Supporting College Success in Foster Care Alumni: Salient Factors Related to Postsecondary Retention

Amy M. Salazar
University of Washington

The current study aimed to identify factors associated with postsecondary disengagement for young people with foster care experience using survey data from a cross-sectional sample of foster care alumni scholarship recipients. Bivariate and multivariate analyses revealed several factors that differentiated those who did and did not disengage from college. Recommendations are given for improving service provision for youth transitioning from foster care who are considering pursuing higher education.

It is well-established that the educational attainment for youth who have spent time in foster care is problematic and far behind that of the general population (National Working Group on Foster Care and Education, 2011). Only about a third of foster care alumni attend college before the age of 25 (Courtney, Dworsky, Lee, & Raap, 2010), and a fourth earn a certificate or degree by age 29, compared with over half of the general population (Davis, 2006). Furthermore, only 3% to 11% graduate with a bachelor's degree, compared with a fourth of the general population (Casey Family Programs, 2011; Courtney et al., 2011; Pecora et al., 2003; 2006). The college dropout rate for foster care alumni is also higher than their general population counterparts, as well as with first-generation college students (Davis, 2006; Day, Dworsky, Fogarty, & Damashek, 2011; Wolanin, 2005).

While youth aging out of care often struggle academically, more than 70% report wanting to earn a college degree (Courtney, Terao, & Bost, 2004). However, these youth face a variety of obstacles that interfere with being able to enroll in or complete a postsecondary program (Casey Family Programs, 2010). Youth aging out of foster care experience overrepresentation of a variety of identities that put them educationally at risk, including experiencing disabilities (Burley & Halpern, 2001; Smithgall, Gladden, Howard, Goerge, & Courtney, 2004), having mental health challenges (Keller, Salazar, & Courtney, 2010; McMillen et al., 2005), and coming primarily from low-income backgrounds (Davis, 2006; Wolanin, 2005), among others. The combination of underserved group memberships and difficult life circumstances related to being placed into and living in foster care presents clear challenges to successfully completing postsecondary education.

Current Modes of Postsecondary Support

Two of the most common modes of postsecondary support for youth in foster care are independent living programs (ILPs) and campus support programs. ILPs are a primary mode of support for youth working toward a variety of post-emancipation goals, including postsecondary education and training. ILPs often provide help applying

for financial aid, completing the college application process, and taking youth on campus tours (United States General Accounting Office, 1999). However, ILP programming differs greatly across the country, with little evidence as to what approaches are actually effective at improving postsecondary outcomes (Montgomery, Donkoh, & Underhill, 2006; United States General Accounting Office, 1999).

A growing number of colleges are developing campus support programs designed to improve the retention and program completion rates of students from foster care (Dworsky & Pérez, 2010; Hernandez & Naccarato, 2010). Common supports offered by these programs include scholarships, priority access to housing and course registration, tailored academic services, mentoring, and referrals to off-campus services, among others. While these approaches offer a wide variety of services that can be beneficial to youth aging out of care, research examining the effectiveness of these programs is quite limited. A review of college support programs by Dworsky and Pérez (2010) reported a severe lack of outcome data in evaluating the effectiveness of these programs, and stated that most evidence comes from interviews with program staff, participants, and stakeholders regarding their perceptions of program effectiveness rather than from empirical comparisons of outcomes.

Factors That May Impact the College Success of Youth With Foster Care Experience

In addition to insufficient empirical evidence on support program effectiveness, there is also very little empirical information regarding what factors differentiate foster care alumni who do and do not drop out of college (i.e., what factors may be most likely to interfere with successful college completion). Therefore, there is not a strong research base to indicate what factors postsecondary support programs may want to focus on in order to maximize the likelihood of postsecondary success for the students they serve. Both the foster care-specific and general population literature do, however, suggest a variety of factors that might reasonably impact postsecondary outcomes of youth with

foster care experience. A review of this literature resulted in five categories of factors that will be examined in the current study.

Academic Skills Factors

A study by Unrau, Font, and Rawls (2012) found that foster care alumni college students were less academically prepared and had lower high school and college GPAs than the general population of college students at a four-year university, despite being more academically motivated and positive about the college experience. Dworsky and Pérez (2010) had similar findings in interviews with college support program personnel. A meta-analysis by Robbins, Lauver, Le, Davis, Langley, and Carlstrom (2004) of studies exploring factors related to college retention in the general population found 11 factors that were moderately ($r \geq .10$) or strongly ($r \geq .30$) associated with retention. Of these 11 factors, 3 were focused on the academic strengths of the student, including academic-related skills (such as study skills and time management), high school GPA, and standardized test scores. Relatedly, the Midwest Study of foster care alumni at age 25-26 (Courtney et al., 2011) found that 26% of alumni who had dropped out of college reported difficult course work as a primary reason for dropout.

