Psychosocial Changes Associated With Participation in a Pediatric Summer Camp

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Objective: To examine the relationship between a 1-week pediatric summer camping program and children’s attitudes toward their physical disabilities and/or medical conditions and levels of trait anxiety.

Method: The Child Attitude Toward Illness Scale (CATIS; Austin & Huberty, 1993) and the trait scale of the State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973) were given to 90 children as pretests to determine baseline attitudes toward their illnesses and their overall levels of trait anxiety. At the end of the 1-week camp sessions, the CATIS and STAIC A-Trait Form were completed once more as posttest measures.

Results: Pretest and posttest scores for all camp groups were compared to assess changes in the children’s attitudes toward their illnesses and levels of trait anxiety. Overall, participants had better attitudes toward their illnesses and lower levels of trait anxiety at the end of camp.

Conclusions: Participation in a pediatric summer camp was related to changes in psychosocial functioning, with changes evident across diagnostic groups and gender. The consistency of the findings underscores the need for further investigation.

Key words: attitudes toward illness; anxiety; pediatric summer camp; children.

All children face significant challenges through the normal growth and maturation process, but children with disabilities and illnesses face specific challenges unique to their situations. Research by Austin (1989) and Breslau (1985) indicates that children with chronic illnesses are at much greater risk for developing psychological difficulties such as behavior problems, poor self-concept, and social withdrawal. Thompson, Zeman, Fanurik, and Sirotkin-Roses (1992) estimate the risk of significant psychological or social problems during childhood for chronically ill children to be 1.3 to 3 times greater than for healthy children. Because of this magnified risk, identifying factors that account for the increased prevalence of mental health problems among this population has become a recent focus of research. In fact, as Lemanek (1994) points out, “psychological research involving children and adolescents with chronic illness has been ranked by pediatric psychologists as a priority area for future investigations” (p. 143).

One factor that has gained attention recently, and appears to play a role in the development of problems in some children with illnesses, is the ill child’s perceptions of or attitudes about his or her condition. How children feel about having a chronic illness plays a significant role in their social...
adjustment to peers (Lefebvre, 1983) and in how they cope with and ultimately adapt to the chronic condition (McCubbin and Patterson, 1983).

Despite the importance of the construct of attitudes towards illness in the outcomes noted, very little is known about experiences, formal (e.g., therapy) or informal (e.g., making new friends), which might lead to more positive attitudes, and ultimately, to better coping. The present study examines changes in attitudes toward illness related to participation in a pediatric summer camp.

Summer camps, such as those used in this study, have become a popular means of addressing the psychosocial needs of children with chronic pediatric conditions. In general, these camps are designed to meet children’s specific physical needs while providing a rewarding camp experience as close to “normal” as possible. For various camp programs, specific camp goals range from “[helping] children feel as normal as possible” (Smith, Gottlieb, Gurwitch, & Blotcky, 1987, p. 535) to “providing opportunities for a sense of mastery and efficacy in peer relationships” (Swensen, 1988, p. 31). Although the programmatic and philosophical bases of these camps is varied, almost all share the broad goal of helping children regard their condition in a more positive, adaptive light (e.g., Smith et al., 1987; Swensen, 1988; Silvers et al., 1992).

Unfortunately, most prior attempts to evaluate the effectiveness of camps in changing attitudes toward illness, it would be instructive to evaluate whether observable changes are specific to attitudes or whether broader changes to psychological functioning are evident. We thus turn to the construct of anxiety, which has been regularly linked to chronic medical conditions in the pediatric literature (e.g., Fritz & Overholser, 1989; Holmes, Respess, Greer, & Frentz, 1998; Johnson, Whitt, & Martin, 1987; Pine et al., 1994; Silver, Westbrook, & Stein, 1998; Swensen, 1988). In particular, the construct of trait anxiety is relevant here because at least one study has found it to distinguish children with chronic illnesses from their healthy peers and to be responsive to interventions targeting adjustment to illness (Johnson et al., 1987). Further, data from the adult literature suggest not only that trait anxiety is associated with illness but that it is significantly correlated with attitudes toward illness (Ostrowski, 1991; Winnicka, 1991; Wizesniewski, 1983).

Our study expands research previously undertaken by assessing the impact of a summer camping experience on both children’s attitudes toward their illnesses and on their overall levels of trait anxiety. Three groups of children were studied, each group attending a separate but comparable week of camp at Camp Aldersgate in Arkansas. Children in all groups were expected to exhibit more positive attitudes toward their illnesses and lower levels of trait anxiety at the end of their 1-week camping session.

