

Predicting Grit and Resilience: Exploring College Students' Academic Rational Beliefs

Jeffrey M. Warren and Robyn W. Hale

Data were collected from 289 undergraduate college students at a minority-serving institution to explore the impact of academic rational beliefs on grit and resilience. Findings from hierarchical regression analyses suggested that academic rational beliefs related to evaluation and work habits accounted for a significant amount of variance in grit. Work habits explained a significant portion of the variance in resilience. On the basis of these results, recommendations for future research and implications for college counselors are offered.

Keywords: rational beliefs, grit, resilience, counselors, college students

Ellis's (1962) rational emotive behavior therapy (REBT) offers a dynamic perspective on the relationships between cognition, emotion, and behavior. Two concepts, rational and irrational beliefs, are central to the healthy versus unhealthy dichotomy REBT espouses. Irrational beliefs are rigid and dogmatic, whereas rational beliefs (RBs) are flexible and preferential thoughts that lead individuals to respond to life's challenges in healthy and productive ways (Dryden, 2014).

Numerous researchers have studied the relationships between rational thinking and social-emotional constructs (Filippello, Harrington, Buzzai, Sorrenti, & Costa, 2014; Harrington, 2005; Jibeen, 2013). According to Ellis and Bernard (1986), rational thought is a prerequisite for demonstrating tolerance for frustration, commitment, self-direction, acceptance, and social interest, among other helpful and desirable values or goals of REBT. Although identified over 3 decades ago, these values are analogous to many of the noncognitive factors studied in postsecondary education today (see Sedlacek, 2017; Warren, 2017).

According to Sedlacek (2017), noncognitive factors are attributes or characteristics tied to motivation and adjustment of college students. Grit and resilience are two noncognitive factors that influence college student success and wellness (Strayhorn, 2014; Wolters & Hussain, 2015). Neenan and Dryden (2011), as well as Deen, Turner, and Wong (2017), have suggested that RBs facilitate traits or attributes such as grit and resilience. Therefore, students who demonstrate grit and resilience in college may operate from a rational philosophy of life, as espoused in REBT.

College counselors play an integral role in the success of college students. Given the role of college counselors in promoting positive mental health and wellness among students, an exploration of the relationships between RBs

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and grit and resilience is warranted. In this article, a review of the literature on grit, resilience, and academic rational beliefs (ARBs) is offered. Next, the study is described, followed by a presentation of the method, results, and implications for college counselors.

Grit

Scholars have defined grit as “perseverance and passion for long-term goals” (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1087). As described by Duckworth and Eskreis-Winkler (2013), grit as a construct embodies tenacity, not intensity, like the classic tale of the tortoise and the hare. Duckworth and Quinn (2009) identified *effort perseverance* and *consistency in interest* as two components of grit. Grit is similar to conscientiousness, one of the Big Five personality dimensions (Tupes & Christal, 1992).

Many educators believe grit is key to increasing college completion rates (Pondiscio, 2013). Powell (2013), for example, described how colleges and universities assess applicants’ level of grit as a component of program admissions. This emphasis on grit likely is spurred by a growing body of research that suggests it is predictive of student success. Findings from several studies suggest that relationships exist between grit and psychological components including self-regulated learning (Wolters & Hussain, 2015) and metacognition (Arslan, Akin, & Çitemel, 2013). In a study conducted by Strayhorn (2013), a positive relationship was found between grit and academic success among African American college students at predominantly White institutions. Duckworth and Quinn (2009) also noted that grit is a predictor of a career change. Grittier individuals change careers fewer times than less gritty individuals. This finding may suggest that college students who possess grit are less likely to switch or change majors.

Resilience

Individuals who display resilience are successful in managing challenges that unexpectedly arise (Neenan, 2009). Resilience is described as the ability to bounce back from stressful events or situations (Smith et al., 2008). O’Connor, Mueller, and Neal (2014) suggested that resilience is a process rather than a fixed trait that results from the continuous experiences of an individual. Resilience can influence the success of young adults pursuing postsecondary education or employment. Resilience is especially important to the academic success of students from historically underrepresented groups (Strayhorn & Terrell, 2010).