College Fit Factors

Robbins and colleagues (2004) also found institutional commitment and satisfaction and college social involvement predicted increased retention. Similarly, Dworsky and Pérez (2010) reported a lack of appropriate supports offered by colleges as another possible barrier to college success for youth with foster care experience.

Maltreatment, Trauma, and Mental Health Factors

A variety of studies have found mental health diagnosis rates for youth with foster care experience to be much higher than those in the general population (Courtney et al., 2005; Havalchak, White, & O'Brien, 2008; McMillen et al., 2005). In a survey of foster care alumni asking those who left college why they did so (White, Holmes,

O'Brien, & Pecora, 2005), one of the most common responses was emotional, behavioral, or family problems. A similar barrier was reported by Dworsky and Pérez (2009). A qualitative study exploring themes among foster care alumni who graduated from universities found mental health counseling to be an essential element during college (Lovitt & Emerson, 2008).

Posttraumatic stress disorder is one of the most common mental health diagnoses found in youth transitioning out of foster care. Studies have found a PTSD lifetime prevalence of approximately 15% in foster care alumni in late adolescence (compared with 6%–7% in the general population), and 6% to 8% continue to struggle with PTSD as they approach their transition to independence (Courtney et al., 2005; Courtney et al., 2004; Havalchak et al., 2008; McMillen et al., 2005; Merikangas et al., 2010). One common cause is a complex and extensive maltreatment history. According to the Casey National Alumni Study, over 90% of adults formerly in foster care experienced maltreatment (Pecora et al., 2003). Both maltreatment and trauma have been linked to problematic educational experiences, including problematic college adjustment (Banyard & Cantor, 2004) and lower educational attainment (Duncan, 2000).

Independent Living Stability Factors

In a study of foster care alumni in college, Merdinger, Hines, Osterling and Wyatt (2005) found that 45.5% of participants did not have health insurance, and that only 58.2% had been able to obtain needed medical care. Lack of and worry about obtaining healthcare during college was also a common experience expressed in the Lovitt and Emerson (2008) study. Furthermore, over 80% of participants defined their financial situation as fair or poor. The Midwest Study of foster care alumni at age 25–26 (Courtney et al., 2011) found two of the most common reasons for dropping out of college to be needing to work and not being able to afford tuition or fees. Securing stable, year-round housing is a common problem for youth with foster care experience who do not always have someone to live with during college breaks, holidays, and summer vacations (Wolanin, 2005).

Relatedly, Merdinger et al. (2005) found that 23.1% of college students from foster care had at some point been without a place to sleep.

Support Factors

Social support was another factor found to be a significant predictor of college retention in the Robbins et al. (2004) meta-analysis. Social support may have even more unique significance for foster care alumni. For example, youth with foster care experience are likely to have lower levels of social support and a fractured social network due to initial placement and subsequent disruptions (Perry, 2006). A study of transition-aged youth with foster care experience by Salazar, Keller, and Courtney (2011) found that only 40% of study participants reported having sufficient levels of four types of social support. Other studies have confirmed that youth who have spent time in foster care often feel stereotyped, stigmatized, and devalued due to their identity of being in care (Martin & Jackson, 2002). Experiences of stigma were also found to translate to a sense of academic inferiority for many of these youth. An exploration of the effects of mentoring for youth in foster care by Ahrens, DuBois, Richardson, Fan, and Lozano (2008) found mentoring to have a trend-level effect on participation in higher education.

Access to support for obtaining needed resources may also impact college outcomes. Merdinger and colleagues (2005) found that 32% of foster care alumni participants in college did not know how to obtain needed services. A study of university students with foster care experience (Lovitt & Emerson, 2008) also found that many students wished there had been more services, especially those geared toward the unique needs of youth from care, available while they were in college.

Current Study: Goal, Questions, and Hypotheses

The current study explores the postsecondary experiences of a large sample of foster care alumni to determine which factors differentiate those who did and did not disengage from a postsecondary program. The findings from this study can inform social work policy and

practice by helping to identify the preferred targets for intervention in independent living programs, college-based support programs, and other sources of postsecondary support for these youth. Finally, for ILP providers or colleges hoping to create supports for their clients with very limited or no funding, this information could inform decisions involving what key program elements to offer if only a very few can be supported.

