Variables Associated With Shift of Responsibility for Daily Tasks From Parents to Children With and Without Disabilities

Ying-Chia Kao, Gael I. Orsmond, Ellen S. Cohn, Wendy J. Coster

Importance: No study has directly investigated which variables are associated with the shift of responsibility for managing daily tasks from parent to child in the transition to adulthood.

Objective: To examine characteristics associated with responsibility for managing daily life tasks in youth with and without disabilities.

Design: A secondary data analysis of parent-report data on typically developing (TD) youth and youth with disabilities.

Setting: An online panel that has regularly participated in online surveys.

Participants: A nationally representative sample of 2,205 TD U.S. children and youth, ages 0 to 20 yr, 11 mo (about 100 children per age year) and a sample of 617 children and youth with disabilities, ages 0 to 20 yr, 11 mo.

Outcomes and Measures: The dependent variable was the Responsibility domain scaled score (from the Pediatric Evaluation of Disability Inventory–Computer Adaptive Test), which reflects the extent to which responsibility for daily tasks has shifted from parent to youth.

Results: Youth with higher levels of responsibility were older in age, reported to be more focused, and youngest in birth order (TD, $R^2 = .79$; disability, $R^2 = .35$). Youth with developmental delay, intellectual disability, autism spectrum disorder, or orthopedic or movement impairments had assumed less responsibility.

Conclusions and Relevance: Other personal characteristics in addition to disability may have important influences on parents' decision making as they prepare their children to manage daily life tasks.

What This Article Adds: Clinicians who work with adolescents in the process of transition to adulthood need to consider the potential influence of the personal characteristics, such as birth order and child temperament, on preparation for adulthood.

The transition to adulthood, a complex process for typically developing (TD) young people, is even more complex for those with disabilities, because their disability or health condition may present additional challenges (Donkervoort et al., 2009). Traditionally, researchers have examined progress toward adulthood by investigating milestone achievement (e.g., getting a paid job, living independently; Donkervoort et al., 2009). However, these milestones are the endpoints of this transition process. In this study, we examined progress toward adulthood from a new perspective: that of *responsibility shift*, which focuses on the shift of responsibility for daily tasks from parent to child (Kao et al., 2015).

As children mature, parents gradually shift responsibility for managing daily tasks to them (Kao et al., 2015). This is an interactive process during which parents draw on their life experiences, cultural beliefs, and experiences of interaction with their children to decide when and how to gradually transfer responsibility (Dunn et al., 2009; Kao et al., 2015; Rogoff, 2003). Although the broad outcome of responsibility shift is observable, limited scientific knowledge about this process exists, in part because no reliable or valid measurement tool has focused on it. The Responsibility domain of the Pediatric Evaluation of Disability Inventory–Computer Adaptive Test (PEDI–CAT; Haley et al., 2012) offers a potential solution to this challenge.

Citation: Kao, Y.-C., Orsmond, G. I., Cohn, E. S., & Coster, W. J. (2020). Variables associated with shift of responsibility for daily tasks from parents to children with and without disabilities. *American Journal of Occupational Therapy*, 74, 7406205070. https://doi.org/10.5014/ajot.2020.036764

Researchers studying disability have discussed the importance of parents gradually transferring responsibility to their children (Magill-Evans et al., 2005; Wehman, 2001; Williams et al., 2007; Young et al., 2006). A small number of studies have investigated specific aspects of this shift; however, most of these examined the management of health-related needs. For example, Williams and colleagues (2007) interviewed children with cystic fibrosis (CF) and their parents to understand their experience of shifting responsibilities and family roles in managing physiotherapy for CF.

Compared with their same-age peers, children with disabilities may face additional challenges to learning and taking on responsibility for daily tasks. The challenges are diverse, and some may be directly related to disabilities. For example, it may take longer for young people with intellectual disabilities to learn to manage their own money, because cognitive skills are an important component of financial management tasks. Some challenges may be linked to complexity of tasks. For example, children with diabetes have to understand their dietary restrictions or monitor their blood glucose on a daily basis to manage their health. These activities are more complicated than the routine health care activities of young people without diabetes.

Other challenges may come from parents or adult caregivers who worry about their children's safety and health and therefore hesitate to let their children take responsibility in certain areas. Although parents of TD children also worry about their children's safety and health, the potential negative consequences of not managing tasks well may be more severe for children with disabilities. Therefore, it may be harder for parents of children with disabilities to let their children heart through trial and error.

