Main Predictors of School Problems among Foster Care Youth

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Abstract

Recent research studies have shown that foster care youth are lagging behind other children in the classroom (Collins, 2004; DeAngelis, 2004; Dilley, Weiner, Martinovich, & Lyons, 2004). Thus, this research study proposes to explore aggregate of factors responsible for the academic struggles of foster care youth. Older Youth from diverse ethnic background in foster care often mediate the impact potentiated by adverse life circumstances on harmful developmental outcomes (Osgood, Foster, Flanagan & Ruth, 2005). Relevant Research study literature shows this group is the most over represented and under serviced members of the child welfare system (O'Brien, Williams, Pecora, English, & Kessler, 2009). The Urban Institute (2014), states that in the past decade foster-care expenditures for children from diverse ethnic background totaled $14.4 billion. In addition, each year, 30,000 alumni "age out" of foster care. These are alumni who exit the foster-care system only because they reach the age of 18, not because they are reunited with their families, are adopted, or leave to attend college. Prior longitudinal research has shown that the nearly 80% of the alumni who are emancipated at the age of 18 failed to obtain a high school diploma. This paper used Binary Logistic regression analysis to examine the predictive relationships between the variables and test the study research question.

Keywords: Foster care, strengths and needs, school problem, logistic regression

Introduction

Foster care students have been an unidentified at-risk population for decades with little focus on this population and the causes of their limited success (Weinberg, 2014; Zetlin, 2012). The National Center for Education Statistics revealed that between the years 2000 and 2010, the number of foster care students has grown to two million children worldwide, and within the United States 400,000 children are identified within the foster care system (Watson & Kabler, 2012). According to the United States Department of Health and Human Services (2014), children and adolescents are placed in state foster-care agencies due to of one or more types of maltreatment. The foster-care system is a coordinated set of services for children (infants to age 21, but often to age 18, depending on each state's laws). Children and adolescents may be removed from the custody of biological parents and placed in a foster-care home either short term or permanently if found to be victims of maltreatment (Pecora, 2007: Weinberg, 2014; Zetlin, et al., 2004).

Currently, one of the most challenging and controversial issues facing the child welfare system is the disproportionate number of children from diverse ethnic background in foster-care placements. In fact, 58% of the foster-care populations are children of diverse background (African-American/Black, Latino/Hispanic, Asian, and Native American/Indigenous); many of these children will remain in foster-care placements until they are emancipated at age 18 Weinberg (2014).

African-American children alone represent 36% of the ethnic group placed in CPS agencies nationwide, a significantly higher share than the number of African American children in the general population (O'Brien, Williams, Pecora, English, & Kessler, 2009; Pecora, 2007; Weinberg, 2009). According to Watson and Kabler, (2012), during the past decade foster-care expenditures for children from diverse ethnic background totaled $14.4 billion. In addition, each year, 30,000 alumni "age out" of foster care. These are alumni who exit the foster-care system only because they reach the age of 18, not because they are reunited with their families, are adopted, or leave to attend college. Prior longitudinal research has shown that nearly 80% of the alumni who are emancipated at the age of 18 failed to obtain a high school diploma. Current research suggests that children from diverse ethnic background in foster care are more likely than those in the general population to have lower educational-achievement outcomes and repeat a grade level. Research studies have uncovered several factors that account for these educational-achievement disparities, specifically among children from diverse ethnic background (*Collins, 2004;* Ward, 2009). Clearly, the child-welfare and educational systems have failed to provide specific remedies to facilitate positive educational achievement among this subgroup of foster-care population.

Nevertheless, recent investigations indicate that strengths, both those possessed by the individual, and those present in her/his environment, exert short and long-term protective effect that buffers the impact of needs. Findings of a longitudinal research study conducted by Mason and Windle (2002) help legitimate the emerging popularity, among providers and consumers, of strengths-based interventions for youth. Strengths based interventions are derived from the system of care philosophy, a treatment model that aims to utilize individual and environmental resources in therapeutic processes.

