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## Sources of Stress among Parents of Children with Intellectual Disabilities: A Preliminary Investigation in Saudi Arabia

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This study identified differences in sources of stress between parents of male children with intellectual disabilities in Saudi Arabia. Seventeen pairs of parents completed the Parent Stress Index (Abidin, 1995). Each pair of parents had a male child diagnosed with intellectual disability who either attended an institute for male children with intellectual disability or a special education classroom attached to a public elementary general school in Riyadh, the capital of Saudi Arabia. Results indicated higher perceived stress levels in Saudi mothers compared to fathers regarding the overall parent-child relationship, the child's individual characteristics, and the parent's characteristics. Implications provide research-based data for stakeholders in the development of appropriate and effective programs for parents of children with intellectual disabilities, especially for mothers. These data will inform professionals in Saudi Arabia of needed services for parents of children with intellectual disabilities and potentially encourage further study of families of children with intellectual disabilities in Saudi Arabia.

Parents' first reaction to the birth of a child with an intellectual disability (ID) is often a combination of hopelessness, loss, and resentment. These feelings can be an obstacle for the parents' capacity to accept the child (Van Riper & Selder, 1989). The adjustment process for parents is often more difficult as additional demands may be placed on parents. Many studies have shown that parents of children with ID report experiencing greater stress than parents of children without disabilities (Gupta & Kaur, 2010; Olsson & Hwang, 2001; Sanders & Morgan, 1997; Simmerman, Blacher, & Baker, 2001). The child may need hospitalization, medical care, developmental services, and

basic care giving services beyond those of a typically developing child. These demands can be prolonged for parents as they cope with financial demands, time constraints, intense emotions, and feelings of inadequacy about their ability to adjust to their child's needs (Blacher, 1984). Farzanekia (1985) found that raising a child with an ID can be burdensome, stressful, frustrating, and can also cause feelings of alienation for parents. Caretaking for children with ID generates stress which affects the physical, cognitive, and emotional development of all family members (Floyd & Gallagher, 1997; Pelchat & Lefebvre, 2004; Wikler, 1986).

While many studies suggest that intellectual disabilities in children have a negative effect on the parents, some studies have reported no negative effects. For instance, Indla, Indla, and Singh (2008) found that 55.38% of parents felt their children with ID had positively impacted the family. Parents stated they had developed patience, tolerance, empathy, sensitivity, and experienced better spousal relations. In contrast, only 25.26% of respondents stated a negative impact of having a child with an ID. Mahoney (1958) found several positive effects of having a child with an ID on a family. These effects included the child having an integrative effect on the family by concentrating the family's energy in a positive manner, which minimized day to day problems. Others parents stated a new appreciation for the ordinary things that they formerly took for granted. Krauss and Seltzer (1993) found that mothers over 60 years of age of children with ID experienced less depression than mothers in the same age group whose children did not have ID. Mothers of children with disabilities reported having better health, more life satisfaction, and better social networks than mothers of children without disabilities. In addition, some studies stated that the presence of parental stress did not always indicate family dysfunction. For example, Longo and Bond (1984) reported that the divorce rate did not appear to be affected by having a child with a disability.

More recent studies, though, have shown that parents of children with ID experience more stress than parents of children without disabilities (e.g., Azar & Badr, 2010; Gupta & Kaur, 2010; Majumdar, Pereira, & Fernandes, 2005). Gupta and Kaur examined the effect of stress on two groups of parents. The authors compared 30 parents of children with ID to 65 parents of typically developing children. Results revealed that parents who had children with ID experienced

more mental and physical stress than parents of typically developing children. Majumdar et al. conducted a study with 60 parents of children with moderate to profound ID, 60 parents of children with mild ID, and 60 parents of children without ID. Parents of children with moderate to profound ID had a higher frequency of stress and anxiety when compared to the other two groups of parents. Results revealed a positive correlation between the severity of perceived stressors and the anxiety level of the parents. In other words, multiple stressors seemed to predict the likelihood that parents would experience stress and anxiety. Examples of stressful feelings included anxious mood, tension, fears, and insomnia.

### **Child Factors**

Numerous characteristics of children with ID have been found to affect the levels of stress that their parent's experience. The severity of the child's intellectual impairment is a strong predictor of parental stress (e.g., Honig & Winger, 1997; Huang, 1997; Majumdar et al., 2005; Minnes, 1988). Among a group of 687 Chinese mothers of children with ID, Huang found mothers whose child had mild ID felt less stress than mothers whose child had severe ID. Similarly, Minnes found a significant positive relationship between the degree of intellectual disability and maternal stress among 60 Canadian mothers. Honig and Winger conducted a study involving families of 65 preschoolers with mild to severe ID. Results determined that the more severe the child's intellectual impairment, the higher the level of parental stress. Together, these findings support the theory that the more severe the intellectual disability of the child, the more negative effects on the parents' stress levels (Majumdar et al., 2005).

The age of a child with ID has also been found to predict parental stress levels. A family may experience greater stress when their child with ID enters school and

parents become more aware of the achievement differences between their child and same-age classmates (Rimmerman & Divdevani, 1996). When the child enters school, more time and effort is needed on the part of the parent to help the child be successful. Additionally, as children get older, parents may not have access to information on how to cope with older children with ID (Wikler, Wasow, & Hatfield, 1981).

Although there is less evidence in this area, the gender of the child with ID may also play a role in the level of stress a parent experiences. Frey, Greenberg, and Fewell (1989) found that the child's gender predicted both the mothers' and fathers' parenting stress with parents of boys experiencing higher stress levels. They also found that fathers were more affected by the child's gender than mothers. Fathers may find it more difficult to adjust their expectations of their sons due to the emphasis on shared recreational activities between father and son rather than caregiver and child. Fathers of children with severe disabilities may have fewer opportunities for recreation with their child.

While several child factors can contribute to the increased level of stress experienced by parents of children with ID, severity of the child's behavioral problems is one of the strongest predictors of parental stress (e.g., Hill & Rose, 2009; Nachshen, Garcin, & Minnes, 2005; Quine & Pahl, 1985). Children with ID are at great risk of having a variety of behavioral disorders including self-stimulation, self-injury, and aggressive behavior (Singh, 1997). Children with ID demonstrate behavior problems at a rate four times higher than children without ID (Dekker, Koot, Ende, & Verhulst, 2002; Einfeld & Tonge, 1996). Parents whose children with ID experience behavioral problems have additional challenges and demands placed on them. These children

may need more individual attention and effective behavioral intervention plans. Nachshen et al. examined the relationship between child behavior difficulties and parental stress in 100 Canadian parents of children with ID. Parents that reported significant behavior problems in their children had more stress, less happiness, less social support, and fewer family-centered school services than parents whose children did not have significant behavior problems.

