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Examination of Treatment Progress Among College Students in a University Counseling Program

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ABSTRACT
This study evaluated an academic counseling program called the University Turn Around Program (U-Turn) for college students experiencing mental health concerns and low academic achievement. Forty-three (27 men, 16 women) college students ranged in age from 18–25 years old ($M = 19.65$, $SD = 1.46$), with 29 freshman, eight sophomores, and six juniors. Thirty-four students identified as Hispanic (79%), two students identified as African American (5%), and seven students identified as White/Caucasian or other (16%). Depression, generalized anxiety, and academic distress were measured on the CCAPS-34, and anxiety, concentration, motivation, self-testing, and time management were measured on the LASSI-3. Paired samples $t$ tests revealed statistically significant improvements for each measure that were characterized by medium to large effects ($d = 0.55$ to $1.18$) but were not clinically significant. These results support the need for additional inquiries into the use of the U-Turn program’s inclusion in university counseling centers.

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KEYWORDS
College students; within-subjects; university counseling center

Students transitioning into college often face personal and academic challenges. First-year college students will especially encounter difficulties during this time of increased personal responsibility. Stressors that can associate with this new transition are often influenced by deciding what major to study, maintaining academic success, time management, excessive quantity of study material, having a social life, managing individual responsibilities and other common requirements (Balapala & Indla, 2017, Canto et al., 2017; Ishii et al., 2018). Having feelings or thoughts of not being able to control the demands of postsecondary education can influence young people’s mental health throughout the transition into college (Land & Legters, 2005; Pelkonen et al., 2008). Transitioning changes, although critical to the developmental progression of young adults, are linked with psychological symptoms such as depression, and anxiety that can lead to a variety of risk related behaviors and outcomes (Fernández Villa et al., 2013).
Mental Health Disparities Amongst Different Ethnic Groups of College Students

Lipson et al. (2018) examined mental health disparities among different ethnic groups of college students. In their study, mental health prevalence and service outcome data was collected for over 40,000 college students (71% white), including 13,000 minority students (African American (4%), Latinx (5%), Asian/Asian American (10%), Arab/Arab American (1%), multiracial (6%), and other (2%)). Lipson et al. (2018) found some variations in the occurrence of mental health problems and significant disparities in treatment across race/ethnicity. Overall, 42% of the students met criteria for a mental health condition, with prevalence ranging from 40% among African American students to 53% for Arab/Arab American students. Among African American students with a mental health condition, only 21% received a diagnosis, compared with 48% of their White peers. White students also had the highest prevalence of treatment, at 46%, while Asian/Asian American students had the lowest prevalence of treatment at 23%, and international Asian students had the least prevalence, at 19% (Lipson et al., 2018).

The Center for Collegiate Mental Health (2013) annual report collected data from 120 colleges and universities describing 81,000 unique college students seeking treatment, 2,823 clinicians, and over 730,567 appointments. In general, students who received prior mental health treatment (prior counseling, psychiatric medications, or psychiatric hospitalization) had higher mean scores on all CCAPS-34 subscales, the Distress Index, and the suicidal and homicidal items than those who did not have a history of mental health treatment. Forty-three percent of men exceeded the elevated cut score on the Depression subscale whereas only 13% exceeded the elevated cut point on the Eating Concerns subscale. Among women respondents, 45% exceeded the elevated cut score in Depression whereas 20% exceeded the Alcohol Use elevated cut score.

When making comparisons by race/ethnicity, White students were more likely than minority students to have elevated mean scores on Generalized Anxiety, Social Anxiety, Eating Concerns, and Alcohol Use. The range of effect size was small for all these comparisons. Minority students reported higher means in the Depression, Academic Distress, Hostility, Distress Index, suicidal and homicidal items than White students but the range of effect size of these differences were also small.

The U.S. Census Bureau (2012), has identified the Hispanic population as one of the largest growing populations in the U.S. (Vela et al., 2016). Despite this growth, there continues to be a trend of low academic completion rates among Hispanic College Students (American Council on Education, 2017). Hispanics are also more at risk for developing depressive symptoms, mental health impairment, and related risk for suicide attempts, suicide ideation, and feelings of hopelessness compared with other ethnic groups (Centers for Disease Control & Prevention, 2011; Wagstaff & Polo, 2012).

