Psychosocial Correlates of Parenting a Child With Autistic Disorder

Latefa Ali Dardas1* · Muayyad M. Ahmad2

1MSN, RN, Teaching Assistant, Faculty of Nursing, The University of Jordan, Amman, Jordan · 2PhD, RN, Professor, Faculty of Nursing, The University of Jordan, Amman, Jordan.

ABSTRACT

Background: The lifelong experience of raising a child with a complex developmental disability such as autistic disorder is considered one of the most significant parenting stressors, with the potential to spill over into various areas of the life of parents. Therefore, studying the psychological functioning for parents of children with developmental disabilities requires the consideration of multiple factors acting and interacting concurrently.

Purpose: The purpose of this study was to examine the relationship between two sets of variables in a sample of parents of children with autistic disorder. The first set was composed of the parents’ characteristics and the coping strategies used. The second set was composed of three stress subscales—parental distress (PD), parent–child dysfunctional interaction (PCDI), and difficult child (DC)—and the parental quality of life (QOL).

Methods: Canonical correlation multivariate analysis was used to examine the relationship between the sets of variables in 184 Jordanian parents of children with autistic disorder.

Results: The analyses revealed that the parents who have higher incomes, use diverse problem-solving strategies, exhibit less escape–avoidance, and exhibit less responsibility acceptance behavior tended to report lower PD, PCDI, and DC scores and a higher QOL score. The analyses also revealed that being an older parent, having more time since the child’s autistic diagnosis, and using more distancing coping strategies were associated with lower PD scores, higher PCDI and DC scores, and better QOL.

Conclusions: This study is the first to investigate a wide range of parental psychosocial impacts as well as several sociodemographic factors that are possibly associated with raising a child with autistic disorder. The results indicate that health professionals working with parents of children with autistic disorder need to consider holistically the factors that can potentially affect the parents’ health and well-being and provide care that focuses on the parents as both clients and caregivers.

Key Words: autistic disorder, parenting, psychosocial correlates, canonical correlation.

Introduction

There is perhaps no event more devastating to a parent than having a child diagnosed with a chronic disability. Autistic disorder is considered one of the most severe childhood developmental disabilities (American Psychiatric Association [APA], 2000). Children with autistic disorder show dysfunctional behaviors that can substantially affect their development. Therefore, parents of children with autistic disorder face numerous challenges when providing care for their children and are considered at high risk for many psychosocial problems (Davis & Carter, 2008; Lecavalier, Leone, & Wiltz, 2006; Mungo, Ruta, D’Arrigo, & Mazzone, 2007).

Professionals working with children with autistic disorder and their parents agree that, to increase the chances of having better outcomes, services should enable parents to be active partners in making decisions regarding their disabled children. Findings from relevant studies have shown uniformly that parents of children with autistic disorders are themselves greatly in need of support systems that can help them cope effectively with their stressors and reduce the negative psychological effects of raising their child (Bromley, Hare, Davison, & Emerson, 2004; Brookman-Frazee, 2004; Singer, Ethridge, & Aldana, 2007). Indeed, it has been found that the parents of children with autistic disorder experience higher levels of parenting stress than the parents of children with typical development (Baker-Ericzen, Brookman-Frazee, & Stahmer, 2005; Sivberg, 2002) and than the parents of children with other developmental disabilities (Seltzer, Abbeduto, Krauss, Greenberg, & Sve, 2004). Thus, further study of the factors that influence parenting stress is needed.

Factors Affecting Parenting Stress, Coping Strategies, and Quality of Life

Among the factors that can either positively or negatively impact parenting stress are coping strategies. It has been embraced...
by some researchers that the type of coping strategies selected and used by parents of children with disabilities has a greater influence on parental level of stress than the stressors themselves (Beresford, 1994). Therefore, parents of children with autistic disorder are fair much better if they develop effective coping responses to address their inevitable stressors.

Quality of life (QOL) is another key tool for evaluating parental adaptation to their child’s disability. Researchers have shown that studying the QOL of parents is fundamental to identifying factors associated with their psychological adjustment (Mungo et al., 2007). In this study, QOL is understood as “individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (World Health Organization [WHO], 1996, p. 5). Despite the growing acceptance of QOL as a key variable in the evaluation of parental adaptation to their child’s disability, little data are available on the impact of raising children with autistic disorder on parents’ QOL (Shu, 2009). Moreover, no studies have examined how different stress-coping interactions are associated with parental QOL.

