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# Risk Factors and Levels of Risk for High School Dropouts

*The study in this article identifies three major risk categories of high school dropouts and evaluates the impact of possible prevention strategies. As students accumulate these risks, they became more likely to drop out and prevention programs become less effective. Additionally, it was found that factors influencing the decision to drop out vary for different sources of risk, and thus there should be a range of prevention strategies offered to accommodate for this variance.*

Since the 1970s, there has been a growing effort to improve high school graduation rates. In 1983, the National Commission on Excellence in Education sounded the alarm because U.S. educational standards had fallen behind other major industrialized countries (National Commission on Excellence in Education, 1983). The commission called for a reform of the nation's educational system in fundamental ways and a renewal of the nation's commitment to high-quality education. Though these issues received increased attention following the commission's call, little research has been devoted to how much the likelihood of dropping out of school increases when students accumulate multiple risk factors.

Studies on high school dropouts have primarily been concerned with the identification of characteristics associated with dropout risk, and researchers have consistently found them in varied domains such as school, family, community, and the students themselves (Farmer & Payne, 1992; Gruskin, Campbell, & Paulu, 1987; Kronick & Harcis, 1998; Orr, 1987; Payne, 1989; Reyes, 1989; Roderick, 1993; Suh, Suh, & Houston, in press; Tindall, 1988; Valdivieso, 1986; Vallerand, Fortier, & Guay, 1997; Wehlage, 1989). Many researchers simply identified the multiple factors contributing to school dropout.

For example, Coley (1995) presented school-related problems such as disliking school, receiving poor grades, not being able to keep up with schoolwork, and not getting along with teachers as four of the top six reasons for dropping out. Devine (1996)

identified parents' low educational attainment, the number of household members, and lack of motivation as reasons why students with a low socioeconomic status (SES) drop out of school. Ekstrom, Goertz, Pollack, and Rock (1986) found that dropouts tend to be racial minorities from poor families. Students' deviant and resistant behaviors also were identified as strongly related to dropping out of school. Fine and Rosenberg (1983) indicated that high school dropouts challenge the dominant belief that education leads to success in life. Pittman (1986) and Tidwell (1988) pointed out that students' resistance and resentfulness toward the school community was a major variable in their decision to drop out.

Students' low level of engagement in their education has been considered by other researchers (Caraway, Tucker, Reinke, & Hall, 2003) as an important factor leading to higher dropout rates. Finn (1989) also proposed that behaviors associated with dropping out of school stem from a withdrawal from school life. A study of elementary and middle school students found that school variables were consistent predictors of alienation from school. The researchers noted that contrary to the generally accepted theory that alienation from school is a steady developmental process, alienation from school may not be overtly manifested until students reach high school.

Researchers also have found that the combination of two or more risk factors increases the likelihood of dropping out (Croninger & Lee, 2001; Farmer et al., 2004). When a student is exposed to multiple risk factors, he or she is likely to be less motivated to do schoolwork and to eventually drop out of school (Suh et al., in press). Farmer et al. also found that youth who experienced a single risk factor in early adolescence had moderately increased levels of school dropout, whereas youth with a combination of two or more risk factors had significantly higher dropout rates. They also examined the extent to which single- and multiple-risk profiles were evident in cross-sectional samples from inner-city and rural areas.

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Some researchers have tried to explain this dropout phenomenon by using interaction or cause-and-effect relationships of contributing factors. For example, Holt (1995) suggested that low achievers usually come to school lacking basic skills that are prerequisites for learning. Academic failure increases students' alienation from school, leading to absenteeism, which in turn increases dropout risk. Devine (1996) also speculated that potential dropouts might have behavioral problems as a result of lack of interest in school as well as poor academic performance.

Early prevention is one of the most often cited strategies for school completion. For example, child behavior researchers observed that early-school-age children with early assault conduct problems are at high risk for school dropout as well as substance abuse, violence, and delinquency in their later years. Consequently, developing treatment strategies to reduce conduct problems when aggression is in its more malleable form prior to age 8, and thus interrupting its progression, is of considerable benefit to both families and society (Webster-Stratton & Reid, 2003).

