

An Ecological Approach to Social Work Student Success*

Una perspectiva ecológica para el éxito de estudiantes de trabajo social

J.D., LCSW. Amy K. Fisher¹
Ph.D., LCSW. Jandel Crutchfield²
Ph.D., MSW, MIA. Na Youn Lee³
Ph.D., Yi Jin Kim⁴
MA. Iuliia Churakova⁵
Ph.D., LMSW. Viktor Burlaka⁶

Resumen

Estados Unidos enfrenta una escasez de profesionales de ayuda en el futuro cercano, lo que resulta en amenazas para los miembros más vulnerables de nuestra sociedad. Mejorar la retención y el éxito académico de los estudiantes inscritos en programas de capacitación para ayudar a los profesionales es un enfoque que puede ayudar a mejorar este problema. Una revisión de la investigación existente sobre el éxito de los estudiantes revela la necesidad de modelos socio-ecológicos de éxito complejos y contextuales que puedan usarse para adaptar el asesoramiento académico y otras intervenciones educativas para mejorar el éxito de los estudiantes. Utilizando la teoría bioecológica de Bronfenbrenner como marco, este documento proporciona la justificación teórica y metodológica de una investigación de estudiantes de trabajo social en un estado rural del sureste con algunas de las mayores necesidades de servicios de trabajo social en los Estados Unidos. Se proporcionan resultados descriptivos preliminares.

Palabras clave: éxito académico, teoría ecológica, factores de riesgo, factores protectores

Abstract

The United States faces a shortage of helping professionals in the near future, resulting in threats to the most vulnerable members of our society. Improving the retention and academic success of students enrolled in training programs for helping professional is one approach that can help ameliorate this problem. A review of the existing research on student success reveals the need for complex, contextual socio-ecological models

* **Corresponding author:** Wayne State University School of Social Work, 5447 Woodward Ave. Detroit, MI 48202
viktor@wayne.edu

¹ University of Mississippi.

² University of Texas at Arlington.

³ University of Mississippi.

⁴ University of Mississippi.

⁵ Wayne State University.

⁶ Wayne State University.

of success that can be used to tailor academic advising and other educational interventions to improve student success. Using Bronfenbrenner's bioecological theory as a framework, this paper provides the theoretical and methodological justification of a study of social work students in a rural southeastern state with some of the greatest needs for social work services in the United States. Preliminary descriptive results are provided.

Key words: Student success, ecological theory, risk factors, protective factors

Modern society is facing a myriad of acute social problems, ranging from health inequalities, an aging population, and homelessness, to social isolation, violence, and mass incarceration (American Academy of Social Work and Social Welfare (AASWSW), 2019). Unsurprisingly, helping professions such as social work have become one of the fastest growing occupations in the United States (U.S. Bureau of Labor Statistics, 2019). Social workers assist and advocate for the most vulnerable populations—those affected by unemployment, poverty, abuse, discrimination, illness, and disability, among other challenges (National Association of Social Workers (NASW), 2019). However, helping professions face obstacles in preparing a sufficient workforce to meet demand. For example, a shortage of over 195,000 social workers is predicted by 2030, with the worst shortages predicted for rural areas of the nation (Lin, Lin, & Zhang, 2016). Given the growing shortage of professional helpers, one way to increase their numbers is to increase retention efforts and support for students enrolled in professional preparation programs. Given the relative dearth of information on the correlates of student retention and success in these programs, the present paper aims to describe the preliminary results from a research study examining multidimensional risk and protective factors for academic success of BSW and MSW students in a rural southern state with some of the greatest needs for social work services in the United States.

Student Success Literature

Student success is generally measured using academic outcomes such as grade point average (GPA), standardized test scores, retention of students from year to year, and graduation rates (Kuh, 2007). The field of student success has worked for decades to increase these indicators of success (Tinto, 2006). Researchers have linked many individual risk factors to student success, such as

being academically underprepared for college-level work; not entering college directly after high school; attending college part-time; being a single parent; being financially independent (i.e., students who rely on their own income or savings and whose parents are not sources of income for meeting college costs); caring for children at home; working more than 30 hours per week; and being a first-generation college student (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2011). In addition to these conditions, researchers have identified psychological correlates of academic performance. These include personality traits, academic motivational factors, self-regulatory learning strategies, students' approaches to learning, and even some psychosocial contextual influences (Richardson, Abraham, & Bond, 2012). However, psychosocial contextual influences of secondary academic success have received far less attention than the other psychological correlates.

