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Kemea Perry

Baylor University

Nealey Thompson

Baylor University

Emmanuel Abrefah

Baylor University

Elizabeth Kwon

Baylor University

Matthew Asare

matt_asare@baylor.edu

Baylor University

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Psychosocial Determinants and Early Childhood Responsibility Associated with College Student Success.

Kemea Perry, Nealey Thompson, Emmanuel Abrefah, Elizabeth Kwon, and Matthew Asare*

Baylor University, Department of Public Health; Waco, TX, USA

***Corresponding Author:** Matthew Asare, Ph.D., M.P.H., Associate Professor in the Department of Public Health, Robbins College of Health and Human Sciences
Baylor University, One Bear Place #97343 Waco, Texas.
Email: matt_asare@baylor.edu

Abstract

Academic success during adolescence and the transition to college is influenced by both individual and environmental factors. While prior research has examined depression, self-efficacy, and environmental support independently, fewer studies have explored their combined effects or the potential contribution of early responsibilities, such as household chores. This study investigates how these factors collectively relate to student success. A cross-sectional survey was administered to college students from two universities in the US. Measures included the PHQ-9 for depression, the General Self-Efficacy Scale, a student success inventory (including GPA and engagement), environmental support, and household chore participation. Correlational analyses and multiple linear regression were conducted to examine associations and identify predictors of student success. The study included 398 students (67% female; 33% sophomores; 61% Caucasian) aged 18–39 years ($M = 20.6$, $SD = 3.17$). Participants reported low depression and moderate to high levels of student success, self-efficacy, environmental support, and household chore involvement. Depression was negatively associated with student success, whereas self-efficacy and environmental support were positively associated. Household chore participation correlated with higher self-efficacy and supportive environment perceptions, but did not independently predict academic outcomes in regression analyses. The final model, including depression, self-efficacy, and environment, accounted for 39% of the variance in student success. Findings suggest that depression is a key barrier to academic success, while self-efficacy and supportive environments act as protective factors. Early household responsibility may contribute indirectly through psychosocial development. These results underscore the importance of mental health support, self-efficacy–building interventions, and supportive campus environments.

Keywords: Childhood Household Chores, Student Success, Self-efficacy, College Students, Depression

Introduction

Adolescence and youthful years represent a critical developmental period characterized by significant academic, psychological, and social transitions[1]. During this stage, students' academic outcomes are shaped not only by cognitive ability but also by psychosocial factors such as depression, self-efficacy, and environmental support. A growing body of literature suggests that student success is strongly intertwined with mental health and contextual influences, underscoring the importance of examining these variables concurrently [2-4].

Depression is among the most prevalent mental health concerns in adolescents and young adults and has been consistently associated with impaired academic performance, reduced motivation, and diminished engagement [5, 6]. Elevated depressive symptoms may hinder concentration, energy levels, and goal-directed behavior, thereby negatively influencing educational attainment. In contrast, self-efficacy, defined as individuals' beliefs in their capabilities to organize and execute courses of action required to manage prospective situations, has been shown to promote resilience, persistence, and academic achievement [2, 7]. Students with high academic self-efficacy are more likely to set challenging goals, persist in the face of difficulty, and demonstrate higher levels of academic success.

Environmental factors, including perceived support within the home and school context, also play a crucial role in shaping both psychological well-being and educational outcomes[8-10]. According to ecological systems theory [3], proximal environmental systems, such as family and school, exert a direct influence on adolescent development. Supportive environments characterized by emotional warmth, structure, and encouragement are associated with lower levels of depression and improved academic performance [11].

In addition to psychological and environmental influences, household chore participation has received increasing attention as a potential contributor to youth development[12-14]. Engagement in age-appropriate chores has been linked to the development of responsibility, autonomy, and self-regulatory skills [12, 15]. These competencies may indirectly enhance

academic outcomes by strengthening self-efficacy and promoting structured daily routines. However, empirical findings regarding the direct relationship between chore participation and academic performance remain mixed, necessitating further investigation.

Although previous research has examined depression, self-efficacy, and environmental support separately, fewer studies have examined how these factors interact to influence student success. Additionally, the potential role of household chore participation within this broader framework remains underexplored. By integrating psychological, environmental, and behavioral factors, this study aims to provide a more comprehensive understanding of the mechanisms that support or hinder academic success during adolescence. Identifying modifiable predictors of student success may inform school-based and family-centered interventions designed to enhance both mental health and educational outcomes. The present study, therefore, seeks to investigate (1) differences in depression, self-efficacy, student success, and environmental support among college students; (2) the relationships among these variables; and (3) the extent to which depression, self-efficacy, environment, and household chores predict student success.