Mental Health Concerns Amongst College Students

An estimated 14% — 17% of college students will receive a diagnoses or treatment for anxiety or depression (ACHA; American College Health Association, 2016). This is concerning given that only 45% of individuals who are diagnosed with psychological disorders receive treatment from mental health care professionals (Substance Abuse and
Mental Health Services Administration, 2015), a metric that is higher among the college student population (American College Health Association, 2016). Ward-Ciesielski et al. (2019) suggested that although localized efforts to increase the availability of mental health services on college campuses have increased, the help-seeking rates remain low.

Psychological distress can present challenges such as academic distress and personal challenges which can lead to poor concentration, low motivation, loss of hope, and impaired quality of life (Andrews & Wilding, 2004; Vaez & Laflamme, 2003). Hispanics who develop depressive symptoms have more of a risk for mental health impairment along with an increase for suicide attempts, suicide ideation, and hopeless feelings compared with other ethnic groups (Centers for Disease Control & Prevention, 2011; Wagstaff & Polo, 2012). Hispanic students are less likely to access campus resources or reach out for professional help (Miville & Constantine, 2006). Support from family can have a powerful impact to motivate students to strive and be successful in a postsecondary setting. For Hispanic students, resilience and academic performance is strongly tied to family which contributes to positive mental health (Cavazos et al., 2010; Vela et al., 2015). Although researchers have shown some positive factors such as family to support and help college students perform better academically and to improve mental health, there is a lack of research on rural university counseling programs in recognizing the academic needs of college students and for providing effective counseling interventions.

**Challenges in Rural Institutions for College Students**

College students attending rural universities have limited resources available to receive emotional and academic support (Peek-Asa et al., 2011). To effectively implement treatment to individuals living in rural communities, university counseling programs, counselors, therapists, or other mental health professionals must understand the needs of college students coming from remote areas. College-going rates of rural students have been shown to fall behind those of suburban and urban students (Tieken, 2016). In a study done in 2004, Provasnik et al. (2007) stated that, compared to 37% of 18- to 24-year-olds living in cities or suburbs, only 27% of rural 18- to 24-year-olds were enrolled in colleges or universities. Lack of academic preparation may account for barriers such as socioeconomic barriers (McDonough et al., 2010). Low enrollment due to financial constraints can be detrimental for rural youth which can cause students to drop out or hinder college enrollment and completion (Byun et al., 2012; Teachman, 1987). Due to rural student’s likelihood of not having parents that are college-educated, this can cause anxiety and depression due to a lack of knowledge on the demands of college life (Provasnik et al., 2007). This increases questions about how rural students come to access academic resources and support for psychological symptoms (Yorgason et al., 2008). Although more research is being done on the academic achievement and mental health of college students, less consideration has been given to treatment effectiveness for mental health needs of college students, particularly while enrolled in a rural institution (Pina-Watson et al., 2013).

Given the importance of college students receiving access to emotional and academic support, we examined the efficacy of an academic counseling program called the
University Turn Around program (U-Turn) that was implemented to improve academic strengths, study strategies, and reduce mental health symptoms amongst college students attending a Hispanic serving rural institution. Our activities were guided by 2 research questions: (a) Are there statistically, practically, and clinically significant differences in mental health-related symptoms and self-reported learning and study skills following a targeted intervention?

**Method**

We implemented a pre- and posttest within-subjects group design to determine the effectiveness of an academic recovery counseling program on reducing mental health symptoms and increasing learning and study strategies.

**Participant Characteristics**

Forty-three (27 men, 16 women) college students attending a Hispanic-serving institution of higher education in a rural south-central region of the United States were recruited to participate in this study. Participants ranged in age from 18-25 years old ($M = 19.65$, $SD = 1.46$) and were 29 student freshman, 3 sophomores, and 6 juniors. Thirty-four participants identified as Hispanic (79%), two students identified as African American (5%), and seven students identified as White/Caucasian or other (16%).

**Sampling Procedures**

Following IRB approval, convenience sampling was conducted to recruit participants from the university student health and wellness center which treats students with issues related to academic concerns, personal and mental health related issues, and alcohol and drug-related dependence/co dependence. Students were asked to participate in the research study following their admission into services at the university student health and wellness center.