Li (2008) suggested that college counselors can promote resilience to reduce stress and help students cope with adverse situations. Galatzer-Levy, Burton, and Bonanno (2012) found significant relationships between college students’ ability to cope and their level of resilience. Significant negative relationships also were found between resilience and socially prescribed perfectionism, anxiety, and depression (Klibert et al., 2014). Klibert et al. (2014) noted that resilience has a

mediating effect on the relationships between perfectionism and distress including depression and anxiety. Exploring how RBs are related to resilience, as well as grit, may offer additional insight into ways college counselors can promote noncognitive factors in postsecondary education.

ARBs

According to Dryden's (2014) analysis of REBT, RBs are logical, realistic, and nonawfulizing, and encourage local rather than global evaluations of self, others, or life. On the basis of findings from numerous studies conducted on college campuses, researchers have suggested that RBs are related to social-emotional factors and influence the success of students (see DiLorenzo, David, & Montgomery, 2011; Jibeen, 2013). Although they have used general measures of RBs, few researchers have explored contextual RBs specific to instruction and learning in college.

Egan, Canale, del Rosario, and White (2007) developed an instrument to assess the ARBs of college students. ARBs are preferential and realistic beliefs about learning and teaching. Using the Academic Rational Beliefs Scale (ARBS; Egan et al., 2007), Atkinson (2011) noted a negative relationship between writing apprehension and ARBs related to evaluation. Balkis (2013) found ARBs related to studying (i.e., work habits) mediated the relationships between procrastination, life satisfaction, and academic success. These studies demonstrate the impact RBs have on various aspects of academic success.

Grit, resilience, and ARBs appear to be constructs that influence psychosocial functioning and the success and well-being of college students. Therefore, the central goal of this study was to explore the relationship of the noncognitive factors of grit and resilience to RBs. Several research questions guided this study: Is there a relationship between ARBs and grit and resilience? Which types of ARBs relate to grit and resilience? When demographic variables are controlled for, will ARBs relate to grit and resilience? On the basis of these research questions, we developed the following hypotheses:

Hypothesis 1: ARBs related to work habits will positively correlate with grit and resilience.

Hypothesis 2: Race/ethnicity, gender, college status, enrollment status, and ARBs will positively correlate with grit and resilience.

Hypothesis 3: After race/ethnicity, gender, college status, and enrollment status are controlled for, ARBs will positively correlate with grit and resilience.

Method

Participants

Undergraduate students ($N = 289$) from a public minority-serving university in the southeastern United States participated in this study. Regarding age,

the majority of participants ($n = 211$, 73.0%) were 18 to 23 years of age. Participants ages 24 to 29 composed 9.7% ($n = 28$) of the sample; 7.3% ($n = 21$) were ages 30 to 35. Distribution of ages for the remaining participants were 3.1% ($n = 9$), 3.1% ($n = 9$), and 3.8% ($n = 11$) for age ranges 36 to 41, 42 to 48, and 49 and over, respectively. Of the participants, 226 (78.2%) identified as female, 62 (21.5%) identified as male, and 1 (0.3%) identified as transgender. Regarding race/ethnicity, most participants identified as White ($n = 139$, 48.1%). The remaining participants identified as African American ($n = 80$, 27.7%), American Indian ($n = 31$, 10.7%), Hispanic or Latina/o ($n = 25$, 8.7%), and Asian or Pacific Islander ($n = 14$, 4.8%).

Procedure

After a thorough review of the literature, two noncognitive measures and one measure of RBs were identified. A brief survey was constructed to capture relevant demographic information. Once the study was reviewed and approved by the university's institutional review board committee, a message regarding the study, including a link to an informed consent form and surveys, was distributed to all undergraduate students via a campus-wide electronic mailing list. The response rate was approximately 7%. Qualtrics survey software (<https://www.qualtrics.com>) was used to collect data during this study. Participants who completed all survey items and provided their email address were entered in a raffle for a chance to win a gift basket or one of ten \$10 gift cards.

Instruments

Demographic questionnaire. A brief questionnaire that we developed was used to capture participant information. The questionnaire included items related to age, gender, race/ethnicity, college enrollment, and college status.