Method

Research Design

This study used a retrospective cross-sectional survey design to better understand factors affecting college student success. Participants were recruited from two universities in the US to complete an online survey hosted on Qualtrics. The survey link was distributed via email, and participants also had the option to access the survey by scanning a QR code. Data were collected over nine months, from March 2019 through November 2019. Before beginning the survey, students were clearly informed that taking part was completely voluntary. They were reassured that their responses would remain anonymous and confidential. Participants were also reminded that they could choose not to participate, stop the survey at any time, or skip any questions they did not feel comfortable answering, without any penalty or negative consequences.

Informed Consent

Before starting the survey, participants were asked to read an online consent form that explained the purpose of the study, what participation would involve, any potential risks or benefits, and their rights as participants. The form made it clear that by clicking “Next” and continuing to the survey, they were agreeing to take part in the study. The research was reviewed and approved by the Baylor University’s Institutional Review Board (IRB) to ensure that it met ethical standards for protecting participants.

Measures

The 45-item online survey included questions about basic demographic information, symptoms of depression, general self-efficacy, student success, supportive environment, and household chore participation.

Depression items

Symptoms of depression were assessed using the Patient Health Questionnaire-9 (PHQ-9), a 9-item survey with the same 6-point response options (all the time, most of the time, slightly more than half the time, slightly less than half the time, some of the time, and not at all). Scores range from 0 to 54, with higher scores indicating more severe depressive symptoms. The PHQ-9 has shown high reliability, with a Cronbach’s alpha of 0.89 [16]. For the current study, Cronbach’s alpha was .91

Self-Efficacy items

Self-efficacy was assessed using the **General Self-Efficacy Scale (GSE)**, a 10-item self-report measure in which participants rate their agreement with statements on a Likert scale. Total scores range from 10 to 50, with higher scores indicating greater perceived ability to cope with

challenges. The GSE has demonstrated strong reliability in prior research (Cronbach's $\alpha = 0.76$ – 0.90) [17] . In the present study, internal consistency was good (Cronbach's $\alpha = .84$).

Student Success items

Student success was measured using 11 items across five areas: relationships with professors (4 items), interactions with peers (3 items), completion of homework (2 items), overall GPA (1 item), and the value students place on their GPA (2 items). Total scores ranged from 0 to 44, with higher scores indicating greater student success. Academic performance was assessed using self-reported overall Grade Point Average (GPA). This measure was selected because the overall GPA has demonstrated high reliability [18] and self-reported GPAs strongly correlate with official academic records, with correlations as high as 0.97 [19]. Although reliability estimates were not previously available for some of the additional variables used in this study, the overall scale demonstrated acceptable internal consistency in the current sample (Cronbach's $\alpha = .78$).

Supportive Environment items

Perceived environmental support was measured using four items assessing students' perceptions of support, structure, and encouragement in both home and school settings. Scores ranged from 4 to 20, with higher scores reflecting a more supportive environment. Reliability estimates were not previously reported for this measure; however, internal consistency in the present sample was acceptable (Cronbach's $\alpha = .75$).

Household Chore Participation items

Household chore participation during childhood was measured using six self-reported items assessing the frequency of engagement in age-appropriate household tasks. Scores ranged from 6 to 30, with higher scores reflecting greater involvement in household chores.

Reliability estimates were not previously available; however, the scale demonstrated acceptable internal consistency in the present sample (Cronbach's $\alpha = .72$).

Data Analysis

Completed surveys were screened for missing or incomplete responses before statistical analysis. Independent samples *t*-tests were conducted to examine gender differences and differences between low and high chore activity groups on depression, self-efficacy, student success, and environment. One-way ANOVAs were conducted to assess differences across grade levels and ethnic groups for each outcome variable. Pearson correlation coefficients were calculated to evaluate relationships among depression, self-efficacy, student success, perceived environment, and household chore participation. A multiple linear regression model was constructed to determine whether depression, self-efficacy, perceived environment, and household chore participation predicted student success. All predictors were entered simultaneously into the model. Model fit was evaluated using the *F* statistic and R^2 . Standardized beta coefficients (β) were examined to determine the relative strength of each predictor. Statistical significance was set at $p < .05$, and statistical analyses were conducted using SAS and SPSS.