These challenges raise the question of whether the variables that influence the shift of responsibility are similar or different for children with disabilities compared with TD children. This study was designed to examine this question. Although no existing study has directly and systematically investigated which variables are associated with responsibility shift, some hints can be found in the literature in the areas of disability, child development, parenting, and transition-to-adulthood research. On the basis of this literature, we identified potential child, parent, and family characteristic predictors for this study that were available in the data set.

Child characteristic predictors included age (Feldman & Quatman, 1988; Wray-Lake et al., 2010), gender (Drummond et al., 2015; Wray-Lake et al., 2010), birth order (Bornstein et al., 2010; Wray-Lake et al., 2010), temperament (Ganiban et al., 2011), and racial or ethnic group (Larson & Verma, 1999; Rogoff, 2003; Wray-Lake et al., 2016). Potential parent characteristic predictors included gender (Lamb & Lewis, 2010), marital status (Lamb & Lewis, 2010), racial or ethnic group (Rogoff, 2003), and education level (Bornstein et al., 2010). Potentially relevant family characteristic predictors included family income level (Bornstein et al., 2010), number of children at home (Rogoff, 2003), recent immigrant status (Rogoff, 2003), and community type (Eccles & Roeser, 2010). This study addressed three research questions:

- 1. What child, parent, and family characteristics are associated with the extent of responsibility shift in TD children and youth?
- 2. What child, parent, and family characteristics are associated with the extent of responsibility shift in children and youth with disabilities?
- 3. Does disability type predict additional variance for children and youth with disabilities?

Method

The data for this study were obtained from research to develop the PEDI–CAT (Haley et al., 2011, 2012). The data set includes a nationally representative sample of 2,205 TD children and youth, ages 0 to 20 yr, 11 mo (about 100 children per age year), and a sample of 617 children and youth with disabilities, ages 0 to 20 yr, 11 mo. Approval for performing secondary data analyses was obtained from the institutional review board at Boston University.

Data and Participants

Parent-report data were obtained through a web-based survey, administered by an online survey company, to establish norms and to examine the psychometric properties of the PEDI–CAT. The survey company has an online panel (n = 115,000) who have regularly participated in online surveys. The survey company contacted only panel members with one or more children younger than age 21 yr and addresses within the contiguous United States between May and August 2009. Details regarding data collection were reported in a prior study (Haley et al., 2011).

The parents were asked to answer a series of screening questions about their children to determine their eligibility and placement into either the TD or the disability sample. If the parents responded yes to any of the screening questions, or reported that their children received early intervention services or had limitations in personal care activities, routine needs, play, or recreation, they were placed in the disability sample.

The company used a quota sampling method based on child age to ensure sufficient data in the TD sample within each of the age years from 0 to 20 yr, 11 mo; equal proportions of male and female children; and representativeness of race and ethnicity according to 2000 U.S. Census data. Table 1 provides participant demographics.

Parent-report data were obtained for 617 children and youth with disabilities. The majority of these children were male (62.7%; n = 387), with a mean age of 11.67 yr (SD = 4.70). Parents of children with disabilities were given a list of disability and health conditions and were asked to select those applicable to their child (Table 2).

Measures

The Responsibility domain of the PEDI–CAT examines the extent to which a young person is taking responsibility for managing life tasks that enable independent living (Haley et al., 2012). Its 51 items address daily life tasks (e.g., taking care of daily needs, managing health, staying safe, planning one's day). An example question is "How much responsibility does your child take for the following activities? Getting ready in the morning on time. Includes getting up; getting dressed; grooming and hygiene activities; eating breakfast, completing on time" (Haley et al., 2012). A 5-point rating scale reflects the extent to which responsibility for each life task is being assumed by either the parent or the child, from adult or caregiver taking full responsibility to adult and child sharing responsibility to child taking full responsibility.

Studies examining the feasibility, content validity, and psychometric properties of the PEDI–CAT domains have provided strong evidence of the reliability and validity of this domain (Dumas et al., 2010, 2012). The Responsibility domain scaled scores used in the analysis were generated from the combined samples of TD children and children with disabilities using the two-parameter logistic Graded Response Model with PARSCALE (Scientific Software International, Lincolnwood, IL) and are expressed on a scale ranging from 20 to 80 (Haley et al., 2012).

