

Fall 2018

Examining the association between therapeutic factors and outcomes of academic enhancement seminars

Kristin G Wurster
University of Iowa

Copyright © 2018 Kristin G Wurster

This dissertation is available at Iowa Research Online: <https://ir.uiowa.edu/etd/6666>

Recommended Citation

Wurster, Kristin G. "Examining the association between therapeutic factors and outcomes of academic enhancement seminars." PhD (Doctor of Philosophy) thesis, University of Iowa, 2018.
<https://doi.org/10.17077/etd.v9mw-u0vc>

Follow this and additional works at: <https://ir.uiowa.edu/etd>

Part of the [Educational Psychology Commons](#)

EXAMINING THE ASSOCIATION BETWEEN THERAPEUTIC FACTORS AND
OUTCOMES OF ACADEMIC ENHANCEMENT SEMINARS

by

Kristin G. Wurster

A thesis submitted in partial fulfillment
of the requirements for the Doctor of Philosophy
degree in Psychological and Quantitative Foundations in the
Graduate College of
The University of Iowa

December 2018

Thesis Supervisors: Professor Megan Foley Nicpon
Assistant Professor Dennis Martin Kivlighan

To those who have shared their stories with me – friends, students, clients, and anonymous voices at the other end of the line. I hope to never forget the privilege of listening.

ACKNOWLEDGEMENTS

To my co-chairs, Drs. Megan Foley Nicpon and Martin Kivlighan, thank you for your wisdom, guidance, and patience throughout this process. Megan, you have supported and empowered me since I first stepped foot in your office. Thank you for believing in me, advocating for me, and being a role model for me in more ways than one. Martin, your enthusiasm for research is contagious. I am grateful for your optimism and methodological savviness. To all the Counseling Psychology faculty, thank you for lessons that have shaped me personally as well as professionally. My thanks also go to my clinical supervisors over the past six years, particularly Drs. Julie Corkery and Paula Keeton who were so encouraging as I came to the final stages of internship and my dissertation.

These past years have been made immeasurably lighter by the support and encouragement of many dear ones, including my cohort, former colleagues who became friends, and friends who have become family. I am deeply grateful to have such kind, thoughtful, funny, tenacious people cheering me on. Thank you to my parents and siblings for your love and seemingly unshakeable belief in my abilities, and to my nieces and nephews - I strive every day to be the person you think I am.

My deepest gratitude to Mike, my brilliant, compassionate partner in life, love, and parenting. You've been my ballast through these years, unflinching in your support while also pursuing your own academic goals. It has been a blur of sleepless nights and coffee, yet I would choose it again and again with you. To my little force, Ellen, and my sweet babe, Teddy, nothing inspires productivity like the prospect of more time with you. You are my greatest joy and motivation.

ABSTRACT

Many colleges have devoted institutional resources to retention initiatives, particularly those targeting students who have been placed on academic probation, but assessment of academic enhancement courses for students on academic probation has generally been limited to correlational studies in which the entire intervention serves as the independent variable. This study, guided by that of Kivlighan et al. (2018), applied knowledge of therapeutic factors related to positive outcomes in group psychotherapy to academic enhancement seminars in order to determine whether the same factors might also be associated with positive outcomes, as measured by semester grade point average (GPA) and participants' reported college self-efficacy and perception of the college environment. Ratings of therapeutic factors from 145 first-year college students enrolled in 11 sections of an academic enhancement seminar were modeled as predictors of change in participants' grade-point average (GPA), college self-efficacy, and perception of the college environment. We did not find an association between any of the therapeutic factors and the outcome variables. The intraclass correlation (ICC) coefficient (ρ) for post-intervention semester GPA was 0.09 ($p = .021$), meaning 9% of the variance in adjusted post-intervention GPA was accounted for by a student's course section. Further research is needed to understand differences in sections that contributed to this.

PUBLIC ABSTRACT

Many students start but do not complete college. A group of students at risk of leaving college without a degree is those placed on academic probation. “Academic probation” means a student’s grade point average (GPA) is below the minimum required to graduate. Some institutions will not permit students to register if they continue to be on academic probation for multiple semesters. While many institutions have created classroom-based interventions for students on academic probation, assessment of these courses has been limited. Most studies have considered only whether completing the course is associated with improved academic performance and retention. This makes it difficult to improve upon these courses, as it is not clear what aspects of the course are associated with positive outcomes. The current study sought to determine if factors known to be responsible for change in group therapy (called “therapeutic factors”) were associated with positive outcomes in a seminar for students on academic probation. It used methods similar to Kivlighan et al. (2018) to determine if change in therapeutic factors was associated with improved GPA, belief in one’s ability to succeed in college, and perception of the college environment. We did not find an association. The article discusses why that might be, and future directions for studying intervention courses for students on academic probation.

TABLE OF CONTENTS

LIST OF TABLES	vii
EXAMINING THE ASSOCIATION BETWEEN THERAPEUTIC FACTORS AND OUTCOMES OF ACADEMIC ENHANCEMENT SEMINARS	1
Introduction.....	1
Research Purpose	8
Method	8
Participants.....	8
Academic Intervention.....	9
Measures	11
Procedure	13
Data Analysis	14
Results.....	15
Discussion.....	16
Limitations and Future Directions	21
Conclusions.....	22
REFERENCES	25

LIST OF TABLES

Table 1. Association between changes in therapeutic factors and adjust post-intervention academic performance, self-efficacy, and perceptions of the university climate.	24
---	----