Quine and Pahl (1985) conducted a study on a group of 200 families of children with severe ID in England. Family members who were interviewed were responsible for the daily care of the child with an ID. Results revealed that the highest stress levels were associated with children with behavior disorders or with multiple disabilities. It was found that factors causing stress (from greatest to least) included: behavior problems in the child, night-time disturbances, social isolation, adversity in the family, multiple impairments, problems with the health of the child, problems with the appearance of the child, and financial worries. Nachshen et al. (2005) suggested that parents whose children have both ID and behavior problems may be overlooked in family service organizations.

Parents of children with disabilities are aware of and sensitive to the reactions of neighbors, friends, and strangers, and adverse reactions may affect the stress experienced by these families (Boss, 1988). Khamis (2007) completed a study of 113 fathers and 112 mothers of children with ID in the United Arab Emirates. The study examined the correlation between child characteristics, parent socio-demographics, and family environment on parental stress and psychological distress. It was found that the combined predictors of child characteristics, parent socio-demographics, and family environment accounted for 36.3% of parental stress and 22.5% of parental psychiatric symptoms. The child's age was significantly

associated with the parents' stress, and parental stress lessened when the child was older. Parents experienced more psychiatric symptoms when the child had a high severity level of disability. Furthermore, the severity of the disability was significantly associated with the parents' psychological distress. In addition, it was found that fathers who were not working experienced higher levels of stress than fathers who did work. Low socioeconomic levels were correlated with higher cognitive disturbance, depression, anxiety, and despair in parents. Within the family environment variable, the personal growth dimension was found to be a predictor of parental stress. The personal growth dimension was comprised of recreational and religious pursuits, high independence, and intellectual and recreational orientation. From Khamis's study, it is clear that the stress of parents of children with intellectual disabilities is complex, interrelated, and is affected by many factors.

### **Parent Factors**

Many studies have indicated that parents of children with ID tend to be in poorer physical health (Oelofsen & Richardson, 2006), experience more depressive symptoms (Hastings, Daley, Burns, & Beck, 2006), and experience more marital conflict (Kersh, Hedvat, Hauser-Cram, & Warfield, 2006) than parents who do not have a child with ID. In comparing families of children with disabilities to families of children without disabilities, it has been found that families of children with disabilities had a smaller social network (Kazak & Wilcox, 1984). Parents tend to isolate themselves because of feelings of shame and guilt (Drew, Logan, & Hardman, 1992), and isolation can result in parents having less time and energy for socialization (Valentine, 1993).

A negative effect of having a child with a disability is the impact on spousal relationships. Many studies discovered that spouses offered lower levels of support to

each other when they had a child with an ID. For example, Gath (1978) found that there was a higher incidence of divorce and marital strife in families with a child with Down syndrome. The family with a child with ID may experience consequences to the entire family system. The effect of having a child with an ID not only affects the parents, but the siblings as well (Farber, 1963, Rodrigue, Morgan, & Geffken, 1992).

Parental age, marital status, and education level can also impact perceived stress in relation to raising a child with ID. Parents who are very old or very young may be at a higher risk of experiencing stress (Oh, Rubin, & Mouw, 1994). Single parents of children with ID have significantly more stress in care, emotional, social, and financial areas than married parents (Upadhyay & Havalappanavar, 2007). More than one study has shown that the higher the education level of the parent, the less stress the family experienced (Azar & Badr, 2006; 2010). Parents with a higher educational background may experience less stress because they have knowledge about effective coping strategies that help them deal with their child's problem behaviors. A higher income level may also afford more opportunities for quality care and education for a child with special needs.

### **Parent Gender**

A number of studies have shown that there are different levels of stress depending on the gender of the parent of the child with ID (e.g., Goldberg, Marcovitch, MacGregor, & Lojkasek, 1986; Gupta & Kaur, 2010). The mother of a child with ID is often the primary caregiver and is acutely aware of her child's disabilities (Azar & Badr, 2006; Heller, Hsieh, & Rowitz, 1997). Therefore, many studies showed that mothers of children with ID may experience higher levels of stress than fathers. For instance, Shin, Nhan, Crittenden, Hong, Flory, and Ladinsky (2006) investigated the influence of child variables on the stress experienced by parents of young children with ID. The

study surveyed 106 mothers and 93 fathers of young children with ID and found that mothers experienced higher levels of stress. Goldberg et al. (1986) conducted a study of parents of 18 children with Down syndrome, 19 children with neurological problems, and 22 children with unknown disabilities. Results indicated that fathers reported fewer symptoms relating to stress and reported higher self-esteem than mothers. Gerstein, Crnic, Blacher, and Baker (2009) examined the trajectory of the daily parenting stress faced by mothers and fathers of children with ID. The researchers indicated that the stress mothers experience increased over time, while the fathers' stress level remained constant.

Other studies have indicated that there are no differences in stress levels between mothers and fathers of children with ID. For example, Azar and Badr (2010) conducted a study on 101 mothers and 46 fathers of children with ID in Beirut, Lebanon. The researchers showed that both fathers and mothers experienced similar stress, informal social support, and coping behaviors.

Kermanshahi, Vanaki, Ahmadi, Kazemnejad, Mordoch, and Azadfalsh (2008) found that mothers' experiences in living with a child with an ID revealed six major stress-related outcomes including: "Challenging the process of acceptance, painful emotional reactions, the inter-relatedness of the mother's health and the child's well-being, struggling to deal with oneself or the child, inadequate support from the family and community, and anxiety related to the child's uncertain future" (p. 317). Additional exploratory analyses in a study by Hastings et al. (2006) found evidence that maternal depression was causally related to the distress the mothers experienced. Furthermore, the analyses revealed this as a separate phenomenon from the stress of parenting a child with severe behavior

problems. Researchers found that the mothers' stress led to an increase in the child's behavior problems, and the resulting problem behavior led to increased stress felt by the mother.

### **Support**

Because parents of children with ID face many challenging situations, they need extra support to help them raise their children. A component to successful adaptation depends on the family's ability to connect with appropriate support services. These services help families take care of the child's needs and reduce problems for the family (Singer, Irvin, Irvine, Hawkins, Hegreness, & Jackson, 1993). The implementation of services is highly dependent on the parents' motivation to get assistance, the type of disability the child has, and the amount of benefit the family will receive from these support services (Dunst, Trivette, Hamby, & Pollack, 1990). Social support can be conceived in two ways: *formal* support from professionals and *informal* support from family and friends (Trunzo & Pinto, 2003; Patterson & McCubbin, 1983). Several studies have shown that parents of children with ID, especially mothers, experienced lower levels of stress when they had informal social support, stress management skills, and interaction with all family members (e.g., Dunst, Trivette, & Cross, 1986; Dyson, 1997; Kermanshahi et al., 2008). The support from a spouse or partner is extremely important in reducing the stress experienced by parents of children with ID (Kazak & Marvin, 1984; Upadhyay & Havalappanavar, 2007).