In contrast, the literature regarding high school retention and success is more complex. There is a well-developed risk and resilience framework that incorporates both individual and contextual factors and contributes to the understanding and crafting of prevention measures for academic problems and antisocial behaviors in secondary education (Forrest-Bank & Jenson, 2015). It is generally agreed that (a) dropping out of high school is a process of disengagement over an extended period of time; (b) students have multiple risk factors across multiple domains; and (c) the greater the number of risk factors a student has, the greater their probability of dropping out of school (Horton, 2015). Individual risk factors for high school drop-out include many of the above listed risk factors for college dropout (study habits, etc.). However, the literature includes attention to a much broader range of complex contextual factors, especially in the family domain. For example, family characteristics that might affect high school retention include low socioeconomic status, high family mobility, low education level of parents, large number of siblings, not living with both natural parents, and family disruption (Horton, 2015). Protective factors include individual, family, and community traits, including resilience, that increase the likelihood of remaining in school.

There is a current need for multi-dimensional, contextual models of student success in higher education. The research agenda for higher education student success “must also extend outside of school boundaries because family, peer, and neighborhood ecologies exert powerful influence on students' educational opportunities and interests, as well as their aspirations for the future”

(Forrest-Bank & Jenson, 2015, p. 433). In relation to higher education, “[k]nowledge of the continued effect of ... childhood risk and protective factors on academic performance and behavior during young adulthood is limited” (Forrest-Bank & Jenson, 2015, p. 66). Although researchers have begun to examine the interaction of multiple factors across systems levels that exist outside of school boundaries (see, e.g., Chun, Marin, Schwartz, & Pham, 2016), there remains a gap in the literature examining complex interactions of factors across multiple systems levels. Thus, this paper describes the theoretical and methodological justifications for, along with preliminary results from a study designed to examine the relationship between and among multiple risk and protective factors and academic outcomes in higher education.

Theoretical Orientation

One theory that supports the extension of the research outside of individual and school boundaries is Bronfenbrenner’s bioecological systems theory, as embodied in the Process-Person-Context-Time (PPCT) model (Bronfenbrenner & Morris, 2006). An ecological systems perspective has been used in the student success literature (Arnold, Lu, & Armstrong, 2012; E. Chun & Evans, 2016) and has a long history in social work (see, e.g., Germain & Gitterman, 1996; Siporin, 1980). The bioecological theory allows us to consider student development as occurring through its central concept of proximal processes, defined most simply as interactions between person and environment across system levels, operating over time to produce human development (Bronfenbrenner & Morris, 2006, p. 795). A review of the student success literature through the lens of bioecological systems theory provides a rich range of extracurricular factors to consider when examining multi-systemic interactions.

Person characteristics. According to the bioecological theory, characteristics of the developing person have the potential to impact development as they interact with other processes. The student success literature reveals that a range of individual risk and protective factors not directly connected to academic activities can impact student success.

For example, general physical functioning, ability to function in various life roles, and bodily pain were significantly correlated with cumulative GPA in a longitudinal study of college freshmen (DeBerard, Spielmans, & Julka, 2004). Additionally, lower Body Mass Index (BMI), physical activity, and good dietary habits were associated with higher academic achievement among

adolescents in Iceland (Kristjánsson, Sigfúsdóttir, & Allegrante, 2010). Health behaviors such as getting adequate sleep are related to learning and academic performance in both high school and college students (Curcio, Ferrara, & De Gennaro, 2006).

Psychological characteristics such as perseverance of effort (Duckworth & Quinn, 2009) and a stronger sense of self-efficacy (Zajacova, Lynch, & Espenshade, 2005) have been linked with higher student GPA. Mental health issues such as depression are negatively associated with GPA and dropping out, and adding anxiety to the equation results in an additional significant drop (Eisenberg, Golberstein, & Hunt, 2009). Substance abuse can also have a significantly negative effect on academic performance (White & Hingson, 2013). Conversely, previous research suggests that religiosity is positively associated with academic success in adolescents (Al-Fadhli & Kersen, 2010; Kang & Romo, 2011; Regnerus, 2003), and has been linked to student success in college students (Mooney, 2010).

