Language and Narrative Skills in Young Children with Special Health Care Needs

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Abstract

Problem Statement: Previous studies showed that children with special health care needs are at increased risk for future linguistic problems and deficits in narrative abilities. Despite this evidence of increased risk, there has been limited research on the impact of young children's health problems on specific aspects of linguistic development.

Purpose of Study: This study examined the relationship between the complexity of health care needs and language and narrative skills in young children with special health care needs.

Method: Ninety-nine children, ages 4 to 6 years, were classified using a rating system in which the number of organ systems affected and severity of complications determined the complexity of

health care needs. Children were stratified by rating complexity, which resulted in three groups. While Group 1 included healthy children, Group 2 included children with less complex health care needs, and Group 3 included children with more complex health care needs. The Wechsler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R) and the Test of Early Language Development (TELD-III) were administered to each child in the study. Children also completed a story generation task and produced personal narratives in response to three conversation prompts. Children's narratives were evaluated on two dimensions: productivity (total number of words and C-units) and quality (where performance was rated in accordance

with nine indicators of quality).

Results: Groups with different levels of complexity of health care needs were compared on language and narrative measures, using gender and

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WPPSI-R scores as covariates. The results showed that children with more complex health care needs demonstrated greater weaknesses on expressive language and narrative tasks than children with less complex health care needs and those who were healthy.

Conclusions: The findings support the contention that health issues are related to children's language status. The complexity of health care needs may hinder the development of language and narrative skills. The results of this study suggest that professionals in health care, speech and language, and education should be alerted to the potential connection between health and language. Yet efforts to identify language and narrative deficits early in this special population should lead to earlier interventions for children who are at risk for the development of later learning difficulties.

Keywords: Special health care needs, complexity of needs, early childhood, language skills, narrative skills

The process of language acquisition and the development of early language delays and deficits in children have become a focus for research in recent years. Several studies have shown that early deficits in language are predictive of subsequent problems in school performance, social skills, and literacy development (Law & Harris, 2000; Scarborough, 2001). Language deficits are often developmental, and the majority of young children with language delays catch up to their age-matched peers on language development measures by the age of five (Girolametto, Wiigs, Smyth, Weitzman, & Pearce, 2001; Paul & Hernandez, 1996). However, they do continue to have weaknesses in a number of higher-level language skills, including the ability to produce narratives (Girolametto et al., 2001; Hemphill, Uccelli, Winner, Chang, & Bellinger, 2002).

The ability to produce narratives has been described as "the ability to describe and characterize actors, objects, and events, identify and order the sequence of events, and comprehend the relations among actors, actions, and consequences of actions" (Harkins, Koch, & Michel, 1994). The narrative is a basic type of discourse that underlies most forms of communication (Shiro, 1995). Peterson, Jesso, and McCabe (1999) identified the link between narratives and decontextualized language. According to these authors, narratives foster decontextualized language skills by describing the there-and-then, rather than the here-and-now. For this reason, they are common in the daily activities of early childhood education settings, such as storytelling, show and tell, and sharing time. Although such activities provide opportunities to practice and to acquire narrative skills, children are expected to already have acquired some narrative skills when they enter school (Peterson, Jesso, & McCabe, 1999). However, some children from disadvantaged backgrounds enter school with not enough pre-existing knowledge of narrative structures and, therefore, have greater difficulty meeting the requirements of school life and are more likely to be identified as having learning disabilities (Girolametto et al., 2001; Paul & Hernandez, 1996; Scarborough, 2001).

Although the causes of early language deficits are largely unknown, the study reported here is based on the hypothesis that language deficits may be related to health problems. About 18.5% of children under 18 years of age were reported to have one or more chronic health condition (Tu & Cunningham, 2005). Children with special health care needs were defined as those "who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally" (McPherson et al., 1998). Among children with chronic conditions, 70% were reported to have a single condition, 21% had two conditions, and 9% had multiple conditions that had a severe impact on their daily living (Tu & Cunningham, 2005).