Researchers also have reported connections between measures of academic performance in early elementary school and dropout behavior before high school graduation (Barrington & Hendricks, 1989; Ensminger & Slusarcick, 1992). They emphasized the need to examine causes of dropping out before high school because many students drop out before the 10th grade. These observations are consistent with the suggestion in the growing literature on adolescent development that, because changing the performance path at the high school level is very difficult, school performance must be improved at an earlier point in the student's development to improve adolescent achievement (Entwisle, 1990). In a rural middle school study, Edmondson and White (1998) indicated that younger students were more open to support services, while older students might be more focused on peer approval and their need for independence. Also, because older children have been in school longer, they may have a stronger defeatist attitude than the younger students.

Among the characteristics associated with dropout, many researchers have identified three main risk indicators. They include poor academic performance (or low grade point average), low SES, and deviant behavior (or behavioral problems) (Ekstrom et al., 1986; Phelan, 1992; Rumberger, 1987; Suh et al., in press). Regardless of the source of risk factors, it is noteworthy that multiple risk factors contribute to and accelerate the risk of dropping out of school.

## PURPOSE OF THIS STUDY

The purpose of this study was to identify the factors

contributing to high school dropout and the extent of their impact on the likelihood of dropping out of school. Based on previous research, this study classified students into the three major at-risk categories of a low grade point average (GPA), low SES, and behavioral problems. Within each of these three at-risk groups, the study also examines variables that interact to increase the risk of dropping out. Four research questions were tested: (a) What are the most significant risk factors leading to school dropout? (b) How much does the combination of two or more risk factors accelerate the likelihood of dropping out compared to a single risk? (c) What are the predictive indicators within each risk group and how different are they across the different types of at-risk groups? (d) What kinds of prevention strategies are effective for different sources of risk?

## METHOD

### Data

Data from the National Longitudinal Survey of Youth (NLSY97) database from the U.S. Department of Labor were used in this study. Participants were selected using a nationally representative sample of approximately 9,000 youths who were 12 to 16 years old as of December 31, 1996. The Department of Labor conducted the initial survey (Round 1) in 1997. In that round, both the eligible youth and one of that youth's parents received hour-long personal interviews. Youths have been reinterviewed annually since then. Data from rounds 1–5 of the NLSY97/01 were released in August 2003. The data in this report excluded 2,792 students who either were enrolled in high school or were not enrolled but working toward a General Educational Development (GED) certificate, because they had neither completed high school nor dropped out. Composing the final sample were 3,111 males and 3,081 females who either completed high school or dropped out without receiving a diploma or a GED by December 31, 2000. Among the 6,192 students in the sample, 5,244 completed high school with a diploma or GED, and 948 did not.

### Procedure

To identify the common causes of dropping out from the NLSY97, this study considered 180 variables as possible contributing factors of dropping out of school. Drawn from numerous literary sources and empirical studies, these variables represent personal, behavioral, familial, school-related, and community-related aspects of students' school performance. Multiple logistic regression using the forward selection procedure was used to systematically screen all variables and arrive at a good parsimonious model (Tamhane & Dunlop, 2000).

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The screening process yielded 16 statistically significant predictors of high school dropout. They include (a) low grade point average in the eighth grade (GPA); (b) low socioeconomic status (SES); (c) students who were suspended (SUSPENSION); (d) students' expectations to stay in school the next year (INSCHOOL); (e) enrichment risk index (ENRICHMENT); (f) number of days absent from school (ABSENT); (g) whether the student lived with both biological parents as of 1996 (BIOPARENT); (h) physical environment risk index (PHYSINDEX); (i) first sexual experience at age 15 or prior (FIRSTSEX); (j) number of household members (HHSIZE); (k) percentage of peers planning to go to college (PEERS); (l) residence in metropolitan area (MSA); (m) region (REGION); (n) positive perception toward teachers (TEACHERS); (o) number of fights at school (FIGHT); and (p) if the student had been threatened with harm at school (THREAT).

Six are quantitative or composite index variables, and the remaining 10 variables are qualitative. The six quantitative/index variables are absenteeism, household size, number of fights at school, percentage of peers planning to go to college, enrichment risk index, and physical environment risk index. Quantitative variables were transformed into standard normalized variables for ease of interpretation. The qualitative variables were coded 1 if the statement was true or present and 0 if not. For example, a student was assigned a low GPA code value of 1 if he or she received a low GPA in eighth grade and a value of 0 if he or she received a medium or high GPA. The quantitative variables indicate the initial survey value. Two index variables, enrichment risk index and physical environment risk index, were calculated from a group of survey questions included in the NLSY97/01. The first includes educational enrichment activities and resources, and the second includes home and community environments.

