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Quality of Life and School Absenteeism in Children With Chronic Illness

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Abstract

Objective—Children and adolescents with a chronic illness (CI) tend to demonstrate diminished physical and social functioning, which contribute to school attendance issues. We investigated the role of social and physical functioning in reducing school absenteeism in children participating in Mastering Each New Direction (MEND), a family-based psychosocial intervention for youths with CI.

Methods—Forty-eight children and adolescents with a CI (70.8% female, $M_{\text{age}} = 14.922$, $SD = 2.143$) and their parent(s) completed a health-related quality of life (HRQOL) measure pre- and postintervention. Using multiple mediation, we examined whether parent- and child-rated physical and social HRQOL mediated the relationship between school attendance before and after MEND. Once the mediational model was not supported, we investigated whether HRQOL moderated the relationship between missed school days pre- and postintervention.

Results—Neither physical nor social functioning mediated or moderated the relationship between missed school days pre- and postintervention. Instead, higher parent-rated physical functioning directly predicted decreased number of missed school days, while lower parent-rated social and child-rated physical functioning predicted increased missed school days.

Conclusions—Parent-perceived HRQOL may have a direct effect on health-related behaviors such as school attendance. Future research should determine whether gains in parent-rated QOL are maintained in the long term and whether these continue to impact markers of functional well-being.

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Keywords

chronic illness; children; adolescents; quality of life; school attendance

Children diagnosed with a chronic illness (CI) often experience both physical and social disadvantages. Child patients face both acute stress from the illness itself (Clarke & Eiser, 2004) and chronic and systemic stress from managing complicated treatment regimens and medical schedules, missing school, and feeling different from peers (Shaw & McCabe, 2008). As a result of these complications, approximately 50% of children are absent from school a significant amount of time, often for periods lengthy enough to necessitate educational adaptations such as individual education programs, grade repetitions, or placement in special education (Geist, Grdisa, & Otley, 2003; Kaffenberger, 2006; Shiu, 2001). Accompanying these attendance issues, school performance often suffers. A third of children with CI experience medical complications serious enough to disrupt school functioning (Newacheck & Halfon, 1998; Thompson & Gustafson, 1996). Besides performance declines related to school absenteeism, disease activity and aggressive forms of treatment also contribute to cognitive delays in children with CI (Compas, 2012).

Although school attendance and academic functioning are undoubtedly driven by the impact of the CI on physical health, biopsychosocial models of health and CI suggest that other familial, social, and exosystem factors play a role in the child's ability to engage in school. To this end, a multidimensional, family systems-based, psychosocial intervention was developed to help children and their families adjust to the CI and reengage in school.

Mastering Each New Direction (MEND; Distelberg, Williams-Reade, Tapanes, Montgomery, & Pandit, 2014) is a 21-session/7-week intensive outpatient family therapy-based treatment protocol designed to improve adherence to medical regimens. MEND works to improve functioning across family, social, and health-care systems to positively influence self-management behavior through cognitive, emotional, familial, and social processes. Preliminary results indicate that MEND leads to improvements in both child and family well-being. While MEND is associated with reductions in school absenteeism, the reason for this improvement is not completely clear. This current study evaluates the mechanisms by which children with CI reengage in school. Specifically, this study examines the effect of both physical and social functioning in reducing absenteeism in children with CI.

CI and School Achievement

Given the wide array of CI severity, duration, and type, school achievement and functioning are difficult to operationalize in this population. In general, however, CIs have been found to negatively affect student achievement and ability (Taras & Potts-Datema, 2005b). Nonetheless, although most CIs are associated with increased absenteeism due to symptom flare-up, medical follow-ups, and medical procedures, not all children with CI who miss school suffer academically (Crump et al., 2013; Taras & Potts-Datema, 2005a; Thies, 1999). Accordingly, it remains crucial to study other psychosocial factors that may better explain the relationship between illness status, school attendance, and well-being.