The U.S. Department of Health and Human Services (2014) suggested that utilizing strengths in treatment promotes positive outcomes and that strengths-based interventions may be more effective than traditional, deficit-based services. Nonetheless, questions remain regarding the clinical utility of strengths. This paper proposes that answers to these questions can be approached by delineating the pattern of relationships between strengths and needs across time in an at-risk youth population. The excess of one half-million youth in foster care across the United States represents a group at high risk for undesirable outcomes. Thus, this study examines the longitudinal pattern of correlations obtained between strengths and needs in a sample of 100 foster care youth receiving System of Care services. Strengths and needs each were measured at specific and aggregate levels with the Child and Adolescent Needs and Strengths (CANS) Assessment (Sullivan, et al, 2010)**.** For the purposes of this study, strengths will be defined as positive attributes belonging to the child, his/her family, or his/her community that promote the child's wellbeing and healthy development. In contrast, needs will be defined as negative elements exhibited by the child, his/her family, or his/her community that places the child at risk for maladjustment and undesirable outcomes. Recent research indicates that the strengths possessed by disadvantaged youth, especially if identified and cultivated, may mediate the harmful developmental impacts potentiated by adverse life circumstances (Reynolds, 2011; Tyre, 2012; Pears, et al, 2015).

Subsequently, the study aimed to better understand the processes by which strengths may act as mechanisms of clinical improvement by delineating the influences of strengths upon developmental outcomes. Twenty percent of children and adolescents around the world endure mental health problems, but most are underserved or receive services not appropriate for their conditions Perhaps most in need of quality services are the 550,000 children and adolescents in foster care (DeAngelis, 2004; Pears, et al, 2015; Sullivan, et al, 2010; Ward, 2009). The study tested the suitability of the community and strengths-based model for the system of care targeting the identification of factors to be used in the prevention of negative outcomes for juveniles. This was accomplished by testing the following research questions:

- Is there a significant relationship between Strength/Needs relationship and School Problem?
- Which are the main predictors for academic achievement among foster care youth in Texas in the areas of interpersonal problems, decision-making, family conflict, school problem, depressive issues, anxiety, self-efficacy and future orientation.

Method

Participants

The sample for this study was drawn from a population of clients served by the Garner & Associates during 2016. The Garner & Associates is a community based organization that offers services focusing on improving the quality of life and empowerment of individuals, and families in Houston, Texas.

Foster care clients were requested to complete a demographic and attitudinal questionnaire at the time of intake. Secondary data was used to generate a subset data file, targeting a systematic random sampling of n=100.Subsequently, the data collected was entered into the Statistical Package for Social Sciences (SPSS) and used to assess strengths, limitations and academic propensities of high school students. The data collection took place in November 2016, and contained no identifiable personal information from any of the participants. The sample for this research study included 100, 15-20-year-old male and female teen/young adults. The sample size was determined by power analysis using Lenth's (2006) computer software employing a medium effect size of 0.3, alpha set at 0.05, and power of .80. By setting the alpha level at .05, it was calculated that a sample size of 84 respondents would result in a power of .80. Since the present study had a sample size of 100 participants, it met and exceeded the sample size and power recommendations, which precludes type I error (the incorrect rejection of a true null hypothesis, "false positive"), and a type II error (incorrectly retaining a false null hypothesis, or a "false negative").

Instrumentation

The Child and Adolescent Needs and Strengths (CANS) was used in the data collection for the study. The Child and Adolescent Needs and Strengths is a multi-purpose tool developed to support care planning and level of care decision-making, to facilitate quality improvement initiatives, and to allow for the monitoring of outcomes of services. The psychometric properties of the CANS facilitate the linkage between the assessment process and the design of individualized service plans including the application of evidence-based practices. Data analysis indicated that the CANS were developed to measure academic success within the context of eight latent variables (*Interpersonal Problems, Decision Making, Family Conflict, School Problem, Depressive Issues, Anxiety, Self Efficacy and Future Orientation).* Reliability of scores for this instrument was established using Cronbach's coefficient alpha. The internal consistency coefficient was appropriate and averaged .800 for the eight resources category scales.