Method

Participants and Research Design

Study participants were all recipients of college scholarships from the Casey Family Scholarship Program and/or the Foster Care to Success' (formerly known as Orphan Foundation of America) college scholarship program between the years of 2001 and 2009, and who either graduated from college or dropped out of the scholarship program before graduating.

Scholarship recipients in the current study were located in 43 states across the country. Scholarship eligibility included being in foster care after one's 16th birthday, being accepted to an accredited postsecondary program, and being under the age of 25. Scholarship winners are chosen based primarily on an essay, GPA, and letters of recommendation. Award amounts vary depending on student need, but typically range from $2,500 to $6,000 per year, for the extent of their postsecondary program. All scholarship recipients in the current study received foster care services from their state child welfare system.

Data were collected between July 2010 and September 2010 using an online survey. Of 764 potential participants, 646 were sent emails that were deliverable (i.e., did not "bounce back") and 329 responded to the survey link included in the email. Two groups of participants were compared on factors potentially related to college disengagement: those who graduated with a bachelor's or associate's degree without disengaging from school (i.e., did not have an incomplete program or take time off) and those who did disengage from school (who may or may not have graduated at the time of the study). Table 1 contains participant demographic information.

Table 1
Participant Demographics ($N = 329$)

	N	% (of those responding)
Gender		
Female	212	73.9%
Male	75	26.1%
Race/ethnicity identification		
White	128	44.6%
Black	80	27.9%
Native American	2	0.7%
Asian	9	3.0%
Other	9	3.0%
Mixed Race	37	12.9%
Hispanic/Latino	22	7.7%
Identifies as having a disability		
Yes	28	10.1%
No	250	89.9%
Highest level of education completed		
No degree	25	7.6%
Certificate	6	1.8%
Associates's	24	7.3%
Bachelor's	223	67.8%
Master's	47	14.3%
Doctorate	4	1.2%
Bachelor's gradguates who started at community college and/or with associates degree		
Yes	33	12.0%
No	241	88.0%
Current school status		
Not currently enrolled in school	224	68.1%
Currently enrolled in school	105	31.9%
Program currently enrolled in...		Of total/Of those in school
Certificate	7	2.1%/6.7%
Associate's	5	1.5%/4.8%
Bachelor's	5	1.5%/4.8%
Master's	58	17.6%/55.2%
Doctorate	13	4.0%/12.4%
Other/Did not specify	6	1.8%/5.7%
Of those who started an associates or bachelors program and are not currently in an undergraduate program...		
Graduated without taking time off	211	72.3%
Graduated taking some time off or having an incomplete program	63	21.6%
Have not graduated and have been out for at least one year	18	6.2%

Table 1 (Cont.)
Participant Demographics ($N = 329$)

	Mean (*SD*)	Total *N* Responding
Mean age	25.6 (2.7)	$N = 288$
Mean age of entry into foster care	11.3 (5.1)	$N = 318$
Mean number of years in foster care	8.7 (5.0)	$N = 309$
Mean number of foster care placements	5.3 (5.8)	$N = 315$
Of those who earned a bachelor's degree, number of years to bachelor's degree graduation	4.6 (1.1)	$N = 264$

Constructs and Measures

College Disengagement

Disengagement was defined as (yes or no) taking time off from an associate's or bachelor's degree program or starting a program but not completing it.

Academic Skills Factors

Participants were asked to self-report their perceived skill level in time management, study skills, leadership skills, problem-solving skills, and communication skills by responding to the question, "How would you rate your skills in the following areas as an undergraduate?" for each skill area. Answer choices included "not strong at all"; "not very strong"; "sort of strong"; and "very strong." In addition, they were asked whether they earned college credit while in high school and their cumulative high school GPA.

College Fit Factors

College satisfaction was gauged by asking "How satisfied were you with the college you attended?" Students were also asked whether they were involved in extracurricular activities and the frequency of non-required contact with college professors and participation in social activities. In addition, connectedness to the college community was assessed using a six-item college community connectedness subscale from the Hemingway Measure of Late Adolescent

Connectedness (Karcher, 2000). The scale was found to have good reliability (α = .825) in the current study.

