



Outcomes of a hospital-based recreation program

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ABSTRACT

The experience of hospitalization is stressful and traumatic for children and their families. A common way to address these threats to positive development is by introducing play programs in hospitals. Studies of therapeutic activities have had a decided focus on medical-related outcomes. Few studies have explored potential outcomes for children who participate in recreational play activities. This study explored potential short-term changes in children after participating in a recreational play experience, from the perspectives of parents/caregivers and of hospital staff. One-hundred and ten parents/caregivers and 114 hospital staff completed questionnaires after interacting with the “Hospital Outreach Program” (HOP), reflecting a total of 126 patients. Questionnaires included questions about patients' anxiety, comfort in the hospital, openness to hospital staff, positive affect, sadness, physical pain, physical activity level, and socializing with other patients, and other potential changes. Results showed several reports of improvements in patients' positive affect and sadness. Few respondents reported any changes in patients' socializing with other patients and physical pain. Parents/caregivers and hospital staff perceived other short-term outcomes involving more activity, communication, and willingness to participate in medical-related activities. The findings from this study contribute to the research base on effects of adult-led, recreation-focused, in-hospital activities for pediatric patients.

1. Introduction

The experience of hospitalization is stressful and traumatic for children and their families (Ball, Bindler, & Cowen, 2015). Meeting children's psychosocial needs in addition to their medical and physical needs in such an environment are difficult tasks. Loss of social interactions come from children in hospitals missing school and their peers. Isolation from friends and taking a break from school are important obstacles from hospitalization (Linder & Seitz, 2017). Fears and challenges experienced by children include separation from parents and family; unfamiliar environment; investigations and treatments; and loss of self-determination which exacerbates their fears and concerns (Coyne, 2006). Other issues faced by children in hospitals include many psychological challenges such as restricted freedom, distrust of parents and other adults, painful procedures, and uncertainty (e.g., Coyne, 2006; Forsner, Jansson, & Sørli, 2005). Besides the obvious medical concerns, such social and psychological challenges can hinder children's well-being.

A common way to address these threats to well-being is by introducing recreation and play programs in hospitals. In this study, play is considered a type of recreation, in which activities are structured to elicit feelings of engagement and freedom (Ellis & Rossman, 2008). In

their statement on child life services, the American Academy of Pediatrics (AAP, 2000) points out that “Engaging in developmentally appropriate play and reading activities moderates children's anxiety and minimizes the possibility that health care encounters will disrupt normal development,” (p. 1156). Further, AAP explains, “Child-directed play and guided (or issue-specific) play experiences allow children to be active and exert control over their endeavors,” (p. 1156). The Association of Child Life Professionals (n.d.) also endorses play as a facilitator of “healing, coping, mastery, self-expression, creativity, achievement, and learning, and is vital to a child's optimal growth and development.” Recreational play is considered an important element in children's hospitals (Pruitt, 2016).

Play activities designed to elicit positive responses can help offset the troubling medical- and isolation-related experiences of children in hospitals (Ford, Courtney-Pratt, Tesch, & Johnson, 2014). Despite the critical situation, positive moments marked by a relaxed, carefree, and welcoming environment were reported by hospitalized children, which led to an acceptable hospital stay and positive relationships with doctors and nurses (Cigala et al., 2015). Burns-Nader and Hernandez-Reif (2016) reviewed research on benefits of different types of play and found that benefits included preparation, distraction, and normalization. Other researchers have found evidence of improved pain

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management (Cregin et al., 2008; Jordan-Marsh et al., 2004), stress management (Alexander, 2012), and anxiety (Al-Yateem, Brenner, Shorrab, & Docherty, 2016; Al-Yateem & Rossiter, 2017). A systematic review found some psychosocial interventions to be effective at reducing anxiety and depressive symptoms and improving quality of life, and having a positive impact on physical symptoms and well-being, including lower procedural pain and symptom distress (Coughtrey et al., 2018). These and other studies of therapeutic activities had a decided focus on medical-related outcomes. However, few studies have explored other potential changes to children who participate in recreational play activities with non-hospital adults.

