

Child and Parent Psychosocial Experiences of Hospitalization: An Examination of the Role of Child Life Specialists

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ABSTRACT

Hospitalization can be stressful for child patients and their parents, and stress during hospitalization is associated with longer recovery times and negative outcomes post-discharge. As a result, families are in need of psychosocial support to cope with hospitalization. Child life specialists in children's hospitals are trained to address this need, and there is empirical support for many of the techniques used by child life specialists. However, there is limited empirical support specific to child life services. In the current study, the authors examined differences in child anxiety and distress, parent stress, and parent-child relationship quality between families who received child life services and those who did not. Participants included 31 children between 3-15 years old who were admitted to a children's hospital in the United States and their parents. Children completed a drawing task and responded to a visual scale, and parents completed a survey. Results indicated children who received child life services tended to exhibit lower anxiety, but there were no differences in parent outcomes based on receipt of child life services. Overall, the study provides promising preliminary evidence for the efficacy of child life services in improving children's psychosocial experience of hospitalization. Implications for practice and future research are discussed.

Hospitalization can be a stressful experience for children. The disruptions in routine and development, and the discomfort and pain that often accompany hospitalization are associated with child distress and anxiety (Bakri et al., 2014). Lowering children's anxiety facilitates cooperation during procedures (Favara-Scacco et al., 2001) and shortens recovery times (Rozanski & Kubzansky, 2005). The American Academy of Pediatrics (AAP; 2012) asserts that all pediatric health care professionals should adhere to child- and family-centered care paradigms to ensure children and their families are well-informed about diagnoses and procedures and are empowered to be involved and make decisions in all aspects of care.

Although ideally all medical staff should be engaged in child- and family-centered care, doctors and nurses report feeling overwhelmed balancing their duties to

provide both physical treatment and emotional support (Drake et al., 2012). Given time and resource constraints, medical staff frequently need to direct attention to physical needs, so it is important that pediatric hospitals include additional psychosocial services for children and families (Bakri et al., 2014).

Child Life and Related Professions

Internationally, it is common for the health care team to include professionals who are specifically trained to assist children and their families in coping with the stress of hospitalization. In the United States, for example, professionals known as child life specialists are well-versed in pediatric diagnoses and provide individualized support, preparation, and education to patients and families based on their knowledge of procedures, child development, and family systems (Turner, 2018). Child life specialists and their inter-

national equivalents—play specialists (in Japan, New Zealand, and the United Kingdom) and child life therapists (in Australia)—usually hold at least a four-year degree specializing in child development, have completed supervised clinical training, and engage in continuing education (Association of Child Life Therapists Australia, 2018; Hubbuck, 2009; Matsudaira & Mori, 2012).

Child life specialists are critical members of the multi-disciplinary health care team (Hubbuck, 2009). They provide children and their families opportunities to process emotions related to hospitalization and communicate concerns and questions, which in turn, inform the team's approach to treatment. These specialists, for example, may use therapeutic play to learn about children's anxieties, explain diagnoses, and normalize the unfamiliar hospital environment; prepare children for procedures; and provide coaching during medical interventions (Goldberger et al., 2018; Jessee & Gaynard, 2018). Child life specialists aim to create environments in which healing is easier for children and in which other medical team members can effectively fulfill their roles.

In the past decade, child life and related professions across the globe have grown dramatically, and most U.S. children's hospitals employ child life specialists (Mayo Clinic, 2014). In fact, the American Academy of Pediatrics has twice issued statements recommending that children's hospitals invest in child life services (AAP Committee on Hospital Care, 2000; AAP Committee on Hospital Care & Child Life Council, 2014). Despite the endorsements, there has been only little empirical evaluation of child life services, and most evaluations have been focused on specific procedural outcomes rather than global wellbeing of children undergoing hospitalization. For example, Gursky and colleagues (2010) found that children undergoing laceration repairs in the emergency department reported less distress when they received procedural preparation and distraction interventions from a child life specialist. Another study similarly found that children who received child life support during emergency room visits reported less anxiety (Heilbrunn et al., 2014). Tyson and colleagues (2014) examined child life services among patients undergoing imaging procedures. They found parents of children who received child life services reported less child distress and pain following the procedure. Taken together, there is initial evidence that child life services may serve to reduce child anxiety and distress during

specific procedures. This current study expanded on the literature by examining more globally the efficacy of child life services in terms of both child and parent experience during child hospitalization.

