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ABSTRACT

Little research has investigated the relationships among sources, outcomes, and moderators of stress. There is a particular lack of such work with children and adolescents, especially work describing how the process unfolds with respect to the influence of continuing everyday stressors, such as those associated with the demands of schooling. This study examined the effects of school-related role strain on two student outcomes: grade point average and self-esteem. Subjects (N=120) were part of a 3-wave longitudinal study of the transition from elementary school to middle school in a small city district. Self-esteem was significantly predicted by both perceived strain magnitude and competence in a hierarchical regression equation. Competence served as a moderator of the effects of strain on self-esteem. Both strain magnitude and academic competence predicted grade point average when included in a regression equation along with father's education. Results point to the importance of early adolescent's perceptions of competence in academic and social domains and a positive sense of physical attractiveness to general self-esteem. Just as important to self-esteem as competence, however, is an environment that is relatively free of strain, that is to say, one in which parents, teachers, and peers hold role expectations that meet the developmental needs of early adolescents. (ABL)

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The Effects of Role Strains and Perceived Competence on Self-Esteem and School Performance of Sixth Graders in Middle School

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In studies of the effects of stress throughout the life span, three principal domains of the stress process have been identified, conceptualized and subjected to increasing scrutiny by theorists and researchers. These include sources of stress, outcomes or manifestations of stress, and moderators or buffers of stress. Each of these domains of the stress process have been conceptualized in a number of ways in recent years. Studies of sources of stress, for example, have concentrated on either major life events or everyday stressors, with a decided preference for the former. Similarly, in investigating outcomes of stress, a multitude of psychological, somatic, attitudinal, performance, and behavioral outcomes have been considered. Finally, coping resources, coping behaviors, and social support have dominated the work on moderators of the stress process.

Despite a great deal of work on each of the three domains of the stress process, little has been done to explain the relationships among sources, outcomes, and moderators of stress. There is a particular lack of such work with children and adolescents, especially work describing how the process unfolds with respect to the influence of continuing everyday stressors, such as those associated with the demands of schooling.

Roles as Sources of Stress

With respect to everyday stressors, an area receiving increased attention in recent years involves the difficulties individuals face in ongoing, ordinary formal and informal social roles (e.g., Kanner, Coyne, Schaefer, & Lazarus, 1980; Pearlin,

1982, 1983). Studies have shown that adults often experience difficulty in the everyday exercise of normal social roles and that persistent difficulty, or strain, can have detrimental effects on individuals' physical and psychological well-being (Holt, 1982; Pearlin, 1982, 1983). This research has suggested that sources of role strain may include role ambiguity, role conflict, role overload, and role "underload"--or underutilization of resources (see also Fenzel, 1988, in press).

Children and adolescents, like adults, actively engage in many social roles. Perhaps the most salient of these roles is that of student. Expectations for behaviors associated with the student role are held by teachers, parents, school administrators and other school personnel, and classmates. To the extent that these expectations conflict with one another or differ from the developing person's attitudes, capabilities, beliefs, and developmental needs, the young person is expected to experience strain and resulting problematic behavioral and attitudinal outcomes (Bronfenbrenner, 1979; Cooper & Ayers-Lopez, 1985; Fenzel, 1988, in press; Metz, 1978).

Outcomes of Strain

Among these outcomes of continuing role strain are disruptions of both the performance and perceived self-worth of individuals (e.g., Pearlin, 1983; Simmons & Blyth, 1987). Consistent with previous studies of school stress (e.g., Blyth, Simmons, & Carlton-Ford, 1983), the present study examines the effects of school-related role strain on two student outcomes of

particular interest to educational researchers and practitioners: grade point average (GPA) and self-esteem.

Role Strain Moderators

Not all individuals experience comparable levels of distress when exposed to similar amounts of role strain (cf., Allen & van de Vliert, 1984; Thoits, 1983). Factors associated with differential levels of vulnerability--and resistance--to stress that have been identified in the stress literature include psychological as well as social resources available to an individual. Most theorists suggest that these factors, also referred to as coping resources and social support, tend to moderate the impact of strains on stress outcomes. Moderation is demonstrated, for example, when individuals with sufficient or high quality resources experience relatively low levels of distress when exposed to low or high levels of strain, but individuals with poor or insufficient resources experience increased distress as strain increases. Moderators, therefore, serve as "buffers" of the effects of strain.