Social Functioning and School Attendance

School absenteeism is closely connected to social functioning. Along with a return to optimal physical health, the child's social well-being can either promote or deter the return to school (Shaw & McCabe, 2008). Sexson and Madan-Swain (1993) found that 40% of pediatric patients experienced problems at school, not only in terms of academic achievement but also difficulties with peers. Part of this difficulty may manifest itself in stigma. Children with CI often feel stigmatized and "undesirably different" as a result of illness (Räty, Söderfeldt, Larsson, & Larsson, 2004). They also tend to feel less socially competent than their normative peers (Meijer, Sinnema, Bijstra, Mellenbergh, & Wolters, 2000). Furthermore, these children often have a low sense of self-efficacy (Pinquart & Pfeiffer, 2012), which further limits their ability to socialize and make peer connections. Houlahan (1991) demonstrated that longer absences from school were associated with more difficult transitions back to school due to increases in learned helplessness and despair. Furthermore, Maslow, Haydon, McRee, and Halpern (2012) found that the protective social factors of mentoring, parent relationship quality, and school connectedness predicted attendance and completion of postgraduate education in persons with child-onset CI. Therefore, social distress may mediate a child's successful return to school after the onset of CI.

MEND

The MEND program is a family and peer-based psychosocial intervention for adolescents with CI. MEND is designed to influence the major systems of the patient's life, that is, individual, family, social, and medical (Distelberg et al., 2014). Across the 7 weeks of treatment, each of the thrice-weekly, 3-hr MEND sessions starts with the children in groups of 8–10. This 1-hr group check-in focuses on current levels of stress, coping responses, and disease-specific adherence goals. Following the check-in, the program then transitions to peer-group processing. This group work centers on the identification and modification of maladaptive stress response patterns. In practice, peer-group processing uses a combination of art and talk therapy techniques and follows a prescribed curriculum outlined in Tapanes, Distelberg, Williams-Reade, and Montgomery (2015). Concurrently, parents engage in their own psychoeducation and process group.

The third hour of MEND consists of having parents and children reunite for a multifamily group. Although both parents and siblings are encouraged to attend this group, and often do, it is required that at least one parent attends each session. Finally, individual and family sessions are used as needed to supplement the weekly sessions. Furthermore, frequent physician consultation as well as regular psychiatric monitoring are also embedded in the MEND program. For a more detailed description of the program and the underlying conceptual framework, see Distelberg et al. (2014) and Tapanes et al. (2015).

Both clinical outcomes and pilot study results have provided evidence of the program's effectiveness. Evaluation of preliminary data indicates that MEND reduces the impact of CI on the child and on the family's functioning across multiple domains including missed

school days, missed workdays for the parent, and higher rated quality of life for both patient and family members (Distelberg et al., 2014).

Given the associations among physical and social well-being and school attendance, we aimed to determine the mechanisms by which the number of missed school days was reduced in MEND. We hypothesized that two specific domains of functioning directly affected the child's ability to reengage in school with fewer missed days of schools. First and foremost, we expected that better physical functioning would predict fewer missed school days. Second, we hypothesized that higher levels of social functioning would be related to less absenteeism at the end of the program. We also considered the parent-child relationship by examining these domains from both the child's and the parent's perspective.

Method

Participants

Data were collected from 48 children and adolescents with CI (70.8% female and 48.3% Caucasian) aged 8–18 years ($M = 14.922$, $SD = 2.143$) and their parents (91.7% mothers) taking part in the MEND psychosocial intervention offered at the Loma Linda University Behavioral Medical Center, between December 2011 and May 2014. Thirty-five participants (74.3% female, 42.9% Caucasian; $M_{\text{age}} = 13.94$, $SD = 2.18$) completed all items in the survey and were included in the analyses. The study design and informed consent processes were reviewed and approved by the Loma Linda University Internal Review Board (cert #5120362). See Table 1 for participant demographics.

To be included in the study, participants had to be between the age of 8 and 18 and have a chronic health condition that either was not optimally managed or had recently worsened. For instance, endocrinologists may refer diabetic patients with an HbA1c of 9 mmol/l or greater to MEND. Once referred to the MEND program by a physician and/or treatment team, participants had to be willing to participate in the entire 21 sessions of the program, have access to funding for their treatment through either health insurance or the MEND scholarship program (for low-income families), and complete both the parent/guardian informed consent process and minor assent process. Participants also had to be able to speak and read English.

