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Adolescent school failure predicts depression among girls

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Abstract

Purpose: Past research has found that social, academic, and behavioral problems are linked with depression during childhood and adolescence. The present study tests a longitudinal cascade model of adolescent problems predicting depression into adulthood, while additionally testing for gender differences.

Methods: Using prospective longitudinal analysis with a sample of 808 youth followed from age 10 to 21, we tested whether social problems, school failure, and delinquency in adolescence increased risk for a Major Depressive Episode in emerging adulthood. Structural equation modeling was used to test for gender differences.

Results: Both early conduct problems and adolescent school failures predisposed girls to depression in young adulthood. Among the boys, none of the problems conferred risk for depression.

Conclusions: This study highlights the mutual interplay between school failure and psychological functioning. It is suggested that school adaptation in adolescence be considered a mental health issue.

Keywords

depression; psychological adaptation; adolescence; female adolescents; student dropouts

Introduction

"Cascade" models of psychopathology suggest there may be developmental cascades by which dysfunction in one domain of adaptive behavior spills over to influence functioning in another domain in a lasting way [1]. In particular, social, academic, and behavioral problems have been implicated in the etiology of depression. Clear links have been demonstrated between deficits in these areas and depression during childhood and adolescence [2,3]. In terms of social problems, interpersonal difficulties such as peer rejection [4], friendship disruption [2,5], lack of social competence [6], and relationship problems are strongly associated with depression [2,4]. Likewise, poor academic achievement is a risk factor for later depression [7]. Finally, prior research has suggested that conduct problems in childhood may be associated with depression during adolescence [8,9] or adulthood [10].

Several theories for the development of depression that could be broadly described as "cascade" models delineate the involvement of earlier adjustment problems in contributing to depression risk. The Dual Failure Model of Depression, for example, postulates that early conduct problems create failure experiences in developmentally appropriate tasks, such as school achievement and the attainment of close relationships, which in turn create vulnerability for depressive symptoms [11,12]. Likewise, according to competency-based models of depression, negative feedback received as a result of deficits in the development of competence in social, academic, and behavioral domains can trigger depression [13]. Relatedly, life stress models of

depression suggest that interpersonal and achievement stress play a particularly salient role in depression [14], with depressed persons additionally prone to generate stress [15].

Support is converging for cascade models predicting depressive symptoms from problem behaviors and deficiencies in childhood and adolescence. For example, Burke and colleagues examined the relationship between child behavioral disorders, psychosocial impairment during adolescence, and depression at age 18 in a sample of boys. They found that conduct disorder symptoms during childhood predicted subsequent depression symptoms, and that this relationship was mediated by psychosocial impairment [16]. Likewise, a cross-sectional study with adults provided support for the Dual Failure Model of Depression, as depression was positively associated with social ineptitude and negatively associated with academic competence [17]. Finally, Masten and colleagues found that externalizing problems in childhood undermined academic competence in adolescence, creating vulnerability to internalizing problems in young adulthood [1].

Yet, whether specific adaptation problems during adolescence influence long-term mental health differently for boys and girls remains relatively unexplored, as many tests of these models have been conducted with all-male samples. There are at least 3 reasons why gender might moderate the relation between adolescent problems and adult depression. First, depressive symptoms and disorders are more prevalent among girls compared to boys during the adolescent years [18] and on to adulthood, creating increased risk for females. Thus, it is possible that girls may be primed for depression when adaptation problems emerge. Second, heterotypic continuity of psychiatric disorders (continuity of disorder but with a different diagnosis over time) has been found to be more common among girls [19], suggesting the possibility that cascade models in general are more relevant for girls. Third, gender differences have been found in both objective and subjective ratings of competence. For example, there is some evidence that girls underestimate their academic competence relative to boys [20], while boys are typically rated as less socially competent than girls [21,22]. Thus, there may be gender differences in the saliency of particular problems for boys and girls.