While some research exists on specific outcomes of recreational activities for children in hospitals as discussed above, more information is needed about other potential short-term outcomes of an experience led by a non-hospital adult and freely chosen by children. Further, many previous studies used self-reports to gather data about changes in children, but few have employed the use of other-reports from people close to the child, such as parents and hospital staff. The aim of this study was to explore potential short-term changes in children after participating in a recreational play experience, from the perspectives of parents/caregivers and of hospital staff at two hospitals.

2. Methods

2.1. Setting and sample

The Hole in the Wall Gang Camp (based in Connecticut, USA) operates a year-round program called the Hospital Outreach Program (HOP), and the aim is to bring the joy and fun of camp beyond the camp grounds to children and families in a pediatric hospital setting. HOP activities are inspired by the summer camp program but are specially adapted to each unique hospital and clinic setting. All one-on-one and group activity interactions provide for choices - something children undergoing medical treatment often lack. HOP interactions typically occur at children's bedsides, in group activity settings, or in outpatient clinics. Activities typically include crafts such as watercolor painting and making jewelry pendent necklaces or duct tape wallets, board or card games, or making "slime" or other silly activities. HOP interactions average 44 min per interaction (HOP Numbers Project Report, 2016).

Specially-trained HOP specialists are full-time salaried employees of The Hole in the Wall Gang Camp and are treated by the hospitals as hospital volunteers. The hospitals in this study included Yale-New Haven Hospital and Connecticut Children's Medical Center. In general, HOP typically serves children and youth in hematology and oncology at these hospitals.

The sample for this study were parents/caregivers of child patients and hospital staff. We chose parents/caregivers because they could be informed observers of their children's changes in psychosocial outcomes. We chose hospital staff to triangulate data with the parents/caregivers and because they too could be informed observers of child patients' changes. Hospital staff did not provide HOP experiences to children; HOP specialists provided the experiences.

2.2. Data collection

Parents/caregivers were approached by HOP specialists soon after HOP's interaction with their children to see if they would be interested in participating in the study. As such, only children whose parents/caregivers were present in the hospital during or after HOP interactions are represented in this study. Next, HOP specialists approached hospital staff for their participation upon agreement of parents/caregivers to complete the questionnaire. HOP specialists matched the parent/caregiver surveys with the hospital staff questionnaire, using pre-recorded matching identifier numbers on parent/caregiver and hospital staff survey covers to maintain anonymity. Study participants completed their questionnaires on their own and returned them to a designated

person or locked box in the hospital within a day, typically within an hour. While exact numbers of study declinations were not recorded, the HOP manager (B. Ballard, personal communication, November 13, 2018) reported that of the approximately 140 parents/caregivers and 140 hospital staff approached, approximately 10 parents/caregivers and 10 hospital staff refused to do the questionnaire. Approximately 20 parents/caregivers and 20 hospital staff did not complete the questionnaire for other reasons such as becoming too busy with hospital procedures or child patient discharge.

Through an extensive development process with HOP staff, hospital staff, and researchers, a questionnaire specific to this study was created. Outcomes were selected based on expert panel review by hospital staff. The questionnaire was not pre-tested due to this study being considered a pilot study for measuring outcomes of the HOP experience.

Parents/caregivers and hospital staff completed one-page questionnaires that were nearly identical. The parent/caregiver questionnaire had 22 questions and the hospital staff questionnaire had 19 questions. Differences between the versions involved questions about the person completing the questionnaire, and the parent/caregiver version included a question about their child attending camp.

Besides questions about the child's previous HOP experiences and the person completing the questionnaire, the Likert-type scale included the prompt "After participating in HOP, have you noticed changes in your child on any of the following outcomes?" Areas of change included: anxiety, comfort in the hospital, openness to hospital staff, positive affect (i.e., being in a good mood, smiling/laughing), sadness, physical pain, physical activity level, and socializing with other children. Response options included: a lot less (1), a little less (2), no change (3), a little more (4), and a lot more (5). An open-ended question was provided to elicit information on other changes noticed. Two closed-ended questions asked if participating in HOP was helpful to the child/family, and if so to explain how HOP was helpful.