Measures

Demographic variables—At baseline, parents provided demographic information about their child, including age, gender, ethnicity, and type of illness. At each time point, parents also answered health-related questions pertaining to the impact of the CI on the child and family's life. Examples of these questions included “In the past 12 months, has your child had any emergency room/urgent care visits?” and “In the past 30 days, how many days did your child need someone to care for him or her due to physical or mental health?” Of particular interest to this article, parents were asked to answer the following question both before and after MEND: “In the past 30 days, how many days did your child miss from school due to physical or mental health?”

Physical and social functioning—The Pediatric Quality of Life Inventory (PedsQL) is designed to measure health-related quality of life (HRQOL) in children 8–18 years of age. The PedsQL assesses HRQOL across four major domains of a child's life: physical, social, emotional, and school. The scale has two versions, one for children (ages 8–12 years) and one for teenagers (ages 13–18 years). A comparison of these two versions indicated factorial invariance, suggesting that the scales function equivalently across age subgroups (Limbers, Newman, & Varni, 2008). HRQOL is assessed by both the child and a parent proxy, the two forms being essentially identical. The instructions of the PedsQL ask the child and parent to rate how much of a problem the child has had in the last month in separate areas of each of the four domains, such as difficulty walking or interacting with peers. All items are answered on a 5-point Likert-type scale ranging from 0 for *never* to 4 for *almost always*. The Child Self-Report subscales have adequate reliability (physical functioning, $\alpha = .76$; emotional functioning, $\alpha = .73$; social functioning, $\alpha = .73$; and school functioning, $\alpha = .71$), as do the parent proxy reports (physical functioning, $\alpha = .82$; emotional functioning, $\alpha = .77$; social functioning, $\alpha = .79$; and school functioning, $\alpha = .73$; Varni et al., 2003).

Procedure

The intervention is carried out by a therapy team of two to three clinicians, depending on the number of families enrolled. Clinicians are licensed marriage and family therapists, psychology postdoctoral fellows, or supervised psychology externs. Following enrollment into the clinical intervention, a research assistant collected baseline measures from both the child participant and one parent. Participation was considered a family completing the prescribed 21 sessions (7 weeks) of the program. While both parents participate in the clinical intervention, only one parent completes the study measures. The research assistant collecting the data was not involved in any portion of the clinical intervention nor made aware of participants' individual progress. Following program completion, the research assistant met with the family and collected postprogram measures. Families were not compensated for participating in the intervention or for completing research measures.

After data collection, PedsQL items were reverse scored and linearly transformed to a 0–100 scale (0 = 100, 1 = 75, 2 = 50, 3 = 25, and 4 = 0). Scale scores were derived by summing all items in a subscale and dividing by the total number of items within the scale. Higher scores were indicative of better HRQOL (Varni et al., 2003).

Data Analysis

Under the hypothesis that within-subject pre- and postprogram absenteeism are related, we hypothesized that social and physical functioning would explain the change in school attendance between missed school days at Time 1 and Time 2. Using multiple mediation, we tested whether parent- and child-rated physical and social QOL mediate the relationship between school absenteeism at Time 1 and Time 2. We chose multiple mediation for its ability to test the effect of several mediators simultaneously, which limits bias due to specification error (Preacher & Hayes, 2008).

Analyses were performed in SPSS 19 using the bootstrapping method within the multiple mediation macro “Indirect” (Preacher & Hayes, 2008). Bootstrapping was chosen over other

mediation approaches because it bypasses the assumption of normality that other techniques often violate. The bootstrapping procedure estimates the mediation effect by drawing a sample of n random cases with replacement from the original sample, calculating the mediation effect, and repeating this process k times (5,000 in the current study). Significance is determined by evaluating 95% confidence intervals for both the mediated effects and pairwise comparisons of these effects, which are derived from the bootstrapping procedure.

Following multiple mediation, we assessed for moderation and interaction effects by using multiple linear regression (MLR) to determine whether missed school days at Time 1 interacted with HRQOL variables to predict missed school days at Time 2. A hierarchical MLR analysis was then used to examine the relative contributions of missed school days at Time 1, child-rated social and physical QOL, and parent-rated social and physical QOL on missed school days at Time 2. We also examined all two-way interactions between missed days of school before MEND and each of the four QOL variables.