**Measurement of Constructs**

**Psychological Symptoms**

The Counseling Center Assessment of Psychological Symptoms-34 (CCAPS-34; Locke et al., 2011) is a 34-item instrument used to assess counseling outcomes among college students. The instrument measures client functioning using a 5-point Likert scale (ranging from 0 to 4) across 8 areas: depression, generalized anxiety, social anxiety, academic distress, eating concerns, family distress, hostility, and substance abuse/alcohol use, with higher scores indicating stronger evidence of decreased functioning. Example items include “I am shy around others” and “my heart races for no good reason.” Locke et al. (2011) reported fair to good internal consistency with alpha coefficients ranging from 0.76 (Academic Distress) to 0.89 (Depression) and test-retest reliability coefficients ranging from 0.79 (Alcohol Use) to 0.87 (Depression) (Center for Collegiate Mental Health, 2010; Locke et al., 2011). Within our sample, alpha coefficients ranged from 0.54 to
0.67. For this study, only subscales on depression, generalized anxiety, and academic distress were used.

**Learning and Study Strategies**

The Learning and Study Strategies Inventory - Third Edition (LASSI-3; Weinstein et al., 2016) is a 10-scale, 60-item assessment of students’ awareness about and use of learning and study strategies related to skill, will and self-regulation components of strategic learning. The LASSI-3 is both diagnostic and prescriptive. The LASSI-3 provides standardized scores (percentile score equivalents) and national norms for ten different scales (Information Processing scale, Selecting Main Ideas scale, Test Strategies scale, Anxiety scale, Attitude scale, Motivation scale, Concentration scale, Self-Testing scale, Time Management scale, and Using Academic Resources scale). It provides students with a summary of their strengths and weaknesses, compared to other college students, in the areas covered by the ten scales. Example items include “I find it hard to stick to a study schedule” and “I concentrate fully when studying.” The LASSI-3 also provides feedback about opportunities for improvement. Weinstein et al. (2016) reported fair to good internal consistency alpha coefficients ranging from (.76 to .89), test-retest reliability, and convergent validity. With our sample, alpha coefficients ranged from 0.62 to 0.75. For this study, only subscales on Anxiety, Time Management, Motivation, Concentration, and Self-Testing were used.

**Procedure**

Participants received an informed consent form that explained the purpose of the study, participants’ rights, confidentiality, and potential risks involved in the study, and agreed to participate in the University Turn Around program (U-Turn) study. Each client was given the CCAPS-34 and LASSI-3 before the first intervention session and at the end of the last session.

**Intervention**

The University Turn-Around Program (U-Turn) is a three-session academic counseling program that teaches students ways to strengthen academic performance and explore elements of success in college. For this study, a total of three consecutive counseling sessions per client were provided weekly over a five-month period (January–May). Participants were assigned to a counselor which was either a licensed professional counselor or a counseling student completing internship requirements. The program director provided training to all counselors and conducted fidelity checks on the implementation of the U-Turn program. Each counseling session was 60 minutes and focused on strengths, needs, goal setting, time management, and discussion of personal values. The program also explored personal challenges experienced by students, and addressed mental health needs through counseling interventions.

In the first session, clients are introduced to program goals and are given an outline of sessions. Students are then asked to complete a Time Management Worksheet within session by reviewing priorities and addressing academic strengths and weaknesses. In
the second session, personal values are explored and time management skills are taught. Participants completed a SMART Goals Worksheet in connection with areas for potential growth and aligned with their values. Small homework activities such as a Goal Setting Sheet are given to provide additional reflection. The third session addressed progress on the Goal Setting Sheet and participants are given information about their learning styles, and discuss study strategies with their counselor. Stress management and relaxation exercises are offered, and clients are referred for additional services if necessary.

Data Analysis Plan

Statistical Power Analysis
An a priori power analysis was conducted using G*Power 3 software program (Faul et al., 2007) to determine the number of participants needed to establish statistical power for this research design at the .80 level given \( \alpha = .05 \). The analysis suggested that a sample size of 27 was necessary to detect a medium effect (\( d = .50 \)) of treatment group type for the dependent variables over time.

Preliminary Analysis
There were no missing values within the data set for participant response ratings due to the student health and wellness center’s computer-based assessment system requiring all questions to be answered. Model assumptions including normality and homogeneity of variance were met.