Short Grit Scale (Grit-S). Created by Duckworth and Quinn (2009), the Grit-S measures stamina for long-range goals and trait-level perseverance. The Grit-S is a self-report measure consisting of eight items, such as "I am a hard worker." A 5-point Likert-type scale with response options ranging from *very much like me* to *not like me at all* is used to indicate the degree to which respondents believe each statement reflects their level of grit.

In a longitudinal study conducted by Duckworth and Quinn (2009), the Grit-S was deemed a reliable measure of grit. Results from their study indicated adequate test-retest reliability ($r = .68$) after 1 year and sufficient internal consistency ($\alpha s = .82$ and $.84$). Duckworth and Quinn also determined that self-reporting grit is as reliable as informant reporting. Correlations between self-reports and family member and peer reports were .45 and .47, respectively. For the current study, the Grit-S had an internal consistency coefficient of .81.

Brief Resilience Scale (BRS). Smith et al. (2008) created the BRS to assess the ability to bounce back or recover from stress. It is a five-item, self-report measure. Using a 5-point Likert scale with response options ranging from

strongly disagree to *strongly agree*, respondents indicate their level of agreement for items such as “I tend to bounce back quickly after hard times.”

Smith et al. (2008) determined the BRS is a valid and reliable measure of resilience. The BRS was positively correlated ($r = .62$) to the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) but negatively related to constructs such as pessimism ($r = -.56$) and alexithymia ($r = -.47$), thus establishing convergent validity. The BRS has good test-retest reliability after 1 month ($r = .69$) and 3 months ($r = .62$). Demonstrating internal consistency across four samples, Smith et al. reported alphas ranging from .80 to .91. The BRS has an internal consistency coefficient of .86 for the present study.

ARBS. The ARBS, developed by Egan et al. (2007), measures ARBs maintained by nonclinical college students. Based on the work of Ellis (1962), this measure comprises 16 items across three subscales. The Evaluation subscale assesses students’ beliefs about grading procedures, instructional standards, and educational onus. Work Habit measures beliefs related to academic effort, class preparation, and attendance. The Support subscale measures beliefs specific to provisions offered by instructors.

College students use a 5-point Likert-type scale, with response options ranging from *never* to *always*, to report the degree to which they agree or disagree with each statement. A high score indicates that the respondent maintains rational academic beliefs. Alternatively, a low score is indicative of a college student who holds irrational beliefs related to instruction and learning.

Egan et al. (2007) suggested the ARBS is a valid and reliable measure of ARBs. Test-retest reliability ($r = .85$) for the ARBS indicated the measure is consistent over at least 1 week. Internal consistency for the ARBS was .83; coefficient alphas for the subscales were .77 (Evaluation), .59 (Work Habit), and .69 (Support).

In the current study, the ARBS had an internal consistency coefficient of .81. Coefficient alphas for the subscales in this study were .78, .65, and .47 for Evaluation, Work Habit, and Support, respectively. Both full-scale scoring and subscale scoring were used in the analyses conducted in this study.

Results

Preliminary Analysis

An initial analysis was conducted in an effort to gain a basic understanding of the factors under investigation. These factors included resilience, grit, race/ethnicity, gender, college status, and enrollment status. Race/ethnicity was collapsed into minority and majority categories in a manner consistent with Ivers, Johnson, Clarke, Newsome, and Berry (2016). As such, non-White participants ($n = 150$) were classified as racial/ethnic minority, and participants identifying as White ($n = 139$) were categorized as racial/ethnic majority. College status indicated participants who identified as either a first-generation college student or a continuing-generation college student. Part-time and full-time were enrollment status options. Descriptive statistics such as means, standard deviations, and ranges are provided in Table 1.