Children with special health care needs not only face the same developmental tasks and challenges as healthy children; they also cope with the stress of conditions that may significantly affect their physical, mental, and social functioning. There are a number of different ways in which children's health care needs may affect their development. Children's special health care needs may directly affect their biological capacity to learn, the medications they are taking may alter their learning capabilities, hospitalizations and time in bed may limit their opportunities for learning, or their health care needs may alter their relationships with their primary caregivers (Bramlett, Read, Bethell, & Blumberg, 2009). Although, with treatment, some consequences of health conditions may be ameliorated or prevented, chronic diseases cannot be cured (Boekaerts & Roder, 1998). At this point, it seems reasonable to hypothesize that disease symptoms, medications and other forms of treatment, frequent hospitalizations, restriction of daily life activities, or alterations in family relationships (Bramlett et al., 2009; Garrison & McQuiston, 1989) may affect the language acquisition and academic success of these children. A few studies provide support for this hypothesis. Bryan, Burstein, Chao, and Ergul (2006) assessed young children with chronic health conditions that historically were not associated with cognitive deficits or severe emotional and behavioral problems. They found that health issues were strongly related to children's intellectual and language status. Their findings supported the hypothesis that even mild health problems may be precursors to, or comorbid with, language and behavior problems in young children.

Hemphill and colleagues (2002) assessed the personal narratives of four-year-old children who were at risk of brain injury due to early corrective heart surgery. Their narratives were compared with those produced by typically-developing four-year-olds for narrative components, evaluative devices, and information adequacy. Children with early corrective heart surgery produced narratives that were significantly shorter, containing fewer words and fewer narrative clauses than the comparison group's narratives.

Children with histories of brain injury have also been found to show slower development of narrative skills than typical children. For example, children with histories of early focal brain injury produced shorter stories and fewer narrative components during a storytelling task than children without histories of injury (Reilly, Bates, & Marchman, 1998). In another study, although children with early-

onset hydrocephalus of average verbal IQ produced the same amount of story content as controls, they still had difficulty making inferences and recalling information from a story previously told. Also, their interpretations of novel figurative expressions were less accurate than those of controls (Barnes & Dennis, 1998). Finally, Chapman et al. (2001) examined the long-term recovery of narrative abilities in children with traumatic brain injury at four intervals. The findings suggested a relationship between injury severity and performance on such narrative measures as amount of language used, amount of information included, organization of information, and global semantic interpretation. Although the group with severe traumatic brain injury continued to show improvements, they scored significantly worse than the mild/moderate group on all measures of the narrative task.

In sum, previous studies showed that children with special health care needs are at increased risk for future linguistic problems and deficits in narrative abilities. Despite this evidence of increased risk, there has been limited research on the impact of young children's health problems on specific aspects of linguistic development. Moreover, children with special health care needs are a heterogeneous group. The level of complexity of health care needs may vary significantly within this group, even among children with the same diagnoses. A chronic health condition involves a spectrum of complications that manifest along a continuum of severity that may alter the level and types of functional limitations and need for specific types of health services (Bramlett et al., 2009). Some children may experience more severe symptoms, need to receive medications, treatment, and health care services more frequently, be more restricted in their daily life activities, and place greater demands on their families than others with the same condition. It is also common for children with different chronic health conditions to experience similar symptoms and need similar health care services. Therefore, a non-categorical approach that depends on the level of complexity of health care needs, rather than a diagnosis, has been recommended when examining the impact of chronic health conditions on children's development (Bramlett et al., 2009; Stein, Westbrook, & Bauman, 1997). Although few attempts have been made to differentiate subgroups of children with chronic health conditions by the complexity of needs, there is limited research that has investigated children's language and narrative skills based on the varying levels of complexity of special health care needs. Thus, the primary purpose of the present study was to examine the relationship between the level of complexity of health care needs and young children's language and narrative skills. The hypothesis was that young children with more complex health care needs would perform less adequately than children with less complex health care needs, who, in turn, would perform less adequately than healthy children on measures of language and narrative skills.

Method

Participants

Participants were recruited from a large pediatric practice in a southwestern metropolitan area in the US that maintains a computerized index of patients. A nurse practitioner located a potential sample of four- to six-year-old children. Letters were

sent to parents of 241 randomly-selected children, inviting them to participate in the study. One hundred nine families returned post cards with their names and phone numbers, indicating their willingness to be contacted to participate in the study.

Children with special health care needs were categorized by complexity (independent of diagnosis), using a set of questions that included number of organ systems affected, severity of complications, frequency of doctor and emergency room visits, and hospital care as described by Bramlett et al. (2009) and used in the 2001 National Survey of Children with Special Health Care Needs. Complexity categories were established by two participating pediatricians who reviewed the children's health records.