Two Main Gaps in the Literature

The concepts of stress, coping strategies, and QOL are all critical to understanding the context of human functioning and the potential for individuals to grow and develop (Lazarus & Folkman, 1984). Within the literature on autistic disorder, a growing body of research has sought to examine issues associated with these concepts. While acknowledging previous studies in this field, two main gaps can be argued.

First, to the best of our knowledge, all the studies that have investigated the concepts of stress, coping strategies, and QOL among parents of children with autistic disorder have focused on either investigating these concepts independently or investigating the relationship between two of them. However, the concepts reflect multiple factors and variables influencing and interacting with each other and, as such, must be studied simultaneously. Furthermore, many variables affect the mental health of parents and, in turn, the outcomes of their parenting experience. For example, research has found that older parents with higher levels of education and higher socioeconomic status tend to report lower levels of stress and better QOL (Hatton & Emerson, 2009; Parish, Seltzer, Greenberg, & Floyd, 2004). Furthermore, parents of older children tend to report better QOL and lower levels of parenting stress (Duarte, Bordin, Yazigi, & Mooney, 2005; Mungo et al., 2007). Therefore, it is necessary to also consider these variables when studying the psychosocial health of parents of children with autistic disorder.

Second, all investigators who have addressed the correlations between the psychosocial factors among parents of children with autistic disorder have analyzed the relationships among individual variables. This study is the first in the health research field to investigate the relationships between sets of variables rather than between individual variables. Canonical correlation analysis (CCA) was used in this study because it addresses relationships between sets of variables. Furthermore, CCA is able to identify the existence of two or more unique relationships. CCA aims to quantify the strength of the relationship between two sets of dependent and independent variables. When there are multiple independent and multiple dependent variables, canonical correlation is the most appropriate and powerful multivariate analysis technique (Tabachnick & Fidell, 1996).

CCA, the highest level of the general linear model, minimizes type I error because it allows for simultaneous comparisons among variables rather than requiring many statistical tests be conducted (Thompson, 1991). Moreover, this analysis technique allows deriving weights for each set of variables so that the linear combinations of each set are maximally correlated. Thus, CCA not only technically analyzes data involving multiple sets of variables but also remains theoretically consistent with that purpose (Thompson, 1991).

The current study contributes to the literature by investigating how the concepts of stress, coping, and QOL are linked to parental psychological functioning among both the fathers and mothers of children with autistic disorder, an area that has not been addressed. The purpose of this study is to examine the relationship between two sets of variables among parents of children with autistic disorder using an advanced multivariate analysis technique. The first set included the parents’ characteristics including gender, age, income and education (socioeconomic status), time since autistic disorder diagnosis; and selected coping strategies (confrontive coping, planful problem solving, seeking social support, distancing, self-control, escape–avoidance, accepting responsibility, and positive reappraisal). The second set of variables was composed of the three stress scores—parental distress (PD), parent–child dysfunctional interaction (PCDI), and difficult child (DC)—and the parental QOL. The relative contribution of each variable to the extracted canonical functions was measured.

Methods

Sample

The convenience sample was composed of parents of children with autistic disorder. The sample size and the necessity for a sufficient number of observations per variable are frequently encountered in CCA. Small samples will result in type II error, and large samples will inflate the statistical significance. Previous research recommends that running CCA should use 5–10 observations for each variable studied (Tabachnick & Fidell, 1996). Therefore, the 17 variables studied in this study require a sample size of 170 participants. The sample recruited for this study totaled 184 participants.

Parents were individually contacted through the professional special-education centers where their children’s autistic disorder diagnoses had been made. Diagnoses were made based on the Diagnostic and Statistical Manual of Mental Disorders (fourth edition, text revision) provided by the APA (2000).
Participation was regarded as tacit consent. None of the participants who agreed to participate left the study.

**Ethical Considerations**

Ethical approval for this study was granted by the academic research committee at the deanship of the academic research at the University of Jordan. The purpose, methods, risks, and benefits of the study were explained to the participants before volunteering, and participants were assured that the participation was completely voluntary. Data confidentiality was assured by assigning an identification number for each participant and using that number on all collected data as well as restricting access to participants’ identification information.