Results

Before conducting analyses, we first confirmed that there was a significant difference in school absenteeism between time points by conducting a paired sample t -test. There were significantly fewer missed school days at Time 2 ($M = 2.205$, $SD = 3.799$) than at Time 1 ($M = 10.744$, $SD = 10.701$), $t(37) = 4.587$, $p < .001$. Due to the sample being comprised of children of a wide age range, we also examined whether differences existed between younger and older children. We divided the sample into younger (ages 8–13, $n = 15$) and older (ages 14–17, $n = 20$) cohorts and ran independent samples t -test analyses. Results revealed no significant differences in missed school days or in HRQOL between younger and older participants, $p > .05$.

Multiple Mediation

The optimal linear combination of missed school days at Time 1 via the effects of parent- and child-rated QOL scores accounted for 35.5% of the variance in missed school days at Time 2, $F(5, 29) = 3.195$, $p < .05$. This suggests that the model explained a significant portion of the variance in missed school days at Time 2. However, none of the indirect paths were significant ($p > .05$). Rather, only the direct effects from social and physical functioning predicted missed days of school postprogram. As hypothesized, higher parent-rated physical functioning was associated with fewer school absences: A 1-point increase in parent-rated physical functioning was associated with a 0.113-point decrease in missed school days at Time 2 ($p < .01$). The reverse was true for the parent-rated social functioning and child-rated physical functioning. A 1-point increase in parent-rated social functioning was associated with a 0.089-point increase in school absences ($p < .05$). Similarly, the relationship between child-rated physical QOL and absenteeism was positive: a 1-point increase in child-rated physical QOL was associated with a 0.102-point increase in school absences ($p < .05$). Table 2 presents the effects and standard error estimates for the mediation model; Figure 1 demonstrates the path model.

To compare the relative strengths of the mediators, we also ran pairwise comparisons between all four mediating variables. Given the subjective nature of parent- and child-rated

psychical and social functioning measures, we anticipated that parent and child scores would be significantly different. On the contrary, no mediator was significantly different from the others ($p > .05$), as noted in Table 2.

Moderation Using Hierarchical MLR

Given that the meditational relationship was not supported, we proceeded to test whether QOL had a moderating effect on missed school days. We used hierarchical MLR to explore whether the physical and social functioning variables moderated the relationship between missed days of school pre- and postintervention. This model was not significant, $F(25, 34) = 2.156$, $p > .05$, nor were individual predictors or interactions ($p > .05$). Results of the hierarchical multiple regression model are presented in Table 3.

Taken together, we can conclude that the effect of physical and social functioning on school attendance is a direct effect only. While direct effects are included in the mediational model, we ran one final model to isolate direct effects. Similarly to our mediational analysis, parent-rated physical function predicted fewer missed school days ($\beta = -.627$, $p = .003$), while parent-rated social and child-rated physical function predicted more missed school days ($\beta = .419$, $p = .024$ and $\beta = .478$, $p = .029$, respectively). Meanwhile, child-rated social functioning did not predict school attendance ($\beta = -.627$, $p = .48$). Results of the multiple regression model are presented in Table 4.

Discussion

The goal of the current study was to identify the mechanisms by which school absenteeism was reduced in children taking part in MEND. Similar to MEND pilot study results, children had significantly fewer school absences postintervention. The proposed meditational model indicated that physical and social QOL directly predicted the number of missed school days postintervention, demonstrating that perceptions of both social and physical functioning play a role in children with CI returning to school. Although the results did not support mediational or moderational hypotheses, the direct effects of social and physical functioning on absenteeism were consistent across all the models. More specifically, higher parent ratings on the physical scale predicted fewer days of missed school.

