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Primary and Secondary Caregiver Reports of Quality of Life in Pediatric Asthma: Are They Comparable?

Robin S. Everhart, Ph.D.¹, Jessica L. Greenlee, B.S.¹, Marcia A. Winter, Ph.D.¹, and Barbara H. Fiese, Ph.D.²

¹Virginia Commonwealth University, Department of Psychology, P.O. Box 842018, Richmond, VA, 23284

²University of Illinois at Urbana-Champaign, Family Resiliency Center, Department of Human Development and Family Studies, 904 W. Nevada St., Urbana, IL 61801

Abstract

Purpose—This study aimed to compare primary and secondary caregiver QOL within families of children with asthma and determine the potential importance of including secondary caregiver QOL in clinical and research settings.

Methods—Participants included 118 families of children with asthma that had primary and secondary caregivers. Families completed measures in a single research session. Caregivers reported on QOL, psychological functioning, and family burden; children completed a measure of QOL. Child lung function was determined from objective spirometry. Adherence to prescribed controller medication was measured for 6 weeks following the research visit.

Results—Primary caregiver QOL was significantly lower than secondary caregiver QOL (Mean overall QOL of 5.85 versus 6.17, $p < .05$). Better medication adherence was associated with higher primary caregiver QOL ($\rho = .22, p = .02$); secondary caregiver QOL, not primary caregiver QOL, was positively associated with child QOL ($\rho = .20, p = .03$). Families with discrepant QOL scores between caregivers (difference in scores of at least .50) were characterized by more family burden and primary caregiver psychological symptoms.

Conclusions—Differences in QOL scores between caregivers may be a reflection of primary caregivers' greater investment in daily asthma management. In families reporting low burden and few psychological difficulties in the primary caregiver, QOL assessments from either caregiver may be informative and representative of how parents are adapting to child asthma. In families experiencing high levels of burden or more primary caregiver psychological difficulties, QOL reports from secondary caregivers may not be as clinically meaningful.

Pediatric asthma is a common chronic condition that affects approximately 6.1 million children a year and contributes to an average of 13.8 missed days of school per year (Centers for Disease Control and Prevention, 2013). Managing asthma is a daily process that involves the entire family system, including the caregivers on whom children are reliant for their

ongoing care, symptom management, medication administration, and access to healthcare (Fiese & Everhart, 2006; Kaugars, Klinnert, & Bender, 2004). Caregivers of children with asthma are at increased risk for anxious and depressive symptoms (Easter, Sharpe, & Hunt, 2015), which can compromise the family's ability to effectively manage asthma symptoms, comply with medication schedules, and communicate with healthcare providers (Fagnano, Berkman, Wiesenthal, Butz, & Halterman, 2012; Shalowitz, Berry, Quinn, & Wolf, 2001). Worse caregiver QOL has also been associated with more life stress and more asthma-related caregiving stress (Bellin et al., 2015).

In the context of pediatric asthma, caregiver QOL is an indication of how well a caregiver is adapting to the child's asthma and has been identified as an important outcome in monitoring childhood asthma (Stelmach et al., 2012). Further, caregiver QOL has been found to influence daily decisions related to child asthma management, such as health care utilization. For instance, lower QOL among primary caregivers has also been associated with indicators of asthma morbidity, including risk for child ED visits (Everhart, Fedele, Miadich, & Koinis-Mitchell, 2015). Studies to date have typically focused on assessing the QOL of children's primary caregivers (e.g., those caregivers who self-identify as being primarily in charge of the child's day to day asthma care, usually the mother) or have not described whether QOL scores are reported by a primary or other caregiver, instead reporting on "caregiver QOL" (e.g., Okelo et al., 2014). Many researchers call for increasing research with other/secondary caregivers who may reflect broader family perspectives and/or different information than the child's mother alone. Other/secondary caregivers of children with asthma are not limited to the child's father, but also include members of the extended family, including grandmothers, aunts, and cousins.

Indeed, recent research suggests the importance of other/secondary caregivers (e.g., fathers, grandparents) in the daily management of childhood asthma (Fedele et al., 2014; Friedman, 2015). Other caregivers may help primary caregivers in a variety of domains including emotional support, financial responsibility, and daily tasks associated with caring for a child with a chronic condition. A recent review concluded that higher levels of involvement from a secondary caregiver positively impacts family functioning in general as well as the individual well-being of the child, the mother, and the father (Swallow, Macfadyen, Santacroce, & Lambert, 2012). Moreover, studies have found that secondary caregivers may be critical in home asthma management for children with multiple sleeping residences or variable housing situations (Naimi et al., 2009). Clearly, further research focusing on secondary caregivers is needed. However, it remains to be seen whether the QOL of secondary caregivers is comparable to, and as clinically useful as, the QOL of primary caregivers.