Results

Table 1 summarizes the demographic characteristics of the 398 students who participated in the study. Most respondents were female (67%, $n = 266$), sophomores (33%, $n = 131$), and Caucasian (61%, $n = 243$). Participants ranged in age from 18 to 39 years ($M = 20.6$, $SD = 3.17$). Overall, mean scores reflected low levels of depression and moderate to high levels of student success, self-efficacy, environment, and chores.

Table 1: Demographic characteristics of participants and distribution of the means and range of age, self-efficacy, depression, student success, supportive environments, and household chores.

Variable		Frequency (<i>n</i>)	Proportion (%)
Sex	Male	132	33.17

Classification	Female	266	66.83
	Freshman	51	12.85
	Sophomore	131	33.00
	Junior	113	28.46
	Senior	93	23.43
	Graduate	9	2.27
Race/Ethnicity	Caucasian	243	61.36
	African American	29	7.32
	Hispanic/Latino	43	10.86
	Native American	13	3.28
	Asian/Pacific Islander	53	13.38
	Other	15	3.79
Major	STEM	84	21.11
	Business	39	9.80
	Education	27	6.78
	Social Sciences	44	11.06
	Health Sciences	82	20.60
	Other	122	30.6
	<i>n</i>	Mean ± SD	Min – Max
Age	395	20.58 ± 3.17	18 – 39
Self-Efficacy	398	40.22 ± 5.72	10 – 50
Depression	398	16.91 ± 10.48	0 – 50
Student Success	398	35.05 ± 5.67	11 – 44
Environment	398	15.77 ± 3.47	4 – 20
Chores	398	25.19 ± 4.36	6 – 30

Table 2 shows the group differences by gender, chores, grade, and ethnicity. Female participants reported significantly higher levels of depressive symptoms than males ($t = -2.40$, $p = .017$). Students who reported high levels of household chore participation during childhood demonstrated significantly greater self-efficacy ($t = -2.21$, $p = .034$), higher educational success ($t = -2.26$, $p = .030$), and a more supportive environment ($t = -2.60$, $p = .013$) compared to those with low household chore involvement.

A one-way ANOVA was conducted to examine differences across grade levels in depression, self-efficacy, student success, environment, and age. Results indicated significant grade-level differences in depression, $F(4, 392) = 5.44$, $p < .001$, and student success, $F(4, 392) = 2.90$, $p = .021$. Post hoc analyses using Tukey's HSD revealed that juniors and sophomores reported higher depressive symptoms than seniors and graduate students. Additionally,

significant racial differences in depression were observed, $F(5, 390) = 3.42$, $p = .004$, with Hispanic students reporting higher levels of depressive symptoms.

Table 2: Group Differences by Gender, Chores, Grade, and Ethnicity.

Gender Comparison				
Outcome	Male (M $\pm$ SD)	Female (M $\pm$ SD)	t	p
Depression	15.22 $\pm$ 9.30	17.75 $\pm$ 10.94	-2.40	0.017*
Self-Efficacy	40.41 $\pm$ 6.61	40.12 $\pm$ 5.23	0.44	0.661
Student Success	34.53 $\pm$ 5.97	35.30 $\pm$ 5.50	-1.24	0.215
Environment	15.59 $\pm$ 3.58	15.86 $\pm$ 3.42	-0.73	0.467
Chore Activity Level Comparison				
Outcome	Low (M $\pm$ SD)	High (M $\pm$ SD)	t	p
Depression	19.81 $\pm$ 11.10	16.66 $\pm$ 10.33	1.42	0.166
Self-Efficacy	37.32 $\pm$ 7.74	40.46 $\pm$ 5.46	-2.21	0.034*
Student Success	32.03 $\pm$ 7.89	35.30 $\pm$ 5.37	-2.26	0.030*
Environment	14.10 $\pm$ 3.76	15.92 $\pm$ 3.41	-2.60	0.013*
Grade Levels Comparison				
Outcome	F(df)	F-value	p	
Depression	F(4, 392)	5.44	0.000*	
Self-Efficacy	F(4, 392)	2.29	0.059	
Student Success	F(4, 392)	2.90	0.021*	
Environment	F(4, 392)	0.33	0.859	
Ethnicity Comparison				
Outcome	F(df)	F-value	p	
Depression	F(5, 390)	3.42	0.004*	
Self-Efficacy	F(5, 390)	0.85	0.512	
Student Success	F(5, 390)	1.04	0.396	
Environment	F(5, 390)	2.25	0.049	

Note: Only outcomes with $p < .05$ are considered statistically significant.