Children were rated 0 when they were healthy and had no special heath care needs. Children were rated 1 when they had one affected organ system (e.g., controlled asthma or diabetes) but were medically stable, had no functional limitations, and needed a minimal level of health care services. Children were rated 2 when they had one organ system affected, with moderate complications (e.g., asthma with complications of steroid treatment). Children in this group experienced some disruption as a result of their health conditions and, therefore, had some limitations in their daily life activities, visited their primary care doctors more frequently, and needed some health care services. Children were rated 3 when they had one or two organ systems affected, with severe complications (e.g., cerebral palsy or epilepsy accompanied by mental retardation), significant functional limitations, and more frequent visits to the doctor or the emergency room, which sometimes led to hospital admission. Children were rated 4 when they had multiple organ systems affected, with multiple severe complications and functional limitations (e.g., bronchopulmonary dysplasia, tracheostomy, ventilator dependent, and cerebral palsy). Children rated 3 and 4 ($N = 10$) were not included, because their medical conditions were so pervasive that they were precluded from experiencing the normal patterns of language, cognition, and behavior development under study. Also, participants identified as having developmental or cognitive delays were not included.

Cohen's kappa statistic (Bakeman & Gottman, 1997), which corrects for chance agreement between raters, was used to calculate interrater agreement for the ratings. Cohen's kappa for the health status ratings was .81, indicating substantial agreement between raters. Disagreements were resolved by discussion amongst raters.

Because the focus of this study was the relationship between complexity of health care needs and language, children were stratified by the ratings, to form three groups. Group 1 included 37 children who were rated 0. Group 2 consisted of 33 children who were rated 1. Group 3 included 29 children who were rated 2. Available information on children's age, gender, ethnicity, family income, and mother's education by group is summarized in Table 1.

Table 1.

Means and Standard Deviations for Age in Months and Frequencies for Gender, Ethnicity, Family Income, and Mother's Education by Group

		Group 1 (N = 37)	Group 2 (N = 33)	Group 3 (N = 29)
Age in Months	M	56.49	56.88	57.18
	SD	7.23	8.21	8.89
Gender	Girls	18	15	12
	Boys	19	18	17
Ethnicity	Anglo	29	29	24
	Latino	3	2	3
	African American	5	2	2
Family Income	Under $10,000	1	0	0
	$10,000 - $25,000	1	3	2
	$26,000-$50,000	6	4	7
	$51,000-$100,000	27	23	19
	More than $100,000	2	3	1
Mother's Education	High School or GED	12	13	8
	Some College	14	11	12
	Bachelor's Degree	11	9	9

Measures

Wechsler Preschool and Primary Scale of Intelligence Revised (WPPSI-R) (Wechsler, 1991). The WPPSI-R is a measure of cognitive ability in children ages 3 to 7 years. It contains 12 subtests, 6 within the Verbal Scale and 6 within the Performance Scale. The Verbal Scale measures expressive language, comprehension, listening, and verbal problem solving. The Performance Scale assesses perceptual skills, speed, visual-motor proficiency, and nonverbal problem solving. Verbal and performance scores are combined to yield a full-scale IQ score with a mean score of 100 and standard deviation of 15 points. Studies of its psychometric properties indicate high reliability coefficients, ranging from .90 to .97 for the three subscales. Validity studies indicate high concurrent and construct validity, ranging from .83 to .92.

Test of Early Language Development (TELD-3) (Hresko, Reid, & Hammill, 1999). The TELD-3 is a standardized measure for assessing receptive, expressive, and overall spoken language in children aged 2-7 years old. It has two forms, each of which contains 76 semantic and syntax questions. The TELD-3 produces scores with a mean of 100 and standard deviation of 15 for each subtest and the overall composite score. The reliability of the TELD-3 is reported to be: internal consistency (.80 - .97), alternate form (.79 - .94), test–retest (.80 - .94), and inter-rater (.99).

Narrative Measures

Story Generation Task. Children's narrative abilities were assessed using a story generation task. A wordless picture book, *Good Dog Carl* (Day, 1997) was used. The book included 22 pictures that told the story of a dog who takes care of a baby when her mother is away. Narratives were collected with individual children in a quiet room at the university. Before the task began, each child played with toys for five minutes. The examiner interacted with the child during play to establish rapport. Then, the child was given a copy of the book and instructed to look through the pictures. When the child finished looking at the book, the examiner asked him or her to tell the story with as much detail as possible. The child used the pictures as prompts. The examiner provided neutral feedback to the child during the task (e.g., "uh-huh", "yes", and nods of the head). If the child was unable to generate information, the examiner prompted him or her by saying "look here (at the picture) and tell me what is happening".

Personal Narratives. Following the story generation task, conversational elicitation strategies developed by McCabe and Rollin (1994) were used to ask children to produce narratives of their personal experiences . The examiner used three conversation prompts: had the child ever been frightened by something, had a quarrel with somebody, and spilled something. During the child's narration, the examiner provided neutral prompts, such as "uh-huh" or "and then", or repeated the child's last utterance with a rising intonation and made nonspecific requests for more information, such as "tell me more" or "then what happened?" The longest personal narrative the child produced - presumably the most complex - was chosen for analysis (McCabe & Rollin, 1994).