TABLE 1
**Descriptive Statistics for Grit and Resilience, Race/Ethnicity,
Gender, Enrollment Status, and College Status**

Criterion and Predictor Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Range
Grit				
Race/ethnicity	289	3.69	0.64	1.5–5.0
Minority	150	3.65	0.69	1.5–5.0
Majority	139	3.72	0.58	2.0–5.0
Gender	289	3.69	0.64	1.5–5.0
Male	62	3.75	0.67	2.0–5.0
Female	226	3.68	0.62	1.5–5.0
College status	289	3.69	0.64	1.5–5.0
First-generation college student	190	3.71	0.61	2.0–5.0
Continuing-generation college student	99	3.66	0.69	1.5–5.0
Enrollment status	289	3.69	0.64	1.5–5.0
Part-time	25	3.92	0.43	3.0–4.38
Full-time	264	3.67	0.65	1.5–5.0
Resilience				
Race/ethnicity	289	3.43	0.78	1.5–5.0
Minority	150	3.36	0.79	1.7–5.0
Majority	139	3.50	0.76	1.5–5.0
Gender	289	3.43	0.78	1.5–5.0
Male	62	3.75	0.82	1.7–5.0
Female	226	3.35	0.74	1.5–5.0
College status	289	3.69	0.64	1.5–5.0
First-generation college student	190	3.44	0.77	1.5–5.0
Continuing-generation college student	99	3.40	0.80	1.7–5.0
Enrollment status	289	3.69	0.64	1.5–5.0
Part-time	25	3.53	0.67	2.3–5.0
Full-time	264	3.42	0.79	1.5–5.0

Before further data analysis was performed, an analysis of power was conducted to determine the probability of finding significant effects should they exist. For a sample size of 289, with an alpha level and effect size set at .05 and .15, respectively, the analysis revealed a power of .99. Two multiple regression analyses were conducted to explore ARBs and their association with grit and resilience. The first analysis indicated that evaluation, $t(287) = 2.24$, $p = .026$, and work habit, $t(287) = 7.18$, $p < .001$, were statistically correlated with grit. Support was not significantly associated with grit. A second multiple regression analysis revealed that work habit was significantly associated with resilience, $t(287) = 3.56$, $p < .001$. Neither evaluation nor support were significantly associated with resilience. As a result, evaluation and work habit factors were included in the main analyses.

Main Analysis

Two hierarchical regression analyses were conducted to further explore evaluation and work habit ARBs as they relate to grit and resilience. Evaluation and work habits served as predictor variables because REBT suggests that thoughts precede emotions and behavior. Grit and resilience were criterion variables; we determined they are both behavior/skill oriented and therefore possibly depen-

dent on rational thinking (Dryden, 2014). Basic assumptions of collinearity, normally distributed errors, and uncorrelated errors were tested and satisfied. Additionally, scatterplots and residuals were reviewed to ensure assumptions of normality, linearity, and homoscedasticity were met (Pallant, 2001).

The first hierarchical regression analysis sought to determine the degree to which evaluation and work habits correlated to grit (see Table 2). In the first step of this analysis, demographic variables including race/ethnicity (dummy coded; racial/ethnic majority as a comparison) and gender (dummy coded; male as a comparison group) were entered as control variables as suggested by Cohen, Cohen, West, and Aiken (2003). College status (dummy coded; continuing-generation college student as a comparison) also was included as a control variable in the first step because of its correlation with a variety of noncognitive factors (Macdonald, 2016; Wang & Castañeda-Sound, 2008). Although not a central aspect of this study, enrollment status (dummy coded; full-time as a comparison) was added in the second step on the basis of findings from previous research that suggested its relationship with social-emotional and interpersonal factors (Darolia, 2014; MacCann, Fogarty, & Roberts, 2012). While predictor variables in Steps 1 and 2 were held constant, evaluation and work habits were entered in Steps 3 and 4, respectively.

TABLE 2
Summary of Hierarchical Regression Analysis for
Variables Predicting Grit