**Measures**

**The Parenting Stress Index-Short Form**

The Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) is a 36-item self-report questionnaire designed to measure parenting stress. It is considered one of the most widely used instruments to measure parenting stress among parents of children with disability (Dardas & Ahmad, 2013a, 2013b). The measure has three subscales: PD, PCDI, and DC (Abidin, 1995). The PD subscale measures parental perception of their own behavior, including perceived competence, marital conflict, views of social support, and life restrictions because of parenting demands (e.g., “I find myself giving up more of my life to meet my child’s needs than I ever expected.”). The PCDI subscale measures parental views on expectations and parenting demands (e.g., “I feel that my child does not like me and does not want to be close to me.”). The DC subscale measures parental perceptions of their child’s temperament, demandingness, and compliance (e.g., “My child reacts very strongly when something happens that my child does not like.”). The internal consistency reliability coefficients have been reported as .91 for the total stress score, .87 for the PD subscale, .80 for the PCDI subscale, and .85 for the DC subscale.

Scale item scores range from 1 (strongly disagree) to 5 (strongly agree). Scale text is presented at a fifth-grade reading level. The expected time to complete the questionnaire is between 10 and 15 minutes. Raw scores above 33 on the PD and DC subscales and above 27 on the PCDI subscale are considered clinically elevated (Abidin, 1995). To avoid multicollinearity, only the three subscales of the PSI-SF were analyzed. The total stress score was not used in the CCA.

**The Ways of Coping Checklist-Revised**

The Ways of Coping Checklist-Revised (WCC-R; Folkman & Lazarus, 1988) is a 66-item questionnaire that addresses coping strategies used by individuals to deal with specific stressful events. The measure has eight subscales including confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape–avoidance, planful problem solving, and positive reappraisal (Folkman & Lazarus, 1988). The internal consistency reliability coefficients ranged from .68 to .79 for the questionnaire subscales (Folkman & Lazarus 1988). Participants were asked to respond to one specific stressor (raising a child with autistic disorder) and indicate the extent to which they have used each coping method. The items of the scale range from 0 (not used) to 3 (used a great deal).

For this study, the two instruments (PSI-SF and WCC-R) were translated into Arabic. The translations were implemented to achieve conceptual equivalence and comparability of meaning. Several procedures were used to determine the reliability and validity of the translated instruments. As described by Brislin (1970) and Chapman and Carter (1979), after first translating the instruments into Arabic, two different professional English-language editors back-translated the Arabic version into English. The two English forms (the original and the translated) were compared in terms of the conceptual rather than the literal meaning of the items. The translator and the back-translator met to examine the differences in the two forms. The translators confirmed the content of both forms as almost the same. Pilot testing was conducted with a sample of parents of children with autistic disorder to confirm the appropriateness of the translation. The instruments maintained their respective structures, numbers of items, and scoring systems. Table 1 presents the Cronbach’s alphas for the WCC-R and PSI-SF subscales.

**The World Health Organization Quality of Life Assessment-Brief Self-Administered Instrument**

The WHO QOL Assessment-Brief (WHOQOL-BREF; WHO, 1996) is a 26-item questionnaire used to measure QOL. A

**TABLE 1. **

**Cronbach’s Alphas for Study Scales**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive reappraisal</td>
<td>.63</td>
<td>5</td>
</tr>
<tr>
<td>Confrontive coping</td>
<td>.50</td>
<td>6</td>
</tr>
<tr>
<td>Planful problem solving</td>
<td>.62</td>
<td>6</td>
</tr>
<tr>
<td>Seeking social support</td>
<td>.73</td>
<td>6</td>
</tr>
<tr>
<td>Distancing coping</td>
<td>.52</td>
<td>6</td>
</tr>
<tr>
<td>Self-control</td>
<td>.44</td>
<td>7</td>
</tr>
<tr>
<td>Escape–avoidance</td>
<td>.70</td>
<td>8</td>
</tr>
<tr>
<td>Accepting responsibility</td>
<td>.45</td>
<td>4</td>
</tr>
<tr>
<td>Total QOL</td>
<td>.93</td>
<td>26</td>
</tr>
<tr>
<td>PD</td>
<td>.91</td>
<td>12</td>
</tr>
<tr>
<td>PCDI</td>
<td>.85</td>
<td>12</td>
</tr>
<tr>
<td>DC</td>
<td>.82</td>
<td>12</td>
</tr>
<tr>
<td>Total PSI</td>
<td>.91</td>
<td>36</td>
</tr>
</tbody>
</table>

*Note. QOL = quality of life; PD = parental distress; PCDI = parent–child dysfunctional interaction; DC = difficult child; PSI = Parenting Stress Index.*

**Data Collection**

Participants included parents of children with autistic disorder (ages 5 to 15 years) at a sample of primary schools in the Amman area in Jordan. The sample was divided into two groups based on the child’s age. Parents of children younger than 7 years of age were considered in the first group, while parents of children aged 7 to 15 years were classified in the second group. The participants who agreed to participate left the study.