2.3. Ethics

Written permission and ethics committee approvals to perform the study were obtained from Yale University's Human Investigation Committee and the Connecticut Children's Medical Center. Written informed consents were obtained from participating parents and hospital staff.

2.4. Data analysis

Quantitative data were transferred from paper sheets to an Excel document and then into IBM SPSS Statistics version 25 software. Means and standard deviations for all variables were computed for both parent/caregiver data and hospital staff data. Differences between parent/caregiver and hospital staff data were computed using independent sample *t*-tests. HOP specialists and activities at both hospitals were the same, so the responses from each hospital were pooled.

Qualitative data were transferred from paper sheets to an Excel document and open-coded by the author to assess other changes in children after a HOP interaction. Qualitative data from the questionnaires were coded and grouped by emergent themes. Themes were further analyzed to determine patterns and conceptual consistency in the responses (Patton, 2002).

3. Results

One-hundred and ten parents/caregivers and 114 hospital staff at both hospitals completed questionnaires within a day of children's HOP interactions, reflecting a total of 126 children. Only one interaction with each child was measured in this study. Valid percentages are reported below; some respondents did not answer all questions. Parents/caregivers and hospital staff reported children's ages as 3–19 with a mean of 10 years, and gender composition was 50% ($n = 63$) girls and

Table 1
Descriptive statistics for the items in the questionnaire.

	Parent or caregiver/ Hospital staff		
	N	Mean	Standard deviation
Positive affect	104/ 111	4.45/ 4.38	0.944/ 0.864
Openness to hospital staff	97/ 109	3.81/ 3.83	0.939/ 0.848
Comfort in the hospital	102/ 113	3.77/ 3.8	1.19/ 1.04
Physical activity level	101/ 113	3.79/ 3.79	0.864/ 0.749
Socializing with other patients	98/ 105	3.43/ 3.38	0.704/ 0.712
Physical pain	99/ 99	2.42/ 2.42	0.809/ 0.809
Anxiety	102/ 110	1.95/ 1.96	0.883/ 0.741
Sadness	102/ 109	1.78/ 1.86	0.828/ 0.775

50% boys ($n = 63$). Parents/caregivers comprised 74% mothers ($n = 93$), 10% fathers ($n = 12$), and 4% ($n = 5$) other adults. Hospital staff comprised 47% child life specialists ($n = 59$), 40% ($n = 50$) registered nurses, and 2% ($n = 3$) personal care assistants. Sixty-seven percent ($n = 84$) of HOP interactions in this study occurred at children's bedsides, 27% ($n = 34$) were in playrooms, and 2% ($n = 2$) were in outpatient areas. For 56% of the children ($n = 70$), this was their first time participating in HOP. Forty-four percent ($n = 56$) of parents/caregivers participated in the HOP experience with their children and 34% ($n = 53$) reported taking time for themselves during the HOP interaction with their child. Parents/caregivers reported that 53% ($n = 67$) of children were eager to participate, 21% ($n = 27$) were willing, 8% ($n = 10$) were unsure, and 2% ($n = 2$) did not initially want to participate. Diagnoses of children in the study were not collected due to concerns about sharing private health information outside of the hospital (Table 1).

There were no statistically significant differences between perceptions of parents/caregivers and hospital staff. Many parents/caregivers and hospital staff reported improvements in all outcomes, with "positive affect" and "sadness" being the most positively changed in children. More than half of respondents reported no change in children's "socializing with other patients" ($n = 68$; 69%) and "physical pain" ($n = 59$; 60%).