Thus, this study focused specifically on comparing primary and other caregiver QOL to determine whether the QOL of secondary caregivers is likely to be a useful outcome measure for healthcare providers and researchers in the way that QOL of primary caregivers is. Given that QOL measures are often used in settings where researchers and providers have limited time with patients/participants, we aimed to describe secondary caregivers' QOL scores based on whether they add substantively to the information provided by primary caregivers' ratings.

First, we tested for differences in QOL scores between primary caregivers and other caregivers. Second, we examined associations between primary and other caregiver QOL and indicators of child asthma status (e.g., child QOL, asthma severity, medication adherence). Finally, we classified caregiver dyads as being discrepant in QOL based on whether the difference between QOL scores in each group was .5 or greater. We then looked within caregiver groups (i.e., discrepant versus not) to determine whether family burden and caregiver emotional health (e.g., depression, anxiety, global distress) may be accounting for discrepancies between these groups. We conceptualized caregiver dyads as discrepant if their scores differed by .5 or more, as this has been classified as the minimally importance difference threshold for QOL scores (Juniper, Guyatt, Willan, & Griffith, 1994) and can serve as a useful metric for determining whether QOL ratings are meaningfully different.

Methods

Participants

Data were from a larger study investigating families of children with asthma (*blinded for review*). Participants in the current study included 118 families that had both a primary and a secondary caregiver participating in the study; children were between 5 and 12 years of age (see Table 1 for participant demographics). The majority of households (90%) were dual parent (106 families). The mean level of educational attainment for both primary and secondary caregivers was partial college/specialized training.

A convenience sample of families was recruited through a pediatric pulmonary clinic and ambulatory clinic at a teaching hospital, as well as pediatric primary care clinics in the surrounding area. Interested families were screened for eligibility over the phone. Inclusion criteria included child age between 5 and 12 years old, an asthma diagnosis, and a daily controller medication prescription for at least 6 months. Exclusion criteria included another chronic medical condition for which they were taking daily medication, being in foster care, not able to read English, or exercise-induced asthma.

Procedures

Institutional Review Board approvals were obtained for this study. Children and their caregivers completed a single session in our research lab. Written informed consent was obtained from caregivers and assent from children. At the visit, caregivers and children were interviewed separately and each completed a series of questionnaires. Children also completed a spirometry assessment during the visit. Adherence to prescribed controller medications was tracked for 6 weeks following the lab visit (see description in Measures). Families were compensated for their time.

Measures

Demographics—Caregivers completed a study specific demographic measure including child's race/ethnicity, and age. Caregivers also reported on education level, income, occupation, single versus dual household, and relationship status.

Hollingshead Index—Socioeconomic status was measured using the Hollingshead Index (Hollingshead, 1975). Parent education level was ranked on a 7-point scale and multiplied by three and occupation was ranked on a 9-point scale and multiplied by five. These values were added together to obtain the SES level. Scores on the Hollingshead ranged from 11 to 66 ($M = 43.92$, $SD = 15.62$), indicating that families across socioeconomic levels were represented in our sample.

Asthma severity—Spirometry testing was administered by a trained respiratory therapist during the laboratory visit to assess asthma severity. A PDS 313100-WSU KOKO spirometer was used to obtain measurements of forced vital capacity (FVC), forced expiratory flow in one second (FEV_1), and forced expiratory flow, 25–75% of vital capacity ($FEF_{25-75\%}$). Each child performed three FVC maneuvers to ensure reproducibility. Severity classifications were made using an average of the three ratings by a board-certified pulmonologist based on standard guidelines (National Heart Lung and Blood Institute, 2007).

Medication adherence—MDIlog-II devices were attached to inhaled medications dispensed in canisters and automatically recorded the date and time of medication usage. Adherence to oral medications (e.g., Singulair) and dry powder inhalers (e.g., Advair) was determined through a weekly telephone diary (Rapoff, 1999) in which caregivers were telephoned and asked to report the number of doses consumed. Average percentage of adherence was calculated by dividing the number of doses taken by the doses prescribed for each day across the 6-week period. The average rate of adherence was 78.7% ($SD = .24$) with a range of 8% to 100%.