Primary Analysis
Two series of dependent samples \( t \)-tests were computed to assess the association of U-Turn and the dependent variables over time. One series of \( t \)-tests were computed for mental health variables (depression, anxiety, academic distress) and another for learning and study skills (anxiety, concentration, motivation, self-testing, and time management). Bonferroni corrections were made to account for the influence of increased Type I error probability when making multiple comparisons. As a result, statistical significance tests for mental health and learning and study skill variables were interpreted at .016 and .010 levels, respectively.

Estimates of Effect Size and Clinical Significance. Estimates of effect size were computed using Cohen’s \( d \) which represents pre-post changes based on units of standard deviation using procedures described by Watson et al. (2016). These values were regarded as representing small (.20), medium (.50), and large (.80) effects and situated back into context. Clinical significance was determined in accordance with calculation of Percent Improvement (PI) values based on procedures described by Lenz (2020a, 2020b). Percent Improvement values greater than 50% were interpreted as representing clinically significant improvement, 25% to 49% were interpreted as slightly improved without clinical significance, and less than 25% represented no clinical significance.
Results

Changes in Mental Health Symptoms Over Time

First, a paired samples t-test was conducted between pretest and post-test scores across participants on the CCAPS-34 subscales of depression, generalized anxiety, and academic distress (see Table 1). A Bonferroni correction of 0.016 was utilized. The results indicated that the respondents’ pretest scores of the depression scale (\(M = 43.65, SD = 8.36\)) were decreased at posttest, (\(M = 38.21, SD = 4.53\)), \(t(42) = 4.75, p < .001, d = 0.73, PI = 12.47\%\). Interpretation of the related effect size estimate (\(d = 0.73\)) was indicative of a medium effect suggesting a change of 73% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 12.47% improvement is not clinically significant (Lenz, 2020a, 2020b).

The respondents’ pretest scores of the Generalized Anxiety scale (\(M = 46.49, SD = 8.74\)) were decreased at posttest, (\(M = 41.81, SD = 6.21\)), \(t(42) = 4.09, p < .001, d = 0.63, PI = 10.05\%\). Interpretation of the related effect size estimate (\(d = 0.63\)) was indicative of a medium effect suggesting a change of 63% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 10.05% improvement is not clinically significant (Lenz, 2020a, 2020b).

The respondents’ pretest scores of the Academic Distress scale (\(M = 46.53, SD = 9.51\)) were decreased at posttest, (\(M = 41.60, SD = 7.02\)), \(t(42) = 3.59, p < .001, d = 0.55, PI = 10.59\%\). Interpretation of the related effect size estimate (\(d = 0.55\)) was indicative of a medium effect suggesting a change of 55% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 10.59% improvement is not clinically significant (Lenz, 2020a, 2020b).

Changes in Ratings of Learning and Study Strategies Over Time

Second, a paired samples t-test was conducted between pretest and post-test scores across participants on the LASSI-3 subscales of Anxiety, Time Management, Motivation, Table 1. Paired Samples t-Test (N = 43).

<table>
<thead>
<tr>
<th>Mental Health Symptoms</th>
<th>(t)</th>
<th>(p)</th>
<th>(d) (95% CI)</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>4.752</td>
<td>&lt;.001</td>
<td>0.73 (0.39, 1.06)</td>
<td>12.47%</td>
</tr>
<tr>
<td>Generalized anxiety</td>
<td>4.097</td>
<td>&lt;.001</td>
<td>0.63 (0.29, 0.95)</td>
<td>10.05%</td>
</tr>
<tr>
<td>Academic distress</td>
<td>3.596</td>
<td>&lt;.001</td>
<td>0.55 (0.23, 0.87)</td>
<td>10.59%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratings of Learning and Study Strategies</th>
<th>(t)</th>
<th>(p)</th>
<th>(d) (95% CI)</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>-6.316</td>
<td>&lt;.001</td>
<td>-0.96 (-1.32, -0.60)</td>
<td>46.03%</td>
</tr>
<tr>
<td>Concentration</td>
<td>-7.784</td>
<td>&lt;.001</td>
<td>-1.187 (-1.57, -0.79)</td>
<td>48.73%</td>
</tr>
<tr>
<td>Motivation</td>
<td>-6.473</td>
<td>&lt;.001</td>
<td>-0.987 (-1.35, -0.62)</td>
<td>45.11%</td>
</tr>
<tr>
<td>Self-testing</td>
<td>-4.221</td>
<td>&lt;.001</td>
<td>-0.644 (-0.97, -0.31)</td>
<td>28.56%</td>
</tr>
<tr>
<td>Time management</td>
<td>-7.503</td>
<td>&lt;.001</td>
<td>-1.144 (-1.53, -0.75)</td>
<td>64.76%</td>
</tr>
</tbody>
</table>

