

Relationships Among Accumulated Lifetime Life Events, Prosocial Skills, and Behavior Problems in Elementary School Children

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Relationships among life events, prosocial skills, and behavior problems for 91 first through fourth grade children were examined. The data were based on mothers' reports of their children's lifetime life events, current prosocial skills, and current behavior problems. Higher prosocial skills scores significantly predicted lower Externalizing behavior problem scores. Higher weighted life events scores significantly predicted higher Internalizing behavior problem scores. The weighted life event scores \times prosocial skills scores interaction did not significantly predict either Externalizing or Internalizing behavior problem scores. The more parsimonious main effects conceptualization suggests that life events and prosocial skills are orthogonal in young, elementary school children.

KEY WORDS: life events; prosocial skills; children; behavior problems.

INTRODUCTION

Life events are changes in major areas of living such as family constellation, economic status, residence, group and peer relationships, education, recreation, and health (Holmes & Rahe, 1967). Researchers have found a relationship between life events and development or exacerbation of physical illness in children (Heisel, Ream, Raitz, Rappaport, & Cod-

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dington, 1973; Rabkin & Struening, 1976; Wallander, Varni, Babani, & Banis, 1988).

Life events may also be related to behavior problems in children (Chandler, Million, & Shermis, 1985; Cohen, Burt, & Bjorck, 1987; Compas, Slavin, Wagner, & Vannatta, 1986; Nolen-Hoeksema, Girgus, & Seligman, 1989). Due to their relatively limited emotional, social, and cognitive capacities, children are less able than adults to understand the significance of life events, the behavior and feelings of others, their own contributions to the situations, and the possible outcomes of the events. Also, younger children have smaller peer groups, neighborhood attachments, and other social contacts that could counter the adverse effects of life changes (Hetherington, 1984).

Life events have been shown to be related to a variety of specific behavior problems in children, including anxiety, depression, isolation, fighting, conflict with parents, and delinquency (Barrera, 1981; Beck & Rosenberg, 1986; Emery, 1982; Johnson, 1982; Nolen-Hoeksema et al., 1989; Wallerstein & Kelly, 1980). However, most of the research examining the effects of life events in children has considered only relatively recent events. In a review article, Felner, Farber, and Primavera (1980) noted that an accumulation of life events may exacerbate the stressfulness of subsequent life events. Forehand, Middleton, and Long (1987) found that adolescents experiencing three or more life stressors had increased behavioral problems relative to adolescents experiencing less than three life events. Thus, accumulated or chronic life events may have relatively greater detrimental effects on children's psychological functioning (Nolen-Hoeksema et al., 1989; Sterling, Cowen, Weissberg, Lotyczewski, & Boike, 1985).

A few studies have examined the effect of moderator variables on life stressors, suggesting that people who experience life events do not always become disturbed, because they have stress-resistant biogenic, personality, familial, or environmental characteristics which reduce or buffer the effects of life events (Beck & Rosenberg, 1986; Thoits, 1983). Such research has focused particularly on the buffering effect of aspects of the social environment, since research has suggested that the etiology of psychopathology is partially social in origin (Thoits, 1983). Cohen et al. (1987) examined life stress and adjustment in young adolescents and found that perceived control over negative life events may protect adolescents from psychological maladjustment. Social support from family, friends, or social institutions has been proposed as a moderator of adverse consequences of life events (Compas et al., 1986; Eaton, 1978; Henderson, 1977; Thoits, 1983). Wertlieb, Weigel, and Feldstein (1987) examined the relationships among life events, behavior problems, and social support in young, elementary school children and found that social support significantly interacts to buffer chil-

dren against the adverse consequences of life events. Prior history of dealing with stressors and coping skills has also been examined as a moderator of stressful life events (Dohrenwend & Dohrenwend, 1978; Johnson & Sarason, 1978, 1979a; Rabkin & Struening, 1976).