Child QOL—The Pediatric Asthma Quality of Life Questionnaire (PAQLQ) (Juniper, Guyatt, Feeny, Griffith, et al., 1996) was completed by children ages eight and older. The PAQLQ is an asthma specific assessment consisting of 23-items that measure the physical, emotional, and social impairment due to asthma over the course of the past week. Responses were rated on a 7-point scale ranging from 1 (*extremely bothered/all of the time*) to 7 (*not at all bothered/none of the time*). An overall score is determined using the mean score of all items. Cronbach's α of .93 was computed for this sample.

The 16-item Pictorial Version of the PAQLQ (Everhart & Fiese, 2009a) was administered to children 5–7 years of age. Children responded to each question using a line anchored by three thermometers: empty, half full, and full. Children marked along the line to indicate how bothered they have been by their asthma in the past week. An empty thermometer indicated “not at all bothered” and a full thermometer indicated “a lot bothered”. Markings were converted into scores from 1 to 7, with higher scores indicating better QOL. Cronbach's α of .77 was computed for this sample.

Caregiver QOL—Primary and secondary caregivers completed the 13-item Pediatric Asthma Caregiver's Quality of Life Questionnaire (PACQLQ) (Juniper, Guyatt, Feeny, Ferrie, et al., 1996). The PACQLQ measures the impact of the child's asthma on the caregiver's daily activities and the fear and worry associated with the child's asthma. Items are rated on a 1 (*all of the time/very, very worried/concerned*) to 7 (*none of the time/not*

worried or concerned) scale, with a total score derived from the mean of all items. Higher scores indicate higher QOL. Cronbach's α of .93 for primary caregivers and α of .90 for overall QOL for secondary caregivers was computed for this sample (see Table 1 for alphas of subscales).

Caregiver Mental Health Symptoms—The Brief Symptom Inventory (BSI) (Derogatis & Melisaratos, 1983) is a 53-item self-report measure in which primary and secondary caregivers separately rated the extent to which they had been bothered (0 = not at all to 4 = extremely) in the past week by various symptoms. Nine primary symptom dimensions (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) make up the BSI along with three global indices of distress (Global Severity, Positive Symptom Distress, and Positive Symptom total) that measure the overall psychological distress level, the intensity of symptoms, and the number of self-report symptoms. We used the anxiety, depression, and global severity scores for this study.

Family Burden—The Impact of the Family Scale (IOF) (Stein & Riessman, 1980) was used to assess the burden and impact of child asthma on the family. The IOF is a 27-item measure completed by the primary caregiver that includes items about family finances, familial and social interactions, and personal strain. Rated on a 4-point scale, total scores can range from 27 to 108, with higher scores indicating an increased impact on the family. Sample items include: “Because of what we have shared, we are a closer family” and “It is hard to find a reliable person to take care of my child.” Cronbach's α of .95 was computed for this sample.

Data Analysis

Analyses were performed using IBM SPSS Version 21.0 (IBM Statistical Product and Service Solutions; IBM Corp., Armonk, NY). T-test analyses were used to test differences in mean overall and subscale QOL scores across primary and secondary caregivers. Spearman rho correlational analyses were used to test for associations between caregiver QOL and medication adherence, child QOL, and asthma severity. To determine discrepant QOL dyads, the absolute value of the difference between primary and secondary caregiver QOL scores was used. Families were then dichotomized as not discrepant (score difference < .5) or discrepant (score difference \geq .5) (Juniper et al., 1994). T-test analyses were used to determine differences in family burden and BSI scores across discrepant vs. non-discrepant QOL dyads.

Results

Mean QOL scores for primary caregivers and other caregivers can be found in Table 2. Overall QOL and subscale scores were significantly lower among primary caregivers as compared to secondary caregivers. Spearman rho correlations revealed significant associations between overall and emotional function subscale scores of the child QOL scale and overall and emotional function subscale scores of secondary caregiver QOL (but not primary caregiver QOL; see Table 3). Medication adherence scores were significantly

associated with the emotional function subscale of primary caregiver QOL ($p = .22$, $p = .02$). Neither primary caregiver nor other caregiver QOL was associated with objective asthma severity.

Sixty-one of the caregiver-secondary caregiver dyads (52%) were classified as having discrepant QOL scores (or a difference in scores of at least .50). Child asthma severity did not differ between the two groups ($t(113) = .62$, $p = .54$). *T*-test analyses revealed greater family burden among caregiver dyads with discrepant QOL. Primary caregivers also had more reported anxiety symptoms and higher global severity scores among discrepant QOL dyads as compared to non-discrepant QOL dyads (see Table 4). Other caregiver functioning did not differ across discrepant versus non-discrepant dyads on QOL.