Children's Experiences of Hospitalization

Children often experience hospitalization as a major stressor, and when they are unable to manage the stress, may experience a multitude of negative emotions (Clatworthy et al., 1999a). Anxiety (a heightened sense of uneasiness to a potential threat; Bay & Algase, 1999) and distress (a physical, physiological, and affective experience of discomfort or pain; McGrath et al., 1996) are common among hospitalized children, and the two emotions are often discussed interchangeably in the literature (e.g., Caldas et al., 2004). Children may also experience long-term memories of their pain which prolong their recovery (Noel et al., 2017), and repeated hospitalizations can disrupt typical cognitive, emotional, and social development (Caldas et al., 2004).

Child-Centered Care

Given the immediate and long-term consequences of children's distress in the hospital, it is best practice to care for children from a family- and child-centered paradigm (AAP Committee on Hospital Care & Institute for Patient- and Family-Centered Care, 2012; Coyne, Hallström, & Söderbäck, 2016). In the last decade, there has been a shift from family-centered care to child-centered care, where the child is viewed as the key and active agent in the health care partnership and the child's rights are center to decisions about their care (Coyne et al., 2018). Child-centered care involves listening to children's perspectives, validating their feelings, and giving them a sense of autonomy and control (Coyne, 2006). Health providers should recognize children's competencies, invite children to participate in decisions about their care, and ultimately tailor care to individual children's needs (Coyne et al., 2016). Child life specialists aim to provide child-centered care by tailoring the hospital environment to the needs of children, communicating to children in their language, and listening and responding to the fears and anxieties of children (Turner, 2018).

It is difficult to assess empirically the global impact of attuning to children's psychosocial needs. Instead, most research tends to examine specific interventions, like play and music distraction activities, aimed at re-

ducing children's pain and anxiety in specific relation to specific procedures (e.g., Singh et al., 2017). Less research examines whether child-centered care in general is related to children's overarching experiences of anxiety or distress in the hospital.

Family Experiences of Child Hospitalization

Parents also tend to report stress associated with the hospitalization of their children (e.g., Fernandez-Castillo et al., 2013) with common experiences such as the physical condition of their children and observable changes in appearance, invasive and dangerous procedures their children need to undergo, changes in their parental role, financial burdens (Nabors et al., 2018), and lack of support (Tallon et al., 2015). In turn, parents' stress disrupts their functioning. Specifically, during hospitalization, parents commonly report sleep disturbance, depression, and anxiety (Vardar-Yagli et al., 2017).

Parents' stress likely also influences children's experiences of and ability to cope with their own distress. Indeed, a review of the literature suggested parents' anxiety prior to medical intervention was a consistent predictor of children's anxiety (Caldas et al., 2004).

Family-Centered Care

Because parents of children in the hospital tend to want to be involved and are in need of support (De Vos et al., 2015), and parents' wellbeing is associated with children's wellbeing, family-centered care is considered a best practice (AAP Committee on Hospital Care, 2003). Family-centered care expands upon child-centered care and incorporates information sharing, respect for family culture and context, and cooperation and negotiation with families (Kuo et al., 2012). Child life specialists embrace both the child- and family-centered care models and aim to improve the overall quality of care that children and families receive by promoting understanding of diagnoses and procedures and by involving parents in procedures where possible.

Current Study Aims

Although there is evidence that child- and family-centered care in general are effective at catering to the various psychosocial needs of children and their family members, and many of the techniques used by child life specialists (e.g., distraction, play, preparation) are associated with positive outcomes for hospitalized children, it is not yet clear whether child life services

specifically are related to improved global experiences for children or their parents. Therefore, in the current study the authors first aimed to examine whether receipt or intensity of child life services was associated with children's distress and anxiety during hospitalization. Second, the authors examined whether receipt or intensity of child life services was associated with the frequency or intensity of parents' stress or parent-child relationship quality.