Unexpectedly, parent-rated social functioning was positively associated with missed school days at Time 2. In this case, the higher the perceived social functioning of the child, the greater the number of missed school days. Given pilot study results that indicate a general improvement in health following the MEND program (Distelberg et al., 2014), we can presume that children were generally healthier by the end of the intervention. The unforeseen, reverse relationship between parent-rated social functioning and missed school days at Time 2 suggests the possibility that parents may be countering their child's newfound well-being with a degree of protectiveness. We believe that parents may be wary of sending children back to school too soon and of losing gains related to the stress of a return to school. This effect may also be noted when the child exhibits better social functioning yet only early signs of physical improvements. In this case, parents may feel apprehensive that their child is actually improving and keep the child home from school longer. Extending the absence despite noted social improvements and/or child-reported

physical gains may give parents a sense of security until their child demonstrates equivalent physical improvements.

This hypothesis is supported by research on parental overprotectiveness in pediatric CI. Parents of children who are chronically ill may be likelier to perceive vulnerability in their children. Those who have this tendency have been shown to use more health-care services and to keep their children home from school more often (Anthony, Gil, & Schanberg, 2003; Spurrier et al., 2000). MEND is designed to educate families about the importance of illness management for prognosis. Given that MEND families have been previously nonadherent, parents who complete MEND are likely to gain a new understanding about the seriousness of their child's situation. In light of this new realization, parents may second guess their own subjective interpretations of social improvement and that of their child's self-professed physical improvement. Keeping a child at home longer may thus be one way to assuage parental doubts.

One of the study's largest strengths (as well as the strength of MEND) is its generalizability. As opposed to psychosocial interventions that focus on one disease type alone, this intervention and study are inclusive of many CIs. Not only does the inclusion of a variety of conditions improve generalizability of our findings, it underscores the commonalities shared by children with CI in terms of both issues and clinical solutions, a key assumption of the MEND intervention (Distelberg et al., 2014). Although we believe this is a significant strength of the MEND program, given the small sample size of this study, we are cautious about the generalizability of results across all disease types. Until a larger study with larger subgroups can be examined, the generalizability of the study results should be done tentatively.

Study results must be considered within the context of several limitations. As with any mediation or moderation model using a longitudinal design, causality cannot be inferred without a control group. MEND does not currently employ a control group because an appropriate treatment program for comparison does not currently exist, and wait-list delays come with ethical concerns. Therefore, a future study should consider developing a comparable alternative treatment control.

Second, our sample size reduced the power of our analyses. Although data were collected from 48 participants, only 35 cases were included in the final analysis due to missing data. Given that nearly one third of cases were omitted, missing data may have contributed to our nonsignificant results in both mediation and moderation models. However, power analyses reveal that, while overall power was estimated at only 68%, individual predictors demonstrated sufficient power. For example, we analyzed the effect of missed days at Time 1 on missed days at Time 2, given the important finding that Time 1 did not predict Time 2. Based on an effect size of .196, we had 88% chance of finding a truly significant effect size at $\alpha = .05$, with a sample of 35 participants (Faul, Erdfelder, Lang, & Buchner, 2007). As a result, it is unlikely that missed school days at Time 1 failed to predict missed school days at Time 2 due to a Type II error.

Another potential weakness of the study may be the incongruence between parent and child reports. While we found that parent-reported QOL negatively predicted absenteeism, the reverse was true for the child-rated domain. The validity of self- versus parent-reported QOL has been debated in the literature (Creemans, Eiser, & Blades, 2006). Although the use of parent-rated child QOL measures has been supported, given children's limited cognitive insight, proxy-based QOL measures have also been criticized for their capacity to distort how the patient feels (Creemans et al., 2006). For instance, Creemans et al. (2006) found that parental QOL colored the child's ratings, with parents projecting their own feelings and judgments onto their children, both positively and negatively. On the other hand, parents may be useful proxies, given that children have been shown to consistently underreport QOL difficulties (Eiser & Morse, 2001).

The literature is also mixed on whether parent- and child-rated QOL scores correspond. Eiser and Morse's (2001) review of QOL reporting revealed more concurrence in self and proxy reports in physical than social or emotional QOL. This agreement also appears stronger for ratings of adolescents and their parents than for younger children (Varni, Katz, Seid, Quiggins, & Friedman-Bender, 1998). Parents of children with CI also tend to be more accurate judges of QOL than those of normative children (Eiser & Morse, 2001).