This study sought to examine the impact of social problems, school failure, and delinquency during adolescence as predictors of a major depressive episode in emerging adulthood, testing a broad cascade model. We explicitly tested the possibility that adaptation problems and associations to later depression may differ for boys and girls.

Method

Participants and Procedures

Data were drawn from the Seattle Social Development Project, a longitudinal study of the development of positive and antisocial behaviors. In fall 1985, all fifth-grade students attending 18 elementary schools in Seattle were recruited for participation. Schools serving children from high-crime neighborhoods were oversampled. Of the 1,053 students making up the population, 808 (77%) agreed to participate in the longitudinal study, including 412 boys and 396 girls. Most participants were 10 years old when the study began (median age was 10.7 years, M = 10.8, SD = .52). Participants identified themselves as Caucasian (46%), African American (24%), Asian American (21%), Native American (6%), or of other racial and ethnic groups (3%). Forty-one percent of the sample reported only one parent present in the home at age 10.

Many of the participants were from low-income households. The median annual family income for the sample was \$25,000 in 1985, with 46% of parents reporting a maximum family income under \$20,000 per year. Fifty-one percent of the sample participated in the National School Lunch and School Breakfast program during the fifth, sixth, or seventh grade. Informed consent was obtained from all children and their parents or guardians, and the study protocols were

approved by the University of Washington Institutional Review Board. All consenting participants completed self-report surveys that were group-administered in classrooms in the early years. In-person, one-on-one interviews were conducted in adolescence and adulthood. The retention rate of the sample at age 21 was approximately 95% (n=765).

Measures

Adaptation problems in childhood (grade 5)—Childhood and adolescent scales were based on items from the Child Behavior Checklist (CBCL) [23], with rationally and empirically derived dimensions of social and conduct problems being used [24]. Each scale was computed as the average response to the items on the scale, with higher scores representing more of the behavior being assessed. Children provided self-report assessments of their conduct problems (grade 5) using 10 items from the Youth Self-Report (YSR) (e.g., picks fights, breaks property; $\alpha = .67$). Low academic achievement (grade 5) was measured from a combination of youth and parent report. Parents were asked to rate their children's school achievement on a scale ranging from 1=very well to 5=poorly. Children were asked how their grades compare to others, using a 3-point scale (better, about the same, not as good). These ratings were standardized and averaged, with higher values reflecting poorer achievement. Social problems were measured using a combination of parent (4 items; e.g., gets teased a lot; not liked by others) and teacher (8 items e.g., gets teased a lot, easily embarrassed) reports, standardized and averaged ($\alpha = .71$). To control for prior vulnerability to depression, teacher-reported depression (grade 5) was assessed using 9 items from the Teacher Report Form (e.g., feels worthless or inferior; unhappy, sad, or depressed; complains of loneliness; $\alpha = .74$).

Adaptation problems in adolescence (grades 8-12).—We combined measures across several different years during adolescence because we were interested in chronic, consistent problems rather than transitory issues. For the 2 latent variables (social problems and delinquency), mean scores on each scale at each year were used as indicators The overall reliability coefficients reported were calculated using all items at each time point comprising the global scale. A social problems (grades 8-10) construct was created as a latent variable using parent reports on 4 CBCL items as indicators ("doesn't get along," "gets teased a lot," "not liked by other children," and "likes to be alone"; overall α reliability coefficient = .73). A dichotomous school failure experience variable (by grade 12) was coded positive if any of the following were endorsed by the youth by the 12th grade: the youth had repeated a grade, had dropped out of school, had been suspended or expelled, or did not expect to graduate on time. In the area of behavioral problems, delinquency (grades 8, 9, 10, 12) was constructed as a latent variable indicated by the mean of 5 self-report items assessing the number of times the youth engaged in each of the following behaviors in the past year: vandalized; broke into a house, store, or building; hit to hurt someone; used a weapon or force to get money; and drew graffiti (overall $\alpha = .83$).

