence of problem behaviour.

Minor problem behaviour includes: whining, crying, inappropriate or rude comments, visual agitation, noncompliance/ignoring and elopement from the designated game area (i.e., turning around, lying on the floor face down, or moving one or more feet away from the game board).

4. **If major problem behaviour occurs:** find a parent if one is not already present, prompt E. to engage in de-escalation procedure, and redirect E. to the task once she has calmed down. The de-escalation procedure consists of:
   a. Blocking any responses that may be harmful to E. or another person around her
   b. Minimizing reinforcement by moving away from E. and limiting the amount of attention she receives (i.e., limit eye contact and verbal attention) once it is safe to do so
   c. Ignoring the occurrence of minor problem behaviour
   d. Prompting E. to use the calm down procedure (i.e., take deep breaths, count to 5, think calm thoughts) until she is engaging in mild problem behaviour or no problem behaviour at all
   e. Reminding E. of the rules and prompting a communicative phrase if appropriate

Once E. is calm, quietly redirect her to the task and provide praise contingent upon appropriate behaviour.

Major problem behaviour includes: hitting, kicking, pushing, throwing objects, self-injury, yelling, and screaming. If E. escalates two times during a session, play time is terminated.

**Monitoring and Evaluation**

1. **Clinical data:** The student researcher will collect clinical data during each play session. This data will include measures of:
   a. Steps completed in the routine
   b. Duration of the routine prior to termination due to problem behaviour or successful completion
   c. Occurrence of major and minor behaviour
   d. Number of times E. uses an FCT phrase
   e. Number of times E. uses the calm-down procedure and accompanying success rate

   All data will be reviewed on an on-going basis in order to make changes to the PBS plan that foster improvement and overall success in the sibling play routine.

2. **Implementation checklist:** An implementation checklist will be created and provided to E.’s parents for use during the intervention phase. This checklist can be used to: (a) remind E.’s parents of the strategies to implement during the process of supporting E. in
the play routine; (b) evaluate the level of implementation, (c) assess the level of problem behaviour, and (d) evaluate the social validity of the plan. The checklist is to be filled out on a weekly basis by E.’s parents, in order to monitor the use of core strategies as well as the maintenance of any gains E. may make.
Appendix R

Positive Behaviour Support Plan Implementation Checklist
Dinner Routine - Dad

Date: ___________  Person Completing Checklist: __________________

Instructions: The purpose of creating this checklist is to help you, as E’s parents, implement the positive behaviour support plan. For each item below, please rate the level of implementation achieved. A rating of “1” indicates a strategy that is either not yet in place, or is not being implemented with success. A rating of “5” indicates a strategy that is firmly in place and being implemented well. Please note, this checklist may serve as a reminder of the PBS strategies agreed upon, as well as an evaluation tool for measuring the success of the plan components and their contextual fit with the environment.

1. Ensure E. does not eat for 1 hour before dinner.  
   Not in Place: 1  2  3  4  5  

2. Present E. with an age-appropriate meal size for dinner.  
   Not in Place: 1  2  3  4  5  

3. Remove all toys from the dinner table and surrounding area (with the exception of the IPAD, to be used for a break if needed).  
   Not in Place: 1  2  3  4  5  

4. Provide more reinforcement (i.e., praise or contingent activity/toy) and reduce demands (provide her with a smaller portion or provide only preferred foods) if E. has had a poor sleep the night before or if she is sick.  
   Not in Place: 1  2  3  4  5  

5. Make use of visual supports including: (a) visual schedule for dinner routine; (b) contingency diagram; and (c) ‘take a break’ card.  
   Not in Place: 1  2  3  4  5  

6. Provide a 5-minute countdown before dinner, with warnings given at five, four, three, two, and one minute to go. When time is up, prompt E. to wash her hands and sit at the table for dinner.  
   Not in Place: 1  2  3  4  5  

7. Provide E. with a sticker and praise if she washes her hands and comes to the table without problem behaviour.  
   Not in Place: 1  2  3  4  5  

8. Once E. comes to the table for dinner, remind her of what is expected during the routine and what she will get if she does a good job. Show E. the visual contingency diagram as well.  
   Not in Place: 1  2  3  4  5  

9. Provide E. with positive contingency statements during the dinner routine. For example “First finish your bowl of food, then we’ll get your toy.”  
   Not in Place: 1  2  3  4  5  

10. Provide E. with safety signals when she shows signs of slowing down or stopping. For example “Only two more bites to go and then you’re all done and you can get your toy!”  
   Not in Place: 1  2  3  4  5
11. Engage E. in conversation every 2-4 minutes while she is seated at the table appropriately. Note: encourage E. to chew first before talking.