Maltreatment, Trauma, and Mental Health Factors

Maltreatment history was assessed by asking participants whether they experienced maltreatment (physical abuse, emotional abuse, sexual abuse, neglect) never, a few times, or a lot of times before entering care, while in care, or any other time before college. Traumatic event exposure was assessed using the one-item trauma screen from the Structured Clinical Interview for DSM-IV-TR, Patient Edition (First, Spitzer, Gibbon, & Williams, 2002). Posttraumatic symptomatology during college was assessed using the Primary Care PTSD Screen (PC-PTSD; Prins et al., 2003). Participants were also asked to report previous mental health diagnoses, and whether they felt that their mental health needs were met prior to and during college.

Independent Living Stability Factors

Independent living stability is defined as one's stability regarding independent living factors typically targeted by ILPs, including housing, transportation, health, legal matters, money management, and employment. Examples of questions developed by the author to assess facets of independent living stability included "How would you rate your budgeting/money management skills as an undergraduate?" and "As an undergraduate, how often did you have access to year-round, safe, steady, and reliable housing?"

Support Factors

Social support was measured using the Medical Outcomes Study Social Support Survey (MOS; Sherbourne & Stewart, 1991). The MOS had excellent reliability (α = .976) in the current study. Respondents were also asked if they had a caring adult during college, and how helpful this person was. Connectedness to family/friends was assessed using subscales from the Hemingway Measure of Late Adolescent Connectedness (Karcher, 2000), which had good reliability (α = .864) in the current study. Similar items from

the Parent, Sibling, and Friend subscale were combined to reflect the alternative family-like connections that these youth may experience. The fear of stigma interfering with college success was measured with scaled responses to the question "Did you feel that people knowing about your foster care experience would, in general, be helpful, harmful, or neither?"

Participation in foster youth-specific programming refers to participation in programming such as ILPs or college-based programs that specifically serve youth with foster care experience. Youth were asked whether or not they participated in any of these programs (yes/no). If they participated in ILP, they were asked how long they participated. Financial aid support was assessed by asking "How well did your financial aid package (grants, Chafee/ETV supports, loans, scholarships) meet your needs as an undergraduate?" Finally, participants were asked to report what types and the quality of supports they received for things such as building academic skills, planning a college path, and securing housing and transportation, among others.

Data Analysis Procedure

The first phase of analysis involved a series of bivariate logistic regressions to determine which factors differentiated those who did and did not disengage from college. The second phase involved one multiple logistic regression combining all of the factors found to be significantly associated with disengagement in Phase One. Odds ratios were calculated for each factor to indicate effect size. Multiple imputation was conducted to deal with the problem of missing data (Schafer, 1997; van Buuren, Boshuizen, & Knook, 1999).

Results

Bivariate Comparisons with School Disengagement

The bivariate logistic regression analysis results, including odds ratios, of academic skills factors and college fit factors predicting college disengagement are reported in Table 2.

Table 2

Bivariate Logistic Regressions of Academic Skills and College Fit Factors Predicting College Disengagement

		N or *M*(*SD*)	Actual % (of those responding) or *N*	Imputed (MI = 5) Exp(B) (95% CI)
Academic Skills Factors				
(1 = not strong at all to 4 = very strong)				
Mean time management skills		3.1 (0.9)	*N* = 323	0.69 (0.53-0.89)**
Mean study skills		3.0 (0.9)	*N* = 324	0.66 (0.51-0.86)**
Mean leadership skills		3.3 (0.9)	*N* = 319	0.95 (0.72-1.25)
Mean problem-solving skills		3.4 (0.8)	*N* = 320	0.69 (0.50-0.94)*
Mean communication skills		3.3 (0.9)	*N* =3 22	0.83 (0.64-1.08)
College credit in high school	Yes	108	33.5%	1.13 (0.67-1.92)
	No	214	66.5%	
Mean high school GPA		3.3 (0.6)	*N* = 308	0.96 (0.64-1.92)
College Fit Factors				
Mean satisfaction with collee (1 = not at all satisfied to 4=very satisfied)		3.4 (0.8)	*N* = 297	0.59 (0.44-0.81)**
Involved in extracurriculars?	Yes	216	71.8%	0.64 (0.38-1.08)^
	No	85	28.2%	
Median frequency of non-required professor contact (1 = Never to 5 = multiple times/week)		3 (Around once per month)	*N* = 289	0.93 (0.78-1.12)

Table 2 (Cont.)
Bivariate Logistic Regressions of Academic Skills and College Fit Factors Predicting College Disengagement

Median frequency of college social events (1 = Never to 5 = multiple times/week)	4 (Around once per week)	*N* = 288	0.83 (0.68-1.01)^
Mean Hemingway college connectedness score (1 = low to 5 = high connectedness)	3.7 (0.9)	*N* = 299	0.60 (0.44-0.82)**

^ = $p < .10$
* = $p < /05$
** = $p < .01$
*** = $p = .000$

Academic Skills Factors

Three of the five skill areas (time management, study skills, and problem-solving skills) differentiated those who did and did not disengage, all with very similar odds ratios. Leadership skills, communication skills, high school GPA, and earning college credit while in high school were not statistically significantly related to school disengagement.