Young adult depressive episode (age 21)—Past-year depressive episode (age 21) was assessed using a modified version of the Diagnostic Interview Schedule (DIS) [25]. Eighteen items from the DIS were used to assess the presence of a past-year depressive episode, based upon the symptoms of a major depressive episode occurring within the same 2-week period, as outlined in the DSM-IV. In the present study, responses of "yes, sometimes" or "yes, definitely" were incorporated into the assessment of past-year depressive episode. Symptoms included depressed mood, anhedonia, weight changes, sleep problems, psychomotor agitation or retardation, fatigue, feelings of worthlessness, concentration difficulties, and suicidal ideation.

Statistical Analyses

Independent-samples t-tests were used to examine gender differences for each of the continuous variables, and chi-square tests were used to compare boys and girls on dichotomous variables. Next, using structural equation modeling, we tested gender as a moderator of the relationship between adult depression and adaptation problems in childhood and adolescence. In all statistical models, we controlled for age 10 depression symptoms as well as each of the childhood problem variables. Weighted least square parameter estimates with mean- and variance-adjusted chi-square test statistics were used for all models (WLSMV), since the outcome variable in this study was dichotomous. The WLSMV estimator provides appropriate parameter estimates for models based on categorical and moderately skewed data [26], and is dependable with modest sample sizes [27]. Skewness values for the continuous variables in this study ranged from -.26 to 3.99, with a mean skew of 2.06. Structural equation modeling analyses were conducted using Mplus version 4.2 [28].

Results

Gender Differences

In order to determine if there were mean differences in adaptation between males and females, we tested each of the study variables using independent samples t-tests for continuous variables and chi-square analyses for dichotomous variables. On the continuous variables, boys evidenced more conduct problems and lower achievement at grade 5, and reported more delinquent behavior throughout adolescence, as shown in Table 1. By grade 12, more boys had experienced a school failure (67.9%) compared to girls (44.7%), $\chi^2(1) = 42.18$, p < .001. At age 21, there was a statistical trend toward more depression among females (22.0%) compared to males (17.0%), $\chi^2(1) = 3.02$, p = .08.

Moderation Analyses

Our next set of analyses was designed to test whether the adaptation-depression model held equally for girls and boys. We tested a series of nested models with varying constraints on measurement and structural pathways and compared them using the Chi-square difference test. Model 1 was a 2-group model allowing all parameters to vary for boys and girls. Model 2 constrained the measurement coefficients of the adolescent delinquency and social problems latent variables to be held equal for boys and girls, while allowing structural paths to vary between the genders. Model 3 constrained all pathways, including measurement and structural, to be equal for boys and girls. In each of the models, the presence of a depressive episode at age 21 was regressed upon each of the areas of adaptation in childhood and adolescence. Stability paths between the same dimension of adaptation problems in childhood and adolescence were included, as were cross-lagged effects between each of the areas. The direct relations from depression at grade 5 to depressive episode at age 21 were retained in all models as controls, as were the paths from depression at grade 5 to each measure of adolescent adaptation, to partial out grade 5 depression from all relations. Correlations among the exogenous variables, including the childhood measures of adaptation problems and depression, were freely estimated. Additionally, models included correlations among the residuals of the adolescent measures.

The zero-order correlations underlying the SEM Models are shown in Table 2, stratified by gender. Each of the 3 models demonstrated good fit according to fit index criteria (CFIs ranged from .97-.98; RMSEA ranged from .03-.04). Chi-square values for each of the 3 models were significant: Model 1 χ^2 (47) = 77.35, p = .004; Model 2 χ^2 (50) = 77.95, p = .007; Model 3 χ^2 (57) = 94.98, p = .001. The difference between Model 1 and Model 2 was nonsignificant, suggesting that fixing the measurement paths to be equal for boys and girls did not significantly reduce model fit, $\Delta\chi^2$ (7) = 7.80, p = .35. However, we found that the gender-specific structural

model (Model 2) fit significantly better than the gender-constrained model (Model 3), suggesting some moderation by gender (Satorra-Bentler Adjusted $\Delta \chi^2(13) = 25.20$, p = .02).