### **Purpose of the Study**

In order to better understand and effectively support children with ID, professionals should have an overall understanding of the family (Fiedler, Simpson, & Clark, 2007). When providing services to families of children with ID, parenting stress is an important variable to consider (Fuller & Rankin, 1994; Smith, Oliver, & Innocenti,

2001). An indirect effect of high parental stress is its relationship to poor intervention results for children with ID (Hastings & Beck, 2004). It has been found that successful intervention of severe problem behaviors in children with ID is most effective when family stress issues are addressed before the intervention begins (Rhodes, 2003); additionally, the high level of stress that the family experiences may translate into a lower quality of life for the family. This issue should be addressed if successful integration of individuals with ID is to be achieved (Browne & Bramston, 1998).

At this time in Saudi Arabia, there is lack of information and resources in the special education field concerning parents who are raising children with disabilities, especially children with ID. The results of this study will provide professionals a better understanding of the stress that Saudi parents experience in caring for their child with ID. Making professionals aware of these stressors may improve the interaction between child and parent, as well as give support to parents. Results from this study will provide research-based data for stakeholders in Saudi Arabia, resulting in the creation of appropriate and effective programs for parents of children with ID. The knowledge gained from this study will make professionals in Saudi Arabia aware of the services parents of children with ID need, thereby supporting the funding of quality social services for these families. Given the urgent need to expand support services for families of children with ID in Saudi Arabia, the purpose of this study was to investigate the differences in the stress levels between fathers and mothers of children with ID in Saudi Arabia. By using the Parenting Stress Index (Abidin, 1995), the following research questions were explored:

1. What is the difference in the total stress levels between Saudi mothers and fathers regarding the parent-child relationship?
2. What is the difference in the stress levels between Saudi mothers and fathers regarding their children with ID in regards to the child's characteristics?
3. What is the difference in the stress levels between Saudi mothers and fathers of children with ID regarding the parent's characteristics?

## **Methods**

### **Participants**

Following Institutional Review Board approval, parent pairs were recruited to complete the Parent Stress Index (Abidin, 1995). Each parent pair was married and had only one child diagnosed with ID aged 6-12 years. Parents who were single or had more than one child with an ID were excluded. Parents who had a child with other disabilities in addition to ID were also excluded. The children attended either an institute for male children with ID or a special education classroom within a public elementary general school for male children in Riyadh. Male and female children are generally educated in separate settings in Saudi Arabia due to Islamic doctrine and the researcher, being male, only had access to schools for male children.

### **Measure**

The Arabic version of the Parent Stress Index (PSI 3<sup>rd</sup> ed.; Abidin, 1995) was used to assess the differences in level of stress between mothers and fathers. The PSI is a screening and diagnostic tool created to obtain a measure of the relative magnitude of stress in the parent-child relationship (Abidin, 1995). The PSI consists of a 101-item, self-reporting measure of the stress that parents experience. The PSI utilizes a 5 point Likert Scale with 1 (strongly agree) to 5 (strongly disagree). Also included in the questionnaire are several multiple choice

items. The PSI includes the Child Domain and Parent Domain. Child Domain scores rate parents' perceptions of how their child functions in the following six subscales: (1) Distractibility/ Hyperactivity (9 items; e.g., "When my child wants something, my child usually keeps trying to get it"), (2) Adaptability (11 items; e.g., "My child reacts very strongly when something happens that my child doesn't like"), (3) Reinforces Parent (6 items; e.g., "Most times I feel that my child likes me and wants to be close to me"), (4) Demandingness (9 items; e.g., "My child seems to be much harder to care for than most"), (5) Mood (5 items; e.g., "My child seems to cry or fuss more often than most children"), and (6) Acceptability (7 items; e.g., "My child looks a little different than I expected and it bothers me at times"). A high score in the Child Domain indicates that parenting stress is initiated from child characteristics or behavior problems that make caregiving for the child seem difficult to the parent.

The Parent Domain relates to the sources of stress and potential dysfunction of the parent-child system in relation to the parent's functioning (Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009). The Parent Domain is calculated as the total of the following seven subscales: (1) Competence (13 items; e.g., "I feel that I am successful most of the time when I try to get my child to do or not do something"), (2) Isolation (6 items; e.g., "I often have the feeling that other people my own age don't particularly like my company"), (3) Attachment (7 items; e.g., "I expected to have closer and warmer feelings for my child than I do and this bothers me"), (4) Health (5 items; e.g., "During the past six months I have been sicker than usual or have had more aches and pains than I normally do"), (5) Role Restriction (7 items; e.g., "I find myself giving up more of my life to meet my children's needs than I ever expected"), (6) Depression (9 items; e.g., "When I think about the kind of parent I am, I often feel

guilty or bad about myself"), and (7) Spouse (7 items; e.g., "Since having a child, my spouse [or male/female friend] has not given me as much help and support as I expected"). A high score in the Parent Domain indicates that the source of stress stems from some parental functioning characteristic, including parent and family context factors that affect a parent's ability to function as a competent caregiver (Hoffman et al, 2009).

The reliability and validity of the PSI have been evaluated, revealing strong internal consistency as well as test-retest reliability and concurrent validity (Abidin, 1995). For the present study, internal consistencies were .91 and .90 for the Child Domain scores for the mother and father groups, respectively, and .85 and .89 for the Parent Domain scores for the mother and father groups, respectively.

### **Procedures**

The researcher first obtained approval from the Educational Development Center in Riyadh to conduct the study in all institutes and programs for male children with ID in Riyadh before distributing and collecting the data from the research population. The researcher asked principals of the institutes of students with ID as well as supervisors of special education students with ID attached to public elementary schools to forward a recruitment letter to parents of students with ID who met the conditions of the study. Parents who agreed to participate in the study were sent another letter with a link to the online survey and a code that identified each set of parents. This code linked parents to their child so the data could be directly compared between mother and father of the same child. The letter also asked parents to complete the survey individually and truthfully. The survey was provided through Qualtrics.com. Before completing the survey, parents first were prompted to input their codes, then to read a



paragraph of information explaining the nature of the questionnaire and, in addition, state that parents' participation was voluntary and confidential.

### Results

Twenty parent pairs were recruited for this preliminary study. Seventeen sets of parents completed the entire survey. In order to gain an understanding of the 17 parent pairs who participated in the study, the demographic characteristics of participants

were examined, as well as information regarding the target children. An independent *t*-test determined whether there was a difference in total stress levels between Saudi mothers and fathers regarding the parent-child relationship. The results indicated that mothers had statistically significantly higher overall stress levels ( $M = 3.44$ ,  $SD = .34$ ) than fathers ( $M = 3.14$ ,  $SD = .31$ ),  $t(16) = 5.474$ ,  $p < .001$  (see Table 1).

Table 1.

*Independent Sample t-Test for the Difference in Total Stress Levels Between Parents*

		<i>M</i>	<i>n</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Child Domain	Father	3.27	17	.32	5.29	0.00
	Mother	3.56	17	.38		
Parent Domain	Father	3.31	17	.36	4.003	0.00
	Mother	3.01	17	.37		
Total Stress	Father	3.14	17	.31	5.47	0.00
	Mother	3.44	17	.34		

Similarly, an independent *t*-test was used to determine whether a difference could be found in the stress levels between Saudi mothers and fathers in regards to the characteristics of their child with ID. The results indicated that mothers had statistically significantly higher stress levels ( $M = 3.56$ ,  $SD = .38$ ) than fathers ( $M = 3.27$ ,  $SD = .32$ ) in regards to the child's characteristics,  $t(16) = 5.290$ ,  $p < .001$  (see Table 1).