Coping Resources. Coping resources may take the form of beneficial personal characteristics or effective coping strategies. Moos and Billings (1982) emphasize the intrapsychic nature of coping resources and define them as a set of relatively stable personality, attitudinal, and cognitive dispositions that promote effective adaptation and are themselves affected by the coping process. Individual vulnerability, or the lack of certain

personal characteristics, on the other hand, may amplify the effect of strain (Petersen & Spiga, 1982).

Personal resources such as high self-esteem, an internal locus of control, and a sense of autonomy have been shown to serve as moderators of the stress process in children and adolescents as well (Compas, 1987; Garmezy, 1983). "Self-efficacy," or perceived personal competence, has also been described as an effective coping resource for children and early adolescents and serves as the moderator variable of choice for the present study (Harter, 1978; Pearlin & Schooler, 1978; Lawrence, 1986). The present study is limited to the investigation of the moderating influence of perceived competence; social resources such as social support will be addressed in subsequent work by the author.

Hypotheses

It is hypothesized that (a) students' magnitude of school-related role strain will have a significant negative impact on both self-esteem and grade point average (GPA) among sixth graders, (b) students with higher levels of perceived competence will have higher self-esteem and GPAs, controlling for the effect of strain, and (c) perceived competence will moderate the effect of strain on both self-esteem and GPA.

METHOD

SUBJECTS

Subjects were part of a 3-wave longitudinal study of the transition from elementary school to middle school in a small

city school district in New York State and included 120 sixth-grade students who attended the same 6th-through-8th grade middle school. These subjects represented 93 percent of students making the transition from two elementary schools in the school district to the middle school. The mean age of subjects at the time of the present study was 10 years, 11 months. Subjects were predominantly white (90%) with African-Americans and Asian-Americans representing 4.2 percent and 3.3 percent of the sample, respectively. In addition, 71 percent of subjects reported living with two married parents. Subjects' parents were very well educated with 82 percent of fathers and 72 percent of mothers having at least one college degree.

PROCEDURES

Students were administered the Middle School Transition Study Questionnaire (MSTSQ) in classroom groups of 20 to 30 at three points in time: in Spring of fifth grade, approximately three weeks prior to the end of the school year (Pretransition); three weeks after the beginning of middle school (Early Transition); and again four months later (Settling In). The second questionnaire administration was chosen for the present study because it afforded a comprehensive measure of student achievement from report cards which followed the questionnaire administration closely in time and because strains occurring during the Early Transition period were of particular interest.

The MSTSQ was a collection of several instruments that assessed students' perceptions of school-related role strains,

self-competence, social support, self-esteem, anxiety, the classroom environment, and significant life events not related to schooling. Grades were obtained from students' report cards furnished by the school district. The present study utilizes the instruments that assessed perceptions of school-related role strains, self-competence, and self-esteem as well as report card grades. These measures are described below.

MEASURES

The Early Adolescent School Role Strain Inventory

The Early Adolescent School Role Strain Inventory (EASRSI, Fenzel, 1988, in press) is a 27-item scale that assesses the quantity and magnitude of school-related role strains affecting students in elementary and middle school. Factor analyses identified four strain subscales representing demands from a variety of settings and role senders: School Demands, Teacher Relations, Parent Control, and Peer Relations (Fenzel, 1988, in press). Factor analytic procedures and a description of subscale items are presented elsewhere (Fenzel, in press).

When completing the EASRSI, subjects first indicated whether a given statement, which described a potential source of strain, was "True" or "False" for them. If subjects chose "True," they then proceeded to indicate how much the strain bothered them on a 7-point scale from 0 (not bothered at all) to 6 (Bothered a lot).