Correlations Between Main Variables

Pearson correlation analyses were conducted to examine the relationships among student success, depression, self-efficacy, environment, and household chore participation (see Table 3). Results indicated that student success was positively correlated with self-efficacy ($r =$

.44, $p < .001$), environment ($r = .46$, $p < .001$), and household chore participation ($r = .15$, $p < .01$), and negatively correlated with depression ($r = -.51$, $p < .001$).

Depression was significantly and negatively associated with self-efficacy ($r = -.32$, $p < .001$) and environment ($r = -.40$, $p < .001$), suggesting that higher levels of depressive symptoms were associated with lower self-efficacy and less supportive environments. Self-efficacy was positively correlated with environment ($r = .31$, $p < .001$) and household chore participation ($r = .15$, $p < .01$). Additionally, environment demonstrated a positive relationship with household chore participation ($r = .14$, $p < .01$)

Table 3: Pearson Correlation Coefficients for self-efficacy, depression, student success, support environment and household chores ($n = 390$)

	Self-Efficacy	Depression	Student Success	Environment	Chores
Self-Efficacy	1.00				
Depression	-0.32*	1.00			
Student Success	0.44*	-0.51*	1.00		
Environment	0.31*	-0.40*	0.46	1.00	
Chores	0.25*	-0.05	0.001	0.15	1.00

Association of Student Success

Table 4 depicts results from regression modeling. The overall model was statistically significant, indicating that the predictors reliably determined the strength of association between student success and all predictors, $F(4, 393) = 64.96$, $p < .0001$.

Among the predictors, depression (Est. = -0.18, $SE = 0.02$, $t = -7.69$, $p < .0001$, $\beta = -0.34$), self-efficacy (Est. = 0.25, $SE = 0.04$, $t = 5.72$, $p < .0001$, $\beta = 0.25$), and environment (Est. = 0.39, $SE = 0.07$, $t = 5.44$, $p < .0001$, $\beta = 0.24$), were significant predictors of student success, accounting for 39% of the variance.

Table 4: Parameter Estimates from the Final Regression Model for Student Success as a Dependent Variable as Predicted by the Self-efficacy, depression, Support Environment, and household chores ($n = 390$)

Predictor	Estimate	SE	t-value	p-value	Std. β
Intercept	20.68	2.18	9.47	<.0001	0
Self-Efficacy	0.25	0.04	5.72	<.0001	0.25
Depression	-0.18	0.02	-7.69	<.0001	-0.34

Environment	0.39	0.07	5.44	<.0001	0.24
Chores	0.06	0.05	1.07	0.29	0.04

Note: $F(4, 393) = 64.96$, $p < .0001$, $R^2 = 0.40$, Adj. $R^2 = 0.39$

Discussion

The present study examined associations among depression, self-efficacy, perceived environment, participation in household chores during childhood, and student success among undergraduate and graduate students. Overall, participants reported low levels of depression and moderate to high levels of student success, self-efficacy, environmental support, and household chore involvement. The findings extend existing literature by highlighting both risk (depression) and protective (self-efficacy, supportive environment, early responsibility) factors associated with academic success.

Consistent with prior research, female participants reported significantly higher depressive symptoms than males. This finding aligns with epidemiological evidence indicating that women in late adolescence and young adulthood experience higher rates of depression compared to men [20, 21]. Explanations in the literature point to a combination of biological, cognitive, and sociocultural influences, including greater exposure to stressors, rumination tendencies, and gendered social expectations [22-24]. The present findings reinforce the need for gender-sensitive mental health interventions within university settings.

Significant differences in depression across grade levels were observed, with sophomores and juniors reporting higher depressive symptoms than seniors and graduate students. This pattern is consistent with developmental and transitional stress models, suggesting that mid-college years may involve heightened academic demands, career uncertainty, and identity exploration [25, 26]. Seniors and graduate students may benefit from increased academic integration and coping skills developed over time.

