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**Transition variables and the Personality Assessment
Inventory in university counseling centers**

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Lauren Kay Shaw

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Dedication

This dissertation is dedicated to Jim and to my parents. For always being proud of me,
for encouraging me along the way, and for your unending support and encouragement. I
love you.

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ABSTRACT

The purpose of this study was to explore the relationship between transition variables and Personality Assessment Inventory (PAI) profiles of university counseling center clients. If these variables have a significant impact on PAI profiles, then understanding how these variables are related to personality profiles will provide important information for diagnosis and treatment planning. Archival data was reviewed for 838 clients seen at a mid-sized southeastern university counseling center. Transition variables included international or domestic student status, distance from home, student classification (freshman, sophomore, junior, senior, or graduate), parent education level, and rural or urban classification of hometown. Ethnicity and gender were also considered as important demographic variables. Mean scores were compared on each of the PAI clinical, treatment, and interpersonal scales.

The results indicated that there were significant differences between the profiles of international and domestic clients, student clients far from home and student clients close to home, clients by academic classification, White and Non-White clients, and male and female clients. There were insufficient data in the archive to investigate differences between students from rural and urban hometowns.

The differences between PAI profiles based on transition variables were relatively minor in terms of differences in means and effect size. Therefore, it is not likely that these variations would alter a decision about client treatment or that clients are at risk of being misdiagnosed or inappropriately prioritized as urgent. The largest differences were found between men and women, suggesting that further research examining the

differences between the genders on PAI profiles is necessary. Overall, the research suggests that the PAI is appropriate for use as a screening tool in university counseling centers; however, differences were found which suggest that transition variables may impact the PAI profiles of counseling center clients.

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CHAPTER I

INTRODUCTION AND GENERAL INFORMATION

Transition variables and the Personality Assessment Inventory in university counseling centers

University and college counseling centers have the opportunity to play a significant role in promoting the psychological, educational, and social well-being of students. A function of these centers is to assess student/client problems and develop a treatment plan. The Personality Assessment Inventory (PAI) is a useful tool to aid in clinical screening and diagnosing, understanding normal personality traits, assessing for suicide and violence potential, and developing a treatment plan (Morey, 2003). The PAI is a relatively new instrument, and to date most of the research has addressed the instrument's psychometric properties (Romain, 2000). More research is needed to better understand the implications of using this instrument with a university counseling center client population.

Students presenting for treatment at college counseling centers represent a unique population. Articles in the counseling center literature over the past twenty years have expressed concerns about increases in the number of students with mental health problems and problem severity (Benton, Robertson, Tseng, Newton, & Benton, 2003; Mowbray et al., 2006). In this context, assessment and treatment planning are becoming even more essential. Counseling center professionals also need training in student and adolescent development, academic issues, and other special issues that clients face (Mowbray et al., 2006).

The PAI is becoming increasingly relevant to university counseling centers as the needs of the average client change and as increasing demands are placed on limited resources. It can be used as a screening instrument for treatment assignment, providing information that can assist clinicians in gauging problem severity and determining the type of treatment that will be most beneficial. In some cases, this means determining which clients are appropriate to be seen by practicum students and which clients require treatment by a more advanced clinician. The PAI also can alert clinicians to clients who need to be seen immediately and may be at risk if placed on a waitlist. In addition, the PAI can be used as an aid to assist in diagnosing. Research is needed to understand the use of the PAI in this manner with the university counseling center client population.

University counseling center clients, like all college students, are in the midst of significant life transitions. Many of them are leaving home for the first time, moving miles away from the town where they grew up. Once they move, students are at a distance from existing sources of social support, such as friends and family. The transition can cause cultural conflicts for some students, particularly international students. Students who move a long distance to attend college face an increased possibility of differences in characteristics between the two environments, such as differences in geography, terrain, customs, and psychosocial factors. Another potential source of cultural conflict some students face is the move from a rural to an urban area or from an urban area to a more rural college town. This environmental shift can increase the mismatch between the home and the university, resulting in increasing demands on personal resources (Fisher, Murray, & Frazer, 1985).