Model Results

As a next step, we examined the parameter estimates from Model 2. Using Wald tests as our criterion for whether path coefficients were significant, the stability paths between childhood and adolescent problems within each domain were similar and statistically significant for both genders. That is, higher levels of conduct problems at age 10 were associated with adolescent delinquency; more childhood social problems predicted adolescent social problems; and lower achievement in grade 5 was related to school failure experiences in high school.

Differences emerged for boys and girls, however, in the significance of cross-lagged effects between adaptation problems, and in the prediction of early adult depression. Gender-specific models are shown in Figures 2 and 3. Among the boys, lower achievement at grade 5 was associated with higher levels of adolescent delinquency. Likewise, higher levels of conduct problems predicted school failure experiences in high school. Moreover, higher levels of teacher-rated depressive symptoms in childhood were associated with fewer social problems during adolescence, controlling for social problems in childhood. Although the zero-order correlation between social problems and depression was positive, a negative relationship emerged in the context of other variables in the model, suggesting a suppressor effect. None of these variables were significantly associated with depression during early adulthood for boys in the multivariate model.

Among the girls, early conduct problems predicted adolescent social problems. Higher levels of teacher-rated youth depression were associated with school-failure experiences in adolescence, which were then significantly associated with the presence of a major depressive episode in early adulthood. The Sobel test was used to statistically evaluate the extent of mediation in the effect of early depression on adult depression [29,30]. This test indicated that the overall indirect effect of early depression on adult depression was significantly greater than zero (z=2.19, p =.03). Although none of the specific indirect effects of early depression were statistically significant, the indirect path via school failure was a statistical trend (z = 1.80, p = .07). The magnitude of the indirect effect, expressed as a standardized beta weight, was .09.

Because of the significant effect of school problems on depression, we next examined the specific types of school failures to determine whether there was a particular kind of failure that accounted for increased risk of depression, recognizing that there was overlap between categories. We used chi-square tests to examine each of the 5 failures as they were associated with risk for a major depressive episode. Three of the failures were significantly associated with depression, as shown in Table 3. Specifically, girls who were suspended, expelled, or who dropped out of high school early were at significantly higher risk for a Major Depressive Episode in early adulthood compared to girls who did not have these school failures. Girls who did not expect to graduate on time also experienced relatively more depression at age 21, though the association was just above the threshold for significance (p = .053).

Discussion

Cascade effects emerged between school problems and depression for girls in our study, providing evidence that school failure can be considered an indicator of psychological health. Our model suggested a true transactional relation, in that childhood depressive symptoms predicted school failures in adolescence, which in turn predicted a major depressive episode in emerging adulthood. Thus, girls' failure in the school arena, such as dropping out of school or being suspended or expelled during adolescence, accounts for some of the long-term

continuity between depressive symptoms in childhood and clinical depression in young adulthood.

Our findings on school failure are quite consistent with Masten and colleagues' finding that adolescents with less academic competence are more vulnerable to internalizing problems in young adulthood [1]. Our focus, however, was on major failure experiences in the school environment, broadly speaking. Almost half of all failures to complete secondary school is attributable to mental health symptoms [31], suggesting a great deal of overlap between academic and behaviorally based problems. Disruptive behavior in the school setting, for example, can interfere with learning in a classroom; conversely, students with low achievement may be prone to get in trouble. We found that relations to depression were similar regardless of which type of "school failure" was examined (see Table 4). Thus "school failure," as defined by the current study, can be considered a marker for identifying girls who are at increased risk, though both academic and behavioral reasons may contribute to these failures. Consistent with our gender-specific findings, Reinherz and colleagues [7] found that poor academic achievement at age 9 was a risk factor for women but not for men. Other research has shown girls to be more sensitive to competency evaluations [32], so it possible that girls may be psychologically more vulnerable to actual failure experiences in the school domain, particularly since they were less common for girls than for boys.