Children's narratives were evaluated on two dimensions:

Productivity. The total number of words and the total number of communication units (C-units) in each narrative were analyzed. Narratives were divided into C-units. As defined by Hunt (1965), a C-unit is the shortest allowable independent clause and any related dependent clauses (e.g., "Baby is dancing" or "My brother hit me when I was little"). Productivity scores included only the relevant pieces of information a child included in a story. Filled pauses, internal corrections, and repetitions were excluded from word counts.

Quality. Children's performances were rated using the following questions (Schoenbrodt, Kerins, & Gesell, 2003): (1) Are the sentences grammatical? (2) Is narrative cohesion present? (3) Is sufficient information given? (4) Does the listener understand without clarification questions? (6) Is the narrative fluent? (7) Do all statements pertain to the topic? (8) Is precise vocabulary used? (9) Are facial and bodily expressions appropriate to the story? Ratings were on a 0-3 scale (0 = never, 1 = sometimes, 2 = often, 3 = always). Children's scores on this rating could range from 0-27.

Reliability. Story generation and personal narratives were videotaped, transcribed, and analyzed by two research assistants who received extensive training on the productivity and quality elements of narratives and were blind to children's health

status. A third research assistant transcribed and coded 20% of the narratives independently. Inter-rater reliability was 96% for the transcriptions and 97% for the total number of C-units. Point-to-point agreement for the quality ratings was 79%, indicating substantial agreement between raters.

Results

Initial analyses were conducted to determine whether groups differed significantly in age, gender, mother's education, family income, and ethnicity. A one-way analysis of variance (ANOVA) indicated that groups were not significantly different with respect to age. Chi-square tests revealed that although groups did not differ on mother's education, family income, and ethnicity, gender was unequally distributed across groups (X^2(1, N = 99) = 11.49, p < .01). The number of girls in Group 3 (N = 12) was much lower than the number of girls in Group 1 (N = 18). Therefore, gender was used as a covariate when comparing groups on measures of language and narrative skills.

In addition, ANOVA was conducted to determine whether groups of varying complexity levels of health care needs differed in cognitive ability, as assessed by the WPPSI-R. One child in Group 2 and two children in Group 3 did not complete the WPPSI-R. These children were eliminated from the WPPSI-R analysis. The results of ANOVA indicated that there were statistically significant differences between groups on the Verbal and Full Scales of the WPPSI-R. Children in Group 1 obtained significantly higher scores than their peers in Groups 2 and 3. Groups did not differ on the Performance Scale. Table 2 summarizes means, standard deviations, and results of analyses (F and effect size values) by group. As the table shows, mean scores fell within one standard deviation of the reported population norms. However, large standard deviations indicated large heterogeneity in cognitive ability within each group. Given the fact that any differences in groups' language and narrative abilities may have resulted from underlying differences in cognitive ability, children's WPPSI-R scores were used as covariates when comparing groups on measures of language and narrative skills.

Between-group Comparisons

To determine whether groups with different levels of complexity of health care needs differed on language and narrative measures (productivity and quality), a series of analyses of covariance (ANCOVA) were computed, using gender and WPPSI-R scores as covariates.

TELD-III. The results of ANCOVA indicated significant group differences on the TELD Expressive Quotient and TELD Spoken Language Quotient (see Table 2). Pairwise comparisons indicated that the children with more complex health care needs in Group 3 obtained significantly lower scores on the TELD Expressive Quotient than children in Groups 1 and 2. Children in Group 3 also obtained significantly lower scores on the TELD Spoken Language Quotient than children in

Group 1. Although children in Group 1 had higher scores on the TELD Spoken Language Quotient than those in Group 2, the difference was not significant. No significant differences were observed between groups with respect to the TELD Receptive Quotient.