To understand which Child Domain subscales contributed most to the mother-father difference, a multivariate analysis of

variance (MANOVA) was used. The results showed that the subscales of Demandingness, Adaptability, Acceptability, and Distractibility/Hyperactivity contributed most to the stress level differences between fathers and mothers. The results presented in Table 2 showed that mothers were significantly more stressed than fathers in the areas of Demandingness,  $F(16) = 19.81$ ,  $p = 0.0002$ ; Adaptability,  $F(16) = 23.82$ ,  $p = 0.0004$ ; Acceptability,  $F(16) = 39.52$ ,  $p = 0.001$ ; and Distractibility/Hyperactivity,  $F(16) = 13.88$ ,  $p = 0.0018$ .

Table 2.

*MANOVA Results for the Difference in Child Domain Stress Level between Mothers and Fathers*

Subscale		n	M	F	p	Relative importance in contributing to group differences
Distractibility/Hyperactivity	Mother	17	3.01	13.88	0.0018	4
	Father	17	2.88			
Reinforces Parents	Mother	17	2.84	0.58	0.4563	6
	Father	17	2.98			
Mood	Mother	17	3.83	3.48	0.0807	5
	Father	17	3.61			
Acceptability	Mother	17	3.72	39.52	0.0010	3
	Father	17	3.69			
Adaptability	Mother	17	3.43	23.82	0.0004	2
	Father	17	2.65			
Demandingness	Mother	17	3.48	19.81	0.0002	1
	Father	17	2.69			

An independent *t*-test was also used to examine whether there was a difference in the stress levels between Saudi mothers and fathers regarding their children with ID in regards to the parent's characteristics. The results indicated that mothers had statistically significantly higher stress levels ( $M = 3.31$ ,  $SD = .36$ ) than fathers ( $M = 3.01$ ,  $SD = .37$ ) relative to the parents' characteristics,  $t(16) = 4.003$ ,  $p < .001$  (see Table 1).

To understand which Parent Domain subscales contributed most to the mother-

father difference, the MANOVA was used. The results showed that the subscales of Depression, Role Restriction, and Competence contributed most to the stress level differences between fathers and mothers. Results presented in Table 3 showed that mothers were significantly more stressed than fathers in the subscales of Depression,  $F(16) = 13.87$ ,  $p = 0.00013$ ; Role Restriction,  $F(16) = 23.82$ ,  $p = 0.0012$ ; and Competence,  $F(16) = 33.88$ ,  $p = 0.0013$ .

Table 3.

*MANOVA Results for the Difference in Parent Domain Stress Level between Mothers and Fathers*

Subscale		n	M	F	p	Relative importance in contributing to group differences
Competence	Mother	17	3.50	33.88	0.00130	3
	Father	17	2.96			
Isolation	Mother	17	3.68	6.34	0.12280	4
	Father	17	3.18			
Attachment	Mother	17	3.47	7.06	0.11720	5
	Father	17	3.12			
Role Restriction	Mother	17	2.98	23.82	0.00120	2
	Father	17	3.73			
Depression	Mother	17	3.71	13.87	0.00013	1
	Father	17	3.15			
Spouse	Mother	17	4.25	6.87	0.11800	6
	Father	17	4.15			
Health	Mother	17	3.18	1.70	0.21070	7
	Father	17	3.38			

### Discussion

This study found a significant difference in the levels of overall stress between Saudi mothers and fathers of children with ID, with mothers experiencing significantly higher overall stress levels than fathers. This result is consistent with previous studies which determined that mothers of children with ID may experience higher levels of stress than fathers (Roach, Orsmond, & Barrett, 1999; Shin et al., 2006).

In Saudi Arabia, the mother is generally the primary caregiver of the child with an ID. She is responsible for educating, caring for, and rearing the child while the father's main focus is supporting the family's financial needs. Because the mother is the primary caregiver, she is acutely aware of her child's educational, behavioral, and physical difficulties. This awareness of the child's needs leads the mother to increase the amount of time and effort required to support and care for the child

and may cause her stress level to be higher than the father's stress level.

Results of this study revealed significant differences in the levels of stress between Saudi mothers and fathers of children with ID regarding the Child Domain of the PSI. The subscales of Demandingness, Adaptability, Acceptability, and Distractibility/Hyperactivity contributed in large part to stress level differences between Saudi mothers and fathers. In terms of the Demandingness subscale, children with ID have specialized needs that require a parent's time and physical and emotional energy. The child may require constant supervision, be unable to play alone, be unaware of dangerous situations, or be difficult to console. The need to constantly pay attention to the child can become an emotional and physical drain on a parent. Some of the child's needs may demand a certain amount of physical strength, may be unpleasant, or may disrupt the family unit (Schultz & Quittner, 1998). It may be difficult to find someone outside the family

to care for the child or the child may react poorly to caretakers other than the parent. Children with ID have demands that persist from childhood through adulthood and parents must adapt in a continuous manner to stressors and crisis situations (Wikler, 1986). Taking care of a child with an ID creates chronic stress for the parent over a long period of time (Dyson, 1993). The continuous intensive caregiving that the parent must provide has a negative effect on levels of personal stress.

Saudi mothers of children with ID also had significantly higher levels of stress compared to fathers in relation to the Adaptability subscale of the PSI. This may be a result of Saudi mothers being the primary caregivers, and their children's inability to adapt to changes in their physical or social environment required them to spend more time than fathers helping the child adjust. Children with ID typically have deficits in adaptive behavioral skills, such as communication, socialization, and activities of daily living. These adaptive behavioral skills are positively related with the degree of intelligence of the child (Paskiewicz, 2009) meaning that the more severe the intellectual impairment, the more impaired are the adaptive behavior skills. Many researchers have found that poor adaptive skills of children with intellectual disabilities are a strong predictor of increased parental stress (Beck, Daley, Hastings, & Stevenson, 2004; McCarthy, Cuskelly, & Kraayenoord, 2006; Smith et al., 2001; Weiss, Sullivan, & Diamond, 2003).

Mothers also reported significantly more stress than fathers in terms of the Acceptability subscale of the PSI which addresses acceptance of the child in relation to self, family, and friends. Children with ID often have lower physical, intellectual, social, and emotional abilities than their peers without disabilities. Children with ID

may be fussier, more distracted, or more easily upset than typically developing children. They may be more likely to wander away, disobey or ignore parent instructions, or be unaware of dangerous situations. They may also appear to be less appreciative of parents' efforts at loving and caregiving. The interaction between children with ID and mothers has been characterized as less reinforcing and less supportive (Krauss, 1993).