Some students are the first from their family to attend college. They are interacting with an education and social system that is unfamiliar and they may not be able to rely on support or advice from their families. In addition, the dynamic created by being the first in a family to attend college can strain students' relationships with their families or create new pressures (Pascarella, Pierson, Wolniak, & Terenzini, 2004).

As students progress through the university system, additional transitions and developmental challenges are presented. Research indicates that college impacts students in a wide variety of ways, ranging from changes in self-esteem and identity to changes in political attitudes and values (Pascarella & Terenzini, 1991). Many college students may feel that they are in a perpetual phase of growth, development, and change. These transitions may have an impact on how a student endorses symptoms or characteristics of psychopathology, thus impacting subsequent profiles on objective assessments such as the PAI.

Statement of Purpose

This study will examine transition factors facing university counseling center clients that may impact responding on the PAI. If these variables have a significant impact on PAI profiles, then understanding how these variables are related to personality profiles will provide important information for diagnosis and treatment planning. The topics investigated in this study are derived from experience using the PAI as a screening tool for treatment assignment in a university counseling center. Anecdotal reports have indicated that international students often have elevated profiles, particularly on certain scales and subscales. However, the clinicians assigned to work with these students report

that these elevations do not seem to be related to increased pathology or even clinical distress. These students are at risk of being misdiagnosed, inappropriately prioritized as urgent, and unnecessarily assigned to more advanced clinicians. In addition, the elevated PAI scales may lead clinicians to over pathologize international students. These anecdotal reports of international students with elevated profiles also lead to questions about the impact of adjustment issues on PAI profiles and the potential impact of geographic relocation within the United States. In addition, these reports also raise questions about the possibility of test bias within the PAI.

As a result of these questions, two sets of variables will be examined: variables related to transition factors and demographic variables. International and domestic clients will be compared, followed by an examination of the impact of geographic distance between the clients' permanent residence and the university. In addition, the urban/rural status of clients' hometowns will be examined. Two other transition variables will be studied: student classification and parent education level. Two demographic variables also will be considered, race/ethnicity and gender.

The purpose of this study is three-fold: (1) To investigate a potential problem in using the PAI as a screening tool for treatment and explore the potential risk of over pathologizing clients in a university counseling center; (2) To contribute to the growing literature on the PAI by examining the impact of important transition and demographic variables on various patterns of responding to PAI items; and (3) to provide useful information to counseling center professionals to aid in diagnosis of and treatment planning for university counseling center clients.

It is important to view this study through a multicultural framework. Diller (2004) defines culture as “a lens through which life is perceived” (p. 4) and explains that every culture generates a phenomenologically unique experience of reality through its language, values, personality and family patterns, rules of interaction, and sense of time and space. This study will explore a variety of different micro-cultures, ranging from the cultural group of first-generation college students to international students to Non-White students on a predominately White university campus. Each of these groups is assumed to have a unique experience of reality, with both similarities and differences between members of the group. This research will evaluate the potential relationship between these cultural variables and PAI profiles. Understanding this relationship will equip university psychologists to better serve their diverse student population.

CHAPTER II

LITERATURE REVIEW

This study is a fairly novel investigation. Very little research has examined the use of the PAI in university counseling centers and the ways in which transition and demographic variables relate to scores on the PAI scales. However, there are several relevant areas addressed in the literature that will be discussed. First, research directly related to the current study will be discussed, followed by a brief exploration of research on the PAI and multicultural assessment. This will be followed by an exploration of the research examining student development and geographic relocation. International students and the unique stressors faced by this population will be discussed and explored. Then, the literature examining the differences between students from rural and urban hometowns will be described as well as the literature examining the impact of parental education. Finally, relevant student development theory and research will be discussed, including the impact of student classification.

Current Study

The most relevant study on the topic compared PAI profiles of African American and European American college students to see if there were systematic differences related to race/ethnicity. Demographic variables including urban or rural status of permanent domicile also were considered. In this study, students from rural areas scored higher on the Alcohol Problems (ALC) scale than urban participants. Overall, there did not appear to be evidence for a test bias in the PAI with African American college students. However, African American students did score significantly higher on the

Paranoia (PAR) scales and subscales and on the Stress (STR) and Nonsupport (NON) scales. The author concluded that use of the PAI should include an assessment of the client's family and neighborhood of origin, client's perceptions and feelings about their upbringing, an understanding of the relationship between upbringing and current experiences, socioeconomic factors, and an exploration of the impact of race and ethnicity (Todd, 2003).