Statistical analysis

Scores from the GLV Surveys were used to generate descriptive statistics and analyze all variables. Next, correlation statistics were performed with Statistical Program for Social Sciences (SPSS) for regression analyses to test the study research question. To answer the research question regarding the main predictors for *School Problem* among foster care youth in Texas, the researcher used a binary logistic regression as it permits the identification of predictor variables and dependent variable while holding other variables constant (Dattalo, 1994; Morrow-Howell & Proctor, 1992). Logistic regression assesses the effect of multiple independent variables presented simultaneously to predict membership of one or more dependent variable categories. Thus, the dependent variable was operationalized as dichotomous variable and regressed on a set of independent variables-strength/needs.

Binary logistic regression is a suitable statistical method for assessing the relationship between one nominal-level, dichotomous dependent variable and several independent variables as it treats the dependent variables as a probability value. Interpretation of the logistic regression analysis was done through the regression coefficient B, exponential B, standard error, and the Wald statistic (Dattalo, 1994; Menard, 1995). The composite variable, (computed sum of all the indicators of the latent variable – *Schoolproblem*) *School Problem* was re-coded into a dichotomous variable for the purpose of running a binary logistic regression. Subsequently, *High School Problems* was used as a dependent variable assessed by the students' binary *School Problem* scores and entered in an SPSS data file as Low Levels of High School Problem (27 or lower) and High Levels of High School Problem (28 or higher).

Pearson correlation coefficient analysis assessed the strength of the bivariate relationship between *School Problem* and each of the seven predictor's variables. All correlations in this study were tested at the $p < .05$ level of significance. The correlation matrix is shown in Table 2. The logistic regression analysis focused on the coefficients for the independent variables. The column labeled B, provide the unstandardized coefficients, which are the values for the logistic regression equation for predicting the dependent variable from the independent variable. The Regression Coefficient B was interpreted as estimate for the amount of change in the log odds of the dependent variable for one unit change in the independent variables while controlling for the other variables in the equation. It is noteworthy that each Regression Coefficient B represented "the change in the natural logarithm of the odds ratio" (Wright, 1995, p. 223).

All independent variables in this analysis had standard errors smaller than 2.0. The S.E. or Standard Error is an index of the accuracy of the logistic regression equation, and the equivalent of the standard deviation. When the standard errors of the estimate are smaller the prediction tends to be more accurate as it indicates a better model fit. A sample size resulting in a power of .80 can use the Wald statistic to test whether a coefficient equal zero as Wald statistic is the square of the ratio of the coefficient to its standard error. The significance of the coefficients is determined by a "Wald Test." Thus, the Wald statistic (chi-square distribution) was used to test whether strengths/needs factors were a significant predictor of the outcome variable at $p < .05$. The Exp(B), which is the exponentiation of the coefficients or the odds ratios for the predictors was used to assess the relative odds or odds ratio for the contextual variables in the model (Menard, 1995; SPSS, 2012). Table 6, summarizes the logistic regression results of the contextual variables. Descriptive statistics were tabled separately to describe the demographic characteristics of the participants of this study.

Findings

The results of the present study reflect the statistical analyses, which were done in two parts. The first part of the analysis summarizes descriptive statistics regarding the characteristics of the study participants as shown in Table 1. Of the 97 participants, 58.2% (n = 57) were female and 40.8 (40) were males. 85.7% were African-American (n = 84); 6.1% (n=6) of the participants classified themselves as Hispanics. 5.1% of the participants were Anglo Americans (n=5) as reflected in figure 1.