EXAMINING THE ASSOCIATION BETWEEN THERAPEUTIC FACTORS AND OUTCOMES OF ACADEMIC ENHANCEMENT SEMINARS

Introduction

Only 60% percent of first-year, full-time students in the United States who entered college at a four-year institution in 2010 had graduated from that institution by 2016 (U.S. Department of Education, 2018). It is challenging to identify why students leave college without earning degrees, and what student characteristics contribute to college persistence and degree completion (Robbins et al., 2004). Respondents on a national survey of students who left college before completing their degrees identified personal, financial, and family responsibility before academic problems as their reasons for leaving (Ross et al., 2012). In a review of college intervention strategies, Robbins, Oh, Le, & Button (2009) found those aiming to increase persistence and improve college outcomes generally can be divided into three categories: academic skills, self-management, and socialization. Per Robbins et al., academic skills strategies build those specific skill sets that help students be successful academically, such as study skills and note-taking tactics. Self-management strategies target skills necessary for emotional and self-regulation, such as stress management, anxiety reduction, and self-acceptance interventions. Socialization strategies aim to connect students with their peers and socialize them into the institutional culture. Robbins et al. found self-management and socialization interventions had the strongest effects upon academic retention. They also reported self-management and academic skills interventions impacted psychosocial factors related to motivational and emotional control. Robbins et al. note there has been limited assessment of interventions intended to increase college retention, and it has generally consisted of correlation between participation in the intervention and improved academic performance or retention rates. More in-depth evaluation is needed to determine what factors within the interventions might be

contributing to positive outcomes; without this, it is challenging for institutions to know how they might improve these interventions.

Given one of the best predictors of college student persistence is grades (Pascarella & Terenzini, 2005), an identifiable subpopulation at risk of attrition is students who have been placed on academic probation. Academic probation signifies a student's GPA is below the minimum required to graduate (Kelley, 1996). Just as the majority of students who leave college without a degree identify personal and non-academic reasons more often than academic (Ross et al., 2012), the majority of students on academic probation cite personal factors (e.g., family and health issues, lack of motivation, difficulty transitioning to college, financial issues) as the cause of their poor performance (James & Graham, 2010; Trombley, 2001). Interventions for students on academic probation generally can be divided into two categories: classroom/workshop interventions, or individual advising/counseling (Kamphoff, Hutson, Amundsen, & Atwood, 2007). In their review of the literature on persistence, Pascarella and Terenzini (2005) note peer influence has a statistically significant and positive effect upon persistence among college students attending four-year institutions, and multiple models of persistence suggest students who feel socially integrated into the campus environment and who feel a sense of belonging are more likely to persist (Astin, 1991; Tinto, 1993). This suggests probationary students might benefit from classroom-based interventions that help them feel more connected to their peers. Similar to retention interventions, there has been limited assessment of interventions for students on academic probation. Evaluations of classroom-based interventions for students on academic probation generally have been correlational, with the entire intervention serving as the independent variable (e.g., Coleman & Freedman, 1996; Hanger, Goldenson, Weinberg, Schmitz-Sciborski, & Monzon, 2011; Humphrey, 2006; Kamphoff et al., 2007; McGrath &

Burd, 2012; Mellor, Brooks, Gray, & Jordan, 2015). This limits the ability of institutions to create and improve upon these courses, as it is unclear what aspects of the intervention contribute to positive outcomes.

Many authors have discussed the need to identify and assist students who are struggling academically, and many potential interventions have been proposed and implemented. Less attention has been given to assessing the effectiveness of these programs. The lack of research on processes and mechanisms within effective interventions has been documented within the literature (Pascarella & Terenzini, 2005; Robbins et al., 2009). Kivlighan et al. (2018) noted the paucity of research in this area and proposed an investigation of how process variables might be impacting outcomes in an academic enhancement seminar. Specifically, they expressed interest in the role of hope and belongingness on students' academic performance (as measured by GPA) and persistence. Informed by Gloria and Rodriguez's (2000) psychosociocultural model, they also postulated small-group interventions may be effective because they mimic the larger social microcosm of the campus and, in facilitating students' experiences of hope and belonging, they serve as a corrective experience. Kivlighan et al. drew upon group processes research and a measure of therapeutic factors within group psychotherapy to test this within their academic enhancement course.

Though there has been limited research on process variables within interventions for students on academic probation, there is a large body of research on therapeutic factors and process outcomes within group therapy interventions. Therapeutic factors, according to Yalom and Leszcz (2005), are the mechanisms of change in group psychotherapy. Yalom and Leszcz identify eleven factors: instillation of hope, universality, imparting information, altruism, corrective recapitulation, socializing techniques, imitative behavior, interpersonal learning, group

cohesiveness, catharsis, and existential factors. Some of these factors target cognitive, behavioral, or emotional change, while others describe conditions that must be present in the group for change to occur. MacNair-Semands et al. (2010) described four global dimensions of the group process that likely underlie Yalom's eleven factors: Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning. Instillation of Hope refers to group members' positive expectations for the future and hope for change, as impacted by an enhanced sense of universality through their interactions with other members. Secure Emotional Expression is understood to reflect how comfortable and safe members feel within the group, which affects their ability to talk openly about their experiences. Central to this factor is a sense of belongingness. Awareness of Relational Impact reflects how members, through interpersonal experiences, gain insight about how they impact and are impacted by others. Social Learning describes those skills members acquire by participating in the group process, which can then be generalized to their interactions outside of group as well. Using a measure that operationalizes psychosocial constructs within a group setting seems particularly applicable given that classroom-based interventions for students on academic probation often facilitate self-reflection and include discussion of personal, as well as academic, problems (e.g., Coleman & Freedman, 1996; Hanger et al., 2011; Humphrey, 2006; Kamphoff et al., 2007; McGrath & Burd, 2012; Mellor et al., 2015).