Mean strain magnitude and proportion. For purposes of analyses, responses were transformed into mean proportion and mean magnitude scores for each of the four strain subscales and

the full strain scale. Mean proportion is a decimal numeral from 0 to 1 indicating the percentage of items endorsed on the scale or subscale. Mean magnitude is the mean of the magnitude scores of all of the items on the scale or subscale. Overall, subjects endorsed a mean proportion of .33 items and reported a mean strain magnitude of 1.1 on the 7-point scale (0 through 6; Fenzel, in press). The full strain scale and strain subscales were found to possess good internal reliability and validity (see Fenzel, in press).

Self-Perception Profile for Children

Harter's Self-Perception Profile for Children (SPPC, 1985) is a 36-item pencil-and-paper instrument which assesses 5 specific domains of competence and global self-worth. Scholastic competence, social acceptance, athletic competence, physical appearance, behavioral conduct, and global self-worth subscales each contain 6 items. Items are scored from 1, indicating a very low level of competence or self-esteem, to 4, indicating a very high level of competence or self-esteem. The SPPC is considered to be appropriate for children and early adolescents in grades 3 through 8 (Harter, 1985). Harter reports that the competence subscales have good internal reliabilities.

Guided by the recent literature on the relationship between competence and self-worth and the value of reducing data to meaningful but manageable chunks, three subscales of the SPPC--scholastic competence, social acceptance, and physical appearance--were combined to predict general self-esteem (see

Fenzel, 1988, for more detail). The scholastic, or academic, competence subscale alone was used in the prediction of school performance.

Middle School Report Cards

Report cards in middle school provided grades for each class taken by students as well as grades for extracurricular activities. Subject areas included on the reports and averaged for use in the present study were English, Reading, Mathematics, Social Studies, and Science. Grades ranged from a low of F to a high of A+. These grades were obtained from report cards issued in November of sixth grade, at the conclusion of the first 10 weeks of the school year.

Interviews

Twenty-four students were selected to be interviewed approximately three weeks after the Early Transition questionnaire administration for the purpose of obtaining personal testimony of the ease or difficulty of the middle school experience. Students were selected based on a combination of scores from the Early Transition questionnaire that indicated highly successful, average, and unsuccessful school adjustment. Equal numbers of boys and girls and students from each of the two elementary schools of origin were represented in the stratified random interview sample.

Analyses

Hypotheses were examined using multiple regression analyses with strain entered as the first independent variable in the

hierarchical framework followed by the appropriate competence variable. Finally, a Strain x Competence interaction term was forced into the equation to examine the buffering hypothesis. One equation was constructed using self-worth as the dependent variable and a second equation using grade point average (GPA). For the second equation, father's education was entered as a covariate. Because analyses involving strain magnitude and proportion produced very similar results, only the results of strain magnitude analyses are presented.

RESULTS

The Prediction of Self-Esteem

Table 1 outlines the results of regression analyses involving role strain magnitude (full scale and each of the four subscales) and competence as independent variables with self-esteem as the dependent variable. Results, which provided good support for the first hypothesis, showed that the magnitude of role strain was significantly and negatively related to self-esteem. This finding applied to the full strain scale and each of the strain subscales, although the effect of School Demands strain was only marginally significant.

Insert Table 1 about here

Competence accounted for a highly significant amount of variation in self-esteem when added to the regression equation. This finding applied to the full strain magnitude scale as well

as to each of the strain subscales. The Strain x Competence interaction term added significantly to the prediction of self-esteem over and above the direct effects of both strain and competence. The significant moderation effect was found for the full strain scale and the Peer Interaction and Teacher Relations subscales. This moderation effect was marginally significant for the Parent Control strain subscale and did not apply to School Demands strains.

Figure 1, which depicts the moderation model, shows that students who possessed a high level of competence maintained high levels of self-esteem even in the presence of high levels of strain. Students with low competence, however, were very reactive to strain: self-esteem declined as strain increased.