Table 1: Demographic Variables

My Gender is:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	40	40.8	41.2	41.2
	Female	57	58.2	58.8	100.0
	Total	97	99.0	100.0	
Missing	System	1	1.0		
Total		98	100.0		

My race and or Ethnicity is:

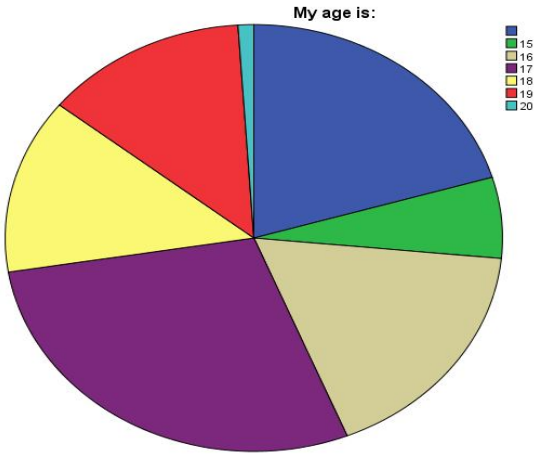
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	84	85.7	86.6	86.6
	Latino	6	6.1	6.2	92.8
	White	5	5.1	5.2	97.9
	Other	2	2.0	2.1	100.0
	Total	97	99.0	100.0	
Missing	System	1	1.0		
Total		98	100.0		

My age is:

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		20	20.4	20.4	20.4
	15	6	6.1	6.1	26.5
	16	17	17.3	17.3	43.9
	17	28	28.6	28.6	72.4
	18	13	13.3	13.3	85.7
	19	13	13.3	13.3	99.0
	20	1	1.0	1.0	100.0
	Total	98	100.0	100.0	

Most of the participants (n= 28; 28.6%) were of 17 years of age, followed by the second largest age group, which was the 16-year-old group (n= 17; 17.3%). Subsequently, the 18 and 19-years old comprised 13.3% (n=13) of the sample as reflected in figure 1.

Figure 1: Age Groups



The second part of the results discusses answers to the assessment question, which examined if a set of independent variables reflecting strength and needs of the students were a significant predictor of *school problem*. Firstly, a Pearson correlation was run to test the association between Strengths/Needs constructs and *school problem* at the .05 level of significance, as shown in Table 2.

Table 2: Correlation Matrix

		Constant	Inter_problems	Dicision	F_conflict	Depress	Anxiety	Selfefficacy	F_orientation
Step 1	Constant	1.000	-.228	-.122	-.021	.004	-.271	-.229	-.360
	Inter_problems	-.228	1.000	-.223	-.165	.001	-.261	.004	-.081
	Dicision	-.122	-.223	1.000	-.212	-.210	.058	.028	-.310
	F_conflict	-.021	-.165	-.212	1.000	-.363	.063	-.130	.035
	Depress	.004	.001	-.210	-.363	1.000	-.460	-.297	.050
	Anxiety	-.271	-.261	.058	.063	-.460	1.000	.044	-.082
	Selfefficacy	-.229	.004	.028	-.130	-.297	.044	1.000	-.130
	F_orientation	-.360	-.081	-.310	.035	.050	-.082	-.130	1.000

The bivariate relationship between the dependent variable and most of the predictor variables was not significant in relation to *school problem*; however, two variables were found to be significant. They were: Depressive Issues, and Self Efficacy shown a model fit statistics close to the $p < .05$ level of significance, see Table 3.

Table 3: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	INTERPERSONALPROBLEMS	.046	.047	.959	1	.328	1.047
	DICISIONMAKING	.025	.067	.140	1	.709	1.026
	FAMILYCONFLICT	-.013	.103	.017	1	.897	.987
	DEPRESSIVEISSUES	-.133	.069	3.761	1	.052	.875
	ANXIETY	.072	.043	2.864	1	.091	1.075
	SELFEFFICACY	.297	.112	6.991	1	.008	1.346
	FUTUREORIENTATION	.070	.064	1.187	1	.276	1.073
	Constant	-3.020	1.070	7.973	1	.005	.049

a. Variable(s) entered on step 1: INTERPERSONALPROBLEMS, DICISIONMAKING, FAMILYCONFLICT, DEPRESSIVEISSUES, ANXIETY, SELFEFFICACY, and FUTUREORIENTATION.