Personality Assessment Inventory

As was previously stated, the majority of research on the PAI deals with psychometric properties of the instrument (Romain, 2000). Recent research, however, has extended into other areas, for example the use of the PAI in legal and forensic settings (Boccaccini & Brodsky, 1999; Douglas, Hart, & Krop, 2001). The PAI is used frequently with college student populations and has been used to compare various populations of college students. For example, one study examined group differences between impulsive aggressive participants and non-aggressive participants. The authors constructed a clinical profile for students who may be impulsive aggressors, which could be used to aid in diagnosis and treatment planning (Helfritz & Stanford, 2006). Another study used the PAI to compare student athletes and non-athletes. The authors reported that female student athletes reported higher mean scores on measures of social anxiety and depression and lower mean scores on measures of social support than male athletes and male and female non-athletes (Storch, Storch, Killiany, & Roberti, 2005). These studies are just a few examples of research that sets a precedent for using the PAI to

examine differences between groups of college students. This research can be used to inform college counseling center personnel about the clients with whom they work.

Personality assessments are designed to provide objective and standard information about behavior, personality, and psychopathology. They are based on the assumption that there are universal standards of human behavior and psychopathology across different groups, and are often used as if they are cultural-general instead of culturally-specific (Dana, 1998; 2000). Personality assessment has been criticized for being biased toward the values of European American, middle-class society. There is a history of controversy over test-bias, which is said to over pathologize those from different racial, ethnic, or sociocultural backgrounds, and even those who lack familiarity with White, middle-class culture (Groth-Marnat, 2003).

A great deal of time and money was spent to obtain a demographically representative standardization group for the PAI; however, anyone taking the PAI will have his or her profile based on a norm group comprised mostly of Whites. If there are differences between cultural groups with regard to the presenting symptoms associated with the specific syndromes assessed by the PAI, then the PAI results may include clinically inaccurate information (Todd, 2003).

Part of being a culturally competent psychologist involves understanding the cultural limitations of testing instruments and taking appropriate steps to provide accurate assessments for culturally diverse clients (Gelso & Fretz, 2001). Therefore, it is important that clinicians understand the impact of culture on assessment instruments such

as the PAI. Specifically, this research will examine differences between international and domestic students and between White/Caucasian and Non-White students.

There is limited research examining the use of the PAI with diverse cultures. The existing research suggests that there is no evidence of test-bias in using the PAI with African American students (Todd, 2003). However, research on the PAI is in the “adolescent phase” (Morey, 2003, p. 199), and more research is needed, particularly in terms of using the PAI with an international population. This study will extend the existing research and deepen clinicians’ understanding of cultural factors that impact PAI profiles.

Several PAI scales and subscales are of particular interest for this study, due to both anecdotal and empirical evidence that suggests these scales may be elevated for students in transition or for different cultural groups (see Appendix 1 for a description of all the PAI clinical and treatment scales). While the majority of these scales were selected based on anecdotal evidence of elevated scores for international students in a midsized southeastern university counseling center, they were also chosen on a theoretical basis. Previous research identifies specific struggles that students in transition often face. If students are experiencing these struggles, then it is expected that they will report elevated scores on these scales. For example, many of these scales deal with interpersonal difficulties. Research indicates that international students often feel socially isolated and struggle to form meaningful connections (Mori, 2000; Ng, 2006). Based on these difficulties, it is expected that international students will report elevated scores on scales measuring social isolation. In addition, in some cases, research on other

personality assessments, such as the MMPI, has indicated that minority clients often report elevations on similar scales (Todd, 2003).