**Statistical Analysis**

The data were analyzed using SPSS version 20.0. The mean, standard deviation, and internal consistency reliability coefficients were calculated. The Cronbach’s alphas for the scales ranged from .70 to .93. The alpha of the total QOL subscale was .93.

**Results**

The results showed that the Cronbach’s alphas for the scales ranged from .70 to .93. The alpha of the total QOL subscale was .93.
validated Arabic version of the WHOQOL-BREF by Ohaeri and Awadalla (2009) was used in this study. The instrument provides a short-form QOL assessment derived from the WHOQOL-100 scale (WHO, 1996). Items on the scale range from 1 to 5, with higher scores denoting higher QOL. The total QOL score was used in this study. The WHOQOL-BREF is a cross-culturally valid and reliable assessment of QOL (Dardas, 2013). Table 1 presents the Cronbach’s alphas for the QOL scales.

Results

Of the 184 participants, 62% (n = 114) were mothers. The mean age was 37 (SD = 7.6) years. About 46% (n = 85) had a secondary school or lower level of education, 23.9% (n = 44) had a high school diploma, and 29.9% (n = 55) held a baccalaureate degree or higher; and nearly half (56%) were not currently employed. Mean family income for participants was 498 Jordanian Dinars (SD = 294). About 79.3% (n = 146) of the participants were living below the poverty line, as defined by the Directorate of Economic Statistics at the Jordanian Department for Statistics (2010). Most were from urban areas, and all had only one child diagnosed with autistic disorder.

All children addressed in this study had been diagnosed with autistic disorder using the criteria of Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (APA, 2000). About 84% (n = 155) of the children were boys. The mean age was 6.3 (SD = 3) years, ranging from 2 to 12 years; the mean age at first symptom appearance was 2 (SD = 1) years, ranging from 6 months to 5 years; the mean age at clinical diagnosis was 3 (SD = 1) years, ranging from 19 months to 6 years; and the mean time since initial diagnosis was 3 (SD = 2) years.

The analysis of parenting stress showed that the mean scores for the PD, PCDI, and DC subscales were 40.29 (SD = 10.47), 37.70 (SD = 8.73), and 39.95 (SD = 7.86), respectively. “Positive reappraisal” was the most commonly used coping strategy among participants (mean = 74.30, SD = 12.97), and “distancing” was the least used (mean = 55.19, SD = 13.56). The other six coping strategies had mean scores ranging from 55 to 68. The mean total QOL score was 80 (SD = 16).

Canonical Correlation Analysis

A canonical variable (variate) is a linear combination of a set of variables in which the variance for each variable that is attributable to the other variables in the set has been controlled. There are two canonical variables in a canonical correlation: the independent canonical variable and the dependent canonical variable. The latter is also known as the covariate canonical variable (Hair, Black, Babin, & Anderson, 2009).

A canonical correlation is performed between a set of “sample characteristics and coping strategies” variables and a set of “types of stress and QOL” variables using a special macro in SPSS 21.0 (IBM, Armonk, NY, USA). The characteristics variables used in this study included the parents’ gender, age, education, and income and time since their diagnosis. The coping strategies used in this study included confrontive coping, planful problem solving, seeking social support, distancing, self-control, escape avoidance, accepting responsibility, and positive reappraisal. The other set included the three stress subscales of PD, PCDI, and DC and the QOL. The number of canonical functions generated for a given data set equals the number of variables in the smaller of the two variable sets. Thus, four canonical functions were generated because the second set had only four dimensions. Table 2 shows the bivariate correlations among all of the variables.