The three variables of low GPA, suspension, and low SES received special attention in the coding procedure because these have been widely identified by researchers as major risk factors to dropout. Low performers were identified as students with an eighth-grade GPA of "half Cs and half Ds" or below (Suh et al., in press). The suspension category included students who had been suspended at least once. Low SES indicated students from families whose annual income was below \$30,000 in 1997. To distinguish between these risk factors and other predictors of dropping out, *risk factors* or *risk backgrounds* refers to students displaying one or more of the above three criteria. *Predictors of dropping out* refers to the remaining 13 independent variables.

The dependent variable (DROPOUT) represents high school dropout/completion. If a student grad-

uated high school with a diploma or received a GED, the dependent variable is coded as 0. If a student did not graduate and was not enrolled in high school in the survey year of 2001, the dependent variable is coded as 1.

# RESULTS

Table 1 shows two models (Model 1 and Model 2) of predictors of school dropouts. The columns of Table 1 denote the value of the regression coefficient, the significance level, and the probability values of the 16 predictors. Model 1 presents the initial estimation of school dropout with three at-risk factors (academic risk, low socioeconomic status, and behavioral problems) included in the regression model. The statistical significance of Model 1 points to a strong association between each risk factor and the likelihood of dropping out. The probability values represent the expected change in the probability of dropping out of school for every one-standard-deviation increase in the predictor variable. The change in the probability is obtained by subtracting 1 from  $\text{Exp}(B)$ , where the positive value represents an increase in the likelihood of dropping out and the negative value indicates a decrease. For example, academic risk (low GPA) increases the probability of dropping out by 115.9% ( $2.159 - 1 = 1.159$  or 115.9%), while socioeconomic risk (SES) and behavioral risk (SUSPENSION) increase the likelihood of dropping out by 75.0% and 77.5%, respectively.

Many students (1,395 youths) are exposed to multiple risk factors (two or three risks) rather than one alone. For example, 183 students have both academic and socioeconomic risks. If there exists a systematic relationship among risk factors, then multicollinearity is present and statistical difficulties arise in fitting the regression model unless extra predictor variables are deleted (Pedhazur, 1997). To minimize multicollinearity in the regression model and to facilitate the interpretation of risk backgrounds, we introduced the variable (RISK) of number of risk factors on behalf of the three at-risk variables of low GPA, low SES, and suspension. RISK is coded from 0 (no risk) to 3 (all three background risks). Model 2 shows predictors of school dropouts when the number of risk factors is included as a predictor. All other predictors remain the same as Model 1. The estimated coefficient on the RISK variable indicates that students with one risk factor have an 89.3 percent higher likelihood of dropping out than students who do not.

Table 2 is constructed to show four different logistic regression models according to the number of risk factors present. Because the number of risk factors is the most significant predictor of dropout and has one of the largest odds value, we need to

**Table 1. Summary of Logistic Regression Analysis for Variables Predicting Dropout (Baseline Model)**

Variable	Model 1			Model 2		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)
GPA	.769	.000	2.159	—	—	—
SES	.559	.000	1.750	—	—	—
SUSPENSION	.574	.000	1.775	—	—	—
RISK	—	—	—	.638	.000	1.893
INSCHOOL	-.237	.000	.789	-.235	.000	.791
ENRICHMENT	-.273	.000	.761	-.273	.000	.761
ABSENT	.230	.000	1.258	.230	.000	1.258
BIOPARENT	-.672	.000	.511	-.653	.000	.520
PHYSINDEX	.207	.000	1.230	.200	.000	1.222
FIRSTSEX	-.233	.000	.792	-.233	.000	.792
HHSIZE	.206	.000	1.228	.205	.000	1.227
PEERS	.171	.000	1.186	.717	.000	1.186
MSA	.324	.000	1.383	.318	.000	1.375
REGION	4.835	.001	125.816	4.638	.002	103.309
TEACHERS	.998	.002	2.714	1.010	.002	2.746
FIGHT	.126	.001	1.135	.123	.002	1.131
THREAT	-.132	.019	.876	-.130	.019	.878
Constant	-3.403	.000	.033	-3.389	.020	.034