We did not find evidence for adolescent adaptation problems predicting young adult depression among boys. Previous literature has identified neonatal and childhood health problems as a gender-specific risk factor predicting depression among men during the transition to adulthood [7]. There may be other risk factors not accounted for by our model that are important for boys, or depressive risk may emerge at a different developmental time point for boys. Our results diverge in some respects from those of Patterson and Stoolmiller [33] who tested the Dual Failure Model among 2 distinct samples of preadolescent boys. They found a negative association between good peer relations and depressed mood, and the association between achievement and depressed mood was mixed. However, the current study differs in at least 2 important ways from their study. First, we examined relationships longitudinally, following participants from late childhood through emerging adulthood, whereas Patterson and Stoolmiller conducted cross-sectional analyses of preadolescent boys. Second, we utilized a structured diagnostic clinical interview to determine those who qualified for a major depressive episode, in contrast to examining ratings of sadness based on parent and teacher reports, as was done by Patterson & Stoolmiller. Thus, it may be the case that transient symptoms of depression or negative mood are related to social and school failures for boys, as is suggested by the left-hand side of our model. Yet we did not find that these types of "failures" were associated with lasting clinical levels of depression, at least at age 21.

One explanation for these findings is that conduct problems and school failure are relatively more atypical and less accepted for girls than for boys, and may signal more impaired functioning or may be associated with more severe consequences [34]. It is also possible that boys and girls with conduct problems and school failures both have vulnerability, but that specificity of risk diverges with development, with girls becoming more prone to internalizing problems during adolescence, and boys manifesting problems in a broader variety of ways, such as problems with substance use, externalizing problems, and other social failures.

In addition to the effect of school failures, a positive association was found between conduct problems at age 10 and depressive symptoms at age 21 for girls, while no significant association was observed for boys in this multivariate modeling context. Early conduct problems, above and beyond adolescent problems with adaptation, directly predispose girls to depression in young adulthood. This is consistent with the literature suggesting that heterotypic continuity

is more common among girls [19]. Indeed, externalizing symptomatology marked by conduct problems appears to be one of several posited childhood pathways to depression [10].

In addition to examining moderation by gender, we went further than previous studies by using rigorous longitudinal analyses in which we controlled for early depression and simultaneously tested adaptation problems in different areas. We found support for the continuity between childhood and adolescent adaptation problems within specific areas. In our sample, this was indicated by higher levels of fifth-grade conduct problems being significantly associated with more delinquency throughout high school; more social problems in childhood predicting adolescent social problems; and problems with early school achievement predicting school failure experiences. We also found that for boys and girls, early conduct problems had somewhat broad consequences for other problems. For girls, early conduct problems predicted later social problems, whereas, for boys, reciprocal associations emerged between conduct problems/delinquency and achievement/school failure. Previous research has shown that problems of conduct and self-control early in development lead to academic or conduct problems, or both [35], but gender differences have not reliably been examined. Neither social nor behavioral problems predicted major depressive episode in adulthood. This lack of findings is contradictory to a body of literature finding that interpersonal difficulties and depression are closely related for children and adolescents [2,4]. This difference may have resulted in part from our fairly conservative methodological approach. Since our purpose was to test an etiological framework, we controlled for co-occurrence of depression and social difficulties within time, as well as stability effects for each over time. Moreover, very few previous studies have examined depression and social problems over such an extended period of time, cutting across distinct developmental phases.