College Fit Factors

Students reporting satisfaction with their college were much less likely to disengage. Furthermore, increased participation in both extracurricular and college social events, but not contact with a professor, were indicative (trend-level) of a lower likelihood of school disengagement. College connectedness also significantly differentiated those who did and did not disengage, with higher connectedness being indicative of less likely disengagement.

The regression analysis results of maltreatment, trauma, mental health, and independent living stability factors predicting college disengagement are reported in Table 3.

Maltreatment, Trauma, and Mental Health Factors

Having a history of severe maltreatment was indicative of higher disengagement, while the broader experience of trauma either before or during college was not. Furthermore, higher counts of posttraumatic symptoms during college (at trend level) and screening positively on the PTSD screen while in college were associated with a higher likelihood of school disengagement, while a reported history of PTSD was not. However, a history of any type of mental health diagnosis was associated with higher disengagement. Finally, how well mental health needs were supported while in college was related to disengagement, with better support indicative of lower disengagement. How well mental health needs were met prior to college was not associated with college disengagement.

Table 3

Bivariate Logistic Regressions of Maltreatment, Mental, Health, and Independent Living Factors Predicting College Disengagement

		N or *M*(*SD*)	Actual % (of those responding) or *N*	Imputed (MI = 5) Exp(B) (95% CI)
Maltreatment, trauma, and mental health factors				
Experienced trauma before college?	Yes	232	75.3%	0.98 (0.55-1.73)
	No	76	24.7%	
Experienced trauma during college?	Yes	127	42.2%	1.48 (0.89-2.46)
	No	181	58.8%	
If yes to either, mean trauma symptom count (0 to 4)		2.3 (1.5)	*N* = 226	1.16 (1.00-1.36)^
If yes to either, PTSD screen positive	Yes	113	50.0%	1.87 (1.13-3.09)*
(3 or more symptoms)?	No	277	89.1%	
Reported history of PTSD diagnosis?	Yes	34	10.9%	1.39 (0.65-2.97)
	No	277	89.1%	
Mean severe maltreatment count (0 to 5)		2.5 (1.7)	*N* = 257	1.25 (1.05-1.48)**
Ever had mental health diagnosis	Yes	101	32.0%	2.01 (1.20-3.36)**
Mental health needs met prior to college	Not at all	50	15.7%	0.97 (0.77-1.23)
	Somewhat	74	23.3%	
	For the most part	84	26.4%	
	Very well or no needs	110	34.6%	
Mental health needs met during college	Not at all	48	15.8%	0.78 (0.62-0.98)*
	Somewhat	72	23.8%	
	For the most part	77	25.4%	
	Very well or no needs	106	35.0%	
Independent living stability factors				
Financial skills (1 = very weak to 4 = very strong)		2.8 (1.0)	*N* = 300	0.82 (0.63-1.06)

Table 3 (Cont.)

Bivariate Logistic Regressions of Maltreatment, Mental, Health, and Independent Living Factors Predicting College Disengagement

Worked at least sometimes during college	Yes	274	89.3%	
	No	33	10.7%	
Average number of hours worked per week (for those who worked)		24.8 (10.8)	*N* = 254	1.03 (1.01-1.05)*
Access to stable houseing	None of the time	6	2.0%	0.87 (0.65-1.17)
	Some of the time	44	14.9%	
	Most of the time	72	24.3%	
	All of the time	174	58.8%	
Access to reliable transportation	None of the time	10	3.4%	1.05 (0.79-1.40)
	Some of the time	52	17.4%	
	Most of the time	72	24.2%	
	All of the time	164	55.0%	
How often had health insurance	Never	60	19.9%	0.86 (0.69-1.07)
	Sometimes	85	28.2%	
	Usually	52	17.3%	
	Always	104	34.%	
How often had untreated health problems	Never	15	52.7%	1.13 (0.85-1.49)
	Sometimes	99	33.4%	
	Usually	23	7.8%	
	Always	18	6.1%	

^ = $p < .10$
* = $p < .05$
** = $p < .01$
*** = $p = .000$

Independent Living Stability Factors

The most salient independent living stability factor was hours of employment per week. Number of hours worked was associated with higher likelihood of disengaging from school. None of these other factors emerged as important predictors of disengagement; however, whether or not they received help with some of these factors did emerge as important, as will be discussed in the next section.