*Note.* Nagelkerke  $R^2 = .305$  for Model 1 and  $.304$  for Model 2.  $-2 \log$  likelihood = 4105.397 for Model 1 and 4108.945 for Model 2. Percentage correctly predicted for high school completers =  $.853$  for Model 1 and  $.967$  for Model 2. Percentage correctly predicted for dropouts =  $.222$  for Model 1 and  $.217$  for Model 2.  $N = 6,192$ .

further investigate the role of this variable in the model. We estimated the probability of dropping out for four different groups of students by the number of risk factors: (a) students without any risk factors ( $N = 2,878$ ); (b) students with only one risk factor regardless of the source of the risk ( $N = 1,915$ ); (c) students with two risk factors ( $N = 1,112$ ); and (d) students with all three risk factors ( $N = 283$ ). The predictor variables used for analysis are the same as the predictors in Table 1 except that the variable “number of risk factors” is controlled instead of one of the other predictors.

In Table 2, the statistical significance of the predictors and the impact of possible prevention—the odds,  $\text{Exp}(B)$ —are significantly different from the results in Table 1. In the 0 Risk model, significant predictors of school dropout are expectations to stay in school, enrichment index, whether the student lived with both biological parents, physical environ-

ment risk index, household size, absenteeism, age of first sexual experience, and percentage of peers going to college. In the 1 Risk model, predictors are similar to the 0 Risk model with the exception that student residing in a metropolitan area, the number of fights in school, and whether the student has been threatened with physical harm in school are significant. In the 2 Risks model, the physical environment risk and the percentage of peers going to college are no longer significant. The most dramatic change is made in the 3 Risks model, where only four predictors (whether the student lived with both biological parents, household size, region, and absenteeism) are significant; all other predictors significant in the previous models are no longer significant.

The odds column,  $\text{Exp}(B)$ , varies significantly depending on the number of risks. In general, the odds of a unit or one-standard-deviation change in a predictor variable are large when the number of risks

**Table 2. Odds Ratio of the Multivariate Logistic Regression Model According to the Number of Risks**

Variable	0 Risk	1 Risk	2 Risks	3 Risks
INSCHOOL	.723 **	.766 **	.834 **	.934
ENRICHMENT	.561 **	.738 **	.855 *	1.155
ABSENT	1.468 **	1.170 **	1.214 **	1.548 **
BIOPARENT	.414 **	.658 **	.525 **	.442 *
PHYSINDEX	1.449 **	1.273 **	1.066	1.144
FIRSTSEX	.714 **	.766 **	.841 *	1.022
HHSIZE	1.198 *	1.169 **	1.188 **	1.431 **
PEERS	1.376 **	1.215 **	1.095	1.162
MSA	1.452	1.473 **	1.386 *	.684
REGION	.078	1.964	10516.73 **	194220.7 *
TEACHERS	.445	1.202	1.906	6.946
FIGHT	.952	1.513 **	1.151 **	.981
THREAT	1.176	.636 **	.869	1.053
Constant	.103	.134	.078	.087 *

*Note.* Nagelkerke  $R^2$  = .225 for 0 Risk; .181 for 1 Risk; .146 for 2 Risks; .214 for 3 Risks.  $-2 \log$  likelihood = 822.101 for 0 Risk; 1524.784 for 1 Risk; 1278.908 for 2 Risks; 342.266 for 3 Risks. Percentage correctly predicted for high school completers = .997 for 0 Risk; .974 for 1 Risk; .924 for 2 Risks; .730 for 3 Risks. Percentage correctly predicted for dropouts = .097 for 0 Risk; .111 for 1 Risk; .227 for 2 Risks; .600 for 3 Risks.  $N$  = 2,878 for 0 Risk; 1,915 for 1 Risk; 1,112 for 2 Risks; 283 for 3 Risks. \* $p$  < .05. \*\* $p$  < .01.

is small. For instance, a one-standard-deviation increase in the enrichment index decreases the probability of dropping out by 43.9% (.561 – 1 = –43.9 or –43.9%) for the 0 Risk model. In the 1 Risk and 2 Risks models, increasing the enrichment index by one standard deviation decreased the likelihood of dropping out by 26.2% and 14.5%, respectively. This implies that prevention strategies become less effective as the number of risks increases to two or three.