In addition to PEDI–CAT items, respondents completed a background questionnaire with questions about themselves and about child and family characteristics (see Table 1). These items were based on literature that had identified variables that may be associated with responsibility shift. Child characteristics included age, gender, birth order, racial or ethnic group, and temperament. Questions about a child's temperament, designed for this study, addressed four dimensions: distracted–focused, shy–outgoing, low activity–active, and easily upset–easygoing. The dimensions were rated using a 7-point Likert scale (distracted–focused: 1 = *easily distracted*, 7 = *very focused*; shy–outgoing: 1 = *very shy*, 7 = *very outgoing*; low activity–active: 1 = *low activity/quiet*, 7 = *very active/energetic*; easily upset–easygoing: 1 = *easily upset*, 7 = *very easygoing*; Rothbart & Bates, 2006; see Table 1). Respondent characteristics included gender, marital status, racial or ethnic group, and education level. In addition, questions asked about family income level, number of children at home, immigrant status, and community type.

Table 1. Independent Variables: Child and Family Characteristics

Variable	TD Children (<i>n</i> = 2,205), <i>M</i> (<i>SD</i>), Range or <i>n</i> (%)	Children With Disabilities $(n = 617), M(SD), Range or n(\%)$			
	Continuous Variables				
Child age, yr ^a	10.6 (6.06), 0–21	11.67 (4.70), 0–20			
Temperament					
Distracted-focused	4.59 (1.56), 1–7	3.22 (1.82), 1–7			
Shy-outgoing	5.17 (1.46), 1–7	4.88 (1.78), 1–7			
Low activity-active ^b	5.29 (1.46), 1–7	5.09 (1.77), 1–7			
Easily upset–easygoing ^b	4.50 (1.58), 1–7	3.56 (1.79), 1–7			
	Categorical Variables ^c				
Child gender	-				
Female	1 079 (48 9)	230 (37 3)			
Male	1,075 (40.5)	387 (62 7)			
Child hirth order	1,120 (31.1)	307 (02.7)			
	753 (3/1)	183 (29 7)			
	733 (34.1) 224 (10.2)	08 (15 0)			
Voungost	224 (10.2) 660 (20.0)	90 (10.9) 202 (26.1)			
	000 (29.9) 569 (25.9)	112 (19.2)			
	506 (25.6)	113 (10.3)			
	1 429 (65 0)	420 (68 1)			
Plack	1,430 (03.2)	420 (08.1)			
Diack Hispania	241(10.9)	59 (9.0)			
Acian	207 (9.4)	59 (9.0) 10 (1.0)			
Asiali	30 (1.4) 200 (12.1)	12 (1.9)			
Derent gender	200 (13.1)	67 (10.9)			
	1 107 (54.2)	274 (60.6)			
Female	1,197 (34.3)	374 (60.6)			
Iviale	1,008 (45.7)	243 (39.4)			
Multita	1 542 (70 0)	452 (72.4)			
Wille	1,343 (70.0)	453 (73.4)			
	207 (12.1)	61 (9.9)			
Asian	240 (11.2)	63 (10.2)			
Asiali	20 (1.1)	6 (1.0) 24 (5.5)			
Durier	124 (3.0)	34 (5.5)			
No bigh achool	47 (01)	10 (0.0)			
No high school graduate	47 (Z.I)	18 (2.9)			
	392 (17.8)	117 (19.0)			
4-yr college graduate)	1,419 (64.4)	389 (63.0)			
Postgraduate	346 (15.7)	93 (15.1)			
Parent marital status					
Married	1,690 (76.6)	445 (72.1)			
Single, widowed, divorced	430 (19.5)	146 (23.7)			
Domestic partnership	85 (3.9)	26 (4.2)			
Annual household income ^b					
<\$50,000	743 (33.7)	255 (41.3)			
\$50,000–\$99,999	833 (37.8)	210 (34.0)			
≥\$100,000	463 (21.0)	111 (18.0)			
Prefer not to say	166 (7.5)	41 (6.6)			
Immigrant (self or spouse)					
Yes	298 (13.5)	92 (14.9)			
No	1,907 (86.5)	525 (85.1)			

Statistical Analysis

Multiple linear regression models were conducted using IBM SPSS Statistics (Version 23.0; IBM Corp., Armonk, NY) to identify the variables significantly associated with the extent of responsibility shift. For Research Questions 1 and 2, the dependent variable in the regression was the Responsibility domain scaled score, and the independent variables included child and family characteristics (Table 1). The Responsibility domain scaled score is an interval-level score on a scale ranging from 20 to 80 that estimates the placement of an individual child along the continuum of responsibility transfer. The scaled score is calculated by the CAT program (Haley et al., 2011).

The regression analyses were conducted separately for the TD and the disability samples. Manual backward elimination was performed to exclude variables, one at a time, that were not significant (p > .05) until the remaining variables in the model were all significant. The coefficient of partial determination, Type 2 partial R², was obtained for each predictor in the final model to assess the unique variance explained by each variable after controlling for other variables in the model. Sample sizes were sufficient to meet regression requirements of at least 10 cases for each variable in the model (Kleinbaum et al., 1998).