12. Prompt E. to complete each step of the routine as necessary. This includes: (a) verbal; (b) gestural; and (c) physical prompts.

13. Encourage E. to finish her meal quickly. Reference a timer as needed, and provide praise and a toy/activity if she finishes within the designated amount of time (i.e., 30-45 minutes at most).

14. Prompt E. to ask for a break if needed by using the ‘take a break’ card and asking verbally (i.e., can I have a break please?). No more than one break should be given, and E. should remain at the table during the break.

15. If E. completes all steps of the dinner routine appropriately, provide praise and access to a preferred toy.

16. If E. engages in appropriate behaviour at any point during the dinner routine, provide praise.

17. If E. asks for a break, or for one more minute of play prior to dinner, honour the request.

18. If E. engages in minor problem behaviour (e.g., whining, crying, leaving assigned area, noncompliance), provide minimal attention, continue to present the demand and prompt if necessary, and redirect her to the task.

19. If E. engages in major problem behaviour (e.g., hitting, kicking, pushing, throwing, screaming or self-injury), block attempts to hurt herself or others around her, provide minimal attention, ignore minor behaviour, and allow her to calm down before redirecting her back to the task.

**Problem Behaviours During Dinner**

1. Food refusal 0 1 2 3 4 5 or more
2. Whining/crying/noncompliance 0 1 2 3 4 5 or more
3. Elopement (leaving the assigned area) 0 1 2 3 4 5 or more
4. Aggressive/destructive behaviour 0 1 2 3 4 5 or more

**Evaluation of Social Validity**

1. The goals of this dinner routine are acceptable and important to me. 1 2 3 4 5
2. The strategies are useful and effective.

3. The strategies are difficult to implement.

4. Using this plan has resulted in positive outcomes for E. during the dinner routine.

5. Using this plan has resulted in positive outcomes for my family.

6. I believe E.’s dinner routine is successful.
Positive Behaviour Support Plan Implementation Checklist
Dinner Routine - Mom

Date: ___________ Person Completing Checklist: ____________________

Instructions: The purpose of creating this checklist is to help you, as E’s parents, implement the positive behaviour support plan. For each item below, please rate the level of implementation achieved. A rating of “1” indicates a strategy that is either not yet in place, or is not being implemented with success. A rating of “5” indicates a strategy that is firmly in place and being implemented well. Please note, this checklist may serve as a reminder of the PBS strategies agreed upon, as well as an evaluation tool for measuring the success of the plan components and their contextual fit within the environment.

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12. If D. engages in minor problem behaviour (e.g., acting silly, yelling, getting out of his chair), give him a warning, and remind him of how many warnings he has left, before access to a reinforcer will be denied.

Evaluation of Social Validity

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<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The goals of this dinner routine are acceptable and important to me.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>2. The strategies are useful and effective.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>3. The strategies are difficult to implement.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>4. Using this plan has resulted in positive outcomes for E. during the dinner routine.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>5. Using this plan has resulted in positive outcomes for my family.</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>6. I believe E.’s dinner routine is successful.</td>
<td>1 2 3 4 5</td>
<td></td>
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Positive Behaviour Support Plan Implementation Checklist
Sibling Play Routine - Dad

Date: ___________ Person Completing Checklist: ______________________

Instructions: The purpose of creating this checklist is to help you, as E’s parents, implement the positive behaviour support plan. For each item below, please rate the level of implementation achieved. A rating of “1” indicates a strategy that is either not yet in place, or is not being implemented with success. A rating of “5” indicates a strategy that is firmly in place and being implemented well. Please note, this checklist may serve as a reminder of the PBS strategies agreed upon, as well as an evaluation tool for measuring the success of the plan components and their contextual fit within the environment.