Several limitations need to be kept in mind in considering these results. We used a sample of children that represent a range of the urban populace, with particular oversampling of children from schools from high-crime neighborhoods. Thus, our sample provides an opportunity to examine a wide range of variability in children, neighborhoods, and school experiences, but this regional sample with somewhat higher risk may not generalize to other populations. Also, we limited our measures of developmental adaptation to those that have emerged from Masten's empirical studies of this topic [36,37]. It is possible that alternative constructs or measures may account for the relationship between adaptation and depressive symptoms. Third, the inclusion of a more complete measure of early depression, including self-report of depressive symptoms, would have been preferable. In the absence of this, we used teacher reports of depressive problems, which are limited by exposure to one particular context (school) as well as teachers' inability to directly observe the more internal phenomenology of depression. Correlations between teacher reports and self-reports of depression range from .20 to .50 [32,38,39]. Fourth, analyses using the WLSMV estimator were based on the standard untested assumption that a continuous latent response variable that is normally conditioned on the exogenous variables underlies the observed dichotomous outcome. Recent simulation work supports the use of WLSMV estimation over traditional estimation procedures, such as maximum likelihood, for structural equation models with categorical endogenous variables. [27] Finally, our measure for academic achievement in grade 5 was based upon parent and child report only, and did not include any objective indicators.

This study offered prospective longitudinal analyses, testing the theory that adaptation problems in various domains of adolescent development may create risk for adult depression. The results suggest that both early conduct problems and adolescent school failures are promising explanatory mechanisms for the development of depression among girls. This study highlights the mutual interplay between school and psychological functioning during adolescence and emerging adulthood, and offers several implications for adolescent health professionals. First, staying in school in adolescence should be promoted as one way to enhance

emotional well-being. Conversely, identifying girls with early conduct problems and school failures and reducing those problems might be a way to reduce later depressive symptoms. Second, if pathways toward depression differ by gender, this suggests that prevention strategies might need to be tailored to the unique needs of girls and boys. Third, a better understanding of the mechanisms of this school failure-depression pathway is needed to help identify the most salient potential targets that could be incorporated into efforts to break the chain of events leading toward depression for many girls.

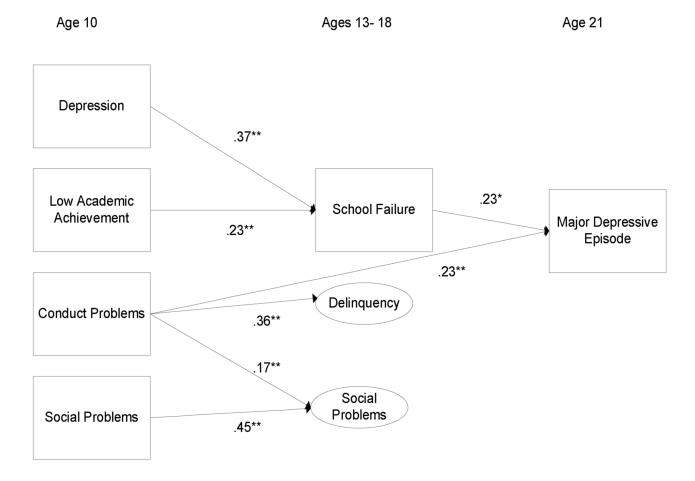
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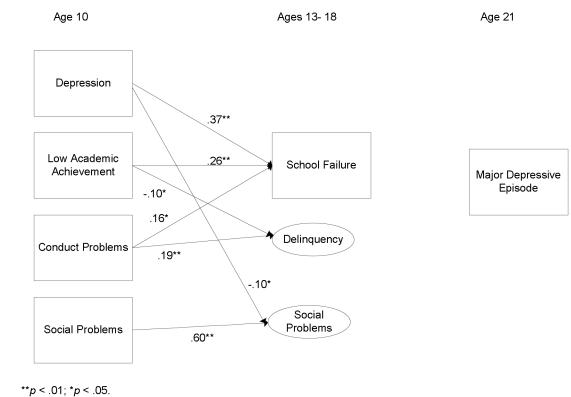
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**p < .01; *p < .05.