Method

Participants

The sample consisted of 90 campers, ages 6 to 16 years (M = 10.27, SD = 2.09), attending three different 1-week summer camps at Camp Aldersgate, Inc., in Little Rock, Arkansas, designed to meet the physical needs of pediatric populations. Specifically, the sample included 37 children attending an asthma camp, 32 children attending a diabetes camp, and 21 children attending a spina bifida camp. Participation rates for the three camps were as follows: 94% (asthma), 91% (diabetes), and 96% (spina bifida). Information about age, gender, and race is summarized in Table I. Each of the camp groups
used the same facilities but met during different weeks of the summer. In an attempt to obtain data from a wait-list control group, the investigators mailed packets of questionnaires to (the families of) children with asthma who were on a waiting list to attend camp. Because only four families returned packets, this control group could not be included in formal analyses.

**Measures**

The Child Attitude Toward Illness Scale (CATIS; Austin & Huberty, 1993) is a 13-item scale designed to assess children’s attitudes toward their specific illnesses or disabilities. In the general form of the scale, blanks are left in the questions that can be filled in with the specific illness or disability the child is facing. The scale includes questions such as “How good or bad do you feel it is that you have ______?”; “How often do you feel that your ______ is your fault?”; “How often do you feel that your ______ keeps you from starting new things?”; and “How often do you feel sad about being sick?” The full scale may be found in the original article by Austin and Huberty (1993). Respondents answer each question on a 5-point Likert-type scale, and attitude toward illness is reflected in the average response/score across items. Thus, scores generated from the CATIS range from 1 to 5. A score of 1 indicates a more negative attitude toward illness and a score of 5 indicates a more positive attitude toward illness.

Although the scale is relatively new, its psychometric properties are sound. Original validation studies performed on 136 children with epilepsy and 133 children with asthma resulted in an overall alpha for internal consistency reliability of .80, with an alpha of .74 for children under 11 years of age and an alpha of .86 for children 11 years of age and older. Test-retest reliability over a 2-week period was .80. Results of the CATIS were compared with results of the Piers-Harris Children’s Self-Concept Scale ($r = .48$, $p < .01$) and the Child Behavior Checklist ($r = -.43$ by father report and $r = -.22$ by mother’s report, both at $p < .01$) given at the same time, yielding support for construct validity as well (Austin & Huberty, 1993).

The State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973), an adaptation of the State Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), includes two 20-item self-report scales. For the present study, only the A-Trait Form was used. Each A-Trait Form item is answered on a 3-point scale ranging from “hardly ever” to “often.” Responses from the 20 items are totaled, yielding a score from 20 to 60. The psychometric properties of the STAIC are well-established (see James, Reynolds, & Dunbar, 1994, for a review).

**Procedure**

While waiting to register their children with the camp nurse(s) on the first day of camp, parents and children were approached by the first author and asked to participate in a project about children’s experience of camp. Consent was obtained from parents via a written consent form, and assent was obtained from children verbally. All children approached agreed to participate. Parents completed a brief demographic questionnaire, which included questions about the date the child was diagnosed, the frequency of treatments (if any), the child’s education, and the child’s exposure to other children with the same illness. For each child, a pretest con-
sisting of the CATIS and STAIC A-Trait Form was administered following registration for each of the week-long camping sessions.

Children attending all three camp sessions lived in cabin groups consisting of five to eight same-age peers, a senior counselor, a junior counselor, and one to four volunteer youth counselors. Campers engaged in such activities as swimming, canoeing, arts and crafts, archery, shooting BB guns, going on nature hikes, and spending one night cooking and camping out. In addition, campers interacted in “all-camp” activities, including daily swimming, evening activities such as scavenger hunts, a dance on the last night of camp, and an awards ceremony on the last day of camp. Additionally, campers in the asthma and diabetes camp groups attended daily educative sessions regarding care and maintenance of their medications, equipment (where applicable), and lifestyles. Programming for campers in the spina bifida group involved no educative sessions.

At the end of the week of camp, the campers completed the same measures contained in the pretest session (i.e., CATIS and STAIC), along with a number of other general questions about their camping experience.