1. Provide E. and D. with a snack prior to play (if hungry). 1 2 3 4 5
2. If a child is sick, prompt the kids to play separately. 1 2 3 4 5
3. Prompt E. and D. to use their visual choice board/schedule at the beginning of the play session. 1 2 3 4 5
4. Review play time rules with E. and D. and refer to rules visual to remind them of how to play nicely together. 1 2 3 4 5
5. Help set up the games as needed and review the rules prior to play. 1 2 3 4 5
6. Provide E. and D. with choices during play session. If E. refuses to make a choice, choose the least preferred option, in order to encourage her to make choices for herself. 1 2 3 4 5
7. Prompt E. and D. to use rock, paper, scissors to make decisions when necessary. 1 2 3 4 5
8. Provide E. with positive contingency statements when necessary. For example, ‘First it’s D.’s choice, then it’s your choice!’ or ‘Play nicely together and then you can both watch TV for 10 minutes’. 1 2 3 4 5
9. Provide E. with safety signals when necessary. For example, ‘only three more turns to go and then you’re done the game!’ or ‘Play together nicely for five more minutes and then you can both go watch TV’ 1 2 3 4 5
10. Prompt E. to complete all steps of the routine as necessary. This includes: (a) Physical; (b) Gestural; and (c) Verbal prompts. 1 2 3 4 5
11. Require E. to use functional communication phrases (with no whining). If E. whines, wait until she finishes and tell her to ask again using a nice voice and nice words. 1 2 3 4 5
12. If E. and D. play nicely together, provide praise and reinforcement in the form of preferred activities/items after play. 1 2 3 4 5

13. If E. uses a functional communication phrase at an appropriate time, honour her request. For list of examples, see behaviour plan. 1 2 3 4 5

14. If E. engages in minor behaviour that does not disrupt game play (i.e., whining, inappropriate comments, saying ‘no’), ignore the behaviour and prompt her to continue playing the game. 1 2 3 4 5

15. If E. engages in minor behaviour that disrupts game play (i.e., crying, ignoring, defiance, elopement):
   a. Prompt E. to calm down (use calm down visual)
   b. Remind E. of the rules (use rules visual)
   c. Prompt E. to use a communicative phrase
   d. Ignore minor behaviour that doesn’t disrupt game play
   e. Prompt E. to continue with game play 1 2 3 4 5

16. If E. engages in major problem behaviour:
   a. Block behaviour that is dangerous and separate the children
   b. Prompt E. to calm down while providing minimal attention
   c. Remind E. of the rules (use rules visual)
   d. Ignore minor behaviour that doesn’t disrupt game play
   e. Prompt E. to continue with game play (if possible), otherwise prompt both children to play separately 1 2 3 4 5

Occurrence of Major and Minor Behaviour

1. Whining/noncompliance/ignoring 0 1 2 3 4 5 or more
2. Crying/yelling/screaming 0 1 2 3 4 5 or more
3. Elopement (leaving the assigned area) 0 1 2 3 4 5 or more
4. Aggressive/destructive behaviour 0 1 2 3 4 5 or more

Evaluation of Social Validity

1. The goals of this play routine are acceptable and important to me. 1 2 3 4 5
2. The strategies are useful and effective. 1 2 3 4 5
3. The strategies are difficult to implement. 1 2 3 4 5
4. Using this plan has resulted in positive outcomes for E. during the play routine. 1 2 3 4 5
5. Using this plan has resulted in positive outcomes for my family. 1 2 3 4 5
6. I believe E.’s play routine is successful. 1 2 3 4 5
Appendix S

Implementation Plan
Routine: Dinner

Introduction and Rationale:

The purpose of this plan is to describe how the interventionists will support family members in the implementation of the positive behaviour support plan created for E. The PBS plan lists and describes behaviour support strategies that are important for helping E to participate successfully in the dinner routine. The implementation plan describes the training and support activities that will be used to support family members in the implementation of the PBS plan with E. It will serve as a guide for staying on task and moving forward at an acceptable pace throughout the implementation process. Furthermore, it will help to ensure that contextual and cultural fit is maintained between the plan components and the implementation environment.