Mothers in this study also reported significantly more stress than fathers in terms of the Distractibility/Hyperactivity subscale of the PSI. Chetwynd (1985) determined that a child who experiences hyperactivity often causes stress due to disruptions in the family unit. Because Saudi mothers are typically the primary caregivers, Saudi mothers of children with ID have significantly higher stress levels than Saudi fathers regarding the child's behavioral characteristics. Although numerous factors affect the stress of parents of children with ID, many studies have found that children's behavior problems are the strongest predictor of parental stress (Baker, Blacher, Crnic, & Edelbrock, 2002; Baker, McIntyre, Blacher, Crnic, Edelbrock, & Low, 2003; Beck et al., 2004; Chen & Tang, 1997; Floyd & Gallagher, 1997; Quine & Pahl, 1985; Shin et al., 2006). Children with ID have a greater chance of developing behavior problems and psychological disorders (Dykens, 2000; Gath & Gumley, 1986).

Parents whose children have ID in conjunction with behavioral problems have additional challenges and demands placed on them. These children may need more individual attention and effective behavioral intervention plans. Saudi mothers had significantly higher stress levels than Saudi fathers regarding the child's behavioral characteristics. This result is consistent with previous studies that have determined that mothers of children with ID may experience

higher levels of stress than fathers due to characteristics of the child's disability (Azar & Badr, 2006; Chen & Tang, 1997).

The mothers in this study also reported higher levels of stress than fathers in terms of the Parent Domain of the PSI. It was found that the subscales of Depression, Role Restriction, and Competence contributed in large part to the stress level differences between Saudi mothers and fathers.

In terms of depression, these results are consistent with Beckman (1991), Hastings (2003), and Krauss (1993), who found that the stress related to depression of the parents was significantly higher in mothers of children with ID than in fathers. Parents of children with ID are more likely than parents of children without ID to express psychological symptoms such as depression or anxiety. Azar and Badr (2006) found that 46.5% of mothers of children with ID had symptoms of depression. It has also been found that depression among parents of children with ID is as an important predictor of stress for those parents (Hastings, 2003).

It is not uncommon for Saudi mothers to engage in full-time employment. Being the primary caregivers, it may be easy for these mothers to become overwhelmed with responsibilities related to taking care of their children as well as their jobs. This may prevent them from having time to do things to relax or things that they enjoy. By spending so much time focused on others instead of themselves, mothers can easily become depressed. Fathers, who do not spend as much time taking care of the children, may have more time for themselves and for the things they enjoy, so they may be less susceptible to depression.

Women have many limitations and are more restricted than men, especially in Riyadh, the central region of Saudi Arabia. For example, a woman must be escorted by her husband when she goes out in public. This causes restrictions on her ability to take

care of her children. If her child were having problems in school, it would be very difficult for a mother to be able to go to the school to discuss the problem with the child's teacher. These restrictions may make it more difficult for her to take care of her children and cause her to feel more depressed than her husband, who does not have as many restrictions.

Results also revealed that Saudi mothers had significantly higher stress levels related to role restriction than Saudi fathers. These results are consistent with a study by Roach et al. (1999), who found that mothers of children with ID reported significantly greater feelings of restriction by their parenting role than fathers. The significant differences found in stress levels due to role restriction of Saudi fathers and mothers may be a result of Saudi mothers tending to be more isolated than Saudi fathers. In addition to her responsibilities of taking care of the home, her husband, her personal responsibilities, and perhaps a job, taking care of a child with ID requires a significant amount of additional time and effort. Taking care of a child with intellectual disabilities may cause mothers to feel as if their lives are no longer their own (Chen & Tang, 1997; McConkey, Truesdale-Kennedy, Chang, Jarrah, & Shukri, 2006).

Finally, under the Parent Domain of the PSI, it was also found that the subscale of Competence contributed significantly to the differences in stress levels between Saudi mothers and fathers. Feelings of competence as a parent can be affected by years of experience as a parent, level of education, and number of children in the family. Support services and parent training are critically important in decreasing stress of parents of children with ID (Dempsey, Keen, Pennell, O'Reilly, & Neilands, 2009) and can contribute to a parent's sense of competence. As awareness in Saudi Arabia regarding children with disabilities

increases, the Ministries of Education and the Social Affairs, universities, and other associations should consider offering courses and educational outreach programs for parents of children with ID. If a parent were lacking in competence, these courses and programs could enhance the parent's competence and reduce the stress that results from a perceived lack of competence.

In conclusion, this study found that Saudi mothers had higher levels of stress than fathers regarding the total stress, the Child Domain (child characteristics), and the Parent Domain (parent characteristics) of the PSI (Abidin, 1995). Mothers of children with ID in this study communicated that they were more acutely affected by child characteristics of demandingness, adaptability, acceptability, and distractibility/hyperactivity than were the fathers. The mothers also expressed significantly more stress in relation to the parent characteristics of depression, role restriction, and competence than the fathers.

At this time in Saudi Arabia, there is lack of information and resources in the special education field concerning parents who are raising children with disabilities, especially children with ID. The results of this study will give professionals and policy makers a better understanding of the sources of stress experienced by Saudi parents, especially mothers, in relation to their child with ID. Making professionals aware of these stressors may lead to improvements in the quantity and scope of resources available to support parents. Results from this study will begin to provide research-based data for stakeholders in Saudi Arabia, hopefully resulting in the funding of appropriate and effective programs for parents of children with ID.

### **Implications**

Although attitudes towards individuals with disabilities have improved in Saudi Arabia in recent years, there are

still some negative perceptions towards these individuals. These attitudes affect mothers, who may be more sensitive and emotional than fathers. When mothers are conscious of the stigma of a child with intellectual disabilities, or they feel that other people are judging or have pity on their child, they may feel more stress than fathers.

While special education services have improved in Saudi Arabia, there is still room to grow in the field. There is still a lack of information and resources for parents of children with disabilities, especially children with ID. Additionally, there is lack of collaboration between the schools and parents. For example, the school rarely suggests ways for the child to improve or may not communicate about the performance of the child. By recognizing that the school does not help in these areas, the additional burden is placed on mothers. These additional responsibilities may take up more of the mothers' time, contributing to their stress.

The results from the current study will help professionals better understand the sources of stress experienced by parents of children with ID in order to improve the support provided to parents. There are cultural factors unique to Saudi Arabia that may impact the mother's experience with stress. There are limitations placed on where women may go and with whom. For example, women cannot drive cars. If a woman wants to go somewhere, she must either take a taxi or be driven by a male relative. These restrictions may make her feel that her freedom is restricted.

Based on the findings from the current study, it may be important for the Saudi Government, including the Ministries of Education, Health, and Social Affairs, to create additional channels of communication for people who are interested in special education. These channels may include

websites, phone hot lines, or community centers. Such resources would increase the awareness regarding children with disabilities, present effective strategies, and provide advice or answer parents' questions about their children with ID. Further, the lack of awareness of laws and policies regarding special education in Saudi Arabia should be addressed in order to help individuals with disabilities and their parents assert their rights and receive the support they require.