Measures of Narrative Ability

Productivity. Total numbers of words and C-units were used as productivity measures of narrative ability. Analyses of these measures for the story generation indicated significant differences between groups. Pairwise comparisons showed that the stories generated by children in Group 3 contained significantly fewer words and C-units than those of children in Groups 1 and 2. The total number of words and C-units did not significantly differ between children in Group 1 and Group 2. The stories generated by children in Group 1 ranged from 47 to 258 words and 11 to 43 C-units, while the personal narratives of children in Group 2 ranged from 29 to 247

Table 2.
Means, Standard Deviations, F, and Effect Size Values for the WPPSI-R, TELD-III, and Measures of Narrative Ability by Group

	Complexity										
	Group 1			Group 2			Group 3				
Measures	*M*	*N*	*SD*	*M*	*N*	*SD*	*M*	*N*	*SD*	*F*	*Partial η2*
WPPSI-R Performance IQ	99.93	37	17.23	100.15	32	19.42	93.77	27	14.68	1.27	.02
WPPSI-R Verbal IQ	103.29	37	13.54	98.43	32	20.23	91.28	27	21.11	9.87*	.05
WPPSI-R Full Scale IQ	104.73	37	16.39	97.22	32	19.57	92.98	27	21.09	9.03*	.04
TELD-III Receptive Quotient	102.53	37	17.26	98.76	33	17.33	98.09	29	16.97	2.59	.03
TELD-III Expressive Quotient	96.29	37	14.92	91.73	33	17.43	83.29	29	14.28	9.11*	.08
TELD-III Spoken Language Quotient	98.85	37	15.78	94.62	33	23.47	87.61	29	18.55	14.67*	.11
Story Generation - Number of Words	177.62	37	35.54	163.48	33	42.81	99.74	29	63.52	19.69*	.15
Story Generation - Number of C-units	23.31	37	6.72	21.76	33	6.91	16.65	29	11.48	13.13*	.12
Story Generation - Quality	20.11	37	4.73	18.72	33	5.02	13.49	29	7.51	11.92*	.14
Personal Narratives-Number of Words	142.08	37	28.66	103.28	33	35.62	69.18	29	42.22	35.38*	.29
Personal Narratives-Number of C-units	21.61	37	5.98	19.85	33	4.36	15.33	29	7.73	7.90*	.07
Personal Narratives – Quality	22.37	37	4.85	17.58	33	8.24	9.71	29	8.08	29.57*	.19

*p < .01

words and 12 to 39 C-units. Children in Group 3 generated stories ranging from 11 to 233 words and 3 to 39 C-units. Greater standard deviations reported for Group 3 on both measures indicated diverse abilities within the group.

Similarly, groups showed significant differences on both measures of productivity when asked to produce personal narratives. Pairwise comparisons indicated that children in Group 3 produced personal narratives with significantly fewer words and C-units than their peers in Groups 2 and 3. Also, children in Group 2 produced personal narratives with significantly fewer words than their peers in Group 1, but their narratives contained similar numbers of C-units. This finding indicated that their C-units were shorter than those of Group 1. The personal narratives generated by children in Group 1 ranged from 27 to 198 words and 7 to 25 C-units, while the personal narratives of children in Group 2 ranged from 16 to 189 words and 4 to 26 C-units. Children in Group 3 tended to generate shorter narratives, ranging from 6 to 119 words and 2 to 21 C-units.

Considering that the conventional cutoffs for small, medium, and large values for partial η^2 are .01, .06, and .14, respectively (Green & Salkind, 2005), the strength of the relationship between number of words and group was very strong, particularly for the personal narratives. The group factor, established based on the complexity of health care needs, accounted for 29% of the variance of productivity skills, holding constant the effects of cognitive ability and gender.

Quality. As Table 2 shows, the means of quality ratings of generated stories were 20.11, 18.72, and 13.49 for Groups 1, 2, and 3, respectively. As with productivity, the quality of stories generated by children in Group 3 was rated significantly lower than that of stories produced by children in Groups 1 and 2. No significant differences were observed between the ratings of stories produced by Groups 1 and 2. When the quality indicators were examined individually, the stories generated by Group 3 contained more grammatical errors and unrelated information, with frequent repetitions and pauses that made them difficult to follow.

Slightly different from the performance measures for the story generation task, the mean quality score for the personal narratives produced by children in Group 3 was significantly lower than the mean for Group 2, which in turn was significantly lower than the mean for Group 1. The mean scores were reported as 22.37, 17.58, and 9.71 for Groups 1, 2, and 3, respectively. In particular, children in Group 3 left out crucial information about who, when, where, and why and included contradictory or unrelated information more frequently when narrating, which made it difficult for the examiner to fully understand their stories.

Large effect sizes reported for the quality of both story generation and personal narratives indicated a strong relationship between the quality of narratives and the group factor. Group accounted for 14% of the variance in story generation and 19% of the variance in personal narratives, holding constant the effects of cognitive ability and gender.