For Research Question 3, 11 disability categories (see Table 2) were included in the regressions as independent variables (dummy coded for yes or no) in addition to the set of independent variables mentioned previously. The

(Continued)

Variable	TD Children (<i>n</i> = 2,205), <i>M (SD</i>), Range or <i>n</i> (%)	Children With Disabilities (<i>n</i> = 617), <i>M</i> (<i>SD</i>), Range or <i>n</i> (%)			
Community type					
City	620 (28.1)	173 (28.0)			
Small town	433 (19.6)	116 (18.8)			
Suburban	847 (38.4)	224 (36.3)			
Rural	305 (13.8)	104 (16.9)			
No. of children at home ^d					
1	1,026 (46.5)	229 (37.1)			
2	786 (35.6)	243 (39.4)			
3	269 (12.2)	98 (15.9)			
≥4	124 (5.6)	46 (7.5)			

Table 1. Independent Variables: Child and Family Characteristics (Cont.)

Note. TD = typically developing.

^aAge = 2009 – child birth year. ^bOne case was missing in the TD sample. ^cIn regression analysis, for categorical variables with more than two categories, the category with the most participants was used as the reference group. ^dOne case was missing in the disability sample.

analysis procedure described previously was then repeated.

Several modeling techniques were used to ensure the quality of final statistical models, including goodness-of-fit assessment and regression diagnostics. The goodnessof-fit measure was the coefficient of determination of R^2 . Regression diagnostics, including residual plots, detection of influential cases, and check for multicollinearity, were applied to each final model to ensure that there were no violations of assumptions in each model.

Results

Table 3 presents findings from the regression analysis for the TD sample. The overall model was significant, F(7, 2197) = 1,199.20, p < .001, with the set of variables together explaining 79% (adjusted $R^2 = .79$) of the variance in Responsibility domain scaled scores. Child age accounted for the largest proportion of unique variance (partial $R^2 = .72$). Children who were older in age, female, reported to be more focused, reported to be more outgoing, in between children in the family, and the youngest in the family tended to have more responsibility, after controlling for other variables in the model.

Table 3 also presents the findings from the regression analysis for the disability sample. The overall model was significant, F(6, 610) = 53.97, p < .001, with the set of variables together explaining 35% (adjusted $R^2 = .35$) of the

Table 2.	Disability	Categories	as	Reported	by	Parents
----------	------------	------------	----	----------	----	---------

Disability Type	Children With Disabilities Sample, n (%)
Attention deficit disorder	248 (40.2)
Developmental delay	195 (31.6)
Speech or language impairments	173 (28.0)
Autism spectrum disorder	108 (17.5)
Specific learning disability	81 (13.1)
Serious emotional disturbance	77 (12.5)
Health impairments	70 (11.3)
Intellectual disability	50 (8.1)
Vision impairments	46 (7.5)
Orthopedic impairments/movement impairments	34 (5.5)
Multiple disabilities ^a	33 (5.3)
Hearing impairments	30 (4.9)
Traumatic brain injury ^b	9 (1.5)

Note. Parents were asked, "Has a doctor, health professional or representative from a school ever told you that your child has any of these conditions?" Parents were allowed to select more than one disability.

^aThe "multiple disabilities" category was not included in the analysis because such a broad term does not describe which disabilities a child might have. ^bTraumatic brain injury was not included in the analysis because the number of children with this diagnosis was very small.

variance in Responsibility domain scaled scores. Similar to the model for the TD children, child age accounted for the largest proportion of unique variance in this population (partial $R^2 = .33$). Children who were older in age, reported to be more focused, reported to be more energetic, and the youngest child in the family tended to have more responsibility, after controlling for other variables in the model.

Finally, Table 3 presents findings from the regression analysis when disability categories were added. The overall model was significant, F(9,607) = 46.86, p < .001, with the set of variables together explaining 41% (adjusted $R^2 = .41$) of the variance in Responsibility domain scaled scores. Adding disability categories to the regression increased the total amount of explained variance in the final model (41% vs. 35%). Four disability categories (developmental delay, intellectual disability, orthopedic or movement impairments, and autism

Table 3.	Predictors	of the	Extent of	Responsibility	Shift
----------	------------	--------	-----------	----------------	-------