The Saudi government should also create early intervention programs for children with ID to provide effective services to these children to improve their skills early in life. These programs should also provide support for the parents to help solve issues and prevent problem-causing stress. The involvement of parents is crucial. Without addressing the needs of parents of children with ID, the goals of special education in Saudi Arabia will not be achieved. This need is especially important when we know that only 4.6% of parents have a high level of involvement in their child's education (Fouzan, 1986). When parents of children with ID participated in their children's intervention programs, they had lower stress levels and more positive perceptions about their children with disabilities and their parental situation, compared with parents who did not participate in their child's intervention programs. These parents were also more confident, had lower levels of emotional distress, and felt as if they received better support from their spouse (Pelchat, Bisson, Richard, Perreault, & Bouchard, 1999).

Parents of children with ID must also receive support designed to help them as parents. This support, which may include counseling, training programs, or other types of support, will help lower parents' levels of stress regarding their children with ID. This support will help the family better

understand their child's needs and provide improved care. It can also teach parents more about disabilities in general, including the origin of their children's disabilities. Sandler, Coren and Thurman (1983) researched participating families of training programs for parents of children with special needs. They found that the families who participated in these training programs showed increased knowledge of techniques of instructing their children with disabilities and had more positive attitudes towards their children. Hastings and Beck (2004) performed a selective review of numerous studies related to intervention methods designed to reduce stress of parents of children with disabilities. Their research review revealed that cognitive behavioral group interventions had the most potential for reducing stress of parents, particularly mothers, of children with ID.

The Saudi government should also consider creating associations or regionally located centers for parents of children with ID to meet to provide support for each other through discussion-based sessions. This would provide a place for parents to share best practices and discuss their concerns with a group of people in a similar situation. They could exchange experiences and difficulties, discuss the problems that they face, and discuss potential ways to further the rights of children with ID and their parents. These groups would also benefit parents by providing socialization and preventing feelings of isolation.

When preparing future teachers of special education, universities should reinforce the importance of parental involvement in children's education. Universities can use the findings from the current and other studies to illustrate this point. They should prepare future special education teachers by teaching them strategies to increase parental involvement within their future classrooms.

**Limitations**

Given that this was a preliminary study to examine potential differences in stress between mothers and fathers of children with ID in Saudi Arabia, a small sample was used. This study needs to be replicated with a much larger sample to ensure consistency with these results. Even though the results of this study are generally aligned with previous research done in other areas of the world, there are limitations to the generalizability of these results. It was only conducted in Riyadh City. Saudi Arabia has many cities and many institutes and programs for individuals with ID. Results may vary by geographic region. The study was only conducted on parents of male children. Future research should include female children with ID. Finally, the study addressed only intellectual disabilities. Results may differ among parents of children with multiple disabilities, physical disabilities or autism.

**Future Research**

First and foremost, this study should be replicated with a much larger sample of participants to verify the findings of this preliminary study. This sample of 17 parent pairs is not sufficient to definitively identify the sources of, and differences in, stress among mothers and fathers of children with ID. At the same time, this study lays the foundation for future related research topics. Given the results of this study, it would be beneficial for future research to examine the same topic using a qualitative research technique, especially individual interviews, to better understand the driving forces behind the stress of parents and give in-depth information.

Research may need to examine additional factors that contribute to parental stress. These factors may include child characteristics such as gender, age, severity of the child's disability, or the child's specific behavioral problems. Other factors

may include parental characteristics such as their age, level of education, number of wives, marital status, or environmental variables such as the socio-economic level of the parents.

To increase the generalizability of these research findings, future research should examine stressor variables among parents of children with ID across the entire country of Saudi Arabia. This study was conducted in Riyadh City, just one city in one region of Saudi Arabia. The culture of each region of Saudi Arabia varies slightly. Therefore, additional research may be conducted to include many cities in addition to Riyadh so that the results are more representative of Saudi Arabia as a country.

Additional research may need to investigate the sources of support that are available for parents of children with intellectual disabilities, and the effect of this support on parents' levels of stress. This research may promote the study's implications to increase support, both informal and formal, which will be provided to parents of children with intellectual disabilities.

**Conclusion**

Results of this study revealed that Saudi mothers of children with intellectual disabilities experience more stress than fathers in relationship to both child and parent characteristics. Being the primary caregiver, experiencing the restrictions on women in the Saudi culture, and the lack of social support provided to mothers of children with disabilities are all likely contributing factors. Although successful intervention of children with intellectual disabilities yields optimal results when family stress issues are addressed before the intervention begins, many Saudi parents do not receive enough support from educators, professionals, and Saudi officials to help them care for their children with intellectual disabilities. Therefore, the current study



showed there is an urgent need from all stakeholders to support parents of children with intellectual disabilities. In order to support these parents, the Saudi government needs to focus its attention on creating support systems as well as awareness of the importance of parental involvement. The government can accomplish this mission by creating additional channels of communication to help educate citizens about children with intellectual disabilities as well as by better implementing laws and policies to address children with intellectual disabilities, advancing the rights of these children and their parents, and assisting them to receive the support they require. Additionally, the Saudi government should create early intervention programs with a focus on parental involvement and provide access to support including counseling, training programs, or regionally located group support associations. Through these advancements in support systems, the levels of stress for parents, specifically mothers, of children with intellectual disabilities can be decreased and the lives of these parents and their children can be improved.

### References

- Abidin, R. R. (1995). *Parenting Stress Index*. Lutz, FL: Psychological Assessment Resources.
- Azar, M., & Badr, L. K. (2006). The adaptation of mothers of children with intellectual disability in Lebanon. *Journal of Transcultural Nursing, 17*(4), 375-380.
- Azar, M., & Badr, L. K. (2010). Predictors of coping in parents of children with an intellectual disability: Comparison between Lebanese mothers and fathers. *Journal of Pediatric Nursing, 25*(1), 46-56.
- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation, 107*(6), 433-444.
- Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Preschool children with and without developmental delay: Behavior problems and parenting stress over time. *Journal of Intellectual Disability Research, 47*(4-5), 217-230.
- Beck, A., Daley, D., Hastings, R. P., & Stevenson, J. (2004). Mothers' expressed emotion towards children with and without intellectual disabilities. *Journal of Intellectual Disability Research, 48*(7), 628-638.
- Beckman, P. J. (1991). Comparison of mothers' and fathers' perceptions of the effect of young children with and without disabilities. *American Journal on Mental Retardation, 95*(5), 585-595.
- Blacher, J. (1984). Sequential changes of parental adjustment to the birth of a child with handicaps: Fact or artifact? *Mental Retardation, 22*(2), 55-68.
- Boss, P. (1988). *Family Stress Management*. Newbury Park, CA: Sage Publications.
- Browne, G., & Bramston, P. (1998). Stress and life quality in the parents of young people with intellectual disabilities. *Journal of Psychiatry and Mental Health Nursing, 5*(5), 415-421.
- Chen, T. Y., & Tang, C. S. (1997). Stress appraisal and social support of Chinese mothers of adult children with mental retardation. *American Journal on Mental Retardation, 101*(5), 473-482.
- Chetwynd, J. (1985). Factors contributing to stress on mothers caring for an intellectually handicapped child. *British Journal of Social Work, 15*(3), 295-330.
- Dekker, M. C., Koot, H. M., Ende, J. V., & Verhulst, F. C. (2002). Emotional and behavioral problems in children and adolescents with and without intellectual