Furthermore, logistic regression analysis of Strengths/Needs scores on binary *School Problem* group (HIGH/LOW) was conducted to test the assessment questions: • RQ1. Is there a relationship between individual student Strengths/Needs (INTERPERSONALPROBLEMS, DICISIONMAKING, FAMILYCONFLICT, DEPRESSIVEISSUES, ANXIETY, SELFEFFICACY, and FUTUREORIENTATION) and *School Problem*? • RQ2. Which are the main Strengths/Needs responsible for *School Problem*? The variables in the equation, Table 4. shows the logistic coefficient (B) as estimate for the effect associated with intercept-only model, which is (odds) = .730. In other words, it represents "the change in the natural logarithm of the odds ratio" (Wright, 1995, p. 223).

Table 4: Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.440	.208	4.474	1	.034	1.553

The Exponential B (Exp(B) = .440) represents the odds ratios or exponential values of the regression coefficient for constant. Since the Exp(B) is greater than one (1.553), the exponential coefficient of the constant is transformed into negative, which implies that the overall model was statistically reliable in predicting students Strengths/Needs to *School Problem*. Study results showed in the Classification Table, (Block 0: Beginning Block) of the Non-Model indicated that 38 of the respondents were predicted to have lower levels of school problem and 59 of the respondents were predicted to have higher levels of school problem with 60.8% classification accuracy as demonstrated in Table 5.

Table 5: Classification Table [a,b]					
Step 0	Academic Challenge	Low level of School Problem	0	38	.0
		High level of School Problem	0	59	100.0
	Overall Percentage				60.8
a. Constant is included in the model.					
b. The cut value is .500					

Moreover, Table 6. Shows statistical evidence of the presence of a relationship between the dependent variable and the combination of independent variables. The model chi-square is 22.501, which is statistically significant at $p<0.002$. Subsequently, the null hypothesis that there is no difference between the model with only a constant and the model with independent variables was rejected. The existence of a relationship between the independent variables and the dependent variable was supported. Subsequently, the assessment first research question (Is there a relationship between individual student Needs/Strengths and School Problem) has been answered.

Table 6: Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	22.501	7	.002
	Block	22.501	7	.002
	Model	22.501	7	.002

In order to determine if the assessment study had a good model to explain variation in the dependent variable, the Cox and Snell pseudo R2 statistic reported in Table 7 was examined. The statistical indices displayed in Table 5. indicated that 20.7 to 28.1 of the variance in the outcome variable was explained by the two independent variables (*Depressive Issues and Self Efficacy)*, in the model. Larger pseudo r-square statistics could have explained more of the variation in the dependent variable in the model.

Table 7: Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	107.387[a]	.207	.281
a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.			

Table 8. Include the Logistic Regression coefficients of the independent variables. Schumacker and Lomax, (2004). Recommend presenting the results in odds ratio when the study is interested in the impact of the independent variables, controlling for the effects of other variables in the model. According to Rubin & Babbie, (2010), the odds ratio "represents the increase or decrease in the odds of being classified in a category when the predictor variable increases by one" (p.318). Tables 8 Summarizes the logistic regression results of HIGH/LOW *High School problem* groups.

Logistic Regression results indicated two variables had significant statistics: *Depressive Issues and Self Efficacy* variables. Predictor variables that were particularly non-significant with the dependent variable were excluded for the logistic regression analysis. Table 8. Shows the results of the logistic analysis which explores the main factors that influence *School Problems*. The variables INTERPERSONALPROBLEMS, DICISIONMAKING, FAMILYCONFLICT, ANXIETY and FUTUREORIENTATION do not contribute to the model as P is larger than the acceptable .05 level of significance. The variables DEPRESSIVEISSUES and SELFEFFICACY, however, had significant statistical fit at the .05 level of significance. The model fit statistics for the measurement models are summarized in Table 8.

Table 8. Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	INTERPERSONALPROBLEMS	.046	.047	.959	1	.328	1.047
	DICISIONMAKING	.025	.067	.140	1	.709	1.026
	FAMILYCONFLICT	-.013	.103	.017	1	.897	.987
	DEPRESSIVEISSUES	-.133	.069	3.761	1	.052	.875
	ANXIETY	.072	.043	2.864	1	.091	1.075
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	FUTUREORIENTATION	.070	.064	1.187	1	.276	1.073
	Constant	-3.020	1.070	7.973	1	.005	.049

a. Variable(s) entered on step 1: INTERPERSONALPROBLEMS, DICISIONMAKING, FAMILYCONFLICT, DEPRESSIVEISSUES, ANXIETY, SELFEFFICACY, and FUTUREORIENTATION.