Racial/ethnic differences in depression were also identified, with Hispanic students reporting higher depressive symptoms. This finding aligns with research indicating that Hispanic college students may experience elevated stress related to acculturation, discrimination, and family role expectations [27-29]. These disparities underscore the importance of culturally responsive mental health resources on college campuses.

Students who reported higher levels of childhood household chore participation demonstrated greater self-efficacy, educational success, and perceptions of a supportive environment. Although limited research has directly examined chores in relation to academic success, developmental literature suggests that early responsibility fosters autonomy, competence, and self-regulation [12, 30, 31]. Mastery experiences, such as completing household responsibilities, are central to the development of self-efficacy [31]. The present findings support this theoretical framework and suggest that early structured responsibility may contribute to later academic and psychosocial adjustment.

The findings further reinforce established theoretical relationships between student success and academic self-efficacy and perceived positive environment. Student success was moderately and positively associated with self-efficacy and perceived environment, and strongly and negatively associated with depression. These findings are consistent with extensive literature demonstrating that self-efficacy is a robust predictor of academic performance and persistence [7, 32]. Students with higher self-efficacy are more likely to approach learning tasks with confidence, sustain effort through challenges, and employ effective strategies, which enhances academic outcomes and buffers against the negative impact of stress and psychological difficulties, such as depression [33]. Academic self-efficacy also mediates the relationship between engagement and achievement, underscoring its protective role in academic environments [33]. Similarly, supportive academic and social environments are well-documented contributors to student engagement and success [34, 35].

Depression showed significant negative correlations with both self-efficacy and environment, supporting cognitive models of depression which posit that depressive symptoms are associated with diminished perceived competence and reduced perceptions of support (Beck, 1967). The modest but significant associations between household chores and both self-efficacy and environment suggest that early responsibility may contribute indirectly to academic success through psychosocial pathways.

Depression, self-efficacy, and the environment were significantly associated with student success. Specifically, students with higher levels of depression tended to have lower success, while students with greater self-efficacy and more supportive environments tended to have higher success. Together, these three factors explained about 39% of the differences in student success. These findings are consistent with prior meta-analytic research demonstrating that psychological well-being and academic self-efficacy are among the most powerful predictors of academic outcomes [7, 32]. The prominence of depression as a negative predictor underscores the critical role of mental health in academic performance.

Notably, although household chore participation was correlated with student success, it did not emerge as a significant independent predictor in the regression model, suggesting its influence may be mediated through self-efficacy and environmental perceptions. Future research should examine potential mediation pathways to clarify these mechanisms.

Limitations and Future Directions

The cross-sectional design precludes causal inference, and reliance on self-report measures may introduce response bias. The sample was predominantly female and Caucasian, limiting generalizability. Longitudinal studies are needed to examine causal pathways and potential mediating effects of self-efficacy and environment in the relationship between early responsibility and later academic success.

Implications

These findings have several practical implications. Universities should prioritize mental health screening and early intervention, particularly for female students, mid-level undergraduates, and Hispanic students. Programs aimed at enhancing academic self-efficacy and strengthening supportive campus environments may substantially improve student success outcomes. Additionally, the developmental benefits of structured responsibility in childhood warrant further investigation as a long-term protective factor.

Conclusion

In summary, the present study highlights depression as a significant barrier to student success, while self-efficacy and supportive environments serve as protective factors. Early household responsibility may contribute indirectly to academic achievement through its association with psychosocial strengths. These findings reinforce the importance of integrating mental health support, self-efficacy development, and environmental enhancement strategies within higher education settings.

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Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request

Compliance with Ethical Standards:

All authors complied with ethical standards

Conflict of interest:

The authors do not have any conflict of interest to declare

Ethics approval and consent to participate:

All procedures performed in the study were in accordance with the ethical standards of the institutional research committee and the 1964 Declaration of Helsinki and its later amendments. This article does not contain any studies with animals performed by any of the authors. Permission was obtained from Baylor University's Institutional Review Board (IRB Reference 1416026) prior to the beginning of the study. Written informed consent to participate in the study was obtained from all participants before the questionnaires were administered. Participation was voluntary, and all participants were informed of the purpose of the study and their roles and rights, including that they could withdraw their participation at any time during data collection and before data analysis commenced

Consent for publication:

Not Applicable.

Clinical Trial Number:

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