- disability. *Journal of Child Psychology and Psychiatry*, 43(8), 1087-1098.
- Dempsey, I., Keen, D., Pennell, D., O'Reilly, J., & Neilands, J. (2009). Parent stress, parenting competence and family-centered support to young children with an intellectual or developmental disability. *Research in Developmental Disabilities* 30(3), 558-566.
- Drew, C. J., Logan, D. L., & Hardman, M. L. (1992). *Mental retardation: A life cycle approach*. Riverside, NJ: Macmillan.
- Dunst, C. J., Trivette, C. M., & Cross, A. H. (1986). Mediating influences of social support: Personal, family, and child outcomes. *American Journal of Mental Deficiency*, 90(4), 403-417.
- Dunst, C. J., Trivette, C. M., Hamby, D., & Pollack, B. (1990). Family systems correlates of the behavior of young children with handicaps. *Journal of Early Intervention*, 14(3), 204-218.
- Dykens, E. M. (2000). Annotation: Psychopathology in children with intellectual disability. *Journal of Child Psychology and Psychiatry*, 41(4), 407-417.
- Dyson, L. L. (1993). Response to the presence of a child with disabilities: Parental stress and family functioning over time. *American Journal on Mental Retardation*, 98(2), 207-218.
- Dyson, L. L. (1997). Father and mother of school-age children with developmental disabilities: Parental stress and family functioning and social support. *American Journal on Mental Retardation*, 102(3), 267-279.
- Einfeld, S. L., & Tonge, B. J. (1996). Population prevalence of psychopathology in children and adolescents with intellectual disability: Epidemiological findings. *Journal of Intellectual Disability Research*, 40(2), 99-109.
- Farber, B. (1963). Interaction with retarded siblings and goals of children. *Marriage and Family Living*, 25, 96-99.
- Farzanekia, H. (1985). *Impact of retarded children on families in a non-western society* (Unpublished Doctoral dissertation). University of Minnesota, Minneapolis, MN.
- Fiedler, C., Simpson, R., & Clark, D. (2007). *Parents and families of children with disabilities: Effective school-based support services*. Upper Saddle River, NJ: Pearson.
- Floyd, F. J., & Gallagher, E. M. (1997). Parental stress, care demands, and use of support services for school-age children with disabilities and behavior problems. *Family Relations*, 46(4), 359-371.
- Fouzan, E. A. (1986). *The involvement of parents of educable mentally retarded in their children's educational programs in Saudi Arabia* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. AAT 8710632).
- Frey, K. S., Greenberg, M. T., & Fewell, R. R. (1989). Stress and coping among parents of handicapped children: A multidimensional approach. *American Journal on Mental Retardation*, 94(3), 240-249.
- Fuller, G. B., & Rankin, R. (1994). Differences in levels of parental stress among mothers of learning disabled, emotionally impaired, and regular school children. *Perceptual and Motor Skills*, 78(2), 583-592.
- Gath, A. (1978). *Down's Syndrome and the family: The early years*. London: Academic Press.
- Gath, A., & Gumley, D. (1986). Behaviour problems in retarded children with special reference to Down's syndrome.

- British Journal of Psychiatry*, 149, 156-161.
- Gerstein, E. D., Crnic, K. A., Blacher, J., & Baker, B. L. (2009). Resilience and the course of daily parenting stress in families of young children with intellectual disabilities. *Journal of Intellectual Disability Research*, 53(12), 981-997.
- Goldberg, S., Marcovitch, S., MacGregor, D., & Lojkasek, M. (1986). Family responses to developmentally delayed preschoolers: Etiology and the father's role. *American Journal of Mental Deficiency*, 90(6), 610-617.
- Gupta, R. K., & Kaur, H. (2010). Stress among parents of children with intellectual disability. *Asia Pacific Disability Rehabilitation Journal*, 21(2), 118-126.
- Hastings, R. P. (2003). Child behaviour problems and partner mental health as correlates of stress in mothers and fathers of children with autism. *Journal of Intellectual Disability Research*, 47(4/5), 231-237.
- Hastings, R. P., & Beck, A. (2004). Practitioner review: Stress intervention for parents of children with intellectual disabilities. *Journal of Child Psychology and Psychiatry*, 45(8), 1338-1349.
- Hastings, R. P., Daley, D., Burns, C., & Beck, A. (2006). Maternal distress and expressed emotion: Cross-sectional and longitudinal relationships with behavior problems of children with intellectual disabilities. *American Journal on Mental Retardation*, 111(1), 48-61.
- Heller, T., Hsieh, K., & Rowitz, L. (1997). Maternal and paternal caregiving of persons with mental retardation across the life span. *Family Relations*, 46(4), 407-415.
- Hill, C., & Rose, J. (2009). Parenting stress in mothers of adults with an intellectual disability: Parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research*, 53(12), 969-680.
- Hoffman, C. D., Sweeney, D. P., Hodge, D., Lopez-Wagner, M. C., & Looney, L. (2009). Parenting stress and closeness: Mothers of typically developing children and mothers of children with autism. *Focus on Autism and Other Developmental Disabilities*, 24(3), 178-187.
- Honig, A. S., & Winger, C. J. (1997). A professional support program for families of handicapped preschoolers: Decrease in maternal stress. *The Journal of Primary Prevention*, 17(3), 285-296.
- Huang, W. (1997). *Correlates of stress and adjustment levels in Chinese mothers of a child with mental retardation* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI NO. AAT 9808826).
- Indla, R., Indla, V., & Singh, T. (2008). Impact of disability of mentally retarded persons on their parents. *Indian Journal of Psychological Medicine*, 30(2), 98-104.
- Kazak, A. R., & Marvin, R. S. (1984). Differences, difficulties and adaptation: Stress and social networks in families with a handicapped child. *Family Relations*, 33(1), 67-77.
- Kazak, A. E., & Wilcox, B. L. (1984). The structure and function of social support networks in families with handicapped children. *American Journal of Community Psychology*, 12(6), 645-661.
- Kermanshahi, S. M., Vanaki, Z., Ahmadi, F., Kazemnejad, A., Mordoch, E., & Azadfalsh, P. (2008). Iranian mothers' perceptions of their lives with children with mental retardation: A preliminary phenomenological investigation. *Journal of Developmental Physical Disabilities*, 20(4), 317-326.