	Research Question 1: TD Children			R Chil	Research Question 2: Children With Disabilities			Research Question 3: Children With Disabilities and Disability Type		
Variable	В	95% CI	Type 2 Partial R ²	В	95% CI	Type 2 Partial R ²	В	95% CI	Type 2 Partial <i>R</i> ²	
Age, yr	1.76***	[1.72, 1.79]	.7173	1.14***	[1.02, 1.27]	.3275	1.14***	[1.02, 1.26]	.3261	
Gender ($0 = male, 1 = female$)	0.58*	[0.12, 1.04]	.0006	_	_	_	_	_		
Temperament										
Distracted-focused	0.23**	[0.08, 0.38]	.0008	0.55**	[0.22, 0.87]	.0116	0.45**	[0.14, 0.76]	.0078	
Low activity-active	_	_	_	0.41*	[0.07, 0.75]	.0059	_	_	_	
Shy-outgoing	0.19*	[0.03, 0.34]	.0005	_	—	_	_	—	—	
Birth order										
In between (vs. oldest)	1.30**	[0.47, 2.13]	.0009	1.09	[-0.72, 2.91]	.0015	1.11	[-0.62, 2.84]	.0015	
Youngest (vs. oldest)	0.90**	[0.33, 1.48]	.0009	1.71*	[0.26, 3.17]	.0058	1.74*	[0.36, 3.12]	.0060	
Only child (vs. oldest)	0.29	[-0.32, 0.90]	.0000	-0.26	[–2.01, 1.49]	.0000	-0.03	[–1.70, 1.64]	.0000	
Disability category										
Developmental delay	_	_	_	_	_	_	-1.94**	[-3.23, -0.64]	.0084	
Intellectual disability	_	_	_	_	_	_	-5.35***	[-7.50, -3.20]	.0232	
Orthopedic/movement impairments	—	—	—	—	_	—	-4.15**	[-6.62, -1.69]	.0162	
Autism spectrum disorder	_	_	_	_	_	_	-2.25**	[-3.76, -0.75]	.0084	
		Total $R^2 = .79^{**}$	**		Total $R^2 = .35^{**}$	**	Total R ² = .41***			

Note. CI = confidence interval; TD = typically developing; — = not applicable.

*p < .05. **p < .01. ***p < .001.

spectrum disorder) stayed in the final model and were significant predictors of the extent of responsibility shift in children with disabilities. Other variables addressed by Research Question 2 (Table 3) remained significant, and child age still accounted for the largest proportion of unique variance (partial $R^2 = .33$). After controlling for other variables in the model, children who were older in age, reported to be more focused, and the youngest child in the family tended to have higher scaled scores. Children with one of the four identified disability categories tended to have less responsibility for managing daily life tasks.

Discussion

This study contributes to knowledge about the transition-to-adulthood process in two important ways. First, it compared factors that predict transfer of responsibility in children and youth with and without disabilities. Second, it considered person characteristics in addition to disability.

Child age explained the largest proportion of unique variance in the shift of responsibility from parent to child in both populations, which is not surprising given the broad age range in the sample. As children develop more cognitive and functional skills, they can take more responsibility for managing daily tasks. Parents also have different expectations of what tasks their children should be responsible for at different ages.

Although age accounted for the most variance in both populations, the models differed in the total amount of explained variance, with the explained variance substantially smaller in the model for the children with disabilities (35% vs. 79%). This difference suggests that there are other important predictors for children with disabilities that were not measured in this study. When disability categories were added to the analysis, the total explained variance for the disability sample increased, but still not to the level in the sample without disability.

An interesting finding is that some dimensions of temperament were associated with the extent of responsibility shift in both groups after controlling for other variables in the model. These associations have not been documented

elsewhere in the literature, but the relevance of this child characteristic is supported by research on parenting. Child temperament has been found to be an important contextual factor in parenting behavior (Ganiban et al., 2011), and parents of several children often find that each child handles daily tasks differently as a result of their unique personality (Putnam et al., 2002). More studies are needed to better understand the complex process through which parents take each child's unique characteristics into consideration as they help them through the transition to adulthood.

The temperament dimension of distracted–focused remained significant in all final models. Children who were reported to be more focused were likely to have higher scores on the Responsibility domain. This association is logical because the ability to sustain attention plays an important role in most daily tasks. Focused children may get tasks done more efficiently; hence, their parents may trust them more and transfer responsibility to them sooner. This positive association may also reflect a relationship between executive function and shift of responsibility. A few studies of adolescents have reported a relationship between executive function and performance of instrumental activities of daily living (Tarazi et al., 2007; Tuminello et al., 2012), which are the types of tasks included in the Responsibility domain. For the disability sample, the association between shift of responsibility and the temperament dimension of distracted–focused can also be considered from a clinical perspective. Forty percent of the disability sample was reported to have attention deficit disorder, so this item may have captured the severity of inattention symptoms in these children.