Method

Participants

Participants included 31 children (3-15 years old) admitted at a medium-sized, acute care children's hospital in the Northwestern United States between January and October 2016, as well as their caregivers. This age range was selected because the majority of children typically seen by child life specialists at the study location are under 15 years old, and developmentally, children under 3 years old would have struggled to participate in the study procedures. Not all measures were completed by all 31 children and caregivers, so some analyses involved fewer than 31 participants. Child participants had to be able to use their hands to draw and verbally communicate in English. Adult participants had to be over 18 years old, English-speaking, and a legal guardian to a child participating in the study.

Procedure

Data collection began after hospital and university ethics boards reviewed and approved the study (University deferred approval to MultiCare Health System IRB; Protocol #15.23). Potential participants were identified using a daily roster of all children ages 3-15 admitted to the inpatient medical/surgical unit at the time of the study, which included child first name, age, gender, date of admittance, and whether they had received child life services during the current hospitalization. The principal investigator divided the roster into two groups: children who had received child life services and those who had not. Using a case control method, cases were randomly selected off the list of children who had received services using a random number generator. Then, matched controls who had not received services were selected based on the best match in terms of age, gender, and date of admittance. Graduate research assistants were provided a list of children to approach in the order determined by the

case control method, without information about receipt of child life services. This method ensured a random sample of hospitalized children between 3 and 15 years old who had received child life services on each day that data were collected, and ensured a demographically-matched control group.

Investigators, who were graduate students trained in research methods and child development, approached parents first and completed informed consent. After adult participants consented for themselves and their child, the investigator completed an assent process with the child, which involved reading and explaining a consent form written at a second grade (age 7) level. Children 7 and older were asked to verbally agree and also sign the form to provide assent. Investigators explained the study in basic terms to children under 7, who were asked to verbally indicate whether they wanted to participate. Once families agreed to participate, the investigator explained the survey instructions and the parent completed the survey while the investigator completed the child drawing task and interview with the child. Parents remained in the room, but were engaged in the parent survey portion of the study.

Measures

Demographic Characteristics

Children's gender, age, and race/ethnicity were assessed via parent self-report. Parents also reported their own gender, age, race/ethnicity, education, income, and marital status. The child's length of current hospitalization (in days) and diagnosis were drawn from medical charts as was the number of previous hospitalizations at the sample hospital.

Diagnoses were categorized as acute or chronic by two independent coders based on medical chart information, including diagnosis and number of past hospitalizations. The coders agreed on chronicity in 90.3% ($n = 28$) of cases. Differences were resolved by further examination of the medical chart and research of the diagnosis.

Child Life Services

Although the patient roster provided whether children had received child life services during the current hospitalization, the roster was created by a child life specialist on duty, and not always 100% accurate. Therefore, analyses used medical chart data about receipt of child life services, both during the current admission and previous admissions at the sample hos-

pital. Analyses also examined the number of child life visits during the current admission, and the "intensity" of child life services, created by calculating a ratio of number of visits to number of days admitted. Number of visits and intensity of services did not account for the type or length of intervention during child life visits.

Child Anxiety

The Child Drawing: Hospital (CD:H) was used to assess child anxiety (Clatworthy et al., 1999b). This measure has been used previously with hospitalized children between ages 4 and 15, and is more developmentally appropriate than verbal methods of assessment (Aminabadi et al., 2011; Bjorkman, 2014; Clatworthy et al., 1999a). In this study, only one 3-year-old (out of five total in the study) completed the CD:H portion, and although the measure has not been used previously with children as young as 3, developmental stage is considered when scoring the drawing (Clatworthy et al., 1999b).

Children were given a blank piece of white paper and one pack of crayons and asked to draw a picture of a person in a hospital. Children were not given any time limit, and were not prompted to draw anything specific. Investigators answered children's questions by restating the instructions. The drawings were scored by three independent and trained coders, each using the CD:H scoring manual (Clatworthy et al., 1999b). Coders assessed drawings on three subscales: level of anxiety, pathological indices, and level of coping. Subscale scores were added together to create a total score ranging from 15-290, where higher scores indicated more anxiety. Using a one-way random intraclass correlation, the current study found strong interrater reliability ($\rho = .84$) among coders' total scores.