Note: Residuals were correlated for indicators measured at the same time point.

Figure 1. Model results for girls.



Note: Residuals were correlated for indicators measured at the same time point.

Figure 2. Model results for boys.

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Mean differences by gender

V11.	Boys	45	Girls	g	
variable	Mean	O.S.	Mean	OS.	191-1
Low Achievement (Grade 5)	0.10	68.0	-0.09	0.85	2.95
Social Problems (Grade 5)	0.06	0.92	90.–	0.78	1.94
Conduct Problems (Grade 5)	0.22	0.28	0.15	0.26	3.88**
Depressive Symptoms (Grade 5)	0.10	0.20	0.09	0.18	1.02
Social Problems (Grade 8)	0.37	0.36	0.39	0.31	0.61
Social Problems (Grade 9)	0.36	0.33	0.37	0.33	0.47
Social Problems (Grade 10)	0.34	0.31	0.35	0.28	0.47
Delinquency (Grade 8)	0.31	0.59	0.15	0.32	4.52**
Delinquency (Grade 9)	0.30	0.53	0.13	0.30	5.50**
Delinquency (Grade 10)	0.33	0.59	0.12	0.29	6.22 **
Delinquency (Grade 12)	0.29	0.52	0.09	0.19	7.15**

p < .05

Table 2

Correlation matrix by gender

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(U) Low Achievement 16 .08 .17 .09 .11 .15 .01 01 01 01 01 01 03 .04 .01 03 .01 06 .00 .00 .00 .17 .16 .22 .24 .20 .01 .00 .17 .16 .22 .24 .22 </th <th>Variable</th> <th>(1)</th> <th>(2)</th> <th>(3)</th> <th>(4)</th> <th>(5)</th> <th>(9)</th> <th>(7)</th> <th>(8)</th> <th>(6)</th> <th>(10)</th> <th>(11)</th> <th>(12)</th> <th>(13)</th>	Variable	(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)	(10)	(11)	(12)	(13)
s 10 -0.5 .64 .38 .36 .39 .04 .10 -0.10 .10 .10 .10 .10 .10 .10 .10 .10 .10 .11 .10 .11 .11 .12 .12 .13 .13 .13 .13 .13 .13 .13 .13 .14 .15 .14 .15 .14 <td>(1) Low Achievement (Grade 5)</td> <td></td> <td>.16</td> <td>80.</td> <td>.17</td> <td>60.</td> <td>.11</td> <td>.15</td> <td>.01</td> <td>03</td> <td>01</td> <td>90</td> <td>.30</td> <td></td>	(1) Low Achievement (Grade 5)		.16	80.	.17	60.	.11	.15	.01	03	01	90	.30	
s 10 -0.65 -0.65 -0.8 0.9 17 1.6 0.2 0.4 0.2 0.4 0.2 0.4 0.2 <td>(2) Social Problems</td> <td>.21</td> <td></td> <td>.05</td> <td>.54</td> <td>.38</td> <td>.36</td> <td>.39</td> <td>.00</td> <td>.10</td> <td>01</td> <td>.10</td> <td>.23</td> <td></td>	(2) Social Problems	.21		.05	.54	.38	.36	.39	.00	.10	01	.10	.23	
13 43 13 13 13 13 13 13 14 49 29 03 113 14 49 29 13 14	(Grade 3) (3) Conduct Problems	.10	05		80.	60.	.17	.16	.22	.24	.22	.29	.14	
13 48 15 46 49 49 15 11 36 15 15 15 15 15 15 16 17 18 17 18<	(4) Depressive	.22	.53	.01		.22	.28	.29	03	.13	.07	60.	.41	