Note. *\(p < .001\).
\(d = 0.20\) small effect size, \(d = 0.50\) medium effect size, \(d = 0.80\) large effect size.
Percent Improvement (PI) values greater than 50% were interpreted as representing clinically significant improvement, 25% to 49% were interpreted as slightly improved without clinical significance, and less than 25% represented no clinical significance.

Bonferroni correction for Mental Health Symptoms and Ratings of Learning and Study Strategies were .016 and .010, respectively.
Concentration, and Self-Testing (see Table 1). A Bonferroni correction of 0.010 was utilized. The results indicated that the respondents’ pretest scores of the Anxiety scale ($M = 33.51, SD = 32.23$) were improved at posttest, ($M = 62.09, SD = 27.67$), $t (42) = -6.32, p < .001, d = -0.96, PI = 46.03\%$. Interpretation of the related effect size estimate ($d = -0.96$) was indicative of a large effect suggesting a change of 96% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 46.03% improvement represents slight improvement that is not clinically significant (Lenz, 2020a, 2020b).

The results indicated that the respondents’ pretest scores of the Concentration scale ($M = 31.95, SD = 28.99$) were improved at posttest, ($M = 62.32, SD = 25.43$), $t (42) = -7.78, p < .001, d = -1.19, PI = 48.73\%$. Interpretation of the related effect size estimate ($d = -1.19$) was indicative of a large effect suggesting a change of 119% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 48.73% improvement represents slight improvement that is not clinically significant (Lenz, 2020a, 2020b).

The results indicated that the respondents’ pretest scores of the Motivation scale ($M = 29.79, SD = 26.15$) were improved at posttest, ($M = 54.28, SD = 29.45$), $t (42) = -6.47, p < .001, d = -0.98, PI = 45.11\%$. Interpretation of the related effect size estimate ($d = -0.98$) was indicative of a large effect suggesting a change of 98% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 45.11% improvement represents slight improvement that is not clinically significant (Lenz, 2020a, 2020b).

The results indicated that the respondents’ pretest scores of the Self-Testing scale ($M = 47.16, SD = 29.21$) were improved at posttest, ($M = 66.02, SD = 26.86$), $t (42) = -4.22, p < .001, d = -0.64, PI = 28.56\%$. Interpretation of the related effect size estimate ($d = -0.64$) was indicative of a medium effect suggesting a change of 64% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 28.56% represents slight improvement that is not clinically significant (Lenz, 2020a, 2020b).

The results indicated that the respondents’ pretest scores of the Time Management scale ($M = 33.56, SD = 28.96$) were improved at posttest, ($M = 65.28, SD = 27.90$), $t (42) = -7.50, p < .001, d = -1.14, PI = 64.76\%$. Interpretation of the related effect size estimate ($d = -1.14$) was indicative of a large effect suggesting a change of 114% of a standard deviation unit from pretest to posttest (Watson et al., 2016). Interpretation of the clinical significance estimate suggests that 64.73% improvement represents clinically significant improvement (Lenz, 2020a, 2020b).

Discussion

In answering our research question, we found helpful effects of the U-Turn program for improving mental health outcomes given the results from the dependent samples $t$-test for pretest and post-test scores for depression, generalized anxiety, and academic distress revealing statistical significance with effect sizes ranging from 0.54 to 0.72, CI $[0.22, 1.06]$ suggesting medium treatment effect. Percent improvement for the CCAPS-34 subscale values ranged from 10.05% to 12.07% improvement which represented no
clinical significance. Because we only found slight improvement in mental health outcomes, we speculate this may be due to the U-Turn program having more of a focus on strengthening academic performance, study strategies, and exploring elements of success in college rather than primarily focusing on mental health related issues. These findings are reasonable given that the U-Turn program is a brief intervention with a greater emphasis on improving learning attitudes and study strategies. Further research is needed to examine the effectiveness of the U-Turn program for mental health related outcome measures.