### Table 2

**Bivariate Correlations Between the Variables in Set 1 and Set 2**

<table>
<thead>
<tr>
<th></th>
<th>Parental Distress</th>
<th>Parent-Child Dysfunctional Interaction</th>
<th>Difficult Child</th>
<th>Quality of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.10</td>
<td>−.08</td>
<td>.07</td>
<td>−.11</td>
</tr>
<tr>
<td>Education</td>
<td>−.04</td>
<td>−.05</td>
<td>−.08</td>
<td>.15*</td>
</tr>
<tr>
<td>Income</td>
<td>−.06</td>
<td>−.07</td>
<td>−.08</td>
<td>.21**</td>
</tr>
<tr>
<td>Age</td>
<td>.04</td>
<td>.11</td>
<td>.16*</td>
<td>.01</td>
</tr>
<tr>
<td>Time since diagnosis</td>
<td>.04</td>
<td>.11</td>
<td>.13</td>
<td>.01</td>
</tr>
<tr>
<td>Confrontive coping</td>
<td>.11</td>
<td>.11</td>
<td>.11</td>
<td>−.07</td>
</tr>
<tr>
<td>Planful problem solving</td>
<td>−.07</td>
<td>−.16*</td>
<td>−.13</td>
<td>.26**</td>
</tr>
<tr>
<td>Seeking social support</td>
<td>.02</td>
<td>.01</td>
<td>.01</td>
<td>.06</td>
</tr>
<tr>
<td>Distancing coping</td>
<td>−.08</td>
<td>.12</td>
<td>.17*</td>
<td>.07</td>
</tr>
<tr>
<td>Self-control</td>
<td>.05</td>
<td>.07</td>
<td>.12</td>
<td>−.01</td>
</tr>
<tr>
<td>Escape–avoidance</td>
<td>.39**</td>
<td>.31**</td>
<td>.38**</td>
<td>−.37**</td>
</tr>
<tr>
<td>Accepting responsibility</td>
<td>.23**</td>
<td>.25**</td>
<td>.35**</td>
<td>−.24**</td>
</tr>
<tr>
<td>Positive reappraisal</td>
<td>−.01</td>
<td>.02</td>
<td>−.03</td>
<td>.13</td>
</tr>
</tbody>
</table>

*p ≤ .05. **p ≤ .01.
All CCA assumptions (Tabachnick & Fidell, 1996) were examined and confirmed as follows: all variables and all linear combinations of variables were reasonably and normally distributed. In addition, examining the bivariate correlations in both sets, the assumption of multicollinearity was not violated. Multivariate normality was met for significance testing in canonical correlation.

The four canonical correlations ranged from .24 to .57. The first canonical correlation was .57 (32% overlapping variance), the second was .38 (14% overlapping variance), the third was .29 (8% overlapping variance), and the fourth was .24 (6% overlapping variance). With all four canonical correlations included, \( \chi^2 \) (52) = 118.23, \( p < .001 \), and with the first canonical correlation removed, \( \chi^2 \) (36) = 52.12, \( p < .05 \). Subsequent \( \chi^2 \) tests were not statistically significant (Table 3). The overall multivariate analysis tests for the dimensionality or optimum structure of each variable set to ensure that the relationship between independent and dependent variable sets is maximized. In our study, there were four canonical dimensions, of which only the first two were statistically significant. The first test of dimensions tested whether all four dimensions combined were significant (the results showed significance, \( p < .001 \)); the second test tested whether dimensions 2, 3, and 4 combined were significant (the results showed significance, \( p = .04 \)); the third test tested whether dimensions 3 and 4 were significant (the results showed that they were not significant); and the final test tested whether dimension 4 alone was significant (the result showed that it was not significant).

The standardized canonical coefficients were used to assess the relative importance of individual variables’ contributions to a given canonical correlation. Using a cutoff correlation (loading) of .30, the variables in the first set that correlated with the first canonical variate were income, planful problem solving, escape–avoidance, and accepting responsibility. Among the second set, PD, PCDI, DC, and QOL were correlated with the first canonical variate. The first canonical variate indicates that parents with higher income (.32), more planful problem solving (.44), less escape–avoidance (−.77), and less accepting responsibility (−.57) were associated with less PD (−.68), PCDI (−.67), DC (−.81), and better QOL (.90).

The second canonical variate in the first set was composed of age, time since autistic diagnosis, and distancing coping. The corresponding canonical variate from the second set was composed of PD, PCDI, DC, and QOL. Thus, the second canonical variate indicates that being older (.39), having a longer time since diagnosis (.33), and having more distancing coping strategies (.72) were associated with less PD (−.43), more PCDI (.44), more DC (.42), and better QOL (.35).

The canonical roots or squared canonical correlations, also called eigenvalues, provide an estimate of the amount of shared variance between the respective optimally weighted canonical variates of independent and dependent variables. The eigenvalues for the first and second canonical roots were .47 and .16, respectively. However, the third and fourth roots had eigenvalues below 1 (Table 4). Furthermore, all statistical tests for the full CCA model were significant at \( p \leq .001 \) (Pillias = .60, Hotellings = .79, Wilks = .50, Roys = .32).