Predictor Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	ΔR^2
Step 1				.01	.01
Race/ethnicity	0.07	0.08	.06		
Gender	−0.11	0.90	−.07		
College status	0.06	0.08	.04		
Constant	3.82	0.17			
Step 2				.02	.01
Race/ethnicity	0.07	0.08	.05		
Gender	−0.19	0.09	−.08		
College status	0.04	0.08	.03		
Enrollment status	0.25	0.13	.11		
Constant	3.57	0.22			
Step 3				.10	.08
Race/ethnicity	−0.02	0.07	−.02		
Gender	−0.09	0.09	−.06		
College status	−0.02	0.08	−.02		
Enrollment status	0.20	0.13	−.09		
ARB evaluation	0.04	0.01	.30**		
Constant	2.95	0.24			
Step 4				.24	.13
Race/ethnicity	−0.02	0.07	−.02		
Gender	−0.09	0.08	−.06		
College status	−0.04	0.07	−.03		
Enrollment status	0.11	0.12	.05		
ARB evaluation	0.03	0.01	.19*		
ARB work habit	0.09	0.02	.39**		
Constant	1.54	0.30			

Note. ARB = academic rational belief.

p* = .001. *p* < .001.

Step 1 of the hierarchical regression revealed a nonsignificant relationship between the predictor variables and grit, $F(3, 285) = 0.96, p = .41, R^2 = .01$. In Step 2, the relationship between enrollment status and grit did not reach statistical significance, $F(4, 284) = 1.62, p = .17, R^2 = .02$. The variables in the last two steps of the model were associated with grit. A combination of race/ethnicity, gender, college status, enrollment status, and evaluation in Step 3 was significantly correlated with grit $F(5, 283) = 6.59, p < .001, R^2 = .10$ (adjusted $R^2 = .09$). Evaluation increased the variance explained in grit by 8.0%. In Step 4, race/ethnicity, gender, college status, enrollment status, and evaluation and work habit in combination were statistically significant in relationship to grit, $F(6, 282) = 14.70, p < .001, R^2 = .24$ (adjusted $R^2 = .22$). Work habit increased the variance explained in grit by 13.0%.

The second hierarchical regression explored the relationship between resilience and the predictor variables. Steps 1 and 2 were identical to those included in the first hierarchical regression analysis; work habit was added in Step 3. Each step of the model was correlated with the criterion variable. In Step 1, a combination of race/ethnicity, gender, and college status significantly related to resilience, $F(3, 285) = 6.40, p < .001, R^2 = .06$ (adjusted $R^2 = .05$). College enrollment, in combination with race/ethnicity, gender, and college status, significantly related to resilience in Step 2, $F(4, 284) = 4.93, p = .001, R^2 = .07$ (adjusted $R^2 = .01$). Individually, college enrollment was not statistically significant. In Step 3, the combination of race/ethnicity, gender, college status, college enrollment, and work habit significantly related to resilience, $F(5, 283) = 4.36, p < .001, R^2 = .13$ (adjusted $R^2 = .11$). The inclusion of work habits increased the variance explained in resilience by 6.0% (see Table 3).

TABLE 3
Summary of Hierarchical Regression Analysis for
Variables Predicting Resilience

Predictor Variable	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	ΔR^2
Step 1				.06	.06
Race/ethnicity	0.14	0.09	.09		
Gender	−0.43	0.11	−.23**		
College status	0.07	0.09	.04		
Constant	4.09	0.21			
Step 2				.07	.00
Race/ethnicity	0.14	0.09	.09		
Gender	−0.44	0.11	−.23**		
College status	0.07	0.10	.04		
Enrollment status	0.12	0.16	.04		
Constant	3.97	0.26			
Step 3				.13	.06
Race/ethnicity	0.17	0.09	.08		
Gender	−0.43	0.10	−.23**		
College status	0.31	0.09	.02		
Enrollment status	0.32	0.16	.01		
ARB work habit	0.07	0.02	.25**		
Constant	2.68	0.39			

Note. ARB = academic rational belief.

***p* < .001.

Discussion

This study explored the relationships between two noncognitive factors and several variables, including race/ethnicity, gender, college status, enrollment status, and evaluation and work habit ARBs. The preliminary analysis revealed that work habit was positively associated with grit and resilience. The findings supported Hypothesis 1 and also demonstrated a relationship between evaluation and grit. College students who maintain RBs related to work habits may better position themselves to work toward academic goals. Students who hold RBs related to the evaluation are more likely to plan in advance and prepare for exams. These students also may better understand the purpose of evaluation and realize that their actions lead to success or failure.