Results

Analysis of variance (ANOVA) or chi-square procedures were performed to examine for group differences on the demographic variables of age and gender, and on the CATIS and STAIC A-Trait Form pretest scores. We employed another series of ANOVAs to examine for anticipated improvements in attitudes toward illness and levels of trait anxiety associated with participation in the summer camping program. Following evaluation of the hypotheses, we examined the potential mediating effects of previous camp experience on camp outcome, also using a series of ANOVA procedures.

Power Analysis. A power analysis revealed that with \( N = 90 \), \( \alpha = 0.05 \), and \( \beta = 0.20 \) (power = .80), there is sufficient power to detect effects of the following effect sizes: for main effects, \( d = 0.30 \); for 2 \( \times \) 2 \( \times \) 2 interaction effects, \( d = 0.31 \); and for 2 \( \times \) 2 \( \times \) 3 interaction effects, \( d = 0.36 \). All of these effect sizes indicate the ability to detect small to medium effects (Cohen, 1988).

Demographic Analyses. An ANOVA for age was performed to assess for any differences among groups based on age, but no significant differences between the three groups were indicated. With only one minority participant in both the diabetes camp (3%) and the spina bifida camp (5%), analyses considering race were impractical. A chi-square revealed significant differences in gender composition between the three camps, \( \chi^2(2, N = 90) = 11.16, p < .005 \), with greater numbers of male campers in both the asthma and spina bifida groups. Gender was then considered as a factor in the analyses that followed. A summary of demographic information for each week of camp can be found in Table I. Two ANOVAs were used to assess for pretest differences between groups on the CATIS and STAIC A-Trait Form. Neither ANOVA revealed significant pretest differences between the three camp groups (see Table II).

<table>
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<th>SD</th>
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Table II. Pretest and Posttest Scores for All Campers on the CATIS and STAIC A-Trait Form by Condition

Time \( \times \) Gender \( \times \) Condition ANOVAs. A 2 (Time: Pretest/Posttest) \( \times \) 2 (Gender) \( \times \) 3 (Condition: asthma, diabetes, or spina bifida) ANOVA on CATIS scores, performed to assess for changes in attitudes toward illness associated with participation in the camp program, revealed a significant main effect for time, \( F(1, 84) = 47.76, p < .001 \), with attitudes toward illness becoming significantly more positive from pretest to posttest. Across all groups, the CATIS pretest mean was 2.92 (SD = 0.36), and the CATIS posttest mean was 3.61 (SD = 0.70), yielding an overall mean difference of 0.69. (Test-retest data from Austin and Hubert [1993] showed a pretest mean of 3.09 and a posttest mean of 3.30, resulting in an overall mean difference of 0.21.) No other main effects or interactions were significant. Table II contains means and standard deviations for all measures.
A second Time × Gender × Condition ANOVA, this time assessing for pretest to posttest changes in STAIC A-Trait scores, also revealed a significant main effect for time, \( F(1, 84) = 3.94, p = .05 \), with levels of trait anxiety decreasing from pretest to posttest. No other main effects or interactions were significant. Across all groups, the STAIC A-Trait pretest mean was \( 34.99 (SD = 7.49) \), and the STAIC A-Trait posttest mean was \( 33.44, (SD = 7.92) \).

Time × Experience × Gender ANOVAS. Another question of interest to us was whether the observed differences from pretest to posttest were specific to first-time campers. To assess for this question, we compared CATIS pretest and posttest scores for both new and returning campers using a 2 (Time) × 2 (Experience: new or returning campers) × 2 (Gender) ANOVA. Once again, a significant main effect was found for time, \( F(1, 86) = 62.20, p < .001 \), but no other main effects or interactions were significant.

A second Time × Experience × Gender ANOVA was conducted on anxiety scores in order to assess for possible pretest to posttest differences that may have emerged between new and returning campers. This ANOVA revealed a significant main effect for experience, \( F(1, 86) = 8.47, p < .01 \), as well as a significant main effect for time, \( F(1, 86) = 4.45, p < .05 \). The main effect for gender was not significant, nor were the tested interactions. The main effect for experience indicates that returning campers exhibited greater levels of trait anxiety overall (\( M = 36.44, SD = 6.82 \)) than did new campers (\( M = 32.27, SD = 6.58 \)).