Discussion

The purpose of the study was to examine the impact of complexity of health care needs on the language and narrative skills of children with special health care needs. On eight of nine measures of language and narrative skills, children with more complex health care needs demonstrated significantly greater weaknesses relative to their peers who had less complex health care needs or who were healthy. As they performed more poorly on measures of expressive and spoken language, their narratives included fewer words and C-units and were not as well-developed, as assessed by quality measures. The personal narratives produced by these children were relatively unclear, due to the frequent inclusion of contradictory or unrelated information and repetitions. Essential information about what, who, where, when, and why was often omitted. Without asking for clarification, it was difficult to understand what happened. These children's narratives were also characterized by fewer grammatically-correct sentences, less-sufficient information, less-fluent narratives, and less-precise vocabulary.

It is important to note that there was considerable variability in the performance of children with more complex health care needs, particularly in narrative ability, as shown by the large standard deviations. For example, while the average number of words in these children's stories was 99, the standard deviation for this variable was 67. While the average quality score for personal narratives was 9.71, the standard deviation was 8.08. This finding is consistent with those of Hemphill and colleagues (2002), who reported an average of 72 words and a standard deviation of 63 words for 4-year-old children with early corrective heart surgery.

The performance scores achieved by children with less complex health care needs were in-between those of children who were healthy and children who had more complex health careneeds. Their performance was comparable to their healthy peers, in terms of generating stories from a wordless picture book and measures of language development. This finding did not support the hypothesis, which presumed less adequate performance by these children on all tasks than by children who were healthy. However, the results lend substantial support to the hypothesis by indicating that children with less complex health care needs generated personal narratives with significantly less information and of significantly lower quality than their healthy peers. Although children in all three groups generated fewer words in response to the conversation prompts than to the wordless picture book, the most dramatic decrease was evident for children with less complex health care needs in Group 2. They generated 163 words for the story generation task but only 103 words for the personal narratives. Such a dramatic decrease was not evident in the number of C-units. This finding indicated that these children's C-units were shorter and included less information. Furthermore, we found that children with less complex health care needs produced personal narratives that were significantly less well-developed than those of their healthy peers. Given that producing narratives in response to conversation prompts is a more cognitively demanding task that requires greater incorporation of context, memory, and problem solving skills, compared to a story generation task (providing visual prompts via wordless picture books), these

findings confirm and extend previous research (e.g., Fiestas & Pena, 2004; Kaderavek & Justice, 2005).

The findings of this study are consistent with prior research (e.g., Barnes & Dennis, 1998; Chapman et al., 2001; Hemphill et al., 2002; Reilly et al., 1998). The complexity of health care needs accounted for a substantial portion of variance in language and narrative performance, even after controlling for the effects of cognitive ability. The pattern established by the performance of children in this study suggests that there is a continuum of impact. Increased complexity of health care needs may hinder the development of language and narrative skills. Children may develop language and narrative skills comparable to those of their healthy peers but may also show some deficits in higher level language skills, such as the ability to produce personal narratives. At this point, the data suggest that increased complexity of health care needs may result in diminished language and narrative skills.

As indicated by previous studies, weak language and narrative skills may be considered predictors of poor subsequent school performance and social development. Young children with language difficulties are at increased risk for academic and social failure and may require special education services. Therefore, it is important to screen young children with special health care needs and include narratives as part of the assessment process (Hemphill et al., 2002; Justice et al., 2006; Schoenbrodt et al., 2003). Early identification of language and narrative difficulties and intervention to improve these skills should also be given more attention. Otherwise, beginning school with language deficits and health limitations may make catching up with peers more difficult (Griffin, Hemphill, Camp, & Wolf, 2004; Scarborough, 2001).

Interpretation of the results is subject to several limitations. First, the small sample size and large within-group variability make it difficult to generalize the results to the entire population of children with special health care needs. Although this study provides evidence that supports the notion that health issues are related to children's language status, the pattern established by the performance of children in this study should be further examined with a larger population. Also, given the substantial variability in children's health care needs, which may contribute to language-learning difficulties, it is important that further research identify individual factors that affect the development of language and narrative skills in this population (Hemphill et al., 2002).

Second, there were two measures of narrative ability, productivity and quality, and the scoring of these measures was limited to number of words and C-units and to ratings of children's narratives based on nine indicators of quality. It is apparent that the narrative measures used in this study do not reflect all aspects of productivity or the quality of narratives produced by children with special health care needs. Paul and Hernandez (1996) claimed that different measures can result in differing profiles of the same child's narrative ability. Thus, future studies should take several aspects of narrative ability into consideration when investigating narratives.