To assess congruence of reports, Eiser and Morse (2001) indicated the common use of the Pearson product-moment correlations in previous literature. Using this method, we found significant associations between physical and social QOL domains within the same rater (parent-rated physical and social QOL, $r = .434$, $p < .005$; child-rated physical and social QOL, $r = .613$, $p < .001$) but found no significant correlations across raters (parent- and child-rated physical QOL, $r = .288$, $p > .05$; parent- and child-rated social, $r = .051$, $p > .05$). In other words, parent-rated physical and social QOL scores were not significantly correlated with child-rated scores. Given that MEND purports to improve family dynamics, it is unlikely that the lack of correlation across raters indicates a lack of awareness by parents of their child's well-being. Rather, it is more probable that children in the sample underreported illness impact.

Given a larger sample size, subgroup analyses will be necessary to determine whether changes in school attendance and HRQOL are consistent across disease types and gender. It would also prove worthwhile to determine whether changes in parental perceptions gained through the intervention are maintained in the long term after the family has completed the program. Determining the exact factors that lead to increases or decreases in parent-rated QOL will permit clinicians and researchers to more accurately target interventions aimed at lowering burden and enhancing adjustment to illness.

In conclusion, our results indicate that children with CI are less likely to miss school when their parents report a higher level of physical functioning. Conversely, these youths are more likely to stay home from school when parents report a higher level of social functioning. In other words, parental impression of child health drives school attendance, above and beyond child impression and past school absenteeism. Parents ensure attendance when they believe their child's health is stable or improving. However, parents of children with CI may remain

weary of social improvements and keep children home for monitoring when social functioning increases.

Assessing the child's functioning at school may lessen unnecessary school absences related to parental wariness of child improvement. Likewise, educating parents about the importance of a return to school may minimize unnecessary absences.

Implications for School Health

Research suggests that children with CI miss a significant amount of school, often for periods lengthy enough to negatively impact academic performance and social well-being (Geist et al., 2003; Kaffenberger, 2006; Sexson & Madan-Swain, 1993; Shaw & McCabe, 2008; Shiu, 2001). The results of the current study indicate that, above and beyond prior markers of physical well-being, parental impression of child health predicts school reentry. Additionally, our results indicate some degree of dissonance between child and parent reports of health. School nurses working with families dealing with a CI should be aware of a possible parental proclivity to keep children at home based on subjective impressions. A comprehensive assessment of functioning may ensure optimal attendance and increase the likelihood of successful school reentry.

Furthermore, school nurses may be in a unique position to educate families about the importance of regular school attendance for future social and academic well-being. Research has shown that nurses in medical settings are unprepared to help their patients navigate a return to school, and school personnel are untrained in the special circumstances of students with CIs (Moore, Kaffenberger, Goldberg, Oh, & Hudspeth, 2009). However, school nurses, who have an understanding of both the medical and educational components of CI, are ideal candidates to help children reenter school successfully.

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Biographies

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Daniel Tapanes, LMFT, DMFT is the creator of MEND and clinical coordinator at the Behavioral Medicine Center at Loma Linda University.

Susanne Montgomery, PhD is the Associate Dean for Research and Director of Research at the Behavioral Health Institute, School of Behavioral Health at Loma Linda University.

Figure 1.

Multiple mediation model predicting missed school days at Time 2 from missed school days at Time 1 via the indirect effect of child-rated and parent-rated physical and social quality of life ($n = 35$). $*p < .05$. $**p < .01$.

Table 1

Characteristics of Participants.

	<i>n</i> (%)
Gender	
Male	14 (29.167)
Female	34 (70.833)
Age, <i>M</i> (<i>SD</i>)	14.292 (2.143)
Chronic illness type	<i>n</i> (%)
Type I diabetes	11 (22.917)
Nephrotic syndrome	3 (6.250)
Transplant	4 (8.333)
Cancer	2 (4.167)
Other ^a	28 (58.333)
Missed school days	<i>M</i> (<i>SD</i>)
Time 1 (T1)	11.256 (11.159)
Time 2 (T2)	2.279 (3.838)
Ethnicity	<i>n</i> (%)
Black	8 (16.667)
Asian or Pacific Islander	1 (2.083)
Hispanic White	14 (29.167)
Non-Hispanic White	22 (45.833)
Other/missing	2 (4.167)
PedsQL measures	<i>M</i> (<i>SD</i>)
Parent physical at T1	57.884 (21.381)
Parent physical at T2	71.801 (21.918)
Parent social at T1	57.976 (21.013)
Parent social at T2	76.444 (18.235)
Child physical at T1	64.205 (27.038)
Child physical at T2	68.611 (17.889)
Child social at T1	70.000 (25.949)
Child social at T2	81.556 (21.342)