Child Distress

The Facial Affective Scale (FAS) was used to assess children's global distress (McGrath et al., 1996). The scale consists of sketches of nine faces, varying in level of distress, and children were asked to select the face that best represented them in the moment. Each face corresponds to a score between .04 and .97, where higher scores indicate more distress. The scale has previously been validated with children age 5 and up (McGrath et al., 1996). Although there is little evidence about the validity of use for children under 5, no 3-year-olds and only one 4-year-old in this study agreed to participate in the FAS portion of the study.

Parent Stress

Frequency and intensity of parents' stress was assessed using the Pediatric Inventory for Parents (PIP; Streisand et al., 2001). The PIP contains 42 self-report items that ask parents to describe the frequency and intensity with which they experience stress related to caring for their hospitalized child. The measure includes four domains: communication (e.g., "arguing with family members"), emotional distress (e.g., "learning upsetting news"), child's medical care (e.g., "being with my child during medical procedures"), and role functioning (e.g., "missing important events"). Parents reported the frequency that each event occurred in the past seven days using a five-point semantic differential scale (1 = never to 5 = very often) and the intensity of the event (1 = not at all difficult to 5 = extremely difficult). Scores were summed for each domain to create subscale scores for each frequency and intensity (range: 42-210). Both subscales demonstrated strong internal consistency (frequency: $\alpha = .95$; intensity: $\alpha = .96$).

Parent-Child Relationship

Parent-child relationship quality was assessed using a 13-item investigator-development measure. Items assessed parents' perceptions of their relationship with their target child over the last week (e.g., "My child is comforted by me in times of stress" and "My child and I get along well"; see full scale in Appendix) using a five point semantic differential scale (1 = strongly disagree to 5 = strongly agree). Items were reverse-coded as appropriate and added together to create a scale score where higher scores indicated higher parent-child relationship quality (range: 13-65). The psychometric properties of the measure have not been previously evaluated. In this study, the internal consistency of the scale was strong ($\alpha = .82$), but the validity was not established.

Data Analyses

First, the authors examined distributions of test variables to ensure normality, both for the entire sample and for both of the subsamples of participants who received and did not receive child life services. All continuous dependent variables demonstrated skewness near zero within acceptable limits of ± 3 (ranging from $\pm .14$ to 1.48) and kurtosis also near zero and within acceptable limits of ± 7 (ranging from $\pm .01$ to 1.96), indicating parametric tests were appropriate (Kline, 2005). Then the authors conducted preliminary analyses to determine whether children's anxiety

or distress levels varied depending on demographic characteristics and whether demographic characteristics were associated with receipt of child life services. The authors also explored associations among parents' frequency and intensity of stress and children's anxiety and distress.

To address the first study aim, the authors conducted a series of *t* tests to determine if children's anxiety or distress varied depending on whether children received child life services during their current hospitalization. Then, the authors conducted a series of bivariate correlations to examine whether the number of visits or intensity of child life services was associated with children's anxiety or distress.

To address the second study aim, the authors conducted a series of *t* tests to determine if parents' perceptions of stress frequency or intensity or parent-child relationship quality varied depending on whether they received child life services. Number of visits and intensity of services were examined using separate correlations with each of the parent measures.

All analyses were conducted in SPSS 22.0. Statistical test results were considered significant at a $p < .05$ level when 95% confidence intervals did not include zero.

Results

There were a total of 415 admitted children during the days data were collected. Of those, 61.4% ($n = 255$) were excluded because they were younger than 3 or older than 15, and 3.9% ($n = 16$) were excluded because they did not speak English. Another 15.2% ($n = 63$) of the families were not approached because nursing staff indicated they could not participate (e.g., there was a procedure happening, discharge was imminent), and 8.9% ($n = 37$) were not approached for other reasons (e.g., researchers ran out of time, there was no parent present).