Kivlighan et al. (2018) used MacNair-Semands et al.'s (2010) measure to determine hope and belongingness in undergraduate students on academic probation who enrolled in a voluntary, one-credit, graded seminar designed to improve students' academic standing. They were interested in growth in hope and belongingness, and whether this was associated with growth in academic outcome. There were 167 students across 22 sections of the course; all enrolled

students gave consent to participate in the study. Seminars were held for 75 minutes weekly and lasted 10 weeks. They were taught by graduate students in counseling psychology who received training in interpersonal process and group facilitation prior to facilitating the course. Instructors used an intervention manual to standardize course content. Kivlighan et al. report that “the program’s curriculum was designed to help students clarify their reasons and expectations for being in school, formulate strategies to improve problem-solving skills, identify long- and short-term goals, explore psychocultural factors related to academic success, and develop social competence necessary for academic and interpersonal success” (p. 207). Facilitators reportedly sought to engage students in reflection and dialogue about their experiences throughout the entirety of the intervention, encouraging them to share their affective and social experiences. Participants completed readings and weekly reflection journals. They completed the Therapeutic Factors Inventory-Short Form (TFI-S; MacNair-Semands et al., 2010) at four time points within the 10-week intervention; Kivlighan et al. were specifically interested in participants’ ratings of hope and belongingness (as indicated by the Instillation of Hope and Secure Emotional Expression factors of the TFI-S). Due to the nested nature of the data, Kivlighan et al. used multilevel modeling to analyze their data. They found that participants’ ratings of hope and belongingness increased over time and were significantly and positively related to changes in semester GPA. There were no significant group-level random slopes, suggesting the relationships between hope and academic success and belongingness and academic success did not significantly differ between groups.

This study proposes to build upon the work of Kivlighan et al. (2018) by addressing whether changes in the four therapeutic factors (Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning; MacNair-Semands et al.,

2010) during an existing academic intervention for first-year college students who performed poorly in their first semester are associated with positive outcomes, as measured by improvement in GPA. Because this study utilized an existing academic enhancement course and the authors did not contribute to the content of the course, we considered all four therapeutic factors.

Kivlighan et al. (2018) was the first study to consider process factors within an academic enhancement course that contribute to positive outcomes. Like most of the other research on classroom-based interventions for students on academic probation, they used academic performance (measured by GPA) as their outcome measure. Improving academic performance is certainly important to prevent dismissal of students on academic probation from the institution. However, these involuntary dismissals are a small percentage of the total number of students who attrit. There is a large body of research tying psychosocial factors to academic performance and retention. To date, no study has measured whether process factors within academic enhancement courses are also associated with increased endorsement of psychosocial factors correlated with improved persistence and retention rates.

Robbins et al. (2004) combed the educational and psychological literatures in a meta-analysis exploring the relationship between psychosocial factors, study skills, and college outcomes. They found psychosocial factors to have incremental validity beyond traditional predictors of academic performance and retention. The psychosocial factors most highly correlated with retention were academic-related skills (e.g., time-management, study skills, problem-solving, and communication skills), academic self-efficacy, and academic goals. Academic self-efficacy was found to be the psychosocial factor most highly correlated with academic performance (GPA). Self-efficacy is defined as “students’ beliefs about their capabilities to successfully complete a task,” and it has been suggested as a potential target of

academic interventions because students with higher self-efficacy put forth more effort toward the achievement of their goals (Hsieh, Sullivan, & Guerra, 2007, p. 456). Our second research question was whether changes in the four therapeutic factors (Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning; MacNair-Semands et al., 2010) were associated with an increase in students' report of college self-efficacy, as measured by the College Self-Efficacy Inventory (CSEI; Solberg et al., 1993).

In a later study elaborating upon Robbins et al.'s (2004) meta-analysis, social connection was found to be related to retention in four-year college settings (Robbins, Allen, Casillas, Peterson, & Le, 2006). This corroborates research that has found sense of belonging to be a predictor of persistence in college (Tinto, 1993). Tinto (1993) states less than 25% of departures from an institution are due to academic dismissal, when the institution no longer permits a student to register. He notes voluntary student departure is reflective of students not being intellectually or socially integrated into the institution. These students who leave voluntarily generally do not feel a sense of belonging, whether that be due to a mismatch with their academic needs/expectations, their personal values, or their interpersonal interactions with faculty, staff, or peers. In interviews, students on academic probation described a sense of feeling lost (Mellor et al., 2015), suggesting they felt some degree of incongruence within the institution. Integrating academic and social support increases the likelihood of student persistence, as some students who are academically struggling will persist in college because of their level of engagement within the campus community (Lotkowski, Robbins, & Noeth, 2004). Our third research question was whether changes in the four therapeutic factors (Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning; MacNair-Semands et al., 2010) were associated with a more positive report of perception of the college

environment, as measured by the Charles F. Kettering School Climate Profile-University Version (CFK; Johnson et al., 1999).

Research Purpose

This study proposes to build upon the preliminary work of Kivlighan et al. (2018) by addressing whether changes in the four therapeutic factors (Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning; MacNair-Semands et al., 2010) during an existing academic intervention for first-year college students who performed poorly in their first semester are associated with positive outcomes. Specifically, are participants' reports of the therapeutic factors associated with improvement in GPA, college self-efficacy, and/or perception of the college environment.

Method

Participants

The participants in this study were 145 first-year college students enrolled in an academic intervention seminar for students with GPAs below 2.2 at a large, public, research institution in the Midwest. Participation was voluntary, and the 145 participants represent 84.3% of eligible students (N=172). Of the 145 participants, 64 (44.1%) identified as women, 68 (46.9%) as men, 1 (0.01%) as gender non-conforming, and 12 (8.3%) did not identify their gender. Participants' age ranged from 18 to 21 ($\bar{x} = 18.46$, $SD = .56$), excluding 28 (19.3%) who did not identify their age. Over half of students identified as White and non-Hispanic/Latinx ($n = 84$; 57.9%), a third identified as racial or ethnic minorities ($n = 49$; 33.8%), and 12 (8.3%) did not report their racial or ethnic status. More than half of the sample ($n = 90$; 62.1%) were continuing-generation college students, just under a third of the sample ($n = 44$; 30.3%) were first-generation college students, and 12 (8.3%) did not provide this information. Most participants reported they lived

on-campus (n = 123; 84.8%), 10 (6.9%) reported they lived off-campus, and 12 (8.3%) did not provide this information.