Note. *N* = 48. Table reflects demographics of all participants included in the original data collection. PedsQL = Pediatric Quality of Life Inventory.

^a Other illness categories: autoimmune, gastrointestinal, neurologic, congenital, and pain.

Table 2

Results of Multiple Mediation Analysis Testing Self-Rated and Parent-Rated Social and Physical QOL at Time 2 as Mediators of the Relationship Between Missed School Days at Time 1 and Missed School Days at Time 2.

Independent Variable	Mediated Effect	Point Estimate	SE
Missed school days at T1	Parent-rated physical QOL	-.016	.400
	Parent-rated social QOL	.027	.023
	Child-rated physical QOL	.020	.030
	Child-rated social QOL	.001	.015
	Total indirect effect	.032	.046
	Contrast: Parent physical vs. child physical	-.036	.054
	Contrast: Parent physical vs. child social	-.017	.045
	Contrast: Parent physical vs. parent social	-.043	.052
	Contrast: Child physical vs. child social	-.018	.037
	Contrast: Child physical vs. parent social	-.008	.030
	Contrast: Child social vs. parent social	-.026	.029

Note. $n = 35$. QOL = quality of life.

Table 3

Results of Multiple Regression Analysis Predicting Number of Missed School Days at Time 2 From Missed School Days at Time 1, PedsQL Variables, and the Interaction Between Missed Days and PedsQL Variables.

Variables	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% Confidence Intervals	<i>sr</i> ²
Missed school days at T1	.375	.402	1.018	0.127	>.05	[-0.453, 1.203]	.196
Parent-rated physical QOL	-.064	.058	-.0355	-.0721	>.05	[-0.184, 0.055]	.028
Parent-rated social QOL	.106	.067	0.497	0.701	>.05	[-0.032, 0.244]	.056
Child-rated physical QOL	.077	.067	0.363	-1.737	>.05	[-0.061, 0.216]	.030
Child-rated social QOL	-.032	.049	-.018	-2.662	>.05	[-0.133, 0.069]	.010
Missed Days $\times$ Parent Physical	-.004	.003	-.0929	-1.287	>.05	[-0.011, 0.003]	.037
Missed Days $\times$ Parent Social	-.003	.005	-.0617	-0.573	>.05	[-0.012, 0.007]	.007
Missed Days $\times$ Child Physical	.001	.005	0.304	0.275	>.05	[-0.009, 0.012]	.002
Missed Days $\times$ Child Social	.001	.004	0.204	0.230	>.05	[-0.007, 0.008]	.001

Note. *n* = 35. QOL = quality of life; PedsQL = Pediatric Quality of Life Inventory.

Table 4

Results of Multiple Regression Analysis Predicting Number of Missed School Days at Time 2 From Missed School Days at Time 1 and PedsQL Variables.

Variables	<i>b</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	95% Confidence Intervals	<i>sr</i> ²
Missed school days at Time 1	.024	.056	.066	0.429	>.05	[-0.091, 0.140]	.004
Parent-rated physical QOL	-.113	.035	-.627	-0.203	<.01	[-0.185, -0.041]	.228
Parent-rated social QOL	.089	.038	.419	2.377	<.05	[0.012, 0.166]	.125
Child-rated physical QOL	.102	.044	.478	2.293	<.05	[0.011, 0.193]	.117
Child-rated social QOL	-.026	.036	-.146	-0.716	>.05	[-0.1, 0.048]	.011

Note. *n* = 35. QOL = quality of life; PedsQL = Pediatric Quality of Life Inventory.