Child birth order was a significant predictor of the extent of responsibility shift in both groups. Later born children (the youngest in the family) tended to have more responsibility for managing daily tasks. This finding is consistent with a study by Wray-Lake et al. (2010), who found that second-born children had higher scores on a measure of decision-making autonomy than firstborns at the same age. However, Wray-Lake et al. examined independence from a cognitive perspective (who is making autonomy-related decisions), whereas this study focused on performance (who is taking responsibility for managing tasks). These findings suggest that parents may learn from their experience with earlier born children and therefore allow autonomy at a younger age for later born children (Whiteman et al., 2003; Wray-Lake et al., 2010).

This same pattern was found in the sample of children with disabilities, indicating that, regardless of disability, parents' experience with their earlier born children may affect the timing of responsibility transfer for daily tasks for their later born children. Parents' previous experience teaching children to manage daily tasks may be a relevant factor for clinicians to consider when planning intervention to assist families in the transition process.

Girls in the TD sample were likely to have higher Responsibility domain scaled scores than boys, which is consistent with the pattern reported in the decision-making autonomy literature (Bumpus et al., 2001; Wray-Lake et al., 2010). There are several possible explanations for this difference. For example, parents may have different age-related expectations for boys and girls in terms of when they should be responsible for various daily tasks. In addition, because girls typically mature earlier than boys (Bumpus et al., 2001), girls' relative maturity may lead parents to transfer more responsibility to them at a younger age.

This association between child gender and the shift of responsibility was not found in the sample of youth with disabilities. Although girls may be more mature than boys in general, parents may see girls with disabilities as more vulnerable than boys. Prior research has shown that, compared with boys, girls with disabilities are more likely to be told that they cannot do something because it is not safe (Powers et al., 2008). It is also possible that the severity of the children's disability overshadowed the differences between boys and girls. This is an important question for future research.

Although children with disabilities in this study were not representative of the disability population in the United States, a wide range of conditions were reported in the disability sample. We found that four conditions (developmental delay, intellectual disability, autism spectrum disorder, and orthopedic or movement impairments) were associated with having less responsibility for managing daily tasks. Multiple factors may contribute to this finding. Many tasks in the Responsibility domain involve cognitive skills, such as planning, problem solving, and organizing. These tasks are more

challenging for young people with an intellectual disability and may also be difficult for children with autism spectrum disorder (Gardiner & Iarocci, 2018). In addition, difficulty with gross motor skills may limit children's mobility in the community, reducing opportunities to perform some community-related tasks (e.g., shopping at a grocery store), whereas limitations in fine motor skills make some tasks more challenging to complete in a timely way.

Study Limitations

The results of this study must be considered in relation to certain limitations. First, although the cross-sectional design can help identify important variables associated with the shift of responsibility, a future study with a longitudinal design is needed to validate the findings. Second, we used only four simple questions to probe children's temperament characteristics. A more comprehensive and reliable temperament questionnaire is needed to further examine the relationship between a child's temperament and their assumption of responsibility for daily life tasks. Third, we did not have information regarding the children's cognitive level, executive function, or severity of disability. Inclusion of good measures of these variables in future research will be important to further understand how they relate to children taking on responsibility for managing daily life tasks. Fourth, the disability diagnosis was reported by parents. Although parents answered a series of questions regarding their children's conditions, we did not have an independent verification of their diagnoses. Such a verification of the child's diagnosis is needed to further examine the relationship between a child's disability and their assumption of responsibility for daily life tasks. Fifth, these findings were from a sample reflecting the culture of the United States. Parents and children from different cultural groups may have different cultural groups would be valuable.

Implications for Occupational Therapy Practice

The results of this study have the following implications for occupational therapy practice:

- Personal characteristics in addition to disability may have important influences in parents' decision making as they prepare their children to manage daily life tasks.
- Child temperament (how focused they were reported to be) and birth order were significant predictors of the extent of responsibility shift in children with and without disabilities.
- Clinicians who work with adolescents in the process of transition to adulthood need to consider the potential influence of personal characteristics on preparation for adulthood (e.g., provide additional guidance for clients who are the oldest child in the family).

Conclusion

We found that child age, the temperament dimension of distracted-focused, and child birth order (youngest) were associated with the extent of responsibility shift for daily task management for children and youth with and without disabilities. Young people with developmental delay, intellectual disability, autism spectrum disorder, or orthopedic or movement impairments were likely to have less responsibility for managing daily life tasks. Although the models for these two populations were similar regarding the combination of the significant predictors, the model for children with disabilities explained substantially less variance.