Academic Intervention

This study utilized an existing, voluntary, one-credit seminar designed to help those who struggled academically in their first semester become more self-aware and effective students. Eleven sections of the academic intervention seminar, each with 14 to 17 enrolled students, met for 50 minutes twice per week for seven weeks. Eligible students (all first-year students who earned a GPA below 2.2 in the fall semester) were informed by their academic advisors prior to the start of the spring semester of the opportunity to enroll, and they were able to enroll in the section of their choice. The enrollment in the course was capped at those 11 sections, and there were more eligible students than there were seats in the course. The course started in the second week of the Spring semester, and ended the week before spring break. Each section was taught by a different academic advisor from the university's general advising center. In addition to the fourteen group class periods, students were required to meet individually with their instructor outside of class for one hour-long meeting in which they discussed the student's academic experience, motivation, and goals. Students in all sections of the course received the same syllabus, though customized with their instructor's contact information. All instructors followed a common schedule and taught the same topics, though how they chose to cover the material may have varied. Instructors met prior to the start of the semester to receive information about the course and training on ways to engage students around the topics. They then attended biweekly meetings during the seven weeks of the course for discussion of seminar topics and to receive feedback and support from other instructors.

The course was created by the university's academic advising center; to the author's knowledge, content was based on advisors' anecdotal experiences of what would be helpful for students on academic probation at their institution. Content of the course was divided into five units: 1) contemplating academic change, 2) preparing for academic change, 3) taking action for academic change, 4) maintaining academic change, and 5) dealing with slip-ups. Students discussed topics such as using a planner and course syllabuses, self-management and taking care of responsibilities, setting goals, time management, keys to college-level reading and making meaning of what they have read, planning for exams, coping with stress and maintaining wellness, problem-solving and responding to big and small "slip-ups." Two class periods were devoted to meeting with campus resources: the university's counseling center and career center, respectively. Instructors introduced topics in the form of lectures, small and large group discussion, and facilitated activities. Homework consisted of the following: three guided reflection papers; identification of a "target course" in which the student would like to improve performance and two reflection papers about progress in that course; an assignment tracking the student's activities during a period of time, reflecting upon their use of time, and planning for future weeks; visiting a course instructor and reflecting upon that experience; responding to a series of questions and prompts prior to meeting with the seminar instructor, and a "future planning paper" in which the student either attended a probation meeting with a representative of their college (if the student was on academic probation) or met with their academic advisor (if not on probation) and summarized the appointment. Additionally, students completed several short readings in preparation for seminar topics. Students had to meet attendance requirements and complete all the components of the class with at least 74% of possible points in order to earn the ungraded credit hour.

Measures

Therapeutic Process. The Therapeutic Factors Inventory-Short Form (TFI-S; MacNair-Semands et al., 2010) is a self-report questionnaire measuring participants' perceptions of therapeutic processes within a group. The measure is comprised of 23 items answered using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Examples of items include "Group helps me feel positive about my future," and "I feel a sense of belonging in this group." Items contribute to four broad therapeutic factors: Instillation of Hope, Secure Emotional Expression, Awareness of Relational Impact, and Social Learning. Responses to items contributing to each therapeutic factor are averaged and reported as means. Higher ratings are associated with a more engaged group climate and positive changes in psychological symptoms, interpersonal distress, and quality of life. MacNair-Semands et al. (2010) used this scale with 174 patients in an 18-week, time-limited day treatment program. They reported alpha coefficients of .91 (Instillation of Hope), .86 (Secure Emotional Expression), .82 (Awareness of Relational Impact), and .71 (Social Learning). This indicates high internal consistency among items contributing to each factor. Concurrent validity was determined using the Group Climate Questionnaire-Short Form (GCQ-S; MacKenzie, 1983). The TFI-S was found to be significantly associated with the Engagement subscale of the GCQ-S, and there was a significant inverse association between Secure Emotional Expression and the Avoidance scale of the GCQ-S. Kivlighan et al. (2018) is the only study to have used the TFI-S with a nonclinical, classroom-based population. They noted that the TFI drew upon data from college students in nontherapy support groups as well as therapy groups when it was developed, and suggested those students may have had similarities with college students participating in their academic enhancement intervention. They revised items on the TFI-S by substituting the name of their course for the word "group." Kivlighan et al.'s Cronbach's alpha for Instillation of Hope was excellent (0.90),

and for Secure Emotional Expression it was good (.88). Similar to Kivlighan et al., we substituted the name of the intervention course for the word “group” on the TFI-S. Our Cronbach’s alphas for Instillation of Hope at times one and two were excellent (.90 and .92, respectively). They were good at both time points for Secure Emotional Expression (.85 and .88) and Awareness of Relational Impact (.85 and .89). Our Cronbach’s alpha for the Social Learning subscale at the first time point was acceptable (.77), and at the second time point it was good (.81).

Self-Efficacy. The College Self-Efficacy Inventory (CSEI; Solberg et al., 1993) measures the respondent’s degree of confidence that they can successfully complete college-related tasks. It contains 20 items, contributing to three subscales: course efficacy, social efficacy, and roommate efficacy. Responses are based on a 10-point scale ranging from 0 (not at all confident) to 10 (extremely confident). Examples of items include “Take good class notes,” “Participate in class discussions,” and “Make new friends at college.” Responses to items contributing to each subscale are averaged and reported as means. Solberg et al. (1993) normed the measure with a sample of 164 second- and third-year students attending a large West Coast university. They reported coefficient alpha estimates of .93 for the total scale and .88 for each of the three subscales. The scale was found to have convergent and discriminant validity. Our Cronbach’s alphas for the total scale at both time points were excellent (.90 and .93).