Prosocial skill, or the ability to acquire and utilize behaviors necessary for effective and satisfying functioning in academic and nonacademic pursuits (Goldstein, 1981), has not yet been examined as a potential moderator of life events and behavior problems in children. Prosocial skills for young children include building and maintaining relationships, carrying on a conversation, introducing oneself, joining others cooperatively, refusing unreasonable requests, assuming another's perspective, and apologizing (Matson & Ollendick, 1988; McGinnis & Goldstein, 1984). Matson and Ollendick (1988) have suggested that prosocial behavior is involved in all aspects of the child's life, determining popularity with peers, teachers, parents, and other adults, as well as enabling the child to adapt to the environment and avoid conflict through communication with others.

Children who are weak or lacking in prosocial skills are more likely to have behavior problems such as difficulty getting along with peers, problems in school, anxiety and depression, and egocentricity (Altmann & Gotlib, 1988; Goldstein & Glick, 1987; Strauss, Forehand, Smith, & Frame, 1986; Strauss, Frame, & Forehand, 1987; Wierzbicki & McCabe, 1988). These children are often described as deficient in interpersonal, planning, and aggression-management skills (Goldstein & Pentz, 1984), and may have general verbal assertion and social cognitive processing deficiencies (Lochman & Lampron, 1986). McGinnis and Goldstein (1984) suggested that children with poor prosocial skill, as compared to their socially competent peers, are also at a higher risk for adjustment problems in adulthood.

Children may be deficient in prosocial skills for a variety of reasons. They may lack knowledge of appropriate social behavior, have learned the skills but lack practice, or lack an ability to evaluate their own behavior in order to judge success or failure (Goldstein & Pentz, 1984). Also, life events may decrease adequate modeling or reinforcement for the child, or may impede the development of appropriate interpersonal behavior. Conversely, if prosocial skills are present, they may moderate the adverse effects of stressful life events. Prosocial skills may enable the child to use resources available for coping and stress management such as extended kin groups, friendships, and teachers at school (Hetherington, 1984).

In both the child and adult psychological literature, significant relationships between life change and maladjustment have been found (Cohen et al., 1987; Compas et al., 1986; Holmes & Rahe, 1967; Nolen-Hoeksema et al., 1989). However, life events considered alone are not of much prac-

tical value as predictors of behavior problems (Beck & Rosenberg, 1986; Johnson, 1982; Thoits, 1983).

The purpose of this study was to examine the relationships among accumulated lifetime life events, prosocial skills, and behavior problems in young, elementary school children. The research focused on the relationship among accumulated, rather than recent, life events and children's behavior problems, and focused attention on the potential buffering effect of prosocial skills. It was hypothesized that stressful life events would correlate positively with behavior problems, while prosocial skills would correlate negatively with behavior problems. It was expected that prosocial skills would interact with accumulated lifetime life events and predict the level of behavior problems after the variance due to accumulated lifetime life events had been partialled out. Finally, it was hypothesized that prosocial skills would moderate the extent to which accumulated lifetime life events predicted behavior problems. That is, a higher incidence of accumulated lifetime life events and poor prosocial skills would predict higher behavior problem scores than would a comparable incidence of accumulated lifetime life events with relatively better prosocial skills.

METHOD

Subjects

The subjects were 91 children in first through fourth grade. The children ranged in age from 7 to 10 years, with a mean age of 8 years and 5 months. There were 26 seven-year olds, 34 eight-year olds, and 2 ten-year olds in the study. There were 45 male and 46 female children in the sample.

Mothers were recruited from several suburban northeastern and southeastern U.S. communities in order to obtain a varied sample of subjects and to avoid disturbing parents at any single school. Public elementary school telephone directories were used to solicit approximately 70% of the subjects. The remaining 30% of the subjects were recruited from an urban medical school pediatric clinic, from an advertisement for volunteers published in an urban public school newsletter, and from personal contacts.