Context and time. All levels of environmental context may influence development: the micro-, meso-, exo-, and macrosystems. Academic risk and protective factors are “likely to be found at, and impacted by, each of these interacting ecological levels” (Haight, Gibson, Kayama, & Marshall, 2015, p. 129). These contextual factors may operate over time to produce different outcomes based on different interactions. The microsystem consists of the immediate social and physical environment and for students, and might consist of family, school, peer groups, and coworkers. For purposes of this study, the focus is on non-school-specific factors. Many behaviors, such as work ethics and lifestyles that surface during college years are often shaped under the influence of unique reinforcements and control structures specific to each individual student family. For example, corporal punishment, poor monitoring and neglectful parenting have been associated with increased risk for child mental health problems, aggression, rule-breaking behaviors and substance use. For example, corporal punishment and neglectful parenting have been associated with increased risk for child mental health problems, aggression, rule-breaking behaviors and substance use (Burlaka, 2016; Burlaka, Kim, Crutchfield, Lefmann, & Kay, 2017; Gershoff & Grogan-Kaylor, 2016) that continue into adulthood (Englund, Egeland, Oliva, & Collins, 2008; Fuller et al., 2003). Moreover, family functioning plays a critical role in development of alcohol problems both during transition to adulthood and during adult life (Burlaka, 2017; Lee et al., 2014). Indeed, raising children stressing such values as autonomy and

responsibility while providing emotional support helps them become successful students in the future (Strage & Brandt, 1999).

Adverse childhood experiences (ACEs), defined as childhood physical, sexual, and emotional abuse, childhood physical and emotional neglect, witnessing domestic violence as a child, and living with a substance abusing, mentally ill, or incarcerated household member as a child, can have serious long-term consequences (Felitti et al., 1998), including lower levels of education (Metzler, Merrick, Klevens, Ports, & Ford, 2017). Few published reports have examined the effects of ACEs on college performance, but studies have found prevalence rates for college students in line with that of the original ACEs study (Karatekin & Ahluwalia, 2016; Mcgavock & Spratt, 2014). Financial stress is another micro-system factor that may affect college student success, as financial worry has been directly linked to GPA (Bennett, McCarty, & Carter, 2015).

The mesosystem includes connections across microsystems. The interactions between any of the above factors has the potential to either increase or decrease student success. A student's time spent working or caring for others, for example, may result in less time spent studying (Arnold et al., 2012). The exosystem includes the level of the environment in which individuals are not present, but that affect processes in a person's immediate setting. For example, a parent's work environment may directly affect a child, although the child is not present in that setting (Arnold et al., 2012). The interactions of any of the above-listed microsystemic factors could be relevant and should be investigated according to bioecological theory.

The macrosystem is the broadest level of the ecological environment, and includes ideology, culture, and major social institutions such as government, religion, and the economy.

Racism emerges from the macrosystem, and evidence is mounting that experiences related to discrimination affect student success. One study examining the relationship between experiences of microaggressions and academic self-efficacy in undergraduate students found that higher levels of reported microaggressive experiences were inversely related to levels of academic self-efficacy (Forrest-Bank & Jenson, 2015). In higher education, academic self-efficacy has been shown to positively affect academic performance (Vuong, Brown-Welty, & Tracz, 2010), and general self-efficacy has likewise been shown to positively predict academic performance (Hwang, Choi, Lee, & Culver, 2016). The importance of understanding the effects of racism cannot be overstated. As

one researcher in the area of student success noted,

“[O]f great concern is that most studies of risk and protective factors in child or adult samples seldom consider or measure the effects of racial discrimination or ethnic identity on academic performance and behavior among young adults. This is true despite ample evidence indicating the presence of significant disparities in academic and behavioral outcomes between White and minority racial populations in the United States.” (Forrest-Bank & Jenson, 2015, p. 66)

Often overlooked in the discussion of racial achievement gaps, however, is stratification of racial groups by skin color. According to social science literature, skin color is associated with college student success as measured by total years of formal schooling (Frank, Akresh, & Lu, 2010; Keith & Herring, 1991; Ryabov, 2016). Discrimination based on skin color is called colorism, in which the preference for white skin and phenotypic features results in unfair treatment of darker skinned people. Among Hispanics, African Americans, and Asians, lighter skin color is linked to more years of formal schooling (Frank et al., 2010; Keith & Herring, 1991; Murguia & Telles, 1996). Among Asian Americans, those with lighter skin were more likely to be college educated and have earned bachelor's degree (Ryabov, 2016). Racism in its many forms is a macro level contextual factor that has only begun to be investigated within the field of success in higher education.