Twelve caregivers (10% of our sample) reported their marital status as either separated, divorced, or single and indicated that their homes were single parent households. We reran our analyses with these families excluded given that these primary and secondary caregivers may not be living together. Our results remained unchanged and we have presented results from all families that had a primary and secondary caregiver participating in the study, regardless of marital status/household type.

Discussion

The overall goal of this study was to compare primary and other/secondary caregiver QOL within families of children with asthma and determine the potential importance of including other caregiver QOL in clinical and research settings. Our findings suggest that primary caregivers experience a significantly lower level of QOL (overall and on each subscale) than secondary caregivers. There are several potential reasons for this difference. First, given that the PACQLQ is a measure of asthma-related QOL, it may be that primary caregivers are responsible for more of the day to day asthma care behaviors, and therefore, experience more of the burden associated with caring for a child with asthma than secondary caregivers. A recent qualitative study found that negative experiences with asthma care, the unpredictability of asthma, and family conflict made it more challenging for primary caregivers to adapt successfully to their caregiving role and to cope with their children's asthma (Chen, Huang, Yeh, & Tsai, 2015). Thus, differences in QOL scores between caregivers may be a reflection of primary caregivers' relatively greater investment in daily asthma management, which includes managing the unpredictability of and negative experiences that may be a part of the child's asthma.

A second explanation for this difference may be that the PACQLQ as developed by Juniper and colleagues (Juniper, Guyatt, Feeny, Ferrie, et al., 1996) does not have the same meaning for all caregivers in a family. The PACQLQ was intended to measure how burdensome a parent found their child's asthma and asks specific questions regarding problems related to activity limitations and emotional function among caregivers responsible for the child's daily asthma care. Therefore, differences in scores between caregivers may indicate that the measure is not able to capture experiences that are salient to the QOL of secondary caregivers, who may be less responsible for daily asthma care.

We suggest, however, that there may be value in measuring and considering the QOL of secondary caregivers, as it may be an indication of how the child him or herself is adapting to their own asthma. For instance, when considering associations between caregiver QOL and indicators of asthma status, we found a significant association between the QOL of secondary – but not primary – caregivers and their children. In our sample of children with asthma, it may be that other caregivers assisted with emotional caregiving of family members and not necessarily the responsibility of daily asthma management. To our knowledge, this study is the first to consider associations between secondary caregiver QOL and child QOL. Previous studies considering associations between primary caregiver QOL and child QOL have been mixed, with most studies finding congruence between primary caregiver QOL and QOL in younger children (Burks, 2013; Vila et al., 2003). Our study suggests that in families with both primary and secondary caregiver participation, children may be more likely to adapt to asthma in a way that is similar to their secondary caregiver and not their primary caregiver (i.e., not the caregiver who is most in charge of daily asthma care).

With respect to other associations between caregiver QOL and asthma indicators, we also found that primary caregiver QOL on the emotional function subscale was associated with medication adherence scores across a 6-week period. Specifically, our finding suggests that caregivers who experienced a higher level of QOL, especially related to the emotional domain, had children who were more adherent to their medication regimen. This may suggest that caregivers with higher QOL are better able to balance their child's asthma-specific needs with other aspects of daily life (Everhart et al., 2014). QOL measures have often been considered an important outcome measure in terms of predicting daily behaviors, such as healthcare utilization (Silva, Carona, Crespo, & Canavarro, 2015). It is important to note that the association between QOL and medication adherence may also be explained in the reverse direction. For instance, children with higher adherence rates may have better asthma control, which, in turn, minimizes caregiver emotions (i.e., anxiety) related to child asthma. Regardless of directionality, our findings extend existing literature by suggesting that primary caregiver QOL may be linked to child medication adherence.

Although we found associations between primary caregiver QOL and medication adherence and between secondary caregiver QOL and child QOL, we did not find the QOL of either caregiver to be associated with asthma severity as determined by objective lung function. This finding is consistent with other research suggesting that QOL measures do not often correlate well with objective measures of health, including spirometry data (Everhart & Fiese, 2009b). In particular, QOL measures are thought to assess different components of health status than clinical indicators, such as spirometry readings.