Support Activities:

1. **Written PBS plan**: A written plan will be given to E’s parents and other relevant members of the support team. The written plan provides a description of the behaviour support plan and serves as a detailed guide for plan implementation. The plan will be translated into Mandarin by a member of the research team, and E’s parents will be given a copy.

2. **Materials development**: The following materials will be developed as part of the PBS plan:
   a. A visual schedule outlining each step of the dinner routine
   b. A contingency diagram outlining the expectations for dinnertime (i.e., what to eat vs. when to take a break)
   c. A ‘take a break’ card, the use of which will be taught using Functional Communication Training

3. **An implementation checklist** will be used by E’s parents during the initial training phase after each initial training session with family members. During the maintenance phase, the implementation checklist will be used weekly by E’s parents. The implementation checklist will help family members self-monitor and self-evaluate the use of the behaviour support plan strategies, as well as the level of child problem behaviour during the routine, and the family’s view of the acceptability of the plan. The student researcher will be responsible for teaching E’s parents how to use this tool.

4. **Intervention led by the student researcher** during each of the 3 stages of intervention in the dinner routine. All PBS plan strategies will be implemented with E by the student researcher alone, 1-3 times per week, until E shows mastery of the predetermined criteria for that stage. At this point, implementation will be transferred to E’s parents, through the use of coaching and modelling sessions.
5. **Coaching and modelling sessions** will occur 1-3 times per week as needed, with the goal of teaching E’s parents and sibling how to properly implement the antecedent and consequence strategies described in the PBS plan. These sessions will begin after E. shows mastery of the predetermined criteria at a specific intervention stage with the student researcher.

6. **Bi-weekly meetings** will be held during the initial training phase to discuss progress, engage in problem solving discussions and any additional training activities that may be helpful (e.g., role play). During the maintenance phase, these meetings will be held to monitor on-going progress and to provide additional support as needed to solve recurring or new problems that may occur. These meetings will include core team members (i.e. Father, Mother, Son, Student Researcher) but also may include other team members (Translator, Primary Investigator/Research Supervisor). The implementation checklist filled out by E’s parents will be reviewed during these meetings. As well, all clinical data, along with any suggestions for major changes that might be made to the PBS plan, should be reviewed at this time.

**Roles and Responsibilities:**

1. **Plan implementation and data collection:**
   a. During each stage of intervention, the student researcher will begin by implementing all PBS strategies until E. has mastered the predetermined criteria for that stage. At this point, the student researcher will transfer control to E’s parents (and her father in particular).
   b. This pattern will remain the same for all 3 stages of intervention for the dinner routine.
   c. Data collection will be completed by the student researcher. Clinical data will be collected every session, while experimental data will be collected as necessary.

2. **Training and design of support materials:**
   a. All training and design of materials will be the responsibility of the student researcher. The primary investigator will assist as needed.

3. **Evaluation of the outcome:**
   a. Student researcher – review the implementation checklists and clinical data to determine program progress, and make changes as necessary through consultation with the family.
   b. Primary Investigator – advise as necessary.
   c. Family members – fill out the implementation checklist daily during initial training (i.e., during each training and support session) and twice/week during the maintenance support phase.
Timeline of Implementation:

Timeline to completion: 5 months or less
1. Creation of PBS plan and implementation plan – 1 week
2. Creation of visual supports – 1 week
3. Intervention stages 1, 2, and 3 – approximately 3 months (or less)
4. Coaching and modelling sessions – 1-3 times/week during times specified by the student researcher throughout the following 3 months
5. Bi-weekly meetings – continue throughout the initial training phase and maintenance support phase (for the final 1 to 2 months)
Implementation Plan
Routine: Sibling Play

Introduction and Rationale:

The purpose of this plan is to describe how the interventionists will support family members in the implementation of the positive behaviour support plan created for E. The PBS plan lists and describes behaviour support strategies that are important for helping E. to participate successfully in the sibling play routine. The implementation plan describes the training and support activities that will be used to support family members in the implementation of the PBS plan with E. It will serve as a guide for staying on task and moving forward at an acceptable pace throughout the implementation process. Furthermore, it will help to ensure that contextual and cultural fit is maintained between the plan components and the implementation environment.