Insert Figure 1 about here

The Prediction of GPA

Separate regression equations were constructed for the full strain magnitude scale and each of the subscales. For the prediction of GPA, the education level of students' fathers was first entered into the regression equation because education of parents is likely to be a strong predictor of student achievement. Without the inclusion of this covariate in the equation, effects of strain and competence on GPA may be considered spurious. Table 2 shows, as expected, that father's education was highly predictive of students' GPA.

Insert Table 2 about here

As is shown in Table 2, both strain magnitude and competence served as significant predictors of school performance for regression equations involving the full strain scale and each of the four strain subscales. Contrary to prediction, no significant moderating effect of competence on GPA was found.

DISCUSSION

It was hypothesized, first, that school-related role strain would predict both self-esteem and GPA of sixth grade students in middle school. Second, it was hypothesized that perceived competence would add significantly to the prediction of both self-esteem and GPA. (In the prediction of self-esteem, competence was defined as a combination of academic and social competence and physical appearance; whereas only academic competence was used to predict GPA.) Third, it was predicted that competence would buffer the effect of role strain on both self-esteem and GPA. The buffering or moderation hypothesis suggests that low levels of strain would affect both high and low-competence early adolescents similarly, but, as strains increase, high-competence individuals will maintain high self-esteem or performance levels and low-competence individuals will be adversely affected by increased strain.

With respect to the prediction of self-esteem, all three hypotheses were supported. Self-esteem was significantly

predicted by both perceived strain magnitude and competence in a hierarchical regression equation. In addition, competence served as a moderator of the effects of strain on self-esteem. Similarly, both strain magnitude and academic competence predicted GPA when included in a regression equation along with the covariate, father's education. Contrary to the buffering hypothesis, the interaction term did not add significantly to the prediction of GPA.

Results point, first, to the importance of early adolescents' perceptions of competence in academic and social domains and a positive sense of physical attractiveness to general self-esteem. Just as important to self-esteem as competence, however, is an environment that is relatively free of strain, that is to say, one in which parents, teachers, and peers hold role expectations that meet the developmental needs of early adolescents. The establishment of a connection between strains in the everyday exercise of the student role and self-esteem in early adolescence is an important and original contribution to the understanding of stress among this population.

The findings regarding the direct effects of competence on self-esteem are consistent with the adult and child stress-and-coping literature and come as no great surprise. What is more enlightening is the finding of the moderating influence of competence on the strain--self-esteem relationship. While such a moderating influence has been found for the interaction of competence or locus of control with discrete stressful life

events (e.g., Walker & Greens, 1987), this study illustrates the powerful moderating effect of competence on the relationship between strain and self-esteem. To reiterate, this interaction suggests, as is shown in Figure 1, that early adolescents high in competence maintain high self-esteem whether they experience low or high strain, whereas individuals low in competence experience a negative relationship between strain and self-esteem. The significant moderating effect of competence emphasizes the importance of teachers and parents helping early adolescents achieve a sense of competence in mastering their environments.

With respect to school performance, father's education, which strongly influences the kind of environment established by parents in the home (Bee, Barnard, Eyres, Gray, Hammond, Spietz, Snyder, & Clark, 1982; Bronfenbrenner, 1979), is a consistently strong predictor. Role strains provide a second strong environmental influence on school performance. When early adolescents perceive school-related demands placed upon them by peers, parents, and teachers to be excessive, their performance in school suffers. The lack of a buffering effect suggests that both high- and low-competence students experience a similar negative relationship between strain and school performance, although high-competence students maintain higher GPAs than low-competence students at various levels of strain.

Study Limitations

Because variables discussed in the model proposed in the present study were measured at the same point in time, with the

exception of GPA, the choice of outcome and predictor variables may appear arbitrary. Several alternative models might be hypothesized, such as those that consider competence or role strains as outcomes rather than predictors. Would it not be reasonable, for example, to suggest that competence or self-esteem affect strains? Reasonable alternative models may, therefore, lead one to question the meaning of the direct and moderator effects found.