Perception of Campus Climate. The Charles F. Kettering School Climate Profile-University Version (CFK; Johnson et al., 1999) is a measure of the psychological dimensions of climate for universities, revised from a similar measure for public schools. The measure is comprised of 40 items, which contribute to eight subscales: Respect, Trust, High Morale, Opportunity for Input, Continuous Academic and Social Growth, Cohesiveness, School

Renewal, and Caring. There are two discrepancy format columns, “What Is” (respondents’ perceived actual status of the skill/attitude) and “What Should Be” (respondents’ desired status of the skill/attitude). Respondents indicate their responses to each of the 40 items on both columns, using a scale of one to four (1=almost never, 2=occasionally, 3=frequently, and 4=almost always). Responses to items contributing to each subscale are averaged and reported as means for each of the columns (“What Is” and “What Should Be”). Johnson et al. (1999) normed the measure with a sample of 707 students from a small, private university. They reported a composite alpha for all “What Is” scores of .94, and a composite alpha for all “What Should Be” item scores of .93. There has been limited research on the University Version of the CFK. We used just the “What Is” scale to ascertain students’ perceptions of the campus climate. Based on the report of a composite alpha for the “What Is” scores in this study, we used the full “What Is” scale rather than subscales. Our Cronbach’s alphas for the “What Is” scale at both time points were excellent (.95 and .96).

Procedure

Instructors were informed about the study and its purpose, and approval for the study was obtained from the Institutional Review Board of the university. The author attended the first day of each seminar to introduce the study and pass out packets containing the consent document and paper copies of the CSEI and CFK. All students, including those who declined to participate, returned their sealed packets in order to protect confidentiality and participants’ privacy. At the end of the second day of the course, the author again attended each seminar and passed out packets containing the TFI-S and a sheet to collect demographic information. The TFI-S was administered again on the second-to-last day of the course, and the CSEI and CFK were administered again on the last day of the course. Participant data was de-identified following

data-collection procedures. After the end of the semester, participants' semester GPAs from the fall semester before the intervention and the spring semester in which the intervention occurred were requested from the University Registrar.

Data Analysis

TFI-S scores were collected at the beginning and end of the intervention, and semester GPA was used as an indicator of academic performance, as well as the CSEI as an indicator of college self-efficacy and the CFK as a measure of students' perceptions of the college environment. Given that the classroom-based design of the study violates the assumption of independence (e.g., all students in one section of the course maybe be impacted in similar ways that differ from other sections of the course), the authors used multilevel modeling to control for the nested nature of the data. HLM 7.0 (Raudenbush, Bryk, & Congdon, 2010) was used to build three multilevel models testing the impact of all four therapeutic factors on changes in our three outcome variables: GPA, self-efficacy, and perceptions of university climate as it is.

The Level 1 model was:

$$\begin{aligned} (Post\text{-}intervention\ semester\ GPA/CSEI/CFK)_{ij} = & \beta_{0j} + \beta_{1j}*(Pre\text{-}intervention \\ & GPA/CSEI/CFK\ Slope_{ij}) + \beta_{2j}*(Hope\ Residual\ Change\ Score_{ij}) + \beta_{3j}*(Social\ Learning \\ & Residual\ Change\ Score_{ij}) + \beta_{4j}*(Relational\ Impact\ Residual\ Change\ Score_{ij}) + \\ & \beta_{5j}*(Emotional\ Expression\ Residual\ Change\ Score_{ij}) + r_{ij} \end{aligned}$$

In this model, the outcome variable for individual i nested in course section j is calculated using the average pre-intervention GPA across sections (β_{0j}), plus the predictor variables (the residual change scores for each therapeutic factor multiplied by their respective intercepts) plus unexplained variance unique to the student (r_{ij}). This allows for prediction of change in the outcome variable by change in all four therapeutic factors.

The Level 2 model was:

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

$$\beta_{3j} = \gamma_{30} + u_{3j}$$

$$\beta_{4j} = \gamma_{40} + u_{4j}$$

$$\beta_{5j} = \gamma_{50} + u_{5j}$$

This model indicates a random effect was included for the intercept (β_{0j}) and each predictor at level 1 ($\beta_{1j} - \beta_{5j}$).

Results

Prior to the tests of hypothesis, we ran empty models without the TFI predictor variables to determine how much of the variance in outcome at level 1 depends on group membership at level 2 (i.e., the amount of between-groups variance) for our outcome and predictor variables. The intraclass correlation (ICC) coefficient (ρ) for post-intervention semester GPA was 0.09 ($p = .021$), meaning 9% of the variance in adjusted post-intervention GPA depended upon the student's course section. The ICC coefficients for post-intervention CSEI and CFK were 0.02 ($p = .260$) and 0.03 ($p = .284$) respectively, meaning 2% of the variance in adjusted post-intervention college self-efficacy, and 3% of the variance in adjusted post-intervention perception of college environment was accounted for by course section, however these random components were not significant. We then ran the two-level models using the TFI predictor variables. We did not find an association between any of the therapeutic factors and the outcome variables (See Table 1).