Two hundred and eight packets containing a consent form and three questionnaires were distributed to a potential subject pool of approximately 400 subjects; 103 packets were returned (50% return rate). One American Indian, 14 Black, and 76 Caucasian mothers agreed to participate in the study. No data were available regarding mothers who declined participation. Of the returned packets, 11 were not used because the questionnaires were incomplete. In addition, data from one subject were deleted because

the weighted life events score was over four standard deviations above the mean score and 50% higher than the next highest weighted life events score; the score was considered to be atypical for this sample.

Measures

Three measures were used to obtain information about the children: (1) Coddington's Life Events Scale for Children (LES-C); (2) The Matson Evaluation of Social Skills with Youngsters (MESSY); (3) Achenbach's parent form of the Child Behavior Checklist (CBCL). The Life Events Scale for Children (LES-C) (Coddington, 1971, 1972, 1984) is a 35-item instrument that lists events that may have occurred in the first 11 years of the child's life. Given the age of the children being studied, the ambiguity of some items, and the length of the questionnaire, the following nine items were not used in the present study:

- Major increase in parent's income
- Major decrease in parent's income
- Start of a new problem between parents
- End of a problem between parents
- Start of a new problem between child and parents
- End of a new problem between child and parents
- Child becoming a member of a church or synagogue
- Being invited to join a social organization
- Child finding an adult who really respects him/her

The mothers were instructed to indicate the number of times each event had occurred in the child's life.

The LES-C not only targets the quantity of events, but also a weighting of stressfulness called the Life Change Unit. Information from over 3000 parents provided researchers with an average Life Change Unit score for each event, later verified by teachers, pediatricians, and mental health workers (Coddington, 1984). For events occurring in the past year, a total Life Change Unit score of approximately 110 is considered the upper limit for elementary school children (Coddington, 1981). The representativeness of the LES-C items, in relation to all possible life events, was established with parents and fourth grade children, yielding a 95% parent-child agreement and suggesting that the LES-C contains at least 97% of events reported by adults and children (Coddington, 1984). Validity of the LES-C has been provided in a number of studies examining the relationship between life change and child health and adjustment (Beck & Rosenberg, 1986; Johnson, 1982; Wertlieb, Weigel, Springer, & Feldstein, 1987). One score was obtained from the LES-C: for each occurrence of each event, a

Life Change Unit score, or weighting of stressfulness, was assigned. The sum was the weighted life events score.

The Matson Evaluation of Social Skills with Youngsters (MESSY) (Matson, Esveldt-Dawson, & Kazdin, 1983; Matson, Rotatori, & Helsel, 1983; Matson, Macklin, & Helsel, 1985) is a 64-item normed rating scale which assesses specific, concrete, observable behaviors in children, and samples diverse areas of verbal and nonverbal social functioning including social isolation, expression of hostility, and conversation skills.

Two factors derived by varimax rotation were Inappropriate Assertiveness/Impulsiveness and Appropriate Social Skills (Matson et al., 1983). Items comprising each factor were established as being reliable on test-retest, for two large samples of children ages 4 to 15 and 4 to 18 years. For the purposes of examining prosocial skills in children, only the 20-item Appropriate Social Skills factor was utilized. Although the MESSY was designed as a teacher-rated instrument, utilized to target educational remediation and psychological treatment (Matson & Ollendick, 1988), in personal communication, the author of the instrument supported our use of the MESSY with mothers. It was felt that both teachers and mothers were reliable observers of children's prosocial behaviors over time. Mothers were asked to rate their child's present level of prosocial functioning on a 5-point Likert-type scale, ranging from 1 if "not at all true" to 5 if "very often true" of their child. A numerical proficiency score called the prosocial skills score was obtained by summing the values indicated for each item. A low score on the MESSY reflects poor prosocial skills (Matson & Ollendick, 1988).

The MESSY has been shown to be a reliable, valid, and broadly applicable measure of prosocial skills in young children. Research with handicapped and nonhandicapped populations has shown the MESSY's inter-item and split-half reliabilities to be high, ranging from .88 to .95 (Matson et al., 1985). The validity of the MESSY has also been demonstrated through its relationship with other social skills measures (Helsel & Matson, 1984; Kazdin, Matson, & Esveldt-Dawson, 1984). Helsel and Matson (1984) found that the Appropriate Social Skills factor correlated negatively with the Children's Depression Inventory.

The Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1983) is an 118-item parent rating scale which measures behavior problems as well as some adaptive competencies. The Total behavior problem score on the CBCL is the sum of all behavior problems reported by the mother about her child. Second-order factor analyses on the CBCL led to two broad-band groupings for all age and gender groups (Achenbach & Edelbrock, 1983). These two groupings, called Internalizing and Externalizing, reflect a distinction between inhibited, withdrawn, overcontrolled behavior

and antisocial, aggressive, undercontrolled behavior. For the purposes of the present study, each child received a score for Internalizing behavior problems and Externalizing behavior problems; the raw scores for each second-order factor were converted to *T* scores. The Total behavior problem score was examined but not utilized in this study because it is relatively more obscure and less useful, clinically, than the two second-order factors.

Achenbach (1988) reported test-retest reliability of .95 for behavior problems of children at one-week intervals. Content validity was established when clinically referred children received significantly higher behavior problem scores than a matched nonreferred sample of children (Achenbach & Edelbrock, 1981).

Procedure

The mothers were given or mailed a packet which contained a consent form, demographics form, Life Events questionnaire, Prosocial Skills questionnaire, and Child Behavior Checklist. The mothers were instructed to complete all information independently, thus increasing the probability that the responses would be candid and honest. Mothers who were given a packet of forms at the Medical College of Virginia Pediatric Clinic were asked to complete and return the packet during their clinic visit. All other mothers were sent or given a prestamped and preaddressed packet of forms and asked to return the packet within two weeks. After two weeks, mothers who did not return packets were contacted by telephone and requested to return the forms as soon as possible.

RESULTS

Table 1 presents the means, standard deviations, and ranges for predictor and criterion variables. The mean for Prosocial Skills is somewhat higher than Matson's 1988 norms (mean = 68.1, SD = 9.90) and probably reflects the more advanced age of the children in this study who were over a year older than Matson's normative groups. The means and standard deviations for Externalizing and Internalizing behavior problem scores closely approximate those reported by Achenbach and Edelbrock (1983).

Table 2 presents correlations and significance levels for the predictor and criterion variables. Accumulated weighted Life Events scores showed significant positive correlations with both Externalizing behavior problem scores and Internalizing behavior problem scores. Prosocial skills scores showed significant negative correlations only with Externalizing behavior

Table 1. Means, Standard Deviations, and Ranges of Predictor and Criterion Variables

| Variable | Mean | SD | Minimum | Maximum |
|----------------------------|--------|--------|---------|---------|
| Weighted Life Events score | 374.34 | 165.34 | 41.00 | 854.00 |
| Prosocial Skills score | 77.14 | 9.97 | 50.00 | 94.00 |
| Behavior problem score | | | | |
| Externalizing | 51.54 | 9.56 | 31.00 | 71.00 |
| Internalizing | 51.12 | 10.19 | 35.00 | 74.00 |

problem scores. Two hierarchical multiple regression analyses were employed to assess the unique and combined strengths of the predictor variables in predicting Externalizing and Internalizing behavior problem scores. Since it was possible for age and gender to be correlated with the predictor variables, they were entered together as the first step in each hierarchical multiple regression analysis. Next, the weighted Life Events score, the Prosocial Skills score, and the interaction between weighted Life Events score and Prosocial Skills score were entered as the second, third, and fourth steps, respectively.