Sample Characteristics

A total of 44 families were invited to participate. Of the families invited to participate, 29.5% ($n = 13$) declined. The study included 31 children and their parents/legal guardian(s). Child participants ranged in age from 3 to 15 years old ($M = 7.97$, $SD = 3.92$), and 58% ($n = 18$) were female (see Table 1). A large portion of parents reported their children's race/ethnicity as Caucasian/Non-Hispanic (45.2%, $n =$

Table 1

Sample Characteristics and Study Variables Based on Receipt of Child Life Services During Current Hospitalization

Variable	Total sample (N = 31)	Received child life (n = 16)	Group differences Did not receive child life (n = 15)	Statistical test
<i>Child variables – continuous</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>t^b</i>
Age (years)	7.97 (3.92)	6.38 (2.66)	10.00 (4.18)	-2.90**
Number of days admitted ^c	2.00 (1-4)	2.5 (1-7.25)	2.00 (1-4)	97.00
Anxiety (range: 15-290)	106.20 (20.00)	97.79 (18.00)	119.43 (16.11)	-2.58*
Distress (range: .04-.97)	0.33 (0.27)	0.24 (0.28)	0.48 (0.18)	-1.90†
Intensity of child life services ^a	0.34 (0.47)	0.70 (0.47)	N/A	N/A
<i>Child variables – categorical</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>χ^{2b}</i>
Gender				.00
Female	18 (58.1)	9 (50.0)	9 (50.0)	
Male	13 (41.9)	7 (53.8)	6 (46.2)	
Race/Ethnicity				5.26
Caucasian	14 (45.2)	8 (57.1)	6 (42.9)	
Black/non-Hispanic	3 (9.7)	0 (0)	3 (100.0)	
Hispanic	2 (6.5)	2 (100.0)	0 (0)	
Multiracial	12 (38.7)	6 (50.0)	6 (50.0)	
Diagnosis chronicity				.82
Chronic	16 (51.6)	7 (43.8)	9 (56.3)	
Acute	15 (48.4)	9 (60.0)	6 (40.0)	
<i>Parent variables – continuous</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>t^b</i>
Age	36.38 (9.85)	32.69 (6.74)	40.08 (11.27)	-2.03†
Parent stress frequency (range: 42-210)	110.94 (31.42)	103.44 (27.17)	115.42 (47.99)	-.76
Parent stress intensity (range: 42-210)	106.38 (35.41)	101.67 (47.99)	111.33 (35.47)	-.67
Parent-child relationship quality (range: 13-65)	56.22 (6.53)	57.54 (7.07)	55.15 (6.20)	.91
<i>Parent variables – categorical</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>χ^{2b}</i>
Gender				1.15
Female	22 (66.7)	10 (45.5)	12 (54.5)	
Male	9 (33.3)	6 (66.7)	3 (33.3)	
Relationship to child				1.10
Biological	30 (96.8)	16 (53.3)	14 (46.7)	
Adopted	1 (3.2)	0 (0)	1 (100.0)	
Race/Ethnicity				4.17
Caucasian	20 (60.6)	10 (50.0)	10 (50.0)	
Black/non-Hispanic	2 (6.1)	0 (0)	2 (100.0)	
Hispanic	2 (6.1)	2 (100.0)	0 (0)	
Multiracial	5 (15.2)	3 (60.0)	2 (40.0)	
Other	2 (6.1)	1 (50.0)	1 (50.0)	
Marital Status				.50
Married	18 (58.1)	9 (50.0)	9 (50.0)	
Single, never married	8 (25.8)	4 (50.0)	4 (50.0)	
Divorced	3 (10.3)	2 (66.7)	1 (33.3)	
Domestic partnership	2 (6.9)	1 (50.0)	1 (50.0)	

^a Intensity of child life services is a ratio of the number of child life visits to the number of days hospitalized (range 0-2).^b Grouping variable was whether or not family received child life services. A *t* test was conducted if variable was continuous and *χ²* was conducted if variable was categorical.^c Number of days admitted was not normally distributed (skewness = 2.20, kurtosis = 5.45). Because the distribution was skewed, median (interquartile range) were calculated instead of mean (standard deviation), and the Mann-Whitney U test was conducted instead of a *t* test.† *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.

14), and many indicated a multiracial background (38.7%, $n = 12$).