Third, it is not clear how language and narrative difficulties in these children will affect school achievement and social development in later years. Due to the complex interrelationship of health limitations and cognitive, social, and language development, these children may respond differently than peers with no health care needs to the increased linguistic and academic demands of school. Therefore, the need for systematic investigation of longer-term effects and growth trajectories as children progress into higher grades remains.

Despite these limitations, the study presented here contributes to our understanding of how special health care needs affect language development. The results of this study suggest that professionals in health care, speech and language, and education should be alerted to the potential connection between health and language and that even mild health problems might have a significant impact on early performance. At this point, there is little crossover between these fields. Yet efforts to identify language and narrative deficits early in this special population should lead to earlier interventions for children who are at risk for the development of later learning difficulties.

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Kronik Hastalığı Olan Küçük Yaştaki Çocukların Dil Ve Öyküleme Becerileri
(Özet)

Problem Durum

Alanyazın incelendiğinde birçok araştırma sonucu göstermiştir ki, kronik hastalığı olan çocuklar dil bozuklukları ve öyküleme becerilerinde yetersizlik için yüksek risk taşımaktadırlar. Buna karşın, çocuklardaki sağlık problemlerinin dil gelişimini hangi yönde ve nasıl etkilediğini araştıran yeterli sayıda çalışma yoktur. Ayrıca sağlık problemi olan çocuklar kendi aralarında büyük farklılıklar gösterirler. Aynı tanıya sahip çocuklar değişen şiddette komplikasyonlar gösterebilir ve bu onların günlük yaşam aktivitelerinde farklı düzeylerde ve türlerde sınırlılıklara yol açabilir; dolayısıyla farklı sağlık hizmetlerine gereksinim duyabilirler. Farklı sağlık sorunlarına sahip çocuklar da benzer sınırlılıklar yaşayabilir ve benzer sağlık hizmetlerine gereksinim duyabilirler. Bu yüzden tanıdan bağımsız olarak ve hastalığa bağlı olarak ortaya çıkan komplikasyonların şiddetine ve dolayısıyla sağlık hizmetlerine duyulan gereksinim düzeyine göre yapılacak bir gruplama ile çocukların sağlık problemlerinin gelişimsel özelliklerine etkilerinin incelenmesi önerilmiştir. Ancak bu bağlamda yapılmış herhangi bir çalışmaya rastlanmamıştır.

Araştırmanın Amacı

Bu çalışmada kronik hastalığı olan küçük yaştaki çocukların sağlık hizmetlerine olan gereksinimlerinin düzeyi ile çocuğun dil ve öyküleme becerileri arasındaki ilişkinin incelenmesi amaçlanmıştır.

Araştırmanın Yöntemi

Dört ile altı yaşları arasındaki 99 çocuk çalışmada yer almıştır. Çocuklar, içerisinde kronik hastalıktan etkilenen organ sayısının ve hastalıktan dolayı ortaya çıkan

komplikasyonların şiddetinin sağlık hizmetlerine olan gereksinim düzeyini belirlediği bir derecelendirme sistemi kullanılarak gruplandırılmıştır. Üç grup elde edilmiştir. Grup 1 sağlıklı çocukları içerirken, Grup 2 sağlık hizmetlerine az düzeyde gereksinim duyan çocukları ve Grup 3 ise orta düzeyde gereksinim duyan çocukları içermiştir. Sağlık hizmetlerine ileri düzeyde gereksinim duyan çocuklar ise sağlık problemleri normal dil, bilişsel ve davranış gelişimini çok yaygın düzeyde etkilediği için çalışma kapsamı dışında bırakılmışlardır. Çalışmada yer alan her çocuğa Wechsler Okul Öncesi Çocuklar İçin Zeka Ölçeği'nin gözden geçirilmiş formu (WPPSI-R) ve Erken Dil Gelişimi Testi (TELD-III) uygulanmıştır. Katılımcılardan ayrıca yazı içermeyen resimli bir kitaba bakarak bir öykü üretmeleri ve üç farklı konuda sorulan açık-uçlu sorulara karşılık kendi deneyimlerini öykülemeleri istenmiştir. Çocuklar tarafından üretilen öyküler iki boyutta değerlendirilmiştir. Birincisi toplam kelime ve tümce sayısı ile değerlendirilen öykü üretme becerileridir. İkincisi ise oluşturulan cümlelerin gramer kurallarına uygunluğu, öyküde bir bütünlük olup olmadığı, yeterli bilginin verilip verilmediği, anlaşılabilirliği, akıcılığı, konuya bağlı kalınması, uygun kelimelerin kullanılması ve uygun jest ve mimiklerin kullanılması şeklinde sıralan göstergeler temelinde değerlendirilen öykü niteliğidir.