For predicting Externalizing behavior problems, age and gender at Step 1 did not account for a significant amount of the variance in Externalizing behavior problem scores. The addition of the weighted Life Events score at Step 2 resulted only in a trend toward a significant R^2 change, $F(1, 87) = 3.54, p < .07$. At Step 3, the addition of the Prosocial Skills score resulted in a significant R^2 change, $F(1, 86) = 10.10, p < .01$, predicting 10% of the variance in Externalizing behavior problem scores beyond the variance predicted by the previously entered variables. The overall R^2 became significant at Step 3, $F(4, 86) = 3.70, p < .01$. The interaction of the accumulated weighted Life Events score and Prosocial Skills score

Table 2. Pearson Product Moment Correlations Between the Predictor and Criterion Variables

| Variable | Behavior problem score | | | |
|---------------------------------|------------------------|-----|--------|--------|
| | LE | PS | E | I |
| Weighted Life Events score (LE) | | .06 | .19* | .27** |
| Prosocial Skills score (PS) | | | -.29** | -.11 |
| Behavior problem score | | | | |
| Externalizing (E) | | | | .60*** |
| Internalizing (I) | | | | |

* $p < .05$.

** $p < .01$.

*** $p < .001$.

at Step 4 did not result in a significant R^2 change. All variables entered into the hierarchical multiple regression analysis accounted for 17% of the variance in Externalizing behavior problem scores.

Age and gender at Step 1 accounted for a statistically insignificant 2.2% of the variance in Internalizing behavior problem scores. The addition of the weighted Life Events score at Step 2 resulted in a significant R^2 change, predicting 5.5% of the variance in Internalizing behavior problems beyond the variance contributed by age and gender, $F(1, 87) = 5.18, p < .05$. At Step 3, the prosocial skills score did not result in a significant R^2 change. The interaction of the weighted Life Events score and Prosocial Skills score at Step 4 did not result in a significant R^2 change. The overall R^2 with all variables entered into the equation was significant at Step 4, $F(5, 85) = 2.51, p < .05$, and all variables entered accounted for 13% of the variance in Internalizing behavior problem scores.

DISCUSSION

The present study was designed to examine the relationships among stressful life events, prosocial skills, and behavior problems in young, elementary school children. The first hypothesis was that life events would show a significant positive correlation with behavior problems in children, and the results supported this hypothesis. These findings are consistent with previous research which has shown that life events are related to behavior problems in children (Chandler et al., 1985; Emery, 1982; Hetherington, 1984; Felner et al., 1980; Johnson, 1982; Wallerstein & Kelly, 1980).

The first hypothesis also stated that prosocial skills would be negatively correlated with behavior problems, and the findings partially supported this hypothesis. Prosocial skills scores showed a significant negative correlation with Externalizing behavior problem scores, but not with Internalizing behavior problem scores. The finding that prosocial skills scores correlated significantly with Externalizing behavior problems supports the findings of Goldstein and Pentz (1984) and others (Freedman, Rosenthal, Donahoe, Schlundt, & McFall, 1978; Matson & Ollendick, 1988; McGinnis & Goldstein, 1984), suggesting that children who lack social skills tend to be aggressive and delinquent and display aggression-management deficiencies. It appears then that prosocial skills may have a stronger relationship with undercontrolled than overcontrolled behavior. The second and third hypotheses were that prosocial skills would predict the level of behavior problems after removing the variance contributed by life events, and that prosocial skills would moderate the extent to which lifetime life events pre-

dicted behavior problems. Different patterns emerged when separate analyses were conducted for Externalizing and Internalizing behavior problems.

Accumulated weighted life events scores showed only a trend toward predicting Externalizing behavior problems in these young, elementary school children. Previous research (Felner, et al., 1980; Patterson & Reid, 1984) has suggested that the experience of stressful life events is significantly associated with behavior such as low frustration tolerance, aggression, and temper outbursts. The relationship in the present study appears to be weaker than that shown in the earlier studies.

Consideration should be given to the possibility that developmental factors may affect this relationship. Specifically, life events may predict Externalizing behavior problems better in older children who, being physically larger and cognitively more mature, have more acting out ability and opportunity than do younger children. Younger children may tend to respond to life events by blaming themselves. Studies comparing younger and older children could assess this possibility.