Children had been hospitalized for a median of two days ($IQR = 1-4$) at the time of participation in the study, and 35.5% ($n = 11$) of participants had been hospitalized for only one day. Approximately half ($n = 16$, 51.6%) of child participants had received child life services in the current admission. Participants without previous hospitalizations at the sample hospital were more likely to receive child life services during the current hospitalization ($X^2 = 12.95$, $p < .05$). Among previously hospitalized participants, those who received child life services in a previous visit were not more or less likely to have received child life services in the current visit ($X^2 < .01$, $p > .99$). There were few significant demographic differences between children who received child life services and those who did not, but overall children who received child life services tended to be younger (mean difference = -3.62 ; $t(29) = -2.90$, 95% CI $[-6.18, -1.07]$).

Children's diagnoses ranged widely, including but not limited to appendicitis, pneumonia, asthma, epilepsy, leukemia, and cerebral palsy. Approximately half (51.6%, $n = 16$) of participants had chronic illnesses. There were no statistically significant differences in children's reports of distress (mean difference = $.14$; $t(14) = 1.02$, 95% CI $[-.16, .43]$) or anxiety (mean difference = 2.78 ; $t(16) = .287$, 95% CI $[-17.78, 23.33]$) based on the diagnosis chronicity. Overall, children in this study demonstrated moderate to high levels of anxiety ($M = 106.20$, $SD = 20.00$) and low levels of distress on average ($M = .33$, $SD = .27$).

Parents ranged in age from 20 to 40 years ($M = 36.38$, $SD = 9.85$), and primarily reported their race/ethnicity as Caucasian/ Non-Hispanic (60.6%, $n = 20$). The vast majority of parents were the biological parents of the participating children (96.8%, $n = 30$), and most were married (58.1%, $n = 18$). Additional demographic characteristics of the sample are presented in Table 1. Parents reported high levels of stress frequency ($M = 110.94$, $SD = 31.42$) and intensity ($M = 106.38$, $SD = 35.41$) and a pattern of higher stress frequency than stress intensity, although there was not a statistically significant difference (mean difference = 4.56 ; $t(12) = .823$, 95% CI $[-8.50, 18.80]$).

Parent's stress intensity and children's anxiety were significantly negatively associated ($r = -.82$, 95% CI $[-0.97, -0.17]$). Parents' stress intensity was not sig-

nificantly associated with child distress nor was parents' stress frequency associated with either child anxiety or child distress (see Table 2).

Table 2
Correlations Among Study Variables

Variable	1	2	3	4	5	6
1. Child anxiety	---					
2. Child distress	.36	---				
3. Parent stress frequency	-.47	.30	---			
4. Parent stress intensity	-.82*	.62	.80***	---		
5. Parent-child relationship quality	.02	.08	-.46†	-.25	---	
6. Number of child life visits	-.53*	-.14	.04	.42	.17	---
7. Child life intensity	-.33	-.62*	-.32	-.29	.13	.46*

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Child Life Services and Child Anxiety and Distress

Results revealed that children who received child life services reported significantly lower levels of anxiety than children who did not receive child life services (mean difference = -21.63 ; $t(16) = -2.58$, 95% CI $[-39.39, -3.89]$). There was not a statistically significant difference in reports of distress between children who had and had not received child life services (mean difference = $-.24$; $t(14) = -1.89$, 95% CI $[-.51, .03]$).

Results revealed a statistically significant negative association between number of child life visits and children's reported levels of anxiety such that when children received more visits during their current hospitalization they reported lower levels of anxiety ($r = -.53$, 95% CI $[-0.82, -0.02]$). However, there was not a significant correlation between number of child life visits and children's distress ($r = -.14$, 95% CI $[-0.64, 0.45]$). In terms of child life visit intensity (the ratio of number of visits per day of current hospitalization), the findings were in reverse: There was a significant negative correlation between the intensity of child life services and children's distress ($r = -.62$, 95% CI $[-0.87, -0.10]$) such that children who received more intense child life services during their current hospitalization were likely to report less distress. However, there was not a significant association between inten-

sity of services and children's anxiety ($r = -.33$, 95% CI [-0.72, 0.22]).

Child Life Services and Parent Outcomes

Results revealed no significant differences in parent outcomes based on whether or not families received child life services (see Table 1). However, there was a consistent pattern such that parents of children who received child life services tended to report lower stress intensity and frequency than parents of children who had not received child life services. Similarly, none of the correlations between number of child life visits or visit intensity and parental stress frequency or intensity were significant (see Table 2).