A benefit of multilevel modeling is knowing whether there are differences between groups in how they responded, as measured by the group-level random slopes. Several of these were significant in this study. The group-level random slopes for the association between changes in Social Learning and academic performance, college self-efficacy, and perceptions of the university climate were .254 ($p = .029$), .172 ($p = .007$), .025 ($p = .042$), meaning the association between social learning and each of these outcome variables significantly differed between sections. Similarly, the group-level random slope for the association between Awareness of Relational Impact and perceptions of the university climate was significant (.008, $p = .049$), and the group-level random slope for the association between Instillation of Hope and college self-efficacy was significant (.167, $p = .040$). These findings indicate that the relationship between Awareness of Relational Impact and perceptions of the university climate and the association between Installation of Hope and college self-efficacy significantly differed between sections.

Discussion

The purpose of this study was to build upon the work of Kivlighan et al. (2018) by measuring students' perceptions of therapeutic factors within an existing classroom-based intervention for students on academic probation, and determining whether these factors were related to change in students' academic outcomes, college self-efficacy, and perceptions of the college environment. In contrast to Kivlighan et al., we did not find an association between therapeutic factors and improvement in GPA. This could be due to methodological and design differences between the two studies. First, the content of the two interventions differed. Kivlighan et al. used an intervention informed by the psychosociocultural model (Gloria & Rodriguez, 2000), which views the psychological, social, and cultural well-being of students as

central to success and persistence. The content of their intervention reflected this. Furthermore, much like group therapy, they based their study on the theory that the small-group intervention (and social interaction students have therein) represents students' larger social microcosm. Our study used an existing intervention developed by the university advising center. The course administrators did not identify theoretical underpinnings guiding course content, but the content of the course was focused primarily on intrapersonal skills-based factors that impact academic performance (e.g., planning and organization, time-management, study skills). It may be that there was less opportunity within the content of this course for engaging with peers in ways that made the seminar reflective of students' larger social microcosm.

There are many possible interventional targets to help students improve academic performance and persist at an institution, and perhaps this study was not measuring the right things. Process factors may have been less meaningful in this intervention than study skills and learning to navigate institutional processes. Robbins et al. (2004) note that these skills are necessary to complete academic tasks, and therefore are likely connected to performance outcomes. Much of the existing research on classroom-based interventions has described course content with a significant focus on academic-related skills, though the entire intervention served as the independent variable so the association between individual skills and academic performance is unknown (Hanger et al., 2011; Humphrey, 2006; Kamphoff et al., 2007; McGrath & Burd, 2012; Mellor et al., 2015). Future studies might measure growth of specific skills throughout the intervention and their association with academic performance.

This study also differed from that of Kivlighan et al. (2018) in instructor background and training, with instructors of this course having deep content knowledge of advising and institutional policy, while instructors of Kivlighan et al.'s academic enhancement seminars were

therapists who had training in interpersonal processes and group facilitation. This might have impacted findings, as perhaps instruction as well as other aspects of Kivlighan et al.'s intervention more closely approximated the therapy group process. Whereas the instructors in Kivlighan et al. might have facilitated the relationships between students and their peers, it is possible the structure of this intervention was more concerned with facilitating a relationship between the individual student and instructor, particularly given the requirement of an individual meeting. McGrath and Burd (2012) described an intervention for students on academic probation taught by academic advisors that was associated with improved retention. Though they were unable to identify what, specifically, within the intervention was responsible for improved outcomes, they noted that students appeared to benefit from the expertise and guidance of advisors. It is possible the same might be said of this intervention; future studies might measure students' perceptions of their instructor and, for those taught by an academic advisor, whether participation in the intervention changed the way the student engaged in advising.

We did not find an association between students' report of therapeutic factors and change in college self-efficacy or perception of the college environment. Again, this could be due to a mismatch between the content of the course and those outcome variables. Although we did not find a significant association overall between therapeutic factors and outcomes, the significant random slopes for the association between some therapeutic factors and outcomes suggest the influence of therapeutic factors significantly differed between sections. Specifically, group-level random slopes for the association between changes in Social Learning and each of the three outcome measures were significant, indicating that the association between these variables differed between sections of the course. Group-level random slopes were also significant for the association between Awareness of Relational Impact and perceptions of university climate, and

the association between Instillation of Hope and college self-efficacy. It is not known how groups differed in these associations, just that the relationships differed across course sections. For some sections, therapeutic factors may have more or less of an impact on students' academic performance, self-efficacy, and perceptions of university climate. This suggests process variables may have been more impactful in some sections than others, but further research is needed to know what is responsible for those differences.

It is possible the lack of uniformity in teaching contributed to differences between groups. The academic advisors teaching the course came from disparate academic backgrounds, and some might have had training that led to greater fostering of the process variables. Additionally, sections of the course were held in different locations around campus and at different times of the day, so it is possible that environmental factors influenced the dynamic that developed among students. The significant intraclass correlation coefficient for GPA in this study suggests some groups were more effective than others, and future research is also needed to continue to understand why this might be. Again, it is possible this is due to differences in the ways that instructors structured and delivered content.

Students who identified as racial and ethnic minorities were overrepresented in the intervention course relative to the campus population. It has been documented that social belonging is particularly important for students with minoritized identities, and challenges to sense of belonging have greater implications for academic performance and motivation of students with minoritized identities than for White students (Walton & Cohen, 2007). It is possible that instructors differed in their inclusion of culture and how they communicated belonging to students in the course, whether in interpersonal interactions, delivery of course

content, or other factors such as their own racial and/or ethnic identities. This may also account for differences between sections.

This intervention was not graded but rather students received either a Satisfactory or Unsatisfactory designation on their transcript, meaning that either way their performance would not impact their GPA. It was made clear instructors were not connected to the study and would not see participants' responses, and not all of the students enrolled in the course consented to participation in the study. These factors may have impacted participants' willingness and/or responses, if they did not see value or personal benefit in participating. It is also possible the results were in some way impacted by differences between those who consented to participate and those who abstained. Because all students in a course influence the classroom dynamic and this study was interested in process variables, it is unknown how students in the class who opted not to participate may have impacted their course sections. This appears to be a concern unique to this study, as other studies of academic enhancement interventions have reported the participation of all enrolled students (Coleman & Freedman, 1996; Hanger et al., 2011; Kamphoff et al., 2007; McGrath & Burd, 2012; Mellor et al., 2015). Future studies might advocate for assessment being a required component of the course.