QOL Discrepancies in Caregiver Dyads

In trying to better understand differences in the QOL of primary and secondary caregivers, we also examined under what conditions (i.e., high burden, more depressive symptoms) researchers and practitioners might expect differences in QOL among caregivers. Such findings could speak to whether the QOL of both primary and secondary caregivers might be important in clinical discussions of care or in pediatric research studies. Our findings suggest

that caregiver dyads may experience their child's asthma differently in families that report high levels of overall burden. In families reporting high levels of burden, it may be that primary caregivers are assuming most of the responsibility related to other areas within the family in addition to chronic disease management. We also found that in families with discrepant QOL between caregivers, primary caregivers were more likely to experience symptoms of anxiety or to have experienced psychological distress more broadly either in the past or currently. Interestingly, this was not the case with psychological factors related to the secondary caregiver. Previous reports suggest that primary caregivers may experience anxieties and emotional stress as a result of their child's asthma, in part, because of the limitations that caring for a child with a chronic condition can put on the caregiver's daily activities (Butz, Eggleston, Winkelstein, Thompson, & Rand, 2004). Therefore, the QOL of primary and secondary caregivers may be discrepant when primary caregivers are also experiencing psychological difficulties.

Limitations

Our study is not without limitations, including that it was a convenience sample and a cross-sectional design, meaning that we are not able to test for directionality or causality. In particular, we were not able to look at directionality between the QOL of caregivers, although the impact of one on another is likely transactional. Further, we included families that had both a primary and secondary caregiver participating in the study. Primary caregiver QOL is likely higher within families that have a secondary caregiver participating in a research study due to the inherent nature of a social support network (Chen et al., 2015). Our findings related to primary caregiver QOL and indicators of child asthma status may not generalize to families without a secondary caregiver in the home. Further, some secondary caregivers in our sample did not appear to live with primary caregivers, which could change the nature of results. However, we note that allowing families to define their own secondary caregiver allows for a more inclusive, individualized definition of co-caregiving. To examine this potential limitation, we reran analyses without those families and our results did not change. Nonetheless, future research should continue to examine whether our results generalize to families with caregivers that do not share a home.

Although efforts were made to include reports from participants other than the primary caregiver, including objective measures of lung function and medication adherence, it is important to note that method bias is a potential concern. Caregivers (both primary and secondary) reported on their own QOL in addition to reports on the BSI, and primary caregivers reported family burden. Our findings may not generalize to children with exercise-induced asthma or adolescents with asthma. Finally, it is important to note that our findings are specific to families in our sample and may not hold true for families from racially/ethnically diverse backgrounds, or for single-parent households.

Recommendations and Future Directions

Our findings have important implications for researchers and health care providers of children with asthma. First, assessments of primary caregiver QOL may serve useful in enabling researchers and providers to better understand rates of medication adherence for children with asthma. Assessments of secondary caregiver QOL, on the other hand, may be

indicative of the child's level of QOL more so than assessments of QOL from primary caregivers, although future work is needed to replicate our findings in larger, more diverse samples.

Second, we suggest that in families reporting low burden (i.e., related to family finances, familial and social interactions, or personal strain) and few psychological difficulties in the primary caregiver, QOL assessments from both caregivers may be better matched and similar to each other. Thus, researchers and health care providers may wish to consider either primary or secondary caregiver QOL in discussions of the child's asthma care, as each may be informative and representative of how parents are adapting to the child's asthma. Other the other hand, in families experiencing high levels of burden or more primary caregiver mental health issues, QOL reports from the secondary caregiver may not be as clinically meaningful. In particular, these reports may not accurately represent the level of caregiving burden or challenges being experienced by the person primarily in charge of the child's daily asthma care. Thus, treatment decisions based on secondary caregiver QOL may not be as beneficial to the child's asthma. Health care providers may wish to include a few questions related to family burden or caregiver psychological functioning in their discussions with families; this would allow providers to determine whether the QOL of secondary caregivers may be a useful tool to include in the care of childhood asthma.

Future directions include replication in larger samples of children, including adolescents, with both primary and secondary caregivers. Our study is one of the first to specifically consider the QOL of secondary caregivers, and it is only an initial step intended to provoke further examination. More research is needed that begins to tease apart the mechanism by which discrepancies in primary and secondary caregiver QOL begin to emerge. Furthermore, research is needed that investigates the impact QOL discrepancies between primary and secondary caregivers may have on the course of the child's asthma, caregiver's emotional functioning and ability to manage the child's asthma (e.g. medication adherence, doctor visits), and impact on family functioning.