Time × Experience × Condition ANOVAs. We were also interested in pretest to posttest differences that may have emerged between new and returning campers and between children with different medical conditions. To assess for the potential interactions between type of illness and previous camp experience for attitudes toward illness, a 2 (Time) × 2 (Experience) × 3 (Condition) ANOVA was performed. Gender was not considered in this analysis because doing so would have resulted in cells with inadequate numbers. A significant main effect was found for experience, \( F(1, 84) = 6.29, p < .025 \), and for time, \( F(1, 84) = 48.72, p < .001 \). In addition, the interaction for time and experience was also significant, \( F(1, 84) = 8.26, p < .01 \). The main effect for experience confirms findings of the analysis reported above that overall differences in attitudes toward illness existed between new and returning campers. The means indicate that new campers showed better attitudes toward illness than returning campers. The main effect for time indicated significant improvement overall from pretest to posttest for the construct of attitudes toward illness. An examination of the means for the interaction of time and experience reveals that, although children who had never attended camp before had lower pretest scores overall on the CATIS (\( M = 2.90, SD = .33 \)) than did returning campers (\( M = 2.94, SD = .39 \)), new campers showed higher CATIS posttest scores overall (\( M = 3.75, SD = .65 \)) than did returning campers (\( M = 3.44, SD = .72 \)).

To assess for interactions between type of illness and previous camp experience for anxiety, we performed another Time × Experience × Condition ANOVA. Again, gender was not considered. A significant main effect was found for experience, \( F(1, 84) = 4.31, p < .05 \), but no other main effects or interactions were significant. Examining the means reveals that the main effect for experience indicates new campers exhibited lower levels of trait anxiety overall than did returning campers.

Additional Analyses. We ran two additional ANOVAs to compare new and returning campers for the variables of age and length of time since diagnosis. Although on average returning campers had dealt with their diagnosis for 1.5 years longer than new campers, neither ANOVA yielded significant results.

Discussion

Prior to this study there had been no empirical investigation into the effects of pediatric summer camps on the construct of attitudes toward illness and its correlates, such as trait anxiety. This project sought to quantify effects that, until now, had been offered only as anecdotal observations. Overall, the data support the position that specialized camping experiences can improve attitudes toward illness in children with pediatric conditions.

Overall, the children in the sample reported more positive attitudes about their illness at the end of the 1-week camp sessions than at the start. Perhaps more importantly, these changes in attitudes were found consistently across the analyses performed, and examination of the pre- and postcamp means for the CATIS indicates that all three diagnostic groups showed changes in the desired direction. Thus, the observed benefits do not appear specific to one condition or group.

Although statistically significant, the actual dif-
ference (.69) between our CATIS precamp mean (2.92) and postcamp mean (3.61) appears rather small and, therefore, might be suspected of lacking clinical utility. Yet reexamining the psychometric work on the CATIS suggests otherwise. Austin and Huberty reported test-retest means of 3.09 and 3.30 (a difference of .21), respectively, over a similar period of time. The present pre to post difference in scores is more than three times the size found in the original sample. This finding, coupled with the CATIS's strong test-retest reliability over a similar period (Austin & Huberty, 1993), suggests that the observed change is in fact meaningful, albeit small. Specifically, the present findings indicate that camps such as the ones studied here may provide a benefit for children with special needs, even across a broad range of disabilities or illnesses.

Further, it appears that desired changes are evident in more than just one area of psychological functioning, as self-reported anxiety showed an overall significant decrease over the course of camp. It should be noted, however, that for STAIC scores, only the diabetes and asthma groups' scores showed changes in the desired direction (although the tested interaction of time and condition was not significant). It is a rather significant finding that changes were observed in a construct correlated with attitudes toward illness but not specifically targeted for intervention. This suggests that the benefits derived from pediatric camps, such as the one studied here, may be global in nature. This would be consistent with the broadly defined and multifaceted goals typically espoused by organizers of such camps, but raises questions as to whether additional research can realistically tease apart the relationships between specific activities of camp and their therapeutic outcomes.

It is worth noting that no group differences were observed in baseline scores on either the CATIS or the STAIC A-Trait Form based on the type of illness the children were facing. Although no previous data exist specifically comparing the diagnostic groups utilized here on the attitudes construct, Austin and Huberty (1993), in a comparison of children with epilepsy and children with asthma, reported CATIS scores for children with asthma comparable to those found here. Certainly the illnesses studied here bring with them common as well as unique experiences. Children with diabetes and asthma face similarly threatening medical conditions that do not affect their mobility or overall activity level. Children with spina bifida, however, are facing a challenge that may not be medically threatening but forces them to physically adapt to their environment on a daily basis and in all settings. Even though the specific challenges faced by these groups can be quite different, children entered the summer camping experience with similar attitudes toward their specific illnesses and similar levels of anxiety.