References

Bornstein, M. H., Cote, L. R., Haynes, O. M., Hahn, C. S., & Park, Y. (2010). Parenting knowledge: Experiential and sociodemographic factors in European American mothers of young children. *Developmental Psychology*, *46*, 1677–1693. https://doi.org/10.1037/a0020677

Bumpus, M. F., Crouter, A. C., & McHale, S. M. (2001). Parental autonomy granting during adolescence: Exploring gender differences in context. *Developmental Psychology*, *37*, 163–173. https://doi.org/10.1037/0012-1649.37.2.163

- Donkervoort, M., Wiegerink, D. J., van Meeteren, J., Stam, H. J., & Roebroeck, M. E.; Transition Research Group South West Netherlands. (2009). Transition to adulthood: Validation of the Rotterdam Transition Profile for young adults with cerebral palsy and normal intelligence. *Developmental Medicine and Child Neurology*, *51*, 53–62. https://doi.org/10.1111/j.1469-8749.2008.03115.x
- Drummond, A. de F., Gomes, A. M., Coster, W. J., & Mancini, M. C. (2015). Predictive factors of household task participation in Brazilian children and adolescents. *OTJR: Occupation, Participation and Health, 35*, 101–109. https://doi.org/10.1177/1539449215573005
- Dumas, H., Fragala-Pinkham, M., Haley, S., Coster, W., Kramer, J., Kao, Y. C., & Moed, R. (2010). Item bank development for a revised Pediatric Evaluation of Disability Inventory (PEDI). *Physical and Occupational Therapy in Pediatrics*, 30, 168–184. https://doi.org/10.3109/01942631003640493
- Dumas, H. M., Fragala-Pinkham, M. A., Haley, S. M., Ni, P., Coster, W., Kramer, J. M., . . . Ludlow, L. H. (2012). Computer adaptive test performance in children with and without disabilities: Prospective field study of the PEDI–CAT. *Disability and Rehabilitation*, 34, 393–401. https://doi.org/10.3109/09638288.2011. 607217
- Dunn, L., Coster, W. J., Cohn, E. S., & Orsmond, G. I. (2009). Factors associated with participation of children with and without ADHD in household tasks. *Physical and Occupational Therapy in Pediatrics*, 29, 274–294. https://doi.org/10.1080/01942630903008327
- Eccles, J. S., & Roeser, R. W. (2010). School and community influences on human development. In L. M. Bornstein (Ed.), *Developmental science: An advanced textbook* (6th ed., pp. 571–644). Psychology Press.
- Feldman, S. S., & Quatman, T. (1988). Factors influencing age expectations for adolescent autonomy: A study of early adolescents and parents. *Journal of Early Adolescence*, *8*, 325–343. https://doi.org/10.1177/0272431688084002
- Ganiban, J. M., Ulbricht, J., Saudino, K. J., Reiss, D., & Neiderhiser, J. M. (2011). Understanding child-based effects on parenting: Temperament as a moderator of genetic and environmental contributions to parenting. *Developmental Psychology*, 47, 676–692. https://doi.org/10.1037/a0021812
- Gardiner, E., & larocci, G. (2018). Everyday executive function predicts adaptive and internalizing behavior among children with and without autism spectrum disorder. *Autism Research*, *11*, 284–295. https://doi.org/10.1002/aur.1877
- Haley, S. M., Coster, W., Dumas, H. M., Fragala-Pinkham, M. A., Kramer, J., Ni, P., . . . Ludlow, L. H. (2011). Accuracy and precision of the Pediatric Evaluation of Disability Inventory Computer Adapted Test (PEDI–CAT) for children 0 to 21 years of age. *Developmental Medicine and Child Neurology, 53*, 1100–1106. https://doi.org/10.1111/j.1469-8749.2011.04107.x
- Haley, S. M., Coster, W., Dumas, H. M., Fragala-Pinkham, M. A., & Moed, R. (2012). PEDI–CAT: Development, standardization, and administration manual. CRECare.
- Kao, Y. C., Kramer, J. M., Liljenquist, K., & Coster, W. J. (2015). Association between impairment, function, and daily life task management in children and adolescents with autism. *Developmental Medicine and Child Neurology*, 57, 68–74. https://doi.org/10.1111/dmcn.12562
- Kleinbaum, D. G., Kupper, L. L., Muller, K. E., & Nizam, A. (1998). Applied regression analysis and other multivariable methods. Brooks/Cole.
- Lamb, M. E., & Lewis, C. (2010). The role of parent-child relationships in child development. In M. H. Bornstein & M. E. Lamb (Eds.), *Developmental science: An advanced textbook* (6th ed., pp. 427–468). Psychology Press.
- Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play, and developmental opportunities. *Psychological Bulletin*, *125*, 701–736. https://doi.org/10.1037/0033-2909.125.6.701
- Magill-Evans, J., Wiart, L., Darrah, J., & Kratochvil, M. (2005). Beginning the transition to adulthood: The experiences of six families with youths with cerebral palsy. *Physical and Occupational Therapy in Pediatrics*, 25, 19–36. https://doi.org/10.1080/J006v25n03_03
- Powers, K., Hogansen, J., Geenen, S., Powers, L. E., & Gil-Kashiwabara, E. (2008). Gender matters in transition to adulthood: A survey study of adolescents with disabilities and their families. *Psychology in the Schools*, *45*, 349–364. https://doi.org/10.1002/pits.20297
- Putnam, S. P., Sanson, A. V., & Rothbart, M. K. (2002). Child temperament and parenting. In M. H. Bornstein (Ed.), Handbook of parenting (2nd ed., pp. 255–277). Eribaum.
- Rogoff, B. (2003). The cultural nature of human development. Oxford University Press.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon & R. Lerner (Eds.), Handbook of child psychology (pp. 99–166). Wiley.
- Tarazi, R., Mahone, E., & Zabel, T. (2007). Self-care independence in children with neurological disorders: An interactional model of adaptive demands and executive dysfunction. *Rehabilitation Psychology*, 52, 196–205. https://doi.org/10.1037/0090-5550.52.2.196
- Tuminello, E. R., Holmbeck, G. N., & Olson, R. (2012). Executive functions in adolescents with spina bifida: Relations with autonomy development and parental intrusiveness. *Child Neuropsychology*, *18*, 105–124. https://doi.org/10.1080/09297049.2011.590470
- Wehman, P. (2001). Life beyond the classroom: Transition strategies for young people with disabilities (3rd ed.). Paul H. Brookes.
- Whiteman, S. D., McHale, S. M., & Crouter, A. C. (2003). What parents learn from experience: The first child as a first draft. *Journal of Marriage and the Family*, 65, 608–621. https://doi.org/10.1111/j.1741-3737.2003.00608.x
- Williams, B., Mukhopadhyay, S., Dowell, J., & Coyle, J. (2007). From child to adult: An exploration of shifting family roles and responsibilities in managing physiotherapy for cystic fibrosis. *Social Science and Medicine*, *65*, 2135–2146. https://doi.org/10.1016/j.socscimed.2007.07.020
- Wray-Lake, L., Crouter, A. C., & McHale, S. M. (2010). Developmental patterns in decision-making autonomy across middle childhood and adolescence: European American parents' perspectives. *Child Development*, *81*, 636–651. https://doi.org/10.1111/j.1467-8624.2009.01420.x
- Wray-Lake, L., Syvertsen, A. K., & Flanagan, C. A. (2016). Developmental change in social responsibility during adolescence: An ecological perspective. Developmental Psychology, 52, 130–142. https://doi.org/10.1037/dev0000067
- Young, N., McCormick, A., Mills, W., Barden, W., Boydell, K., Law, M., . . . Williams, J. I. (2006). The transition study: A look at youth and adults with cerebral palsy, spina bifida and acquired brain injury. *Physical and Occupational Therapy in Pediatrics*, *26*, 25–45. https://doi.org/10.1080/J006v26n04_03

Ying-Chia Kao, ScD, OTR, is Assistant Professor, Department of Occupational Therapy, Asia University, Taichung, Taiwan; yckao@asia.edu.tw Gael I. Orsmond, PhD, is Professor, Department of Occupational Therapy, Boston University, Boston, MA.

Ellen S. Cohn, ScD, OTR, FAOTA, is Clinical Professor, Department of Occupational Therapy, Boston University, Boston, MA.

Wendy J. Coster, PhD, OTR, FAOTA, is Professor, Department of Occupational Therapy, Boston University, Boston, MA.

Acknowledgments

This article is dedicated to the memory of our colleague, Stephen Haley, whose passion to improve services and outcomes for children with disabilities guided the development of the original Pediatric Evaluation of Disability Inventory and its recent revision. We miss his intellect, passion, warmth, and humor.

We thank Timothy Hereen from the Biostatistics Department, Boston University, for giving us feedback on our "Statistical Analysis" section.

This research was partially supported by Dudley Allen Sargent Research Fund and National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Center for Medical Rehabilitation Research Grant R42HD052318 (Small Business Technology Transfer Phase II award).