Design of the Study and Preliminary Results

The purpose of the study was to investigate the interaction of risk and protective factors associated with student success using a bioecological systems theory/contextual perspective. As identified in the student success literature, dependent variables include overall institutional grade point average (GPA), GPA for the current semester, major GPA, high school GPA, standardized test scores (ACT/SAT), holds, scholarships, and honors. Independent variables included the risk and protective factors displayed by our students and revealed by the literature review.

The first wave of survey data was collected from spring semester 2017 to spring semester 2018, upon receiving IRB approval and the Certificate of Confidentiality from the National Institutes of Health (NIH). The researchers recruited students in their classes to participate in the study for bonus points and a small monetary incentive. Participants completed self-administered surveys on their own computers or mobile devices in a small-group lab session proctored by trained research

assistants to ensure data quality. They also signed informed consent forms and Family Educational Rights and Privacy Act (FERPA) releases. The first wave consisted of a cross-sectional sample of 192 students, of which there were 140 BSW and 29 MSW students.

Table 1

Measurements

System Levels	Measures	References
Person		
Physical Health	BMI	
Perseverance	Short Grit Scale	(Duckworth & Quinn, 2009)
Mental health	Adult Self-Report (ASR)	(Achenbach, Dumenci, & Rescorla, 2003)
	NSDUH (suicidality)	
Substance use	Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)	(World Health Organization, 2002)
Sleep quality	Pittsburgh Sleep Quality Index (PSQI)	(Buysse, Reynolds, Monk, Berman, & Kupfer, 1989)

Health behaviors	Adolescent Health Promotion Scale-Short form (AHP-SF)	(Chen, Lai, Chen, & Gaete, 2014)
Self-efficacy	The General Self-Efficacy scale	(Schwarzer & Jerusalem, 1995)
Religiosity	Daily Spiritual Experiences (DSES)	(Underwood & Teresi, 2002)
	Duke University Religion Index (DUREL)	(Koenig & Büssing, 2010)
	NSDUH Items (Religiosity)	
Financial stress/efficacy	Questionnaire items	(Heckman, Lim, & Montalto, 2014; Lim, Heckman, Montalto, & Letkiewicz, 2014)

Microsystem

Family Reinforcement/Control Structure/Socialization Practices	Alabama Parenting Questionnaire (APQ) FACES-IV	(Shelton, Frick, & Wootton, 1996) (Olson, 2011)
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Childhood trauma experiences	Adverse childhood experiences (ACEs) Questionnaire	(Felitti et al., 1998)
Exosystem	Questions concerning primary caregivers' education level and earning	
Macrosystem		
Race experiences	Racial and Ethnic Microaggressions Scale (REMS)	(Nadal, 2011)
	Color-blind Racial Attitude Scale (CoBRAS)	(Neville, Lilly, Duran, & Lee, 2000)
Political Experiences	External and Internal Efficacy	American National Election Studies (ANES), 1992 (Miller, Kinder, Rosenstone, & University Of Michigan. Institute For Social Research. American

National
Election Studies,
1993)
Questions concerning voting behaviors,
policy attitudes, trust in government, party
affiliation, and political participation
American
Trends Panel
(Pew Research
Center, 2017);
American
Values Atlas
2015 (Jones,
Cox, Cooper, &
Lienesch, 2016);
National Asian
American
Survey
(Ramakrishnan,
Junn, Lee, &
Wong, 2011);
National Politics
Study (Jackson,
Hutchings,
Brown, & Wong,
2009)

Table 1 details a list of instruments and the relation of the instruments to bioecological theory. The authors identified a comprehensive set of measures designated to elicit student responses on a variety of “person-level” factors, such as physical and mental health and wellbeing, financial stress, spirituality, and religiosity. We also identified measures to assess “contextual” factors on the micro- and mesosystem levels, including family and peer experiences, and factors from the macrosystem level, focusing on experiences with racism due to the makeup of our student body and the location of the university. We also added demographic questions to capture such information as parent’s level of education to assess exosystemic factors.