mas .08 .16 .48 .56 .06 .16 .08 .16 .16 .18 .14 .18 .14 .14 .14 .14 .14 .14 .14 .14 .15 .19 .11 .10 .11 .12 .11 .12 .11 .12 .11 .12 .11 .12 .11 .12 .11 .12 .12 .12 .13 .14 <td>Symptoms (Grade 3) (5) Social Problems</td> <td>.13</td> <td>.48</td> <td>09</td> <td>.12</td> <td></td> <td>.46</td> <td>.49</td> <td>60:</td> <td>.15</td> <td>.11</td> <td>90.</td> <td>.15</td> <td></td>	Symptoms (Grade 3) (5) Social Problems	.13	.48	09	.12		.46	.49	60:	.15	.11	90.	.15	
ms 09 07 18 47 47 48 18 14 69 28 108 11 15 10 07 -0.20 -0.55 46 46 46 37 99 y 14 15 12 11 09 11 61 46 46 46 46 37 98 y 09 03 11 05 10 05 07 32 36 37 28 nee 32 25 19 26 29 39 36 36 37 37 38 sssive 34 37 36 36 36 36 36 37 37 38	(6) Social Problems	80.	.41	.00	.16	.48		.56	00.	.16	80.	.07	.18	
48 11 15 10 0.7 -0.5 -0.5 46 46 46 37 99 y 12 12 11 09 11 09 11 61 7 45 46 46 46 46 46 46 46 46 46 46 46 46 46 47 47 48 48 48 46 46 46 46 46 46 46 46 46 46 46 47 48 4	(7) Social Problems	60.	.07	00.	.18	.41	.47		.00	.18	.14	60.	.28	
quency .14 .15 .12 .11 .09 .11 .09 .11 .05 .07 .05 .07 .05 .07 .05 .07 .05 .07 .05 .07 .07 .07 .05 .07<	(S) Delinquency	80.	.11	.15	.10	.07	02	05		.46	.46	.37	60.	
quency .09 .05 .10 .06 .06 .06 .05 05 .40 .54 .54 .37 .28 qquency .09 .03 .11 .05 .10 .05 .07 .32 .36 .52 .25 .25 ol Failure .32 .19 .26 .29 .09 .08 .46 .61 .57 .33 Age 21) .07 .12 .03 .07 .13 .08 .17 .20 .15 .14 .29	(Grade 8) (9) Delinquency	.14	.15	91.	.12	.11	60:	.11	.61		.51	.45	.26	
y	(Orade 9) (10) Delinquency (Grade 10)	60:	.05	.10	90.	90.	.05	05	.40	.54		.37	.28	
ure 32 .25 .19 .26 .29 .09 .08 .46 .61 .57 .33 .38 essive 0.4 .07 .12 .03 .07 .13 .08 .17 .20 .15 .14 .29	(11) Delinquency (Grade 12)	60.	.03	.11	.05	.10	.05	.07	.32	.36	.52		.25	
essive .04 .07 .12 .03 .07 .13 .08 .17 .20	(12) School Failure (Grade 12)	.32	.25	.19	.26	.29	60.	80.	.46	.61	.57	.33		
	(13) Major Depressive Episode (Age 21)	.04	.07	.12	.03	.07	.13	80.	.17	.20	.15	.14	.29	

Note. Correlations for girls above the diagonal; boys below. Coefficients with absolute values greater than .10 are significant at p < .05, and greater than .13 are significant p < .01.

Table 3

Proportion of major depressive episodes (age 21) among women stratified by various school failure experiences (by grade 12)

		Percen	t with MDE	
Variable	Yes	No	Chi-square	p-value
Has Repeated a Grade (n=369)	29.5	19.5	2.88	.09
Has Dropped out of School (n=368)	32.5	17.5	8.11	.005
Expects to Graduate on Time (n=356)	19.8	29.1	3.74	.053
Has Been Suspended from School (n=368)	28.2	18.5	3.98	.046
Has Been Expelled from School (n=368)	44.0	19.5	7.08	.008