The first scale that may be relevant is the Schizophrenia, or SCZ, scale. The SCZ scale was designed to assess three aspects of schizophrenia that each appears to represent a different type or element of the disorder: thought disorders, positive symptoms (symptoms usually not present in individuals, such as hallucinations, delusions, and bizarre behavior), and negative symptoms (the absence of features usually present in individuals, such as social behavior and affective responsiveness) (Morey, 2003). Morey (2003) indicates that elevations on the full SCZ scale could occur for a number of reasons, such as unusual beliefs and perceptions, poor social competence and social anhedonia, or inefficiency and disturbances in attention, concentration and associational processes. Previous research indicates that African Americans are more likely to be diagnosed with schizophrenia and less likely to be diagnosed with a mood disorder than Whites (Costello, Tiffany, & Grier, 1972; Graham, 2006; Greene, 1987).

The SCZ scale is composed of three subscales: Psychotic Experiences (SCZ-P), Social Detachment (SCZ-S), and Thought Disorder (SCZ-T). The SCZ-P subscale focuses on the experience of unusual sensations and perceptions, magical thinking, and unusual ideas and delusional beliefs. The SCZ-S subscale focuses on social isolation, discomfort, and awkwardness in interpersonal interactions (Morey, 2003). This subscale is of particular interest, because it seems quite likely that students in the midst of major life transitions, particularly students from a different culture, may endorse items on this subscale, thus elevating their overall SCZ score and raising the possibility that an

adjustment/transition issue becomes pathologized. The final subscale, SCZ-T focuses on confusion, concentration problems, and disorganization of thought processes (Morey, 2003). These symptoms may be an issue for students facing cultural differences and language difficulties, causing an elevation on this subscale where no pathology actually exists. These possibilities make the SCZ scale a particularly important point of investigation in this study.

A second scale that may be especially relevant to this study is the BOR, or Borderline Features, scale. This scale assesses a number of elements related to severe personality disorder, particularly borderline syndrome. Scores on the full scale BOR refer to level of personality organization or adaptation, ranging somewhere between neurosis and psychosis. Lower scores on this scale reflect a person who is fairly healthy in terms of personality issues, while high scores reflect fairly primitive concerns across many variants of personality disorders (Morey, 2003).

The BOR scale is made up of four subscales. The Affective Instability, or BOR-A subscale, measures emotional responsiveness, rapid mood changes, and poor emotional control. The Identity Problems (BOR-I) subscale looks at uncertainty regarding major life issues and feelings of emptiness and lack of purpose. This is another subscale that may be impacted by the developmental stage of college students. The third subscale, BOR-N, or Negative Relationships, looks at a history of ambivalent, intense relationships in which one has felt exploited or betrayed (Morey, 2003). Research on international students indicates that cultural differences often cause interpersonal struggles, where they have difficulty understanding relationship patterns of American students. International

students may misinterpret sociability as overtures for more serious relationships, and end up feeling betrayed and abandoned by the casual nature of relationships common on college campuses (Mori, 2000). Although this will be discussed in greater detail in the section on international students, it is important to note this possibility and the implications it may have on the BOR-N scale, suggesting pathology where other issues may be at work. The final BOR subscale is Self-Harm, BOR-S. This scale looks at impulsivity in areas that have high potential for negative consequences.

The next scales which may be relevant for students in the middle of transition are the NON scale and the STR scale. The NON scale is a measure of perceived lack of social support, addressing the quality and availability of a client's interpersonal relationships (Morey, 2003). This treatment scale is clearly relevant for students transitioning from home, whether several towns or states apart or half a world away. The STR scale is a measure of life stressors that the client has recently experienced or is currently experiencing. Item content includes problems in family relationships, financial difficulties, and major changes that have recently occurred or are about to occur (Morey, 2003). This scale may be a marker which indicates how students are experiencing transitions and how stressful they perceive these transitions to be. Although this study is largely exploratory, the questions raised are based on clinical observations and past research. Based on these observations, these are some possible scales and subscales that may show a difference between international and domestic students.

Geographic Relocation and Transition

Another area of relevant research comes from the field of student development. Although there currently is no research examining the impact of geographic location or home environment on the PAI, and very little relating to university counseling center client assessment in general, there is research discussing the impact of relocation on college students and mental health. This research will be examined in order to gain a better understanding of the variables involved in this study.