Support Factors

The logistic regression analysis results of support factors predicting college disengagement are reported in Table 4. While MOS scores had a trend-level relationship with disengagement, helpfulness of a caring adult had a significant association. For both, higher scores indicated lower likelihood of disengagement. The extent that one's financial aid package met one's needs was also a trend-level indicator of lower disengagement.

Access to stable housing and transportation were not significantly associated with disengagement, as was stated above; however, receiving insufficient support with these issues was indicative of increased disengagement (transportation support trend-level). Receiving insufficient support around developing academic skills was also related to higher disengagement, in addition to insufficient support with deciding on a college path (trend-level). None of the other support factors were related to disengagement.

Multivariate Analysis of Disengagement

All 14 factors that had a statistically significant bivariate relationship with school disengagement were included in the second phase of the analysis. Bivariate correlations among the 14 factors were all found to be less than $r = .53$, ruling out multicollinearity as a potential problem. This multivariate logistic regression analysis is reported in Table 5. Of the 14 included factors, three had a statistically significant association and one had a trend-level association with disengagement. Having a history of mental health diagnosis was indicative of higher likelihood of college disengagement, while being

Table 4

Bivariate Logistic Regressions of Support Factors Predicting College Disengagment

Support Factors		*N* or *M*(*SD*)	Actual % (of those responding) or *N*	Imputed (MI = 5) Exp(B) (95% CI)
Mean medical outcomes study social support score (1=support none of the time 5=support all of the time)		3.4 (1.1)	*N* = 308	0.81 (0.64-1.03)^
Had a caring adult while in college	Yes	250	79.9%	
	No	63	20.1%	
If yes, mean helpfulness of caring adult (0 = not helpful at all to 10 = extrememly helpful)		8.7 (1.5)	*N* = 244	0.93 (0.87-0.99)*
Mean rating of how well financial aid package met needs (1 = very poorly to 4 = very well)		3.4 (0.7)	*N* = 299	0.69 (0.49-0.98)*
Median education level of guardians (1 = less than high school to 6 = graduate school degrees)		3 (some college)	*N* = 296	1.02 (0.88-1.20)
Median high school friends that went to college (1 = almost none of them to 4 = almost all of them)		4 (almost all of them)	*N* = 309	1.26 (0.92-1.74)
Was telling people that you were in foster care harmful or helpful?	Extremely harmful	12	4.3%	0.86 (0.66-1.12)
	Somewhat harmful	62	22.0%	
	Neither	123	43.6%	
	Somewhat helpful	68	24.1%	
	Extremely helpful	17	6.0%	
Participated in college-based foster youth-focised program	Yes	11	3.6%	1.06 (0.29-3.88)
	No	291	96.4%	
Participated in ILP	Yes	124	37.8%	
	No	204	62.2%	
If yes, median length of time participated in ILP		2 years	*N* = 114	1.00 (0.90-1.12)
Mean Hemingway Connectedness to parents/siblings/friends core (1 = low to 5 = high connectedness)		4.2 (0.8)	*N* = 302	0.80 (0.58-1.10)
Received support with...				
5 academic-related skills (time management,	Sufficient support received	111	35.8%	(Reference category = Sufficient support)
	Insufficient support received	151	48.7%	2.37 (1.35-4.17)**

Table 4 (Cont.)
Bivariate Logistic Regressions of Support Factors Predicting College Disengagment