We did find improvement for learning attitudes such as concentration, motivation, and study strategies such as self-testing, and time management as dependent samples t-tests revealed they were all statistically significant with large effect sizes ranging from −0.64 to −1.18, CI [−0.97, −0.79]. We found the most meaningful changes between the pretest and post-test scores occurring on the LASSI-3 subscales with percent improvement (PI) scores ranging from 28.56% for self-testing to 64.76% for time management. Blanchard and Schwarz (1988) suggested that PI values exceeding 50% represent clinically significant improvements in symptoms or functioning. Hiller et al. (2012) analyses suggested that PI values greater than 50% are associated with large effect sizes (e.g., $d = 1.14$) (Lenz, 2020b). We believe the improvement in participants’ scores can be attributed to the structure and activities prepared for participants within each U-Turn session.

Some of the activities we believe positively impacted participant outcomes included reviewing an agenda, building rapport while discussing limits of confidentiality, and reviewing program goals and participant’s own personal goals. Lipson et al. (2018) found that awareness to the need for services appears to be the strongest predictor of help seeking, while the most commonly reported barrier for college students seeking treatment is “I prefer to deal with issues on my own,” endorsed by 51% of all students in their sample which reflects a lack of perceived need around addressing mental health and academic needs. Because the U-Turn program begins with a thorough needs assessment, students recognize their areas of need and collaboratively establish session goals.

Participants were asked to complete a time management sheet during the first session and discuss their schedule. We believe this helped participants gain awareness of their priorities and decreased their anxiety by feeling more prepared after planning their schedule with the counselor. We also believe the personal values checklist homework activity assigned after the first session allowed participants to gain more insight in what they find important and how they prioritize their needs. Other activities we believe positively impacted participant outcomes included a discussion of learning strategies from the administration of the VARK questionnaire, and the completion of their smart goals worksheet where participants connected areas for potential growth with their personal values. Discussions of learning strategies and achievement of smart goals planned from sessions support improvements in academic self-efficacy and mental health. Cavazos Vela et al. (2016) found that perceptions of college self-efficacy served as a positive predictor of Hispanic college students’ mental health. Their finding suggests that as college self-efficacy improves, the level of mental health improves. There are also a number of studies that support the relationship among college self-efficacy, academic achievement, and the pursuit of college (Ojeda et al., 2011).


**Recommendations for Practice and Future Research**

Because there continues to be low academic completion rates particularly among minority college students (American Council on Education, 2017), and because there are a number of challenges for college students living in rural areas such as limited career opportunities, and access to mental health resources (World Health Organization, 2018), we recommend all rural institutions implement interventions aimed at assessing values, teaching time management strategies, and addressing mental health needs. We interpret our data to suggest that as attitudes toward motivation and concentration improve, academic distress decreases which also decreases mental health related symptoms.

We recommend several features of the U-Turn program to be replicated at other institutions. These features include administration of the LASSI web assessment and CCAPS-34, a thorough review of participant’s time management and scheduling, a review and discussion of personal values, a review and discussion of personal goals in connection with areas for potential growth and values, as well as the administration and discussion of the VARK questionnaire reviewing participant learning styles and study strategies.

Future research is recommended on the implementation of institutional programming to continue examining factors that promote academic success and improvement in mental health functioning particularly in rural areas. An area of limitation with our study is that some participants were referred to the U-Turn program after being placed on academic probation. We did not control for possible confounding effects of being placed on academic probation, nor know if it had an unintended effect on outcomes. Our research is considered exploratory as we did not include a comparison group. Researchers should include a control or comparison group for a better comparison of program effectiveness, and to see how this program compares to treatment as usual. Further research is necessary to determine which specific activities and particular aspects of the intervention were helpful for improving outcomes.

Researchers in previous studies have highlighted the relationship between mental health symptoms and academic achievement, (Cavazos et al., 2010; Vela et al., 2015) yet little was known about differences in treatment effect based on gender variables and student classification. Results of this study expand on the available knowledge by highlighting the positive effects of an academic counseling program (U-Turn) on college students attending a rural university.

**Disclosure Statement**

No potential conflict of interest was reported by the authors.

**Notes on Contributors**

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