Content analyses of qualitative data from open-ended questions showed parents/caregivers perceived other outcomes for children as being: more active, more interactive and communicative, and more willing to participate in activities or medical care. Numbers in parentheses reflect participant numbers and representative quotations are included below for the densest themes. Forty-one of 93 parent/caregiver comments about how HOP was helpful to their children were about overcoming boredom or being a distraction from stress or pain. One parent (#20) shared, "My daughter has experienced several extended stays in the hospital recently. HOP allows her to take a break from procedures and anxiety and just be a normal kid for a bit." Another parent (#117) explained, "Took his mind off of being in the hospital. Allowed him to use his creativity." Twenty-eight parent/caregiver comments were about children being more social after a HOP interaction: "Engages in conversations with new people, gets him out and about," (#26) Twenty-five parent/caregiver comments were about the fun activities HOP staff brought to children: "Having a nonmedical staff person play with my son and do crafts and activities with him breaks up the long hospital day and gives him something to look forward to," (#70). Parents/caregivers reported that HOP helped families by: providing benefits for the child ("Allowed for laughter in the middle of trauma, chaos, and disaster," (#92)), providing parents/caregivers with a break ("Gives parents time to relax and not have to be 'in demand,'" (#15)), providing a nice opportunity for parents/caregivers to see their children having fun ("When our child is happy our stress is lower," (#22)).

Hospital staff reported other outcomes for children as being: more

compliant or willing to participate in activities or hospital procedures ("The patient was willing to leave her room, exhibited increase in compliance, calmer," (#14)) and more ambulation ("Tolerated sitting up in chair longer," (#51)). Outcomes for families included: more relaxation during and after a HOP interaction ("Mother's mood improved after having a stressful day," (#36)) and being nice for families to see their child having fun ("Mother appeared to enjoy seeing her daughter smile and was really happy to see familiar HOP specialist face," (#2)).

4. Discussion

This study explored short-term changes in children after participating in a recreational play experience, from the perspectives of parents/caregivers and hospital staff at two Connecticut pediatric hospitals. Quantitative results showed the most improvements in children's positive affect and sadness, indicating a lot more and a lot less, respectively. Few respondents reported any changes in children socializing with other children and physical pain. Qualitative results showed that parents/caregivers and hospital staff perceived children after a HOP experience as being more active, engaging in more interactions and communication, and being more willing to participate in medical-related activities or procedures. The findings from this study contribute to the research base on effects of adult-led, recreation-focused, in-hospital activities for pediatric children.

Some findings of this study warrant additional discussion. Children improved the most in their positive affect and sadness, which reflects mood or emotions. Child patients' moods have been the focus of several studies (Avers, Mathur, & Kamat, 2007; Hendon & Bohon, 2008; Kaminski, Pellino, & Wish, 2002). Positive mood is essential for effective coping and resilience in pediatric hospital environments (Kennedy, Unnithan, & Wamboldt, 2015). More research is needed about how and why mood was affected by HOP experiences and how such experiences can be optimized to improve child patients' moods.

Interestingly, "socializing with other patients" and "physical pain" were the two outcomes least likely to change, according to parents/caregivers and hospital staff. It appears that HOP experiences did not contain sufficient elements likely to improve these two outcomes. Given the need to control infection or contagion, it is difficult for children to interact with each other in hospitals. However, in a study on children's stories about their hospitalizations, children reported wanting companions (Wilson, Megel, Enenbach, & Carlson, 2010). Potential situations could be explored to provide structured opportunities for children to socialize with each other wherever possible, such as virtually or through computer-facilitated means.

Similarly, "physical pain" was perceived to be mostly unchanged after a HOP interaction. Perhaps connections between a HOP interaction and physical pain are indirect or mediated or moderated by another variable if they exist at all. Other studies suggest elevated mood relates to less pain (e.g., Baker, Raiker, Elkin, Palermo, & Karlson, 2017; Sørensen & Christiansen, 2017; Zempsky et al., 2013). More research is needed on the potential for an intervention such as HOP to influence pain in the short- or long-term.