**Discussion**

The purpose of this study was to examine the relationships between a set of parental psychosocial variables and a set of sociodemographic factors among parents of children with autistic disorder using canonical multivariate analysis. The relative contribution of each variable to the extracted canonical functions was measured. The classification of data as independent or dependent variables did not affect the statistical estimation, as canonical correlations weigh both sets of variates to maximize the correlation without placing any particular emphasis on either variate (Tabachnick & Fidell, 1996). Nevertheless, to establish a strong conceptual elucidation for the variables, a researcher must conceptually specify the sets of independent and dependent variables.

Because of the limited number of studies, particularly nursing studies, published in the health literature that use the CCA technique, it is difficult to compare the results of this study with other research. However, other disciplines such as education and psychology have used advanced multivariate analysis in their research. Therefore, studies in disciplines close to nursing such as psychology were referenced to compare analysis results and findings interpretations.

CCA accounts for maximum relationship between two sets of variables. The first pair of canonical variates gives the highest intercorrelation between the two sets, whereas the second pair displays the maximum relationship not accounted for by the first pair (Hair et al., 2009). In our study, the total variance (69%) and total redundancy (5%) suggest that the first pair of canonical variates was highly related. However, the second pair captured only 24% of total variance and had a redundancy of 3%, suggesting only a minimal relationship and limited value in interpretation.

The CCA in this study revealed that, for parents, having a higher income, using more planful problem solving, lower escape–avoidance, and lower responsibility acceptance were associated with less PD, PCDI, and DC scores and better QOL. Furthermore, being an older parent, longer time since the child’s diagnosis, and greater use of distancing coping were associated with lower PD, higher PCDI and DC scores, and better QOL. The following sections discuss the relative

**TABLE 3.**

**Results of the Four Canonical Correlations for the Two Sets of Variables**

<table>
<thead>
<tr>
<th></th>
<th>Wilks’ ( \lambda )</th>
<th>( \chi^2 )</th>
<th>( df )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.50</td>
<td>118.23**</td>
<td>52</td>
</tr>
<tr>
<td>2</td>
<td>.74</td>
<td>52.12*</td>
<td>36</td>
</tr>
<tr>
<td>3</td>
<td>.86</td>
<td>25.16</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>.94</td>
<td>9.89</td>
<td>10</td>
</tr>
</tbody>
</table>

\( ^* p \leq .05 \); \( ** p \leq .001 \).
Parents’ Age

The results of this study revealed a correlation between older age and lower PD, higher PCDI and DC scores, and better QOL. The age of parents is considered an important factor because age is a marker of progression in the family life course, which significantly affects family mental health outcomes (Seltzer et al., 2004). Discussing the impact of age on the stress-coping process and its health consequences is a complex area of investigation. Indeed, there is only one study that has addressed this issue (Gray, 2006). Our results are consistent with the results of Gray, who sought to investigate how parental responses to life stressors changed over time by doing follow-up research on the sample coping strategies over 12 years. Gray found that the stress levels of parents and the number of coping strategies used declined significantly over time. This was explained as a positive reflection of improving symptoms of autistic disorder and, consequently, a reduced degree of psychological distress for the parents. Nevertheless, the positive correlation in this study between the parents’ age and the levels of stress related to the child’s characteristics and interactions (PCDI and DC) may be explained by the child’s developmental characteristics. As the parents and their children grow older, greater parenting stress may possibly be attributed to the problems parents have with their child’s lack of social skills and compulsive behaviors, which interfere with the child’s functioning and learning and appear more peculiar over time (APA, 2000).

Parents’ Income

Having a higher income was associated in this study with lower PD, PCDI, and DC scores and better QOL. This finding is consistent with the logical interpretation that higher levels of income equip parents with better support services to deal with their stressors. This finding is also supported by previous studies that have linked higher incomes with better QOL (Hatton & Emerson, 2009; Kersh, Hedvat, Hauser-Cram, & Warfield, 2006). Thus, it is an expected result that parents who do not receive any economic support will face economic difficulties that reflect in lower QOL scores and higher perceived stress levels.

Time Since Autistic Disorder Diagnosis

Child age has been identified as an important contributing factor to parental mental health problems (Higgins, Bailey, & Pearce, 2005). This study investigated the time elapsed since autistic disorder diagnosis rather than the age of the participants’ children to ensure that the potential stress-coping interactions occurred primarily after the parents received their child’s diagnosis. The results of this study are consistent with those of previous studies (Duarte et al., 2005; Mungo et al., 2007).