In defense of the model investigated, self-esteem and GPA were chosen as dependent variables to provide comparability with past research on stress and strain. Although it is likely that the variables in the model are reciprocally rather than linearly related (cf. Compass, Wagner, Slavin, & Vannatta, 1986), some meaningful framework is needed to investigate the relationships. The model chosen has a consistent and strong theoretical and research history, in addition to possessing sound logic.

Implications for Research and Practice

The present study provides a worthwhile step toward increasing our understanding of the effects of daily strains related to the role of middle school student on early adolescents' self-perceptions and behavior. While it seems that role demands communicated by teachers, parents, and peers all affect school performance and self-esteem, future work might investigate the relative contribution of each strain domain to these outcomes.

Although the findings of the present study contribute significantly to the understanding of strains and the relationships among sources, moderators, and outcomes of strain, the results do not generalize beyond communities similar to the one in which the study takes place. With the cultural characteristics of our society changing as they are, future research efforts should address the questions investigated herein with nonwhite samples in both urban and rural settings. In addition, the use of control groups and more than one ethnic or social group within a given school community should enhance our understanding of the effects of school transitions on early adolescents.

Findings from the present questionnaire study, supplemented by interview data, suggest that parents and teachers, as authority figures, might share decision-making power with early adolescents regarding such things as the use of free time and acceptable ways of completing assignments. Allowing students to share control over assignment selection and monitoring work progress has been shown to increase school satisfaction among elementary and secondary school students (e.g., Epstein & McPartland, 1976). Similarly, adults should consider setting standards for school performance that are attainable and keeping rules and regulations reasonable in terms of number and importance.

Eccles and Midgley (in press) suggest that treating students as responsible, mature, and capable of independent decision

making may be particularly crucial in early adolescence. In early adolescence, individuals begin trying on many different psychological, behavioral, and social hats in search of an identity. By working to create a middle school environment in which early adolescents' developmental needs for affiliation, decision making, challenge, and support are being met, teachers help early adolescents identify themselves as students, comfortable in a school environment and motivated to learn. If early adolescents fail to find satisfaction with the student role, they may find greater comfort wearing the more socially unacceptable hats of alienated youth who become involved in excessive drug and alcohol use and other delinquent activity.

Middle school teachers in the present study not withstanding, teachers' and administrators' awareness of the important developmental needs of middle school students is, unfortunately, often lacking. Teacher training and continuing education programs for middle school teachers need to provide better education for practitioners who work with early adolescents. Failing to provide such training, especially likely in today's educational climate that is placing considerable emphasis on the subject matter preparation of teachers, can have serious consequences in terms of student alienation from school.

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Table 1

Results of Regression Analyses of the Effects of Strain and Competence on Self-Esteem among Sixth Graders (N = 120)

Strain Variable	Strain Effect			Competence Effect			Interaction		
(N of items)	Adj. R^2	F	p	R^2 Change	F	p	R^2 Change	F	p
Full Scale (27)	.18	27.32	<.0001	.31	72.11	<.0001	.04	9.32	.003
Peer (9)	.29	49.37	<.0001	.22	53.03	<.0001	.07	9.31	.003
School (7)	.02	3.02	.0847	.46	105.96	<.0001	.01	1.29	NS
Parent (6)	.04	6.53	.0119	.44	100.21	<.0001	.01	3.42	.067
Teacher (5)	.11	15.04	.0002	.38	86.94	<.0001	.13	17.06	.0001

Table 2

Results of Regression Analyses of the Effects of Father's Education, Strain, and Competence on GPA during Early Transition (N = 120)

Strain	Father's Educ.			Strain			Competence			Interaction		
Variable	Adj. R^2	F	p	R^2 Change	F	p	R^2 Change	F	p	R^2 Change	F	p
Full Scale	.29	50.19	<.001	.14	28.60	<.001	.04	7.78	.006	<.01	.44	NS
Peer	.29	50.19	<.001	.06	9.96	.002	.08	16.23	<.001	<.01	.03	NS
School	.29	50.19	<.001	.09	16.33	<.001	.06	12.56	.001	<.01	.21	NS
Parent	.29	50.19	<.001	.09	18.18	<.001	.06	12.32	.001	<.01	.03	NS
Teacher	.29	50.19	<.001	.09	17.40	<.001	.06	13.85	<.001	<.01	.01	NS