To determine the predictive indicators within each risk group (low SES, low GPA, and suspension) and how they differ from each other, we ran another logistic regression analysis for students who drop out of high school. Because we wanted to determine the differences between each at-risk group, each sample included students with only one of the three risk backgrounds (see Table 3). The first model (0 Risk) is the same as the one in Table 2. For the remaining three models (low GPA, low SES, and suspension), the samples are mutually exclusive because the sample for multiple risks such as a low academic performer with behavioral problems is excluded. The sample size is 465 for low GPA, 644 for low SES, and 806 for those who had been suspended.

Models in Table 3 show that the magnitude of the odds and the level of significance of predictors are quite different for each risk factor. The GPA model shows statistical significance for the four independent variables of whether the student expects to be in school the next year, absenteeism, age of first sexual experience, and percentage of peers going to college. The actual dropout rate for this type of at-risk student is 15.9% (74 out of 465), the lowest among the three types of risk. In the SES model, the statistically significant predictors are enrichment index, physical environment risk index, household size, whether the student expects to be in school the next year, and age of first sexual experience. The dropout rate for students with a low socioeconomic status is 16.6% (107 out of 644). The model of students who are suspended shows that as many as nine independent variables are significant predictors of school dropout. The actual dropout rate for this type of at-risk student is 18.1% (146 out of 806), the highest among the three types of at-risk.

The only significant predictor ( $p$  < 0.05) in all four models is whether the students expect to attend school the upcoming year; the other predictors are

**Table 3. Odds Ratio of the Multivariate Logistic Regression Model for Single At-Risk Students**

Variable	GPA	SES	SUSPENSION
INSCHOOL	.674 **	.676 **	.783 *
ENRICHMENT	.799	.658 **	1.162 *
ABSENT	1.367 *	1.131	.591 *
BIOPARENT	.919	.562	1.352 *
PHYSINDEX	1.070	1.278 **	.850 **
FIRSTSEX	.738 *	.667 **	1.150
HHSIZE	1.047	1.286 **	1.252
PEERS	1.300 *	1.154	1.686 *
MSA	1.289	1.382	20.823 **
REGION	1.184	.176	1.178
TEACHERS	.871	8.644	1.569
FIGHT	1.435	1.742	.632 **
THREAT	.684	.397	.091 *
Constant	.164	.131	.841

*Note.* Nagelkerke  $R^2$  = .119 for GPA; .226 for SES; .212 for SUSPENSION.  $-2 \log$  likelihood = 370.774 for GPA; .226 for SES; .212 for SUSPENSION. Percentage correctly predicted for high school completers = .987 for GPA; .961 for SES; .965 for SUSPENSION. Percentage correctly predicted for dropouts = .055 for GPA; .170 for SES; .171 for SUSPENSION.  $N$  = 465 for GPA; 644 for SES; 806 for SUSPENSION. \* $p$  < .05. \*\* $p$  < .01.

partially significant depending on the association of background risks. This implies that the student's expectation to be in school next year (INSCHOOL) is the most reliable predictor regardless of risk type. Because the actual significance of any predictor varies across the risk factors, possible prevention strategies also will vary in their effectiveness.

## DISCUSSION

Results from the analysis of the National Longitudinal Survey of Youth database provide valuable information on the characteristics of high school dropouts and possible strategies for dropout prevention and intervention efforts. First of all, as is extensively addressed in the existing literature, we found the three risk factors of academic failure, low socioeconomic status, and behavioral problems to have a major impact on the decision to drop out of school. Besides these three risk factors, 13 other predictors (see Table 1) also were found to be statistically significant. However, the purpose of this study was not limited to identifying risk variables, but also to further examine the extent of their impact on the

likelihood of dropping out of school and how much the combination of two or more risk factors accelerates the likelihood of dropping out. We also examined what are the predictive indicators within each risk group and how they differ across the different types of at-risk groups. Ultimately, this study was intended to explore what kind of prevention strategies would be effective for at-risk adolescents with different sources of risk.