Some of the qualitative responses to the survey reflect benefits for the parents/caregivers in addition to the children. Parents/caregivers typically face problems and distress caring for their children (Devine et al., 2014). Given that the hospital environment can entail boredom, anxiety and concern for the emotional state of their children (Corsano, Majorano, Vignola, Guidotti, & Izzì, 2015), programs such as HOP can enhance parent/caregiver well-being. Caring for a child with illness has been described as a balancing act between acting as a caregiver and being in need of care (Hagvall, Ehnfors, & Anderzén-Carlsson, 2016). The balancing act involves parents needing skilled staff who could relieve them of medical responsibility, but also a desire to be involved in the care and in the decisions taken. Parents need support (e.g., relief) to meet their own needs while taking care of their children (Hagvall et al., 2016). Taking care of a child with needs related to an illness can be

exhausting. Programs such as HOP can help to ease caregiver burden. More research on the potential externalities of HOP is needed.

Future research could also include the perspectives of children on changes they perceive after a recreational experience. Self-report measures could be used, such as the Fast Assessment of Children's Emotions (Kennedy et al., 2015). Further, self-reports could also be used in conjunction with proxy reports such as from parents/caregivers and hospital staff, as recommended by Hermont, Scarpelli, Paiva, Auad, and Pordeus (2015). Other observational measures could be used such as using existing recordings of heart rate, blood pressure, salivary cortisol, or by counting the number of smiles per minute. Study staff could engage with hospitalized children multiple times a week. As an exploratory study, more research could build on this study's initial findings to explore other aspects of outcomes related to recreational experiences such as HOP. The sustained or distal effects of a HOP intervention beyond the short term could also be examined.

Future research could explore the mechanisms of change after a recreational experience such as HOP. For example, what are the elements of the HOP experience that are responsible for changes in children's mood, such as interactions with caring adults? Some research on children's interactions with adults in hospitals has found that health care providers can encourage children's emotions, especially for happy events (Corsano, Cigala et al., 2015). Other research has shown that supportive adults can help mitigate children's anxiety (Middlebrooks & Audage, 2008). What are children's perceptions of non-hospital adult volunteers or other recreational program providers in the hospital? These and other questions could expand this study by examining the mechanisms of change.

5. Limitations

Some limitations affect the generalizability of this study. First, the sample included a range of children with different ages and illnesses (although most had hematologic or oncology diagnoses). Future research could compare children of different ages with specific illnesses and hospital experiences. Second, excluding the perspectives of parents/caregivers who were absent during HOP experiences might have overlooked a group of children with the highest anxiety, thus influencing study results. Third, handing back the questionnaires to a HOP specialist could have influenced the findings, although many respondents placed their surveys in the collection box. Fourth, no information was collected about *how* short-term outcomes occurred for children. Future research could include analyses of setting-level factors such as HOP specialist characteristics or activity types and duration. Fifth, this study used a cross-sectional design which cannot show evidence of a temporal relationship between exposure and outcome; there are no baseline measures to compare. Changes perceived by parents and hospital staff could have been attributed to other factors besides HOP, although the questionnaire was clearly worded with HOP language in a retrospective format. This study used data from two sources which showed strong convergence, strengthening the credibility of the findings.

6. Conclusions

The present study contributes to the literature on children's experiences who participate in recreational play activities in hospitals. A strength of the study was its use of multiple informants: hospital staff and parents/caregivers of children. This study demonstrated that a recreational experience led to improvements in positive affect and sadness but did not seem to influence children's socializing with other children or physical pain. Other positive outcomes of the HOP experience included children being more active, being more interactive and communicative, and being more willing to participate in hospital procedures. A further outcome of the HOP experience benefited parents/caregivers who were cheered by their children's improvements. The

findings from this study contribute to the research base on effects of adult-led, recreation-focused, in-hospital activities for children.

Implications for practice include offering more opportunities for children to participate in HOP-like experiences with the understanding that their moods are likely to improve following such experiences. Utilizing trained and prepared staff from a non-hospital organization can extend the reach of caring adults in hospitals. Given the competing demands for hospital staff such as nurses and child life specialists, programs such as HOP can help provide additional and enhanced opportunities for children to experience positive development in hospital settings.

Declarations of interest

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