Support Activities:

1. **Written PBS plan**: A written plan will be given to E’s parents and other relevant members of the support team. The written plan provides a description of the behaviour support strategies and serves as a detailed guide for plan implementation. The plan will be translated into Mandarin by a member of the research team, and E’s parents will be given a copy.

2. **Materials development**: The following materials will be developed as part of the PBS plan:
   a. A visual choice board/schedule for game play
   b. A ‘General rules for playing board games’ visual tool
   c. A ‘calm down’ procedure visual tool
   d. A ‘5-point scale for anger’ visual tool
   e. Social stories for ‘Being a good sport’ and ‘Playing games with my brother’

3. **An implementation checklist** will be used by E’s parents during the initial training phase after each initial training session with family members. During the maintenance phase, the implementation checklist will be used weekly by E’s parents. The implementation checklist will help family members self-monitor and self-evaluate the use of the behaviour support plan strategies, as well as the level of child problem behaviour during the routine, and the family’s view of the acceptability of the plan. The student researcher will be responsible for teaching E’s parents how to use this tool.

4. **Social play skills tutorials led by the student researcher** will occur 1-3 times per week as needed, with the goal of teaching E. and D. how to play together successfully. These sessions will last for approximately 15 minutes each, and will include the following teaching techniques: verbal instruction, visual animation, modeling and coaching, role play and verbal review of lessons after play sessions.
5. **Coaching and modelling sessions** will occur 1-3 times per week as needed, with the goal of teaching E’s parents and sibling how to properly implement the antecedent and consequence strategies described in the PBS plan. Teaching techniques will include: modeling and coaching, role play and verbal instruction.

6. **Bi-weekly meetings** will be held during the initial training phase to discuss progress, engage in problem solving discussions and any additional training activities that may be helpful (e.g., role play). During the maintenance phase, these meetings will be held to monitor on-going progress and to provide additional support as needed to solve recurring or new problems that may occur. These meetings will include core team members (i.e. Father, Mother, Son, Student Researcher) but also may include other team members (Translator, Primary Investigator/Research Supervisor). The implementation checklist filled out by E’s parents will be reviewed during these meetings. As well, all clinical data, along with any suggestions for major changes that might be made to the PBS plan, should be reviewed at this time.

**Roles and Responsibilities:**

1. **Plan implementation and data collection:**
   a. During intervention, the student researcher will facilitate the use of implementation strategies by all family members supporting E., in addition to monitoring E.’s use of the social play and calm down strategies that are taught during accompanying tutorials.
   b. Over the course of intervention, the student researcher will fade back, such that support is provided from a distance (i.e., before or after the play routine, or from sitting outside of the play room) and only when needed.
   c. Data collection will be completed by the student researcher. Clinical data will be collected every session, while experimental data will be collected as necessary.

2. **Training and design of support materials:**
   a. All training and design of materials will be the responsibility of the student researcher. The primary investigator will assist as needed.

3. **Evaluation of the outcome:**
   a. Student researcher – review the implementation checklists and clinical data to determine program progress, and make changes as necessary through consultation with the family.
   b. Primary Investigator – advise as necessary.
   c. Family members – fill out the implementation checklist daily during initial training (i.e., during each training and support session) and once/week during the maintenance support phase.
Timeline of Implementation:

Timeline to completion: 3 months or less

1. Creation of PBS plan and implementation plan – 2 weeks
2. Creation of visual supports – 2 weeks
3. Intervention – approximately 3 months (or less)
4. Coaching and modelling sessions – 1-3 times/week during times specified by the student researcher throughout the following 3 months
5. Bi-weekly meetings – continue throughout the initial training phase and maintenance support phase (less often during maintenance support)