The findings of this study failed to adequately support Hypothesis 2. The hierarchical regression analyses indicated that race/ethnicity is not related to grit or resilience. As McGee and Stovall (2015) articulated, conceptualizations of grit and resilience often fail to consider the impact of systemic racism and the fortitude of students from historically underrepresented groups. Alternatively, as the findings suggest, minimal variations in levels of grit and resilience may exist across race/ethnicity.

Gender was not correlated with grit. However, findings suggest that gender is associated with resilience. Specifically, male students reported a significantly higher level of resilience than females. Hirani, Lasiuk, and Hegadoren (2016) explained the discrepancy in levels of resilience among male and female students by stating that “conceptualizations of resilience do not reflect the ways that gender roles, social expectations . . . interact to shape their responses to adversity” (p. 455).

Regarding college status, a relationship did not exist between grit and resilience. First-generation college students and continuing-generation college students reported similar levels of grit and resilience. Additionally, enrollment status was not related to grit or resilience, thus supporting Wilks’s (2008) finding of no meaningful relationship between enrollment status and resilience among social work students. In general, except for gender, this study suggests that demographic variables are not predictive of grit and resilience.

The results of this study suggested that evaluation and work habits are positively correlated with grit; work habit was positively correlated with resilience, thus partially supporting Hypothesis 3. When race/ethnicity, gender, college status, and enrollment status were controlled for, evaluation and work habits were significantly correlated with grit. Additionally, after race/ethnicity, gender, college status, and enrollment status were controlled for, work habit positively related to resilience.

Regarding grit, ARBs related to evaluation and work habits likely position students to prefer long-range planning and attain their goals. Rational beliefs promote a preferential and realistic philosophy of life, including commitment and self-responsibility. As such, students who maintain RBs related to evaluation and work habits may more easily navigate academic requirements when working toward the achievement of their goals. Rational thinking may lead

to the accomplishment of goals, which enhances the overall condition of life (Morley, 2014). Alternatively, students may place unwarranted demands on the evaluation process and maintain beliefs about the work ethic that impede goal attainment. For example, some students may believe that “instructors should give them a good grade if they need it.” This thought places the responsibility of the grade received with the instructor rather than the student. As a result, students are less likely to engage in studious behaviors and more likely to become angry with the instructor when a poor grade is earned. Therefore, students may display less effort and commitment in preparing for exams because RBs are absent from the habits of the mind.

Concerning resilience, this study supports Rodman, Daughters, and Lejuez’s (2009) assertion that RBs are positively related to student persistence. Students who maintain irrational beliefs likely experience more intense emotions during adverse situations. As a result, it may take longer for such students to adjust or bounce back from the obstacles they face. This type of response may hinder classroom efforts and the ability to persist.

When students are faced with discomfort or obstacles, those who maintain RBs related to work habits are better positioned to tolerate and overcome those barriers. For example, a student with car trouble will work through the dilemma and find a way to attend class. The student may prefer that the car did not have a flat tire but realizes that it is not horrible, thus tolerating the situation. As a result, the student can respond in an emotionally healthy manner and overcome the obstacle.

The findings of this study suggest that evaluation and work habit RBs are significantly related to grit and resiliency above and beyond demographic variables. Although correlation does not imply causation, REBT promotes the notion that thoughts lead to behaviors (Dryden, 2014). As such, students who think rationally about academic endeavors may, in turn, demonstrate behaviors that represent grit and resilience. Rational beliefs likely influence many psychosocial aspects of grit and resilience. For example, a student who maintains RBs related to work habits may not procrastinate and therefore demonstrates consistent interest and perseverance of effort (i.e., grit).

Implications

Findings gleaned from this study suggest that college counselors can promote ARBs to increase resilience and grit among college students attending minority-serving institutions of higher education. Studies by Strayhorn (2014), Wolters and Hussain (2015), and others have suggested that resilience and grit are predictors of college student success including persistence and graduation. Eisenberg, Golberstein, and Hunt (2009) also suggested that mental health is related to the academic success of college students. However, a stigma exists that often inhibits college students from seeking mental health services (Gruttadaro & Crudo, 2012).