Interesting findings emerged when the variable of previous camp experience was factored into analyses. For example, one analysis revealed that returning campers on average reported poorer attitudes toward their illnesses than new campers. Similar results were found for trait anxiety. Further, these differences cannot be attributed to factors such as the length of time the child has had to deal with his or her illness, as new and returning campers showed no statistical differences here. Although on the surface the more negative presentation of returning campers appears to raise questions about the efficacy of camps such as Aldersgate, the observed differences are not entirely surprising. One explanation would be that children with poorer attitudes toward their illnesses are more likely than their peers to receive a referral back to camp. It is unclear whether returning campers in the present study are representative of those children who had previously experienced camp. Of course, any interpretations must be considered cautiously since this study does not have data regarding attitudes toward illness (or anxiety) in participants prior to their first involvement in this study. Although on average returning campers reported poorer attitudes toward their illness than new campers, their attitudes may be far more positive than those they had prior to their previous camp experience. One other possible explanation might be that although the observed difference in length of time since diagnosis (1.5 years) may be quantitatively insignificant, qualitatively an extra year and a half of dealing with a chronic illness may bear great impact on the outcomes studied here. In any event, currently many camps focus on recruiting only new campers, assuming that they alone will derive the greatest benefit. Although analyses involving the CATIS lend some support to this position (changes in attitudes over the course of camp were slightly more pronounced for new campers than returning campers), the analyses taken as a whole suggest that camp programs might do well to expand their focus to
better accommodate both new and returning campers, both of whom appear to benefit from the experience.

Also worthy of note, when we considered the relationship between previous camp experience and type of illness over the course of camp, significant improvements in trait anxiety over the course of camp are no longer found. Perhaps the one definitive conclusion that can be drawn is that, in contrast to the initial findings reported above, attitudes toward illness and anxiety may not be consistent in their response to special camping experiences. There is, however, consistent agreement across all analyses conducted that type of illness does not appear to significantly influence response to camp. Benefits gained from participation in the summer camps appear independent of one's particular condition, lending hope that the present findings may be generalizable to other conditions as well.

There are a number of limitations to our investigation that must be noted. Certainly, interpretation of the present findings must be made cautiously due to the absence of a follow-up assessment phase. Inclusion of follow-up in future studies would serve to better support the significant but modest outcomes observed here. In addition, our attempt to secure an asthma control group for comparison in the present study was unsuccessful. Thus, the psychometric data on the CATIS published by Austin and Huberty (1993) were the only available yardstick against which to compare the present findings. As we have suggested above, the comparison leads to a favorable interpretation of the outcomes found here. For the present study, a wait-list of children who had applied to attend asthma camp was chosen to constitute a control group. Unfortunately, the number of children moving from the wait-list to the camp-list was not determined until shortly before camp, leaving us with an inadequately small control group and few alternatives to secure comparable children. In the future, investigators would do well to consider alternate sources for noncamp participants, for example through pediatric clinics, or to approach wait-list participants at an earlier time, which might ensure their greater commitment to the project in the event that they are not selected for camp.

Finally, although the precamp to postcamp changes reported here were found across almost all analyses, the design of the present study cannot account for what specific components of camps might have contributed to this change. We speculate that it was the children's experience of developing a true peer group that brought about observed changes, but there is no means of determining the impact of individual components from the present data.

Despite the caveats noted, this study represents the first attempt to empirically examine the potential benefits to psychosocial functioning from participation in structured pediatric summer camps. Results of the present study indicate that summer camping programs are associated with beneficial outcomes for children with disabilities and illnesses, and that these benefits may be reflected across a number of psychosocial indicators and across illness groups. Although the strength of observed changes may be influenced by previous experience at camp, in the case of one analysis for attitudes toward illness, overall improved attitudes toward illness and lower anxiety scores do not appear to be specific to one gender or to one's particular medical condition. We would not argue that the magnitude of the changes found here point to the utilization of camps instead of other therapeutic modalities, but rather that "normalizing" camp experiences like the ones reported here may act to complement other available programs for addressing the feelings children have about their conditions. This special population of children is often inadequately served or neglected by service agencies, and brief programs like those studied here may help to more effectively reach these children. With this goal in mind, these camping programs clearly deserve further attention from the pediatric service and research communities.

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References