Much of the research in this area deals with the impact of the initial transition or relocation on the lives of college students. While the transition to the university is generally perceived as a positive change involving new and exciting opportunities, it still involves change and transition, which often are associated with mental and physical health problems (Fisher & Hood, 1987). College students who relocate may experience feelings of isolation and loneliness, interpersonal conflicts, and financial pressures (Brooks & DuBois, 1995). Relocation can have a major impact on students:

There is a need to break with old routines and life-styles and to adjust to the demands of a new situation, which presents fresh intellectual and social challenges. Social support networks may be left behind, a factor associated with homesickness in adults. The young student simultaneously experiences the loss of a familiar psychosocial environment and explores a new one. For some there are cultural and linguistic differences to master. In addition there is an interruption of routines and habits together with a likely change in perceived role and sense of self (Bell & Bromnick, 1998, p. 745).

One of the major issues related to geographic relocation for college students is homesickness, and much of the research in this area investigates the ways in which geographic relocation contributes to homesickness. Fisher, et al. (1985) looked at ways in which geographical distance from home led to homesickness in university students, considering the number of miles between students' permanent residences and the university. They concluded that there was no evidence to indicate that home environment (rural or urban) had any influence on homesickness, although distance from home did have an effect, with students who were farther from home being more homesick. In other words, the greater the distance between the student's home residence and the university, the greater the likelihood that the student reported feeling homesick and having difficulty adjusting to college. Other researchers (Brooks & DuBois, 1995; Burt, 1993) have found similar results: the further away a student's family of origin home was, the more difficulties he or she had adjusting to the first year of college.

If geographical relocation can lead to homesickness, it is useful to look at the ways in which homesickness affects psychological health. Approximately 60% of university students report experiencing homesickness at some point in their college career. A meta-analysis of homesickness found that it is largely independent of age and sex. It is more likely to occur when control over the decision to relocate is minimal, and/or when the individual is engaged in passive mental tasks as opposed to active physical tasks. In addition, homesick participants score higher on measures of absent-mindedness than non-homesick participants, have difficulty with concentration, and generally have difficulty adapting to college life. Homesick students typically score

higher on measures of psychological symptoms, particularly anxiety, phobias, obsessions, somatic complaints, and depression than non-homesick students. In addition, almost a third of college students who experience homesickness report that their work has been adversely affected by the experience, either through poor attendance, lack of concentration, or falling behind in their work (Fisher et al., 1985). This research indicates that being far from home, which is associated with homesickness, may have negative implications for students' psychological health and thus may impact PAI responding.

A related study of particular interest was conducted by Fisher and Hood (1987). Students' level of psychological disturbance, absent-mindedness, and homesickness were assessed the summer before beginning college and six weeks into the first semester. All of the students, both local and relocated, showed a decrease in psychological functioning (particularly in depression and obsessiveness) as well as an increase in absent-mindedness. This indicates that transitioning to the university, a major life event that is generally perceived as positive, may have adverse effects on psychological functioning, at least in the short term. This leads to questions about possible variations in PAI profiles of students in the midst of transition.

Another study examined students' perceptions of the distance between home and the university. Actual geographic distance between home and school was assessed in miles, as well as students' perception of the distance, as measured on a 9 point Likert-type scale (1= too far, 9=just right). In this study, increased geographic distance from home was not associated with students' adjustment to college. However, there was a

significant negative linear relationship between perceived distance from home and college adjustment, so that students who had the perception that the college was too far from home had lower adjustment scores than students who perceived the distance to be just right. The authors concluded that perceived distance from home was more important than actual distance from home (Mooney, Sherman, & Presto, 1991).

In a study on the impact of relocation on adults, Stokols, Shumaker, and Martinez (1983) identified a number of factors that impact the effect of relocation on an individual, including the length of time at the new location, attachment to previous residences, and feelings about moving. Overall, mobility (or relocation) was associated with having more illness-related symptoms and decreased feelings of subjective-well-being. However, psychological processes, such as the degree of control one feels over the relocation, mediated these effects and could limit the impact of residential mobility on health. The authors suggest that clinicians working with relocated subjects pay particular attention to the client's reaction to the transition and self-reported mobility experience and adjustment.