- Kersh, J., Hedvat, T. T., Hauser-Cram, P., & Warfield, M. E. (2006). The contribution of marital quality to the wellbeing of parents of children with developmental disabilities. *Journal of Intellectual Disability Research, 50*(12), 883-893.
- Khamis, V. (2007). Psychological distress among parents of children with mental retardation in the United Arab Emirates. *Social Science & Medicine, 64*(4), 850-857.
- Krauss, M. W. (1993). Child-related and parenting stress: Similarities and differences between mothers and fathers of children with disabilities. *American Journal on Mental Retardation, 97*(4), 393-404.
- Krauss, M. W., & Seltzer, M. M. (1993). Current well-being and future plans of older caregiving mothers. *Irish Journal of Psychology, 14*(1), 47-64.
- Longo, D. C., & Bond, L. L. (1984). Families of the handicapped child: Research and practice. *Family Relations, 33*(1), 57-65.
- Mahoney, S. C. (1958). Observations concerning counseling with parents of mentally retarded children. *American Journal of Mental Deficiency, 63*(1), 81-86.
- Majumdar, M., Pereira, Y. D., & Fernandes, J. (2005). Stress and anxiety in parents of mentally retarded children. *Indian Journal of Psychiatry, 47*(3), 144-147.
- McCarthy, A., Cuskelly, M., Van Kraayenoord, C. E., & Cohen, J. (2006). Predictors of stress in mothers and fathers of children with Fragile X syndrome. *Research in Developmental Disabilities, 27*(6), 688-704.
- McConkey, R., Truesdale-Kennedy, M., Chang, M. Y., Jarrah, S., & Shukri, R. (2006). The impact on mothers of bringing up a child with intellectual disabilities: A cross-cultural study. *International Journal of Nursing Studies, 45*(1), 65-74.
- Minnes, P. M. (1988). Family resources and stress associated with having a mentally retarded child. *American Journal of Mental Retardation, 93*(2), 184-192.
- Nachshen, J. S., Garcin, N., & Minnes, P. (2005). Problem behavior in children with intellectual disabilities: Parenting stress, empowerment and school services. *Mental Health Aspects of Developmental Disabilities, 8*(4), 105-114.
- Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *Journal of Intellectual & Developmental Disability, 31*(1), 1-12.
- Oh, K. S., Rubin, S. E., & Mouw, J. T. (1994). Predictors of maternal adjustment to a child with mental retardation. *International Journal of Rehabilitation Research, 17*(1), 64-69.
- Olsson, M. B., & Hwang, C. P. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research, 45*(6), 535-545.
- Patterson, J. M., & McCubbin, H. I. (1983). *Chronic illness: Family stress and coping*. In C. R. Figley, & H. I. McCubbin (Eds.), *Stress and the family* (Vol. 1): Coping with catastrophe. NY: Brunner.
- Pelchat, D., Bisson, J., Richard, N., Perreault, M. & Bouchard, J. M. (1999). Longitudinal effects of an early family intervention programme on the adaptation of parents of children with a disability. *International Journal of Nursing Studies, 36*(6), 465-477.
- Pelchat, D., & Lefebvre, H. (2004). A holistic intervention program for families with a child with a disability.

- Journal of Advanced Nursing*, 48(2), 124-131.
- Quine, L., & Pahl, J. (1985). Examining the causes of stress in families with severely mentally handicapped children. *British Journal of Social Work*, 15(5), 501-517.
- Rhodes, P. (2003). Behavioural and family systems interventions in developmental disability: Towards a contemporary and integrative approach. *Journal of Intellectual and Developmental Disability*, 28(1), 51-64.
- Rimmerman, A., & Duvdevani, I. (1996). Parent of child and adolescent with severe mental retardation: Stress, family resource, normalization, and their application for out-of-home placement. *Research in Developmental Disabilities*, 17(6), 487-494.
- Roach, M. A., Orsmond, G. I., & Barrett, M. S. (1999). Mothers and fathers of children with Down syndrome: Parental stress and involvement in childcare. *American Journal on Mental Retardation*, 104(5), 422-436.
- Rodrigue, J., Morgan, S., & Geffken, G. (1992). Psychosocial adaptation of fathers of children with autism, Down syndrome, and normal development. *Journal of Autism and Developmental Disorders*, 22(2), 249-263.
- Sanders, J. L., & Morgan, S. B. (1997). Family stress and adjustment as perceived by parents of children with autism or Down syndrome: Implications for intervention. *Child and Family Behavior Therapy*, 19(4), 15-32.
- Sandler, A., Coren, A., & Thurman, S. K. (1983). A training program for parents of handicapped preschool children: Effects upon mother, father, and child. *Exceptional Children*, 49(4), 355-335.
- Schultz, R., & Quittner, A. L. (1998). Caregiving for children and adults with chronic conditions: Introduction to the special issue. *Health Psychology*, 17(2), 110-111.
- Shin, J., Nhan, N. V., Crittenden, K. S., Hong, H. T., Flory, M., & Ladinsky, J. (2006). Parenting stress of mothers and fathers of young children with cognitive delays in Vietnam. *Journal of Intellectual Disability Research*, 50(10), 748-760.
- Simmerman, S., Blacher, J., & Baker, B. L. (2001). Father's and mother's perceptions of father involvement in families with young children with disability. *Journal of Intellectual and Developmental Disability*, 26(4), 325-338.
- Singer, G. H., Irvin, L. K., Irvine, B., Hawkins, N. E., Hegreness, J., & Jackson, R. (1993). *Helping families adapt positively to disability: Overcoming demoralization through community supports*, In G. H. S. Singer & L. E. Powers (Eds.), *Families, disability, and empowerment* (pp. 67-83). Baltimore, MD: Paul H. Brookes.
- Singh, N. N. (1997). *Prevention and treatment of severe behavior problems: Models and methods in developmental disabilities*. Pacific Grove, CA: Brookes/Cole.
- Smith, T. B., Oliver, M. N., & Innocenti, M. S. (2001). Parenting stress in families of children with disabilities. *American Journal of Orthopsychiatry*, 71(2), 257-261.
- Trunzo, J. J., & Pinto, B. M. (2003). Social support as a mediator of optimism and distress in breast cancer survivors. *Journal of Consulting and Clinical Psychology*, 71(4), 805-811.
- Upadhyay, G. R., & Havalappanavar, N. B. (2007). Stress among single parent families of mentally retarded children. *Journal of the Indian Academy of Applied Psychology*, 33(1), 47-51.

- Valentine, D. P. (1993). Children with special needs: Sources of support and stress for families. *Social Work and Human Sexuality, 12*(2), 107-121.
- Van Riper, M., & Selder, F. (1989). Parental responses to birth of a child with Down syndrome. *Loss, Grief and Care: A Journal of Professional Practice, 3*(3-4), 59-76.
- Weiss, J., Sullivan, A., & Diamond, T. (2003). Parent stress and adaptive functioning of individuals with developmental disabilities. *Journal on Developmental Disabilities, 10*(1) 129-136.
- Wikler, L. (1986). Periodic stresses of families of older mentally retarded children: An exploratory study. *American Journal of Mental Deficiency, 90*(6), 703-706.
- Wikler, L. M., Wasow, M., & Hatfield, E. (1981). Chronic sorrow revisited: Parents vs. professional depiction of the adjustment of parents of mentally retarded children. *American Journal of Orthopsychiatry, 51*(1), 63-70.