Lastly, this intervention differed from Kivlighan et al. (2018) in the analyses. Kivlighan et al. administered the TFI-S at four different time points and ran a three-level model focused on two of the four TFI-S subscales. This study administered each measure just twice and considered all four of the subscales as predictors. Analysis of each subscale in this study required controlling for the other subscales. It is possible the other TFI-S subscales are impacting Kivlighan et al.'s findings, and they might have had different results if they had controlled for these in their analyses.

Limitations and Future Directions

Similar to Kivlighan et al. (2018), this study used self-report measures and is limited by factors inherent in that type of assessment. The results may have been impacted by response bias, different interpretations of items, or even the amount of time allotted to complete the measures. Kivlighan et al. were the first to use this therapy measure, the TFI-S, with a classroom intervention. There is no prior evidence for this, and it is possible that the measure was less appropriate for this intervention given differences in the background and training of instructors relative to those of Kivlighan et al.

The interventional nature of this study and utilizing an existing course also present a number of limitations. Participation in the study was voluntary, and there is no way to know whether there was a difference between those students who consented to participate and those who did not. One way to address this in future studies might be to collaborate with course administrators and make assessment of process and outcomes a part of the course that is mandatory for all enrolled students. Students who identified as racial and ethnic minorities were overrepresented in the sample who consented to participate relative to the institution at large. It is possible that they experience the process factors differentially due to sociopolitical factors. Future research might test whether racial and/or ethnic identity moderates the relationship between the process factors and outcomes.

Another limitation was the lack of standardization across sections. There were eleven sections of the course taught by eleven different instructors. While each section covered the same topics, it was up to individual instructors how they wanted to present the information. Future studies could do more to investigate why therapeutic factors appeared to have more of an influence in some groups than others, as indicated by several significant group-level random slopes. Because of the lack of standardization in this course, there are many possible areas for

exploration. Perhaps differences in the way content was taught or differences in the ways instructors engaged with students contributed. Future studies could be informed by qualitative questions at the end of the course that solicit feedback on what students viewed as most helpful or impactful from the course. They might also directly measure the relationship between students' perceptions of their instructor and academic performance outcome measures. Again, collaborating with course administrators to introduce greater standardization in teaching and to solicit more student feedback would be beneficial.

This was a relatively short intervention. It is possible that the eight weeks between the end of this intervention and the end of the semester did not allow enough time for maturation of newly learned skills. Future studies might gather semester GPAs from the following semester and do a post-intervention follow-up to assess participants' reports of college self-efficacy and perception of the college environment six months after the conclusion of the intervention. Lastly, this study was based on eleven sections of the intervention course. Though this is small, it would be challenging to find a similar intervention course with a greater sample size.

Conclusions

This study sought to investigate whether changes in students' report of four global therapeutic factors were associated with positive outcomes in an academic enhancement course. No associations were found. However, analysis using multilevel modeling suggested sections of the course differed in academic performance outcomes, as the ICC for post-intervention semester GPA suggested 9% of the variance in post-intervention GPA depended upon the student's course section. To what those differences might be attributed is unknown. Postsecondary institutions seeking to evaluate academic enhancement courses may benefit from more complex analysis of their interventions, such that they are able to distinguish between more and less effective

sections. This could then inform future research on processes within academic enhancement courses that contribute to positive outcomes, and allow institutions to be more intentional in their intervention design.

Table 1. Association between changes in therapeutic factors and adjust post-intervention academic performance, self-efficacy, and perceptions of the university climate.

Predictor	γ	SE	t	p
Post-intervention GPA				
Intercept, γ_{00}	1.98	0.07	27.22	<.001
Pre-intervention GPA, γ_{10}	0.48	0.18	2.76	.020
TFI Hope, γ_{20}	0.16	0.15	1.09	.303
TFI Social, γ_{30}	0.02	0.20	0.09	.929
TFI Relational Impact, γ_{40}	-0.11	0.13	-0.83	.426
TFI Emotional Expression, γ_{50}	0.02	0.15	0.10	.920
Post-intervention CSEI				
Intercept, γ_{00}	7.47	0.08	97.98	<.001
Pre-intervention CSEI, γ_{10}	0.54	0.10	5.53	<.001
TFI Hope, γ_{20}	-0.01	0.21	-0.07	.946
TFI Social, γ_{30}	0.28	0.25	1.15	.279
TFI Relational Impact, γ_{40}	0.09	0.24	0.38	.712
TFI Emotional Expression, γ_{50}	0.08	0.14	0.60	.562
Post-intervention CFK				
Intercept, γ_{00}	3.21	0.04	79.29	<.001
Pre-intervention CFK, γ_{10}	0.84	0.08	10.87	<.001
TFI Hope, γ_{20}	0.02	0.07	0.31	.766
TFI Social, γ_{30}	0.12	0.08	1.41	.189
TFI Relational Impact, γ_{40}	-0.08	0.07	-1.15	.278
TFI Emotional Expression, γ_{50}	0.03	0.07	0.40	.701