Discussion

Children and parents often experience stress in the hospital and require psychosocial supports to cope. Findings in this study support existing research indicating that child anxiety levels during hospitalization merit daily psychosocial intervention (Clatworthy et al., 1999a). On the other hand, children reported low levels of distress on average (Nilsson et al., 2014). Similarly, parents in this study reported high levels of stress frequency and intensity compared to previous studies using the PIP in outpatient populations (Streisand et al., 2001) and in studies with mixed in- and outpatient populations (Raphael et al., 2013).

The findings demonstrated a pattern of lower anxiety and distress among children who received child life services. Overall, the results provide promising preliminary evidence in support of the AAP's claim that child life intervention is effective at regulating some of the negative psychosocial outcomes related to hospitalization (AAP Committee on Hospital Care & Child Life Council, 2014). However, receipt and intensity of child life services were not uniformly associated with children's outcomes and were not significantly associated with parents' outcomes, indicating child life may serve different purposes for parents and children.

Contrary to hypotheses, results revealed a negative association between parents' stress and children's anxiety such that when parents reported more stress, their children tended to report lower anxiety levels. One possible explanation is that when children experience more anxiety, parents receive more support, and in turn, parents experience less stress (Ygge & Arnetz, 2001). Another possibility is that when children are

anxious, parents may focus on their children's needs and underreport their own stress. This association needs further examination in future studies.

Child Life Services and Child Anxiety and Distress

Results revealed that children who received child life services reported lower levels of anxiety, but not lower levels of distress, than children who did not receive services. The finding of lower anxiety is consistent with previous studies examining outcomes of providing psychosocial supports, like procedural preparation and therapeutic art and music activities, which tend to be associated with lower child anxiety and distress (Grissom et al., 2014; Singh et al., 2017). This study provides preliminary evidence extending those findings to indicate that child life services may be related to children's global experiences of anxiety in the hospital, among a sample of children of diverse ages and diagnoses.

Results suggest that receipt of child life services is related in different ways to children's anxiety and distress, highlighting an important distinction between the constructs: The anxiety variable in this study was measured by asking children to draw a picture of a person in a hospital and captures children's global experience of uneasiness. Distress, on the other hand, was measured by asking children to pick a face that was most similar to their feelings in that moment, and as such, assessed children's in-time discomfort levels.

Children who received child life services exhibited significantly lower anxiety in their drawings, but did not report significantly lower distress using the faces task. The analyses including child life intensity help to clarify the distinction between anxiety and distress. When children received more child life visits during their current hospitalization, they exhibited less overall hospital anxiety, whereas when children received more intense child life visits (i.e., more visits per day admitted), they reported lower levels of in-time distress. One potential reason for the association between more visits and lower anxiety could be that in an unfamiliar environment, seeing a familiar face may help improve security and reduce overall anxiety (Boyd & Hunsberger, 1998). The intensity of child life services, however, was only significantly associated with lower distress levels, perhaps because children with higher intensity services were likely to have been visited more recently by a child life specialist, and therefore, were less distressed in the moment of the

interview. Future studies should continue to examine the distinctions between anxiety and distress among hospitalized children.

Child Life Services and Parental Outcomes

Contrary to hypotheses, neither receipt nor intensity of child life specialist services were related to parents' reports of stress intensity or frequency. These findings are inconsistent with existing literature indicating that through psychological preparation and family-centered care, parents' stress is relieved (Simons & Roberson, 2002). It was unclear in this study if and how child life specialists interacted with parents when they visited children, and there is a need to further explore these associations to better understand how child life specialists may influence parents' experience in the hospital.

Also contrary to hypotheses, receipt of child life services was not associated with parents' report of their relationship quality with their hospitalized child. All parents reported fairly high relationship quality with their children, whether or not they had received services. This is consistent with previous literature highlighting the generally positive parent-child relationships during hospitalization (Pinquart, 2013). Despite the generally high relationship quality, as parents perceived more stressors, they tended to report poorer relationships with their children. This finding highlights the importance of intervening with parents in addition to children in the hospital, as their stress may spill over into the parent-child relationship.