study skills, leadership, problem solving, communication)	Support not needed	40	12.9%	0.70 (0.26-1.89)
Deciding college major/program	Sufficient support received	133	43.0%	
	Insufficient support received	67	21.7%	1.81 (0.97-3.41)^
	Support not needed	109	35.3%	0.90 (0.51-1.59)
Houseing	Sufficient support received	149	48.5%	
	Insufficient support received	44	14.3%	2.39 (1.14-5.04)*
	Support not needed	114	37.1%	1.48 (0.86-2.54)
Financial aid	Sufficient support received	199	64.0%	
	Insufficient support received	45	14.5%	1.02 (0.50-2.09)
	Support not needed	67	21.5%	1.14 (0.62-2.08)
Tutoring	Sufficient support received	101	41.7%	
	Insufficient support received	52	21.5%	1.18 (0.62-2.25)
	Support not needed	89	36.8%	1.03 (0.56-1.90)
Career/college counseling	Sufficient support received	89	38.5%	
	Insufficient support received	84	36.4%	1.80 (0.89-3.66)^
	Support not needed	58	25.1%	1.05 (0.55-2.01)
Disability services	Sufficient support received	14	6.4%	
	Insufficient support received	13	5.9%	0.92 (0.28-3.04)
	Support not needed	193	87.7%	0.81 (0.27-2.43)
Cultural supports	Sufficient support received	21	10.6%	
	Insufficient support received	26	13.1%	1.38 (0.49-3.84)
	Support not needed	152	76.4%	1.11 (0.37-3.27)
Transportation needs	Sufficient support received	39	17.6%	
	Insufficient support received	53	23.9%	2.13 (0.95-4.76)^
	Support not needed	130	58.6%	1.47 (0.69-3.11)

^ = $p < .10$
* = $p < .05$
** = $p < .01$
*** = $p = .00$

Table 5
Multivariate Logistic Regression of Factors Predicting College Disengagement

		Exp(B) (95% CI)
Mean severe maltreatment count		1.14 (0.96-1.37)
Ever had mental health diagnosis		1.81 (1.00-3.27)*
Time management skills		1.06 (0.75-1.52)
Study skills		0.80 (0.56-1.13)
Problem-solving skills		0.93 (0.62-1.39)
Satisfaction with college		0.68 (0.47-0.99)*
Helpfulness of caring adult		0.98 (0.91-1.07)
Hemingway college connectedness score		0.91 (0.59-1.14)
Rating of how well financial aid package met needs		0.85 (0.56-1.28)
PTSD screen positive		1.17 (0.62-2.22)
Mental health needs met during college		0.98 (0.73-1.30)
Average number of hours worked per week		1.02 (1.00-1.04)^
Support received with...		
(Reference category = sufficient support)	Insufficient	1.68 (0.79-3.58)
5 academic-related skills	Not needed	0.55 (0.19-1.59)
Housing	Insufficient	1.83 (0.77-4.32)
	Not needed	1.97 (1.05-3.68)*

^ = $p < .10$
* = $p < .05$
** = $p < .01$
*** = $p = .000$

satisfied with one's college was associated with a lower likelihood of disengagement. Increasing number of hours worked per week was associated with a higher likelihood of disengaging from college. Curiously, students reporting no need for help with securing housing were significantly more likely than those who received sufficient help to disengage from college.

Discussion

Summary of Findings

Many of the factors associated with college retention were similar to those found previously in the literature. For example, tangible supports (specifically support with academic-related skills) and PTSD and other

mental health issues (at the bivariate level) were similar to some of the factors outlined by Dworsky and Pérez (2010), including appropriate supports offered by colleges and emotional/behavioral problems. Similar factors to those found by White and colleagues (2005) in relation to program noncompletion were also found, including needing to work and having an emotional or behavioral problem. A variety of factors found to predict college retention in Robbins and colleagues' (2004) meta-analysis of students in the general population were also found to be associated with retention of foster care alumni in the current study, including a variety of academic skills, satisfaction with one's college, college social involvement, and social support (here, in the form of a caring adult). Unlike in Robbins and colleagues (2004), however, high school GPA was not found to be a predictor of college retention. This may be due to the fact that all participants were scholarship recipients and thus GPA was less of a factor than it would be for the larger population of college-attending foster care alumni.

It is interesting to note that none of the independent stability factors tested except for those related to employment were found to be associated with college success. However, whether or not they received sufficient support with certain facets of independent living such as housing and transportation needs were indicators of increased school retention, at least at the bivariate level. A related curious finding was that involving housing support. Those reporting not needing support securing stable housing were, in the multivariate analysis, more likely to disengage from college than those who received sufficient support. This may be due to an unwillingness to accept help following involvement in the child welfare system, a phenomenon explained by Samuels and Pryce (2008) as survivalist self-reliance.

Limitations

The current study used cross-sectional, nonexperimental data to explore predictors of college success. While causality can be suggested, it cannot ultimately be inferred. Furthermore, because predictors of college disengagement were collected after the outcomes occurred, recollection and reporting may have been influenced by the outcome

or inaccurate for other reasons, including memory error. This explains why academic self-efficacy and standardized test scores, two factors found in Robbins and colleagues' (2004) meta-analysis to predict college retention, were not included in the current study. Finally, while it is anticipated that the study's findings will be used to improve services for all college-attending foster care alumni, the fact that data were collected from a convenience sample of primarily four-year college students receiving scholarships presents several limitations to generalizability.