Table 2

Descriptive Statistics of MSS Social Work Students

Variables	Mean	Std. Dev.	Range	Obs (n)
GPA				
Overall	3.19	0.63	0-4	159
Social Work Major	3.23	0.62	0-4	154
Demographics				
Age (years)	26.55	8.74	19-56	165
Gender (Female=1)	0.96	0.20	0-1	164
White	0.51	0.50	0-1	165
Black	0.45	0.50	0-1	165
Other Race	0.04	0.20	0-1	165
Transfer Status	0.63	0.48	0-1	159
Risk and Protective Factors				
Self-Efficacy	23.05	4.17	12-30	57
Adverse Childhood Experiences (ACEs)	2.24	2.31	0-9	163
Financial Stress	1.87	1.30	0-4.67	161
Sleep	9.51	5.04	0-23	164
Religiosity	1.96	0.91	0-3	163

Note.^(a) Standardized scales with mean 0 and standard deviation 1. Reported ranges for self-efficacy were 0 to 30 in a total sample and 12 to 30 in a social workers' subsample.

Table 2 shows the descriptive statistics of 169 social work students (140 BSW and 29 MSW students) in a total sample of 192 students. Social work students were on average 26.55 years old, with the youngest being 19 and oldest being 56 years old; 96% female; and 51% White, 45% Black, and 4% Asian, Hispanic or other ethnicity. Over sixty percent of students were transfer students from community colleges or other institutions. Social work students have an overall average GPA of 3.19 (SD = 0.63) and an average major GPA of 3.23 (SD = 0.62).

For purposes of this initial report, responses to selected questionnaires were analyzed to see if the hypothesized risk and protective factors appeared to be related to academic performance. Self-efficacy, sleep, and religiosity were the selected protective factors while childhood trauma and financial stress were the observed risk factors.

The general self-efficacy scale (GSE; Schwarzer & Jerusalem, 1995) was used to measure students' perceptions of efficaciousness, with values ranging from 10 to 40. Social work students had an average value of 23.05 (SD = 4.17), with the highest scoring 30 and lowest scoring 12. Thus, it can be said social work students reported somewhat lower scores on the individual generalized sense of self-efficacy compared, for example, with a German sample of students and adults who reported a mean score of 29.28 (SD = 4.6; Schwarzer, 1993).

The Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) is a self-rated questionnaire which assesses sleep quality and disturbances over a one-month time interval. Nineteen individual items generate seven "component" scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Here, we reported the summary statistics for 10 items ("cannot get to sleep within 30 minutes"; "wake up in the middle of the night or early morning"; "have to get up to use the bathroom"; "cannot breathe comfortably"; "cough or snore loudly"; "feel too cold"; "feel too hot"; "had bad dreams"; "have pain"; and "other reason(s)") with four response options, "not during the past month (0)," "less than once a week (1)," "once or twice a week (2)," and "three or more times a week (3)." This subscale ranged from 0 to 30, with higher scores

indicating more sleep problems. In our sample, an average social work student scored 9.51 (SD=5.04), with the highest being 23 and lowest being zero.

To measure religiosity, we used three items from the 2016 National Survey on Drug Use and Health that asked how important religious beliefs were in an individual's life ("your religious beliefs are a very important part of your life"; "your religious beliefs influence how you make decisions in your life"; "it is important that your friends share your religious beliefs"). Each item was measured on a 4-point Likert-type scale from "strongly disagree = 0" to "strongly agree = 3." We generated a measure that was the mean score of the three items, with a range of 0-3, to run the correlation analysis. Social work students on average scored 1.96 (SD = 0.91) on the religiosity measure.

The Adverse Childhood Experiences Questionnaire (ACE; Felitti et al., 1998) assessed 10 types of childhood adversity among three domains of childhood abuse: emotional and physical abuse, physical neglect, and abuse associated with living in a dysfunctional household (witnessing maternal abuse; living with a substance abuser; living with a mentally ill household member; parental loss, such as through divorce; and incarceration of a household member). ACE scores range from 0 to 10, representing the total number of childhood adversities experienced before age 18 years. The test-retest reliability for every ACE and the ACE score were in the good to excellent range (range of Cohen's kappa: 0.46–0.86) (Dube et al., 2003). In our study, an average social work student experienced 2.24 counts of ACE before age 18 years (SD = 2.31); the highest count for social work students was nine.