REFERENCES

- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass Publishers.
- Coleman, H. L. K. & Freedman, A. M. (1996). Effects of a structured group intervention on the achievement of academically at-risk undergraduates. *Journal of College Student Development, 37*, 631-636.
- Gloria, A. M. & Rodriguez, E. R. (2000). Counseling Latino university students: Psychosociocultural issues for consideration. *Journal of Counseling and Development, 78*, 145-154. <http://dx.doi.org/10.1002/j.1556-6676.2000.tb02572.x>
- Hanger, M. A., Goldenson, J., Weinberg, M., Schmitz-Sciborski, A., & Monzon, R. (2011). The Bounce Back Retention Program: One-year follow-up study. *Journal of College Student Retention, 13*, 205-227. <https://doi.org/10.2190/CS.13.2.d>
- Hsieh, P., Sullivan, J. R., & Guerra, N. S. (2007). A closer look at college students: Self-efficacy and goal orientation. *Journal of Advanced Academics, 18*, 454-476. <https://doi.org/10.4219/jaa-2007-500>
- Humphrey, E. (2006). Project Success: Helping probationary students achieve academic success. *Journal of College Student Retention, 7*, 147-163. <https://doi.org/10.2190/AMQ4-13VE-RBH7-6P1R>
- James, C. L. & Graham, S. (2010). An empirical study of students on academic probation. *Journal of The First-Year Experience & Students in Transition, 22*, 71-92.
- Johnson, W. L., Johnson, A. M., Kranch, D. A., & Zimmerman, K. J. (1999). The development of a university version of the Charles F. Kettering Climate Scale. *Educational and Psychological Measurement, 59*, 336-350. <https://doi.org/10.1177/00131649921969884>

- Joyce, A. S., MacNair-Semands, R., Tasca, G. A., & Ogrodniczuk, J. S. (2011). Factor structure and validity of the Therapeutic Factors Inventory – Short Form. *Group Dynamics: Theory, Research, and Practice, 15*, 201-219. <http://dx.doi.org/10.1037/a0024677>
- Kamphoff, C. S., Hutson, B. L., Amundsen, S. A., & Atwood, J. A. (2007). A motivational/empowerment model applied to students on academic probation. *Journal of College Student Retention, 8*, 397-412. <https://doi.org/10.2190/9652-8543-3428-1J06>
- Kelley, K. N. (1996). Causes, reactions, and consequences of academic probation: A theoretical model. *NACADA Journal, 16*, 28-34. <https://doi.org/10.12930/0271-9517-16.1.28>
- Kivlighan, III, D. M., Abbas, M., Gloria, A. M., Aguinaga, A., Frank, C., & Frost, N. D. (2018). Are belongingness and hope essential features of academic enhancement groups? A psychosociocultural perspective. *Journal of Counseling Psychology, 65*, 204-213. <http://dx.doi.org/10.1037/cou0000266>
- Lese, K. P. & MacNair-Semands, R. R. (2000). The Therapeutic Factors Inventory: Development of a scale. *Group, 24*, 303-317. <http://dx.doi.org/10.1023/A:1026616626780>
- Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). *The role of academic and non-academic factors in improving college retention*. Iowa City, IA: ACT.
- MacKenzie, K. R. (1983). The clinical application of a group measure. In R. R. Dies & K. R. MacKenzie (Eds.), *Advances in group psychotherapy: Integrating research and practice* (pp. 159-170). New York: International Universities Press.
- MacNair-Semands, R. R., Ogrodniczuk, J. S., & Joyce, A. S. (2010). Structure and initial validation of a short form of the Therapeutic Factors Inventory. *International Journal of Group Psychotherapy, 60*, 245-281. <http://dx.doi.org/10.1521/ijgp.2010.60.2.245>

- McGrath, S. M. & Burd, G. D. (2012). A success course for freshmen on academic probation: Persistence and graduation outcomes. *NACADA Journal*, 32, 43-52.
- Mellor, D. T., Brooks, W. R., Gray, S. A., & Jordan, R. C. (2015). Troubled transitions into college and the effects of a small intervention course. *Journal of College Student Retention: Research, Theory & Practice*, 17(1), 44-63.
<https://doi.org/10.1177/1521025115571102>
- Pascarella, E. T. & Terenzini, P. T. (2005). *How college affects students* (Vol. 2). K. A. Feldman (Ed.). San Francisco, CA: Jossey-Bass.
- Robbins, S. B., Allen, J., Casillas, A., Peterson, C. H., & Le, H. (2006). Unraveling the differential effects of motivational and skills, social, and self-management measures from traditional predictors of college outcomes. *Journal of Educational Psychology*, 98, 598-616. <http://dx.doi.org/10.1037/0022-0663.98.3.598>
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, 130, 261-288. <http://dx.doi.org/10.1037/0033-2909.130.2.261>
- Robbins, S. B., Oh, I. S., Le, H., and Button, C. (2009). Intervention effects on college performance and retention as mediated by motivational, emotional, and social control factors: Integrated meta-analytic path analyses. *Journal of Applied Psychology*, 94(5), 1163-1184. <http://dx.doi.org/10.1037/a0015738>
- Ross, T., Kena, G., Rathbun, A., KewalRamani, A., Zhang, J., Kristapovich, P., & Manning, E. (2012). *Higher education: Gaps in access and persistence study* (NCES 2012-046). Washington, DC: National Center for Education Statistics.

- Solberg, V. S., O'Brien, K., Villareal, P., Kennel, R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the College Self-Efficacy Instrument. *Hispanic Journal of Behavioral Sciences, 15*, 80-95.
<http://dx.doi.org/10.1177/07399863930151004>
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- Trombley, C. M. (2001). Evaluating students on probation and determining intervention strategies: A comparison of probation and good standing students. *Journal of College Student Retention: Research, Theory, and Practice, 2*, 239-251.
<https://doi.org/10.2190/4MY9-LB3T-D5Y0-APUQ>
- U.S. Department of Education, (2018). *The condition of education 2018*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Walton, G. M. & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology, 92*, 82-96.
<http://dx.doi.org/10.1037/0022-3514.92.1.82>
- Yalom, I. D. & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York, NY: Basic Books.