---

<table>
<thead>
<tr>
<th>TABLE 4. Canonical Correlations and Standardized Canonical Coefficients for the Study Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Canonical Variate</strong></td>
</tr>
<tr>
<td>Correlation</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Time since diagnosis</td>
</tr>
<tr>
<td>Confrontive coping</td>
</tr>
<tr>
<td>Planful problem solving</td>
</tr>
<tr>
<td>Seeking social support</td>
</tr>
<tr>
<td>Distancing coping</td>
</tr>
<tr>
<td>Self-control</td>
</tr>
<tr>
<td>Escape–avoidance</td>
</tr>
<tr>
<td>Accepting responsibility</td>
</tr>
<tr>
<td>Positive reappraisal</td>
</tr>
<tr>
<td>PD</td>
</tr>
<tr>
<td>PCDI</td>
</tr>
<tr>
<td>DC</td>
</tr>
<tr>
<td>QOL</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
</tr>
</tbody>
</table>

Note. PD = parental distress; PCDI = parent-child dysfunctional interaction; DC = difficult child; QOL = quality of life.
particularly in terms of the correlations between time since diagnosis and, respectively, PD (lower) and QOL (higher) scores. Sivberg (2002) addressed this phenomenon in the finding that the age of children with autistic disorder significantly affects parental coping and, consequently, parental mental health. As a child grows older, the parents are expected to develop a more realistic view of the child’s future and outcome (Crnic, Gaze, & Hoffman, 2005). In addition, Gray (2006), in his qualitative longitudinal inquiry, found that, as a child gets older, parents readjust to changing circumstances to maintain an adaptive balance. On the other hand, the higher levels of PCDI and DC stress scores that this study found to be associated with longer time since receiving the autistic disorder diagnosis may be explained by the increasing complexity of children’s developmental characteristics as they grow older.

**Coping Strategies**

The findings related to planful problem solving are consistent with previous findings that correlated the use of this strategy with lower levels of stress and adaptive outcomes (Smith, Selzter, Tager-Flusberg, Greenberg, & Carter, 2008). Planful problem solving is considered a problem-focused strategy that involves a deliberate emphasis on altering the situation using careful analyses to solve the problem and to generate possible solutions (Folkman & Lazarus, 1988). In this study, we inferred that parents who tend to carefully analyze and solve their child-related problems are more likely to diffuse their stress and enhance their QOL.

Furthermore, this study revealed that avoidance coping was correlated with lower levels of stress and better QOL. According to Folkman and Lazarus (1988), avoidance coping strategies include wishful thinking and behavioral efforts to avoid facing the problem. Previous studies that have examined the consequences of using avoidance coping for parents of children with chronic disabilities have yielded mixed results. Whereas many authors have argued that avoidance coping may correspond to negative psychosocial impacts if used to deal with chronic stressors (Kashdan, Barrios, Forsyth, & Steger, 2006; Hastings et al., 2005), others have argued that no one coping strategy can be said to be definitively more successful than another (Lazarus, 1996). The results of this study were consistent with Sivberg (2002), who reported that, although avoiding coping is generally considered to be maladaptive, these strategies are functional for parents of children with autistic disorder as a protective mechanism in the early stages of adapting to the reality of the situation. However, it should be noted that the use of avoidance coping may adversely affect the mental health of parents with chronic stressors such as raising a child with disability (Hastings et al., 2005).

In this study, use of the “accepting responsibility” coping strategy, which entails the acknowledgment of one’s contribution to the problem and trying to correct the situation, was associated with higher levels of parenting stress and lower QOL. The higher levels of stress associated with accepting responsibility may be explained by referring to the work of Folkman and Lazarus (1988), who stated that, although individuals who cope by accepting responsibility for a mistake usually make constructive changes to overcome their problems, this strategy is usually accompanied by more feelings of distress. Against our expectation, accepting responsibility was associated with lower levels of QOL. Because accepting responsibility may be considered as the opposite of avoidance, we initially expected that parents who accept responsibilities for their child-related stressors would report better QOL. The opposite results revealed in this study may be partially explained by the sample characteristics. Most of the parents in this study (79.3%) were living below the poverty line. Consequently, it is possible that those parents lacked the necessary skills and support to help them accept their responsibilities in a healthy manner.