Araştırmanın Bulguları

Sağlık hizmetlerine gereksinim düzeyleri temelinde gruplandırılan üç grup, cinsiyet ve WPPSI-R zeka testi skorları kovaryant olarak kullanılarak karşılaştırılmıştır. Sonuçlar, sağlık hizmetlerine orta düzeyde gereksinim duyan grubun hizmetlere daha az düzeyde gereksinim duyan çocuklardan ve sağlıklı çocuklardan oluşan diğer iki gruba göre ifade edici dil ve öyküleme becerilerinde anlamlı olarak daha geride olduğunu göstermiştir. TELD-III'ün alıcı dil alt testinde gruplar arasında herhangi bir fark gözlenmezken ifade edici dile dayalı alt testlerde, Grup 3 diğer gruplara göre anlamlı olarak daha düşük bir performans göstermiştir. Grup 3'de yer alan çocuklar akranlarına göre öykülerinde daha az sayıda kelime ve tümce üretmişlerdir. Özellikle kişisel öykülerde kelime ve tümce sayısındaki grup farklılıklarının %29'unun grup faktörü ile açıklandığı bulunmuştur. Ürettikleri öykülerin niteliğinin de diğer gruplara göre anlamlı olarak daha düşük olduğu gözlenmiştir. Öyküleri daha fazla sayıda gramer hataları, ilgisiz bilgi, tekrarlar ve duraksamalar içermiştir. Kişisel öykülerde ise kim, nerede, ne zaman ve niçin gibi önemli bilgileri sıklıkla atladıkları ve çelişen bilgiler verdikleri, böylece öykünün anlaşılabilirliğinin önemli ölçüde azaldığı görülmüştür. Buna karşın, sağlık hizmetlerine daha az düzeyde gereksinim duyan çocuklar sağlıklı olan akranlarından daha düşük skorlar elde etmelerine rağmen anlamlılık düzeyinde farklılaşmamışlardır. Farklı oldukları tek alan kişisel öyküleri olmuştur. Kişisel öykülerinde hem kelime ve tümce sayısı hem de nitelik açısından anlamlı olarak daha düşük bir performans göstermişlerdir.

Araştırmanın Sonuçları ve Öneriler

Elde edilen bulgular sağlık problemlerinin çocukların dil gelişimleri olumsuz etkileyebileceği hipotezini desteklemektedir ve daha önceki bulgularla tutarlıdır. Sağlık hizmetlerine olan gereksinim düzeyi dil ve öyküleme becerilerindeki varyansın önemli bir bölümünü açıklamıştır. Gereksinim düzeyi arttıkça dil ve öyküleme becerilerindeki gelişim olumsuz etkilenmiştir.

Önceki çalışmaların sonuçlarının da desteklediği gibi, dil ve öyküleme becerilerindeki yetersizlikler gelecekteki okul başarısının ve öğrenme problemlerinin

yordayıcıları olarak değerlendirilebilir. Dil problemleri olan çocuklar akademik başarısızlık ve özel eğitim için yüksek risk grubunda değerlendirilirler. Bu yüzden kronik sağlık problemleri olan çocukların, dil gelişimindeki olası gecikmeler ve problemler açısından erken dönemde taranması ve öyküleme becerilerinin de bu tarama sürecinin bir parçası haline getirilmesi önemlidir. Belirlenen problemlerin erken dönemde iyileştirilmesi amacıyla müdahale programlarının oluşturulması daha çok üzerinde durulması gereken bir konudur. Aksi takdirde hem dil hem de sağlık problemleri ile okula başlayan çocukların akademik anlamda akranlarını yakalamaları daha zor olacaktır. Ayrıca dil ve konuşma, sağlık ve eğitim alanlarındaki uzmanlar sağlık ve dil gelişimi arasındaki olası ilişki konusunda bilgilendirilmeli ve hafif ve orta şiddette seyreden sağlık problemlerinin dahi çocuğun gelişimi üzerinde önemli etkilerinin olabileceği konusunda uyarılmalıdırlar. Bu bağlamda sözü geçen uzmanlar arasındaki işbirliğinin de artırılması da son derece önemlidir. Sonuç olarak, kronik sağlık sorunları olan çocukların ileride yaşayabilecekleri öğrenme problemlerini azaltabilmek ve akademik başarı şansları artırılabilmek için dil ve öyküleme becerilerindeki problemlerin çocuklarda erken dönemde belirlenmesi ve erken müdahele programları uygulayarak iyileştirilmesi araştırmadan elde edilen bulgular temelinde önemle önerilmektedir.