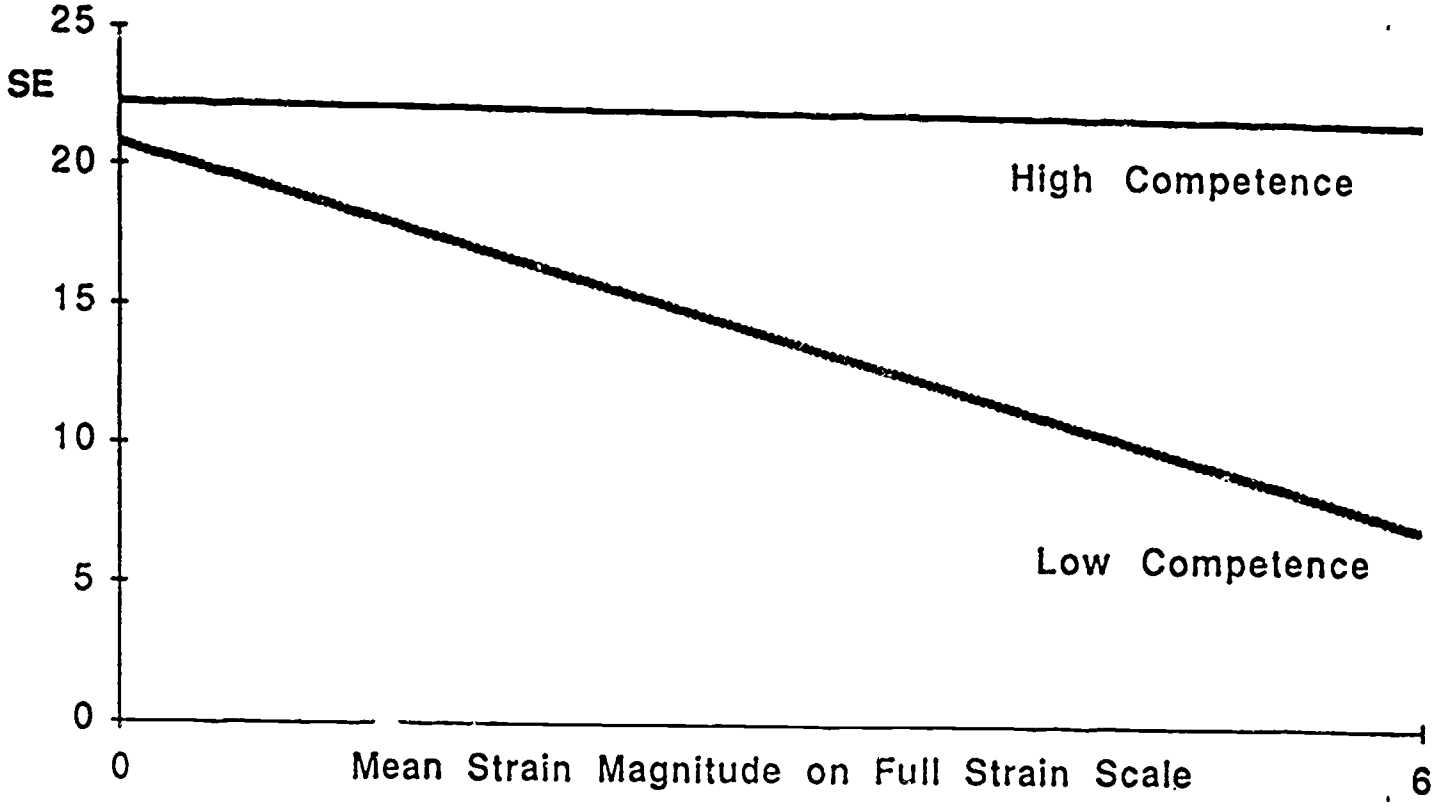

Figure 1. Relationship of Mean Strain Magnitude and Self-Esteem for Low and High Competence Subjects