College counselors who understand REBT and the relationships between ARBs and noncognitive factors, such as grit and resilience, are best positioned to help students succeed. College students can benefit from preventive strategies as well

as interventions conducted by college counselors. In either instance, college counselors can use the ARBS to assess students' beliefs related to instruction and learning. Counselors can also assist students in understanding the connections between thoughts, emotions, and behaviors, which are fundamental components of REBT. As a result, students may improve their metacognitive skills and become more adept at identifying irrational thoughts that impede their academic performance. Using REBT as a vehicle to promote grit and resilience, college counselors can teach students how to dispute irrational thinking and develop a rational philosophy of life. College counselors can also promote self-help skills and offer students tools that reinforce rational thinking. For example, Warren (2012) outlined how college students can use mobile mind mapping applications on smartphones to practice and reinforce a rational philosophy of life.

Preventively, college counselors can partner with student affairs programs to offer psychoeducational sessions during freshman orientation. Providing apropos first-year experiences that promote wellness during transitions and impending adversity seems essential to college student success. These sessions can focus on academic expectations and aim to promote ARBs. The skills students learn to maintain ARBs may promote grit and resilience in addition to positive mental health. Because students may experience challenges or setbacks at any time, counselors should also consider embedding tenets of REBT in preventive, campus-wide services such as empowerment workshops or time management and study skills sessions. College counselor involvement in these events may help to familiarize students with counseling services and to demystify and destigmatize help-seeking behaviors.

Additionally, college counselors can offer group counseling sessions. These sessions may target first-year students and serve as booster or follow-up sessions to the psychoeducation provided during orientation. Group sessions are viable opportunities for college counselors to promote grit and resilience through REBT while further establishing relationships with students. Although initial sessions may emphasize ARBs, once rapport is established, students may be more likely to explore other issues with the college counselor, perhaps through individual work. In addition to fostering grit and resilience, these group encounters can help to promote a sense of social belonging as well as campus involvement, factors linked to postsecondary success (Duckworth & Quinn, 2009; Strayhorn & Terrell, 2010).

Future Research and Limitations

This article has explored the relationship between RBs and grit and resilience. However, additional research is needed to better understand the relationships between these constructs. Researchers are encouraged to design studies that explore the relationships between RBs and the components of grit (i.e., consistent interest, the perseverance of effort). Additionally, researchers should consider the use of culturally sensitive instruments to measure ARBs, grit, and resilience. This effort would afford researchers and educators a better understanding of the thoughts and skills possessed by all college students.

Although this study used a correlational design and found significant relationships between some RBs and grit and resilience, REBT suggests that thoughts lead to emotions and behaviors (Dryden, 2014). As such, from a theoretical perspective, a cause-and-effect relationship exists between RBs and the behaviors that suggest grit and resilience in students. Moving forward, researchers are encouraged to develop experimental studies to support or refute theoretical causation.

Several limitations should be considered when one is attempting to understand the findings of this study. First, this study used self-report measures. Therefore, it is difficult to gauge the accuracy of the participants' responses. It is possible that participants overrated or underrated their degree of RBs or their levels of grit and resilience. Second, the participants constitute a convenience sample rather than a random sample. Although the sample size is adequate and yields appropriate power, researchers should use caution when generalizing the findings.

Finally, the instruments used in this study may lack cultural sensitivity. Because of the diverse set of values and customs of the racial and ethnic groups under investigation in this study, the measures used may fail to measure RBs, grit, and resilience adequately. In addition, as noted by Hirani et al. (2016), women's interpretations of resilience may differ from men's given societal expectations.

Conclusion

Building on the work of Warren and Hale (2016), this article presents a study that explored the relationships between ARBs and grit and resilience. Results indicated that ARBs related to evaluation and work habits are predictive of grit. Additionally, ARBs related to work habits are significantly related to resilience. Researchers are encouraged to further explore the relationships between RBs and grit and resilience, as well as other noncognitive factors, within the college-going population. Such research will likely yield further insights that can inform college counseling, but meanwhile it is important for college counselors to promote rational thinking among college students to promote grit and resilience. This approach is key to ensuring all students have the knowledge, attitudes, and skills necessary for success in college and the workforce.

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