Recommendations

This study has implications for both social work policy and practice. First, it is interesting to find that participation in foster youth-focused programming was not significantly associated with college disengagement; however, all of the factors that were found to be related to disengagement are factors that ILPs, colleges, and other programs could target. Based on the current findings, five recommendations for supporting college-attending youth are offered.

1. *ILPs could prioritize supportive development of the youth in their environment rather than simply the logistics of living independently*. The current study clearly indicates the need for supports that go beyond the logistics of filling out applications, coordinating financial aid, and other bureaucratic requirements of attending college. This is not to undermine the importance of these services. However, youth appear to need support in becoming more integrated and finding a sense of belongingness, balance, and satisfaction in their new college setting.
2. *ILPs and colleges could identify workers that specialize in working with college-engaged foster care alumni*. ILPs could have workers who are "college experts." All youth aspiring toward or attending college could be assigned to these workers, who in turn would become immersed in the unique experiences, needs, and challenges of college-attending clients. They would become familiar with resources at local colleges, which would make connecting students more fully into their environments

much simpler. A similar point-person identification process could take place with higher education staff at local colleages so there is one go-to person for complex issues such as financial aid and campus housing supports.

3. *ILPs and colleges could start college-focused volunteer mentoring programs*. Providing more relational and integrative supports can be quite time consuming, and could prove to be a challenge for many ILPs and colleges. A volunteer mentoring program is a relatively inexpensive approach to eliciting the help of college-experienced community members as well as providing youth with more opportunities to build relationships, network in academic and professional communities, and target the unique needs explored earlier.
4. *Child welfare and higher education professionals should support the development of improved policy*. Changes could also be made to improve the policies that outline services for these youth. Most current state and federal policy advances primarily address financial aid elements of college support (although some do address the need for TRIO and GEAR UP programs to increase outreach and support services to students from foster care). However, systems could require the use of evidence-based practices and/or outcome evaluations to ensure they are supporting youth through college. Building in incentives for providing effective programming and evaluating outcomes may be necessary to get some programs to participate. Furthermore, policy could require youth to be automatically enrolled in ILPs unless they opt out, instead of vice versa. The fact that most youth do not even participate in ILPs must be addressed if service improvements are to actually impact those they are designed to support.
5. *Colleges could prioritize foster care alumni for on-campus employment and mental health services*. Working on campus provides students with additional opportunities to build college connections, in addition to helping with financial challenges. Furthermore, while many campuses offer counseling services,

they are sometimes insufficient to meet the needs of students coming from backgrounds of abuse, neglect, or community violence. Dworsky and Pérez (2010) explain that some foster care alumni campus support programs have either expanded the cap on the yearly number of counseling sessions available to students or have begun providing referrals and treatment funding for their foster care alumni students who cannot get the mental health support they need on campus. An investment in improving campus mental health services could be beneficial not only to foster care alumni but to disadvantaged students of all backgrounds who have no other access to mental health services.

Future Directions for Research

The current study examined college disengagement primarily for scholarship recipient students graduating from four-year universities. There certainly needs to be more exploration into factors associated with retention for (a) students not heavily supported by scholarships and (b) students pursuing two-year programs. It is possible that some of the nonsignificant factors in the current study, such as independent living stability or the perception of stigma, are more pertinent for these students. Furthermore, while this study focuses on college disengagement, much is still not known about factors differentiating those who do and do not enroll in the first place. This is another place where factors such as trauma history or high school GPA could be important. One valuable source of information that may soon be able to answer some questions about college-attending foster care alumni is the National Youth in Transition Database (U.S. Department of Health and Human Services Administration for Children & Families, 2012). Other ways to advance research in this area include encouraging colleges to (a) identify and track the progress of foster care alumni and (b) evaluate the effectiveness of campus support programming.

Conclusions

Too few foster care alumni make it successfully to and through college. This study found a variety of factors associated with college disengagement for a sample of foster care alumni. In order to address these factors, approaches that go beyond logistical support to address relational and integrative aspects of college life seem necessary. Independent living programs and colleges are primary modes of transitional and postsecondary educational support for youth with foster care experiences; however, the impact of these programs is unclear at best. Best practices that directly impact improved retention and program completion need to be identified and replicated across the country.

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