DEPRESSIVEISSUES yielded a b of 133, S.E. = 069, Wald = 3.761, P < .05 and the Exp(B) was .875. Statistical indices indicated that when this variable (DEPRESSIVEISSUES) increases one unit, there is a 13.3 increase in the logit (probability) of students experiencing higher levels of *Scholl Problems*. This variable, (DEPRESSIVEISSUES), is a significant predictor of school problem, which was statistically significant at the p < .05 level of significance.

For the latent variable, SELF_EFFICACY, the b was .297, SE = .112, Wald = 6.991, P < 008. And the Exp (B) was 1.346. Statistical indices indicated this variable; SELF_EFFICACY is also a significant predictor of school problem. Wald statistic for the variable SELF_EFFICACY was 6.991, indicating a strong reliability of this variable as a predictor in the model, at P < .05 level of significance. The null hypothesis that the b coefficient for the variable SELF-EFFICACY Income was equal to zero was rejected. This supports the relationship that "survey respondents who had lower levels of SELF-EFFICACY had higher levels of School Problems.

The value of b was -.297, Exp(B) was 1.346, which implies that one unit increase in SELF-EFFICACY decreased the log odds of the dependent variable by 29.7. It is noteworthy that none of the independent variables in this analysis had a standard error larger than 2.0. The standard errors for the b coefficients were smaller than 2.0, which indicated no numerical problems, such as multicollinearity among the independent variables. Logistic analysis results satisfactorily answered the assessment questions regarding relationship between Strengths / Needs variables and School Problems. Results indicated the presence of a significant relationship between Strengths / Needs variables and School Problems. In addition, two contextual factors were identified as having a significant impact on School Problems: DEPRESSIVEISSUES and SELF-EFFICACY.

Implications for Practice

The findings of this research study can be used to inform the development of interventions to reduce school problems among foster care youth. The identification of the two main factors (DEPRESSIVEISSUES and SELF-EFFICACY) within the strength and needs scale can help practitioners to construct school related programs to address the needs of students at risk of school failure. The domains that are often found in the relevant literature as determinants of school success and serving as areas of strengths include the individual, the family, the peer group, school climate, and the community (Bowen et al., 2002). Practitioners interested in intervening with students who are at risk for school failure might find it helpful to work mutually with the student to make an assessment of the individual student (addressing values, beliefs, skills, and academic competencies); his or her interactions within environmental context; and his or her stage of development. The goal should be to develop interventions that support and strengthen the student individually and the micro system in which the student is embedded.

Furthermore, practitioners should attempt to intervene in the social environment to effect change in the individual; that is, the practitioner should work with the family, peer group, school, and neighborhood to produce positive change by reducing school problem and subsequently increasing GPA, academic retention and graduation. Practitioners working with students at risk of school failure can make home visits and intervene with family to improve positive relationships between student and parent(s); which can address needs regarding depressive issues and increase self-efficacy.

Furthermore, practitioners can periodically engage in teacher and staff training focusing on the direct correlation between a student's positive relationship with teachers, staff and academic success. Practitioners can also organize support groups for students at risk for school failure. Discussing issues like family stress, mental health, anger management, social skills, and academic struggles. Lastly, practitioners can recruit positive adults to mentor and speak to the at-risk students on a regular basis. Promoting academic success for all youth involves developing, supporting, and maintaining safe, caring, and challenging environment in which students can trust the practitioners and fully participate in school activities. Effective learning environments encourage a sense of acceptance and belonging, promote self-efficacy and help prepare students for health adult role assignments. Although, many students face serious life disadvantages across multiple contexts, consistent efforts are needed to promote a school context whereby at-risks students can build self-efficacy, succeed in school, and move successfully toward assuming adult roles and responsibilities.

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