Financial stress was measured using three items ("how much stress does the total amount of money you owe cause you?"; "how much stress does credit card debt cause you?"; "how much stress does student loan debt cause you?") on a 5-point Likert-type scale ranging from "does not apply/no debt = 0" to "extreme amount = 5" (Heckman, Lim, & Montalto, 2014; Lim, Heckman, Letkiewicz, & Montalto, 2014). Average response scores ranged from 2.32-3.41 in those studies. Social work students on average experienced 1.87 (SD = 1.30) with the highest scoring 4.67 and lowest reporting no stress at all.

Table 3

Pearson's correlation matrix for selected variables (social work students, N=169)

Variables	1	2	3	4	5	6
1. Social Work GPA	–					
2. Self-Efficacy (sum)	0.298* (n=56)	–				
3. ACEs (sum)	-0.175* (n=153)	-0.181 (n=57)	–			
4. Financial Stress (avg)	-0.201* (n=151)	-0.004 (n=57)	0.222* (n=160)	–		
5. Sleep (sum)	-0.129 (n=153)	-0.078 (n=57)	0.167* (n=163)	0.190* (n=160)	–	
6. Religiosity (avg)	0.024 (n=153)	0.023 (n=57)	-0.056 (n=163)	0.032 (n=160)	-0.194* (n=163)	–

Note. * $p < 0.05$

Finally, Table 3 shows the Pearson's correlation matrix which was used to explore whether there were statistically significant associations between social work GPA and the selected protective and risk variables. Pearson's correlation r showed that higher levels of self-efficacy were associated with higher average major GPA for social work students ($p < 0.05$); while more financial stress and childhood trauma were each associated with lower academic performance in social work classes for social work undergraduate and graduate students ($p < 0.05$). Sleep and religiosity, however, were not significantly correlated with social work GPA. We also saw positive associations between ACEs and financial stress ($r = 0.222$, $p < 0.05$); ACEs and sleep ($r = 0.167$, $p < 0.05$); and financial stress and sleep ($r = 0.190$, $p < 0.05$). Religiosity and sleep were negatively associated ($r = -0.194$, $p < 0.05$).

In sum, the preliminary results support the purpose and aim of the study: Protective factors, such as self-efficacy, were positively correlated with academic performance; whereas risk factors, such

as adverse childhood experiences (ACEs) and financial stress, showed a negative association with social work GPA. There is also evidence of interplay between factors, such as the relationship of ACEs and financial stress.

Preliminary Suppositions and Implications

Results of this pilot study indicate that the ecological conceptual model assessing the interplay of risk and protective factors affecting academic success has promise. Understanding the dynamic construct of student success for students in helping professions may assist in developing appropriate solutions for students in social work and other helping professions who are facing challenges, so that those students are able to remain in school and get prepared to succeed in their chosen fields.

In answering the calls for multidimensional understanding of college student wellbeing, studies that highlight the relationships between and interactions among diverse risk factors as described in this study are paramount. The intent for this project is to examine multiple factors across system levels to identify interactions so that the team can use the information to develop effective academic interventions to improve social work student success. Our assumption that the variables examined will interact with others and across system levels to produce detailed information about their effects and allow the team to target appropriate interventions will be tested after further data collection. Just as with any other helping intervention, knowledge of the client being served, in this case the particular student body, is critical to designing appropriate interventions. Use of the ecological systems perspective is familiar to many helping profession educators and provides a useful tool for examining the issue. Our experience in designing the study has already produced greater familiarity with the characteristics of and challenges our students face. One caution, as always, is to avoid the creation of a monolithic helping profession student. Our students are as diverse as it is possible to be, and each must be seen and recognized as an individual.

Our ultimate hope is that extending our knowledge of college student success to risk and protective factors outside the classroom can lead to innovative, effective practices for our department. Those practices will then be tested for effectiveness and shared with others.

Conclusion

With the projected shortage of helping professionals looming (Lin et al., 2016), educators must work to produce more graduates. The chance to improve retention and academic success of students who are already enrolled in professional programs cannot be ignored. The study described in this article will contribute to filling a gap in the knowledge of student success by using the bioecological framework (Bronfenbrenner & Morris, 2006) to produce a much-needed complex, contextual understanding of risk and protective factors for students success (Chun & Evans, 2016; Forrest-Bank & Jenson, 2015; Lawson & Lawson, 2013) that will potentially lead to interventions that will improve student retention and success.

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