“Distancing coping” was defined by Folkman and Lazarus (1988) as undertaking cognitive efforts to detach oneself from a stressful situation and minimize its significance. The results of this study showed that more distancing strategies were associated with less PD and better QOL. However, distancing was positively correlated with parental stress related to a child’s difficult characteristics and interactions (PCDI and DC). Our results are consistent with Higgins et al. (2005) and Sivberg (2002) who reported that distancing coping moderates the relationship between stressors and mental health. Parents of children with autistic disorder who are able to distance themselves appropriately from their stressful situation may cope significantly better than those who are enmeshed with their child-related demands. However, parents should be carefully trained on the application of distancing strategies so that these strategies do not exaggerate the child-related stressors (DC, PCDI).

Confrontive coping, seeking social support, self-control, and positive reappraisal coping strategies did not show significant correlations with the parental stress levels and QOL. These results are inconsistent with the previous findings that correlated the use of these strategies with lower levels of stress and adaptive outcomes. It is worth noting that, despite the lack of identified correlations, all of the aforementioned strategies were among the most commonly used strategies of participants. These results warrant further investigation for the subjective meaning that coping has for the parents. For example, items like “I expressed anger to the person(s) who caused the problem,” “I let my feelings out somehow,” and “I took a big chance or did something very risky” are included in the “confrontive coping” subscale. It should be noted that the application of these strategies in a nonadaptive context may lead to negative mental health outcomes. Furthermore, the nonsignificant effects of seeking social support on parental stress levels warrant further investigation into the quality of their social involvements.

**Parents’ Gender**

In this study, no significant correlation was found between parent gender and any of the other investigated variables. This result may be explained by reference to the work of
Lazarus (1996), who reported that stress and coping responses used by men and women are related to the different roles they assume in their societies and cultures rather than to their gender per se. Therefore, the discussion on this issue may be limited, as we did not specifically identify the roles and responsibilities of each participant.

Parents’ Level of Education
This study found no significant correlation between parent level of education and either perceived level of stress or QOL. Although the logical expectation may be that higher levels of education broaden an individual’s knowledge and equip him or her with better support services and cognitive reframing to deal with stressors, our study did not support this. This result warrants further investigation regarding the content of educational curricula and its addressing of the meaning and experience of disabilities.

Conclusions
It is somewhat difficult to draw firm conclusions on the concepts of stress, coping, and QOL. In addition, the existing literature on these concepts is limited and leaves many key issues unresolved. However, it is reasonable to conclude that mental health outcomes for the parents of children with autistic disorder reflect the interaction of multiple factors. This study investigated a wide range of relevant parental psychosocial impacts as well as several sociodemographic factors.

Implications for Practice
Professionals who work with parents of children with autistic disorder are in a special position to benefit from the results of this study. Professionals need to provide care and support in more sensitive, comprehensive, and collaborative ways and seriously consider the psychological well-being of parents of children with autistic disorder. Nurses are at the forefront of providing holistic care and support for affected parents. Indeed, the American Nurses Association, American Psychiatric Nurses Association, and International Society of Psychiatric-Mental Health Nurses (2007) have defined a major responsibility of psychiatric nursing as managing the interpersonal, psychological, and social circumstances that affect the mental and emotional well-being of individuals and their families. The holistic nursing practice that draws on nursing knowledge, theories, expertise, and intuition is a typical model for helping parents of children with autistic disorder. Providing care that is oriented and centered on the relationship with the parents rather than the disability of their children is an effective instrument for helping parents address the various stressors and demands they may face because of their child’s disability. This holistic attitude, which considers a wide range of active/interactive factors and holds the potential to affect the mental health of parents, will complement, broaden, and enrich the services provided to the parents and their affected children and help facilitate client access to the greatest healing potential.

Limitations and Recommendations
Among the limitations that may impact the scope of interpretation of this study is that the CCA reflects the variance shared by the linear composites of the sets of variables and not the variance extracted from the variables. Furthermore, as the data were cross-sectional, it was not possible to analyze causation in the relationships between variables. It should be noted that some of the WCC-R subscales that were used in this study had low reliability scores. A further limitation relates to the nature of the concepts investigated. Coping is a dynamic process that changes over time, and parents who perceived initial stress in dealing with their newly diagnosed child may review and revise their perceptions as the child grows older. Therefore, replication of this study using a longitudinal design is recommended.

Acknowledgments
The authors acknowledge the partial funding for this study provided by the University of Jordan.

References