While it appears that academic risk (low GPA) has the greatest impact on dropout rates, the current results indicate that all three factors (low GPA, socioeconomic status, and behavioral problems) have an almost equivalent effect on dropout rates when examined independently. Therefore, developing dropout prevention programs that target students with only an academic risk factor may not be as effective as possible. First, programs that target students with academic risk alone may overlook students who display one or both of the other two risk factors but not a low GPA. Second, because students with a low GPA may very likely have other risk factors that result in a low GPA, the program may not sufficiently meet their needs. According to our data, pro-

grams that target students at-risk academically have a very high possibility of including students with other risks. The number of students who have only a low GPA is 7.5% (465 of 6,192). However, 8.8% (543 of 6,192) displayed both a low GPA and behavioral risks, 3.0% (184 of 6,192) displayed a low GPA and low SES, and 4.6% (283 of 6,192) displayed all three risks. The total number of students with more than one risk is 16.3% (1,009 of 6,192), far more than those with an academic risk alone.

Our study also indicated that early prevention and intervention efforts are critical. As students accumulate risk factors, they become more likely to drop out, and possible intervention efforts become more limited. The dropout rate for students with one risk is 17.1%, for two risks it is 32.5% (90.1% increase), and for three risks it is 47.7% (178.9% increase). Considering that many students (1,395 youths) who dropped out exhibited multiple risk factors, early prevention and intervention efforts when students display no or one risk factor for dropout are highly recommended.

As the number of risk factors increases, not only do the dropout rates rise dramatically, but the number of significant predictors decreases. This decrease may limit prevention methods. Students who exhibited two or fewer risk factors had 8 to 11 significant predictive indicators, but only four predictors were significant among those students with all three risk factors. Therefore, the fewer risk factors the students have, the more likely it is that multiple predictors will influence their decision to drop out of school. Multiple intervention methods may be needed to help these students stay in school.

Additionally, this study implies that interventions are more effective when students display fewer risk factors. This can be seen in the odds ratio,  $\text{Exp}(B)$ , where the odds of a unit or one-standard-deviation change in a predictor variable are large when the number of risks is small. For example, a one-standard-deviation increase in the enrichment index decreases the likelihood of dropping out of school by 43.9% in the 0 Risk model, 26.2% in the 2 Risks model, and 14.5% in the 3 Risks model.

Finally, although the three risk factors have a major impact on dropout (17.0%, 32.5%, and 47.7% dropout rate for one risk, two risks, and three risks, respectively), some students dropped out even when they displayed none of these risk factors. The current study found that the dropout rate for students who exhibited no risk factors but still dropped out is 4.3%, and eight predictive indicators impacted the decision of these students (see Table 2). Developing school-wide dropout prevention programs around these indicators would reach students who display no risk factors, reducing their likelihood of dropping out. By being sensitive to the impact of these indicators on students' lives and creating programs to

aid students in effectively dealing with them, school counselors could contribute to decreasing the dropout rate.

The findings of this study could be useful when school counselors develop dropout prevention programs targeted to one at-risk group or another. The predictors targeted by these intervention programs should differ depending on the students' risk factors, as different predictors affect each group of students differently. For example, for the group of students with only academic risk, counselors may want to work around the following four topics: (a) examining and developing plans for the coming year (expectations to stay in school); (b) identifying factors interfering with attendance and generating strategies to improve attendance (absenteeism); (c) exploring the impact of peers on students' aspiration for higher education (percentage of peers going to college); and (d) understanding the physical, social, and psychological development of students and increasing a sense of respect for their own body (age of first sexual experience). Among these four predictors, absenteeism and peer relations appeared to have a higher impact on dropout than the other two indicators; therefore, programs with limited time or resources may find more success by focusing on these two indicators.

Likewise, for the group of students with low SES, this study identified five significant risk factors: (a) students' expectations to stay in school, (b) age of first sexual experience, (c) limited educational enrichment activities and resources, (d) risk of harm from the students' physical environment, and (e) household size. While students' expectations to stay in school and age of first sexual experience also were predictors in the academic risk group, the other three are unique to this group. Therefore, counselors need to help the students explore and identify negative impacts of their limited resources and disadvantaged environments on their academic achievement and develop strategic plans to raise their resilience against these difficult situations. Specifically, because physical environment and household size are the two most significant predicting factors, prevention programs should emphasize the nature of their impact on students' academic achievement and strategies to counteract that.