Prosocial skills scores, however, did affect the prediction of Externalizing behavior problems in young elementary school children. This finding supports previous research which suggests that children who act out appear to have deficiencies in relating to people (Freedman et al., 1978; McGinnis & Goldstein, 1984). Younger children may be lacking or not utilizing prosocial skills related to the expression of anger and self-control to cope effectively with their environment. The finding that prosocial skills are related to Externalizing behavior problems in elementary school children supports the use of prosocial skills training to prevent acting out behavior (Goldstein & Glick, 1987).

The interaction of weighted life events and prosocial skills in the prediction of Externalizing behavior problem scores was not significant. It may be hypothesized that the interaction was not significant because weighted life events showed only a trend toward predicting Externalizing behavior problems and did not strengthen the prediction when interacting with prosocial skills. The results suggest that children who act out are not as affected by the life events they experience as they are by possessing deficient prosocial skills.

The pattern of results was different for Internalizing behavior problems. Weighted life events scores significantly predicted Internalizing behavior problems; these results support past research suggesting a relationship between life events and overcontrolled behaviors such as depression, anxiety, and hypochondriasis in young children (Barrera, 1981; Felner et al., 1980; Johnson & Sarason, 1979b). The results of the present study suggest that life events may have an etiologic role for Internalizing behavior problems.

Prosocial skills scores, however, did not significantly predict Internalizing behavior problems in these young, elementary school children. This result appears to be compatible with current literature in which there is only a little support for a relationship between prosocial skills and over-controlled, Internalizing behavior problems; Wierzbicki & McCabe (1988) found a modest but significant positive relationship between social skills deficits and subsequent levels of depressive symptomatology in nonreferred children between the ages of 8 and 14 years. Prosocial skills can be expected to help children to avoid conflict in the external environment through communication with others (Matson & Ollendick, 1988), but younger withdrawn children may not require as well-developed prosocial skills since they already tend to avoid conflict and they have experienced fewer negative stimuli from their peers.

The interaction of weighted life events and prosocial skills was not found to contribute significantly to predicting Internalizing behavior problems. This finding means that prosocial skills were not affecting a change in Internalizing behavior problems when that behavior was related to the experience of life events. The data suggest that the two predictor variables are orthogonal; the experience of life events in childhood is more predictive of Internalizing behavior problems than is the child's prosocial skill.

In summary, the present findings are compatible with previous research which has suggested that life events and prosocial skills affect behavior problems in children. However, stressful life events and prosocial skills may affect different types of behavior problems in different ways for children of different ages. Only accumulated stressful life events were related to increased Internalizing behavior problems in these elementary school children, while only prosocial skills affected the prediction of decreased Externalizing behavior problems. Prosocial skills were not found to moderate the effect of stressful life events on either Externalizing or Internalizing behavior problems in young children.

It is important to note several limitations of the study which restrict interpretation of the data. First, assessment of children's lifetime life events, prosocial skills, and behavior problems were completed by one source (i.e., mother). Data from multiple sources (e.g., teacher, self-report) would provide a more representative and stringent test of the hypotheses and may serve to preclude shared method variance. Second, data obtained on children's lifetime accumulated life events was reliant upon mothers' recall, which may have increased error variance. Third, multimodal assessment strategies seem to be required to assess a wide range of social skills, such as inclusion of role-play or observation. Fourth, research which is longitudinal or includes cross-validated independent samples, rather than cross-sectional, is needed to explore and support the above hypotheses. Finally,

variables other than prosocial skills could have served to moderate the effects of life events in young children with Internalizing behavior problems; such variables may include social support, family structure, and cognitive development. Moderator variables affecting the impact of life events on young children and the effects of stressful life events on older children are two areas in need of further research. Such research could ultimately improve our ability to prevent some behavior problems in young children. Notwithstanding the above limitations, the current study provides important implications for future research and clinical intervention. An accumulation of stressful life events, once experienced, cannot be remediated—what can be remediated is the ability of children to cope with such events. Prosocial skills may serve to enhance the coping capacity of young, elementary school children displaying acting out problems.

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