Limitations

Although this study provides preliminary evidence in support of child life services, it is not without limitations. The small sample limits the statistical power to identify significant associations or explore multivariate analyses. Based on an initial power analysis, the authors anticipated needing 125 participants to examine the study aims with sufficient power. In general, the patterns in terms of group differences indicated lower child distress and parent stress among families who received child life services, and with more statistical power, it is possible those differences would have been statistically significant. Unfortunately, the authors were limited to 31 participants due to anticipated challenges with collecting data in the hospital environment. The data collection sessions were often interrupted by hospital staff, and would pause and then resume once procedures had been complet-

ed. In several cases, children opted into the study and then became tired and did not complete all measures. Future research with larger samples could identify demographic characteristics or other variables that may help to explain the conditions under which child life services are beneficial (or not).

Child participants also varied greatly in terms of age, diagnosis, previous experiences in the hospital, and current experience in the hospital up to their participation in the study (i.e., recently admitted versus having just undergone a painful procedure). Children perceive anxiety and distress in ways that may differ based on age, and neither the CD:H, which measured anxiety, nor the FAS, which measured distress, have been validated with children as young as three years old. Further, the PIP measure has been primarily used to assess parent stress in outpatient settings, so it is possible it did not fully capture parent stress in this study's inpatient setting. Also, child life services may have been more effective for children of certain diagnoses and at certain points in children's hospital stays. It is unclear why certain children received child life services and others did not or the type or length of child life intervention provided in each case. It is possible that children and parents with the highest anxiety and distress received the most intense child life services, and in that case, the expected associations may have been weakened. Future research should examine these factors to determine for whom and under what conditions child life services are most effective and to better understand how child life specialists make decisions about which families to intervene with and which child life interventions to employ.

The results are also limited by self-report measures which are subject to social desirability biases, particularly because the researchers were in the room with families as they completed measures. The measures were completed by children and one parent, so do not capture the entire family system experience. Future studies should seek to involve all caregivers and siblings. Due to the cross-sectional nature of the study, the findings represent only children and parents' experiences at one point during hospitalization, and future studies should follow-up after discharge or at multiple points during hospitalization. Further, causation cannot be inferred, and all findings are purely associations. Future studies could examine these questions using experimental design, with baseline measurement prior to intervention to determine change in variables over time.

Conclusion

Findings from this study indicate that children who received child life services exhibited lower levels of anxiety than children who did not. These findings are important because lower levels of stress are associated with a more efficient healing environment for children, which simultaneously makes health care less costly for families and hospitals (AAP Committee on Hospital Care, 2003). Findings also showed that more intense child life intervention may be additionally beneficial in reducing anxiety and distress among children. Based on these findings, there is emerging support for the value of child life specialist services in reducing children's anxiety in the hospital, and at the same time there are many remaining questions about for whom and under what conditions services are beneficial. Future studies with larger samples should further explore the distinctions between child anxiety and distress in the hospital and the mechanisms through which receipt of child life services is associated with children's psychosocial outcomes.

Although there were no significant associations between child life services and parents' outcomes, future research should explore the ways in which child life specialists contribute to experiences of the entire family. Because parents' stress was associated with their perceptions of their relationship with their child, it is important to identify ways to improve parents' coping while in the hospital. Research could also examine other impacts of child life specialists in the hospital, including their influences on other members of the health care team.

Overall, this study confirms the need to attend to children's psychosocial needs during hospitalization and provides promising preliminary evidence that child life services may improve children's overall psychosocial experience while in the hospital.

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Appendix

Parent-Child Relationship Scale

Items in the Parent-Relationship Scale ($\alpha = .82$)

1. My child and I get along well.
2. My child enjoys spending time with me.
3. I feel emotionally close to my child.
4. My child respects me.
5. My child is comforted by me in times of stress.
6. My child and I often experience conflict in our relationship.*
7. I have fun with my child.
8. My child contributes to my personal self-growth.
9. My child is often clingy and overly dependent on me.*
10. I am often annoyed with my child.*
11. I trust my child.
12. My child often interferes with my activities.*
13. I understand my child.

Note. Respondents were asked to think about their relationship with the target child over the last week and indicate how much they agreed or disagreed with each statement using a five-point scale (1 = *strongly disagree* and 5 = *strongly agree*).

* Items were reverse-coded prior to creating a composite score.