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Table 1Participant demographics ($n = 118$)

Demographic variable	
<i>Primary Caregivers</i>	
Race/ethnicity, n (%)	
Caucasian	91 (77)
African American	17 (14)
Native American	2 (2)
Hispanic	2 (2)
Other	6 (5)
Caregiver identity, n (%)	
Biological mother	112 (95)
Biological father	5 (4)
Grandmother	1 (1)
Caregiver age in years, M (SD)	36.06 (6.19)
Marital status, n (%)	
Married	93 (79)
Living with a partner	13 (11)
Separated	3 (3)
Divorced	3 (3)
Single	5 (4)
<i>Secondary/Other Caregivers</i>	
Caregiver identity, n (%)	
Biological father	89 (75)
Biological mother	13 (11)
Stepmother/stepfather	5 (4)
Grandmother	2 (2)
Aunt/uncle	2 (2)
“Other”	7 (6)
Caregiver age in years, M (SD)	38.68 (5.32)
<i>Children</i>	
Child age in years, M (SD)	7.71 (2.13)
Asthma Severity, n (%)	
Mild	67 (57)
Mild persistent	26 (22)
Moderate persistent	24 (20)
Severe	2 (2)
Number of asthma-related ED visits in last year	
0 visits, n of children (%)	92 (78)
1 visit	13 (11)
2 visits	6 (5)
3 or more visits	7 (6)

Note. ED = Emergency department

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Table 2

T-test analyses comparing mean overall and subscale QOL scores for primary caregivers and secondary/other caregivers

	Primary Caregiver	Other Caregiver	t-value
Overall QOL, <i>M</i> (<i>SD</i>)	5.85 (1.26)	6.17 (.86)	-2.29 *
Cronbach's alpha	$\alpha = .93$	$\alpha = .90$	
Emotional Function Subscale	5.84 (1.21)	6.16 (.86)	-1.98 *
	$\alpha = .88$	$\alpha = .86$	
Activity Limitation subscale	5.87 (1.59)	6.22 (1.08)	-2.28 *
	$\alpha = .92$	$\alpha = .85$	

*
 $p < .05$

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Table 3
Spearman rho correlations between primary and secondary/other caregiver QOL and child asthma status indicators

	Overall PAQLQ (child QOL)	PAQLQ Symptom	PAQLQ Emotional Function	PAQLQ Activity Limitation	Medication Adherence	Asthma severity
PC Overall QOL	.12	.09	.12	.10	.18	.01
PC Emotional Function	.18	.33	.22	.29	.05	.93
PC Activity Limitation	.08	.04	.10	.06	.22	.02
OC Overall QOL	.40	.70	.31	.50	.02**	.85
OC Emotional Function	.17	.17	.13	.16	.07	-.02
OC Activity Limitation	.08	.08	.17	.08	.48	.80
PC Overall QOL	.20	.17	.24	.15	.15	-.08
PC Emotional Function	.03*	.07	.009**	.11	.14	.43
PC Activity Limitation	.20	.16	.26	.15	.18	-.09
OC Overall QOL	.03*	.09	.004**	.11	.07	.36
OC Emotional Function	.15	.16	.14	.10	-.02	-.03
OC Activity Limitation	.10	.09	.13	.26	.88	.72

PC = primary caregiver; OC = other caregiver

* $p < .05$,

** $p < .01$

Table 4

Differences in family burden and BSI scores (primary and secondary/other caregiver) across caregiver dyads with discrepant QOL scores versus those without

	Mean Scores (SD) [Range]	Dyads with discrepant QOL scores	Dyads without discrepant QOL scores	t-value
Family burden (IOF total)	25.30 (8.34) [15–50]	26.92 (7.99)	23.63 (8.43)	–3.28*
PC Depression	50.32 (9.20) [42–78]	50.94 (10.39)	49.67 (7.80)	–1.27
PC Anxiety	49.80 (10.13) [38–75]	52.11 (10.96)	47.36 (8.61)	–4.74*
PC Global severity	51.98 (10.96) [33–80]	54.51 (11.51)	49.31 (9.75)	–5.21*
OC Depression	50.50 (11.89) [0–80]	49.92 (11.41)	51.12 (12.46)	1.20
OC Anxiety	48.58 (11.47) [0–78]	48.20 (11.12)	48.99 (11.92)	.79
OC Global severity	49.60 (13.34) [0–80]	48.75 (12.83)	50.51 (13.92)	1.77

*p<.05

Note. Discrepant QOL scores refer to differences between primary caregiver (PC) and other caregiver (OC) overall QOL scores that were .50 or greater (i.e., minimally important difference threshold); IOF = Impact on Family; Depression, anxiety, and global severity scores are from the BSI (Brief Symptom Inventory).