The third type of at-risk group, students with behavioral problems, including suspension from school, has nine factors influencing the decision to drop out, more than the other two groups. Five are shared with other groups, while the remaining four are unique to the behavioral group. The five shared factors are (a) students' expectations to stay in school, (b) absenteeism, (c) association with college-bound peers, (d) limited educational enrichment resources, and (e) unhealthy community and family

**We found the three risk factors of academic failure, low socioeconomic status, and behavioral problems to have a major impact on the decision to drop out of school.**

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students who  
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and parents in  
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consultation  
activities.**

environment. The four factors unique to this group are (a) the possible impact of living with a nonbiological parent, (b) the effects of living in a metropolitan area, (c) participation in fights at school, and (d) whether the student had been threatened with harm at school.

In the behavioral group, many of these indicators reflect the special difficulties associated with living in a metropolitan area. Therefore, prevention efforts directed to students with behavioral problems in metropolitan areas need to address specifically how living in those areas can affect students' decisions to drop out. Residence in a metropolitan area is the largest risk indicator for students with behavioral troubles, but programs also should address these students' peer relationships, the possible emotional impact caused by living with a nonbiological parent, and the educational climate of their living environment.

Finally, this research identified that a student's expectation to attend school the next year is the only significant predictor in all four risk models. Other predictors are only partially significant depending on the risk source. This implies that a student's expectation to be in school the next year is the most reliable predictor regardless of the risk type. This finding confirms the existing literature (Finn, 1989; Rumberger, 1987; Trusty, 1996; Trusty & Dooley-Dickey, 1993) that underscores the major role of student engagement with the school on eventual school completion. This indicates that school-wide dropout prevention and intervention efforts should address students' educational aspirations and plans for the coming years. This might further imply that career exploration and counseling should be given a priority in the secondary school counseling program development. Students' educational expectations have a critical impact on their decision to either continue or suspend their education in high school whether or not they display at-risk status by experiencing risk factors (academic difficulty, low SES, or behavior problems). Therefore, by developing programs to help students develop optimistic outlooks of their educational development, school counselors could prevent students from dropping out of school.

### **Limitations**

It is important to note that the adolescents in this study were 12 to 16 years old as of 1996 and, thus, may not fully reflect the behavior of current high school students. Risk factors considered in this study are limited to the three major at-risk factors. Further research is clearly needed in order to better understand individual, home, and school influences of factors beyond the three risk factors identified in this investigation.

### **Conclusion**

The American School Counselor Association (2005) recommends that each school or district develop a school counseling program aligned with the school or district's academic goals. In schools or districts where dropout is an increasingly troublesome problem and where raising the graduation rate becomes a critical goal, it is recommended that school counselors examine the characteristics of at-risk dropout students in their schools, keeping in mind the findings of this study. This investigation will help school counselors tailor their efforts to the unique needs of their student population.

Three differences were found between the existing literature and the findings in this study. First, this study attempted to develop the concept that early intervention should be based upon the number of risk factors that students display rather than using age- or grade-based reference. Early intervention implies early school age or a lower grade level of the student in most existing dropout literature (Fasko & Fasco, 1998; Lehr, Hansen, Sinclair, & Christenson, 2003; O'Connor, 1985; Rush & Vitale, 1994). Waiting until high school to address the dropout issue may be too late for most students. However, redefining early intervention as intervention when students display one of the three risk factors of low GPA, low SES, or behavioral problems can be useful at any level of school. By identifying students when they develop one or two risk factors, regardless of their school level or age, prevention programs can possibly effectively lower dropout rates. Additionally, we believe that possible prevention strategies should take into account that factors contributing to dropping out differ according to the risk each student displays.

In order to identify students who display a risk factor, school counselors need to actively involve teachers and parents in collaboration and consultation activities. It is also imperative that school counselors serve as advocates for students from low socioeconomic backgrounds and work closely with school authorities and community members to provide a better educational environment for this group of students. Students from a low socioeconomic background are more likely to drop out because of the lack of educational enrichment activities and resources, and the impact of their community environments on their lives. These findings urge school counselors to assist these students by helping them understand how their environment causes development of negative self-concepts and beliefs, therefore adversely impacting their schoolwork. At the same time, counselors may want to help these students develop resilience against these obstacles.

In summary, this study identified three major at-risk categories of students who drop out of school.



This study also found that students who drop out often have multiple risk factors influencing their decision. Because these risk factors are often firmly in place by high school and occur in conjunction with each other, this study supports the need for early intervention when younger students are more likely to display fewer risks. This study also identified the different predictors associated with each at-risk group. By knowing which predictors are more significant in each at-risk group, school counselors can better tailor dropout prevention programs to their students. ■

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