Other research suggests that students who move out of their parents' homes to live in dormitories within easy commuting distance have continued access to parents and the structure of their childhood homes, which provides a transitional link that helps reduce the negative impact of leaving home (Tognoli, 2003). This study indicated that, rather than being limited to the first weeks at the university, homesickness is cyclical and ongoing, fluctuating according to situational determinants and memories. Therefore, students who have spent several years at a university far from their permanent domicile

occasionally still may experience the impact of living far from their homes and families. As a result of these findings, Tognoli suggests that college programs and therapeutic services, “be directed at those students who would most benefit from such an attachment—namely those who traveled greater distances from the parental home and who appear at risk regarding psychological issues surrounding separation from home” (p. 47).

Overall, the research is mixed. Some studies suggest that attending a university far from home negatively impacts psychological health, while other studies suggest it does not. Clearly, there is not a simple relationship between these two variables. However, there is reason to suggest that geographic distance may influence students in a way that impacts PAI profiles.

International Students

International students face the same adjustment tasks as other students but to a greater degree. Research indicates that international students experience more stress and psychological problems than American students (Chen, 1999; Dadfar & Friedlander, 1982; Ng, 2006; Rahman & Rollack, 2004; Yeh & Inose, 2003). In the 2003-2004 academic year international students comprised 4.3% of the total enrollment in U.S. institutions of higher education (Wang & Mallinckrodt, 2006). In the past 20 years the number of international students studying in the U.S. has increased by 62% (Mitchell, Greenwood, & Guglielmi, 2007). The international student population is itself a diverse group. Mori (2000) reports that 57% of international students enrolled in U.S. higher education are from South or East Asia, 15% are from Europe, and 10% are from Latin America. In addition to these major segments of the international student population,

many students come from other parts of the world. Despite the culture differences within this population, many international students share similar characteristics. Many of them plan on returning to their home countries after they have completed their studies, making their time in the United States a prolonged transitional period. In addition, most are far from family, all are far from home, and all are immersed in a new culture. “Living and studying in another country can often be a very important life transition for a person. This change involves many sociocultural, environmental, and psychological adjustments” (Chen, 1999, p. 49). Because of these similarities, there are certain challenges and stressors that most international students face.

The most widely discussed problem in the literature is the language barrier. Difficulty with the English language can impact students’ ability to understand lectures, take notes, complete reading and writing assignments, orally express opinions, and ask questions in the classroom (Mori, 2000). In addition, the struggle to master a second language can be a significant source of psychological stress and anxiety (Ng, 2006). Chen (1999) writes,

It is not difficult to imagine how one would feel when he or she is having a hard time understanding, and being understood by, others in an unfamiliar host culture. Difficulties in verbal and written communications may cause international students to feel uncomfortable in daily life and may lead to feelings of insecurity (p. 51).

Language problems may inhibit international students’ social relationships. They may feel inferior, confused, and less willing to communicate with others. Language-

related struggles also can impact international students' self-concepts and sense of self-efficacy in relationship to their interpersonal and academic abilities. This factor alone can have a strong impact on students' sense of personal well-being and perception of their ability to cope with stress (Chen, 1999). Language barriers can make it challenging for international students to communicate and connect with American students (Yeh & Inose, 2003). Language-related problems also can be a problem for international students who spoke English in their country of origin, as they may have to deal with different expressions, slang, and difficulty understanding or being understood due to differing accents (Mori, 2000).

A study by Yeh and Inose (2003) investigated the impact of English language fluency, social support satisfaction, and social connectedness on acculturative stress. Acculturative stress can be defined as a distinctive type of stress associated with cross-cultural encounters. This type of stress often manifests in physical, social, and psychological problems. The study indicated that participants who reported higher frequency of use of the English language, higher fluency, and greater comfort speaking English also reported lower levels of acculturative stress. Higher English fluency was related to smoother interactions with American peers and professors, lower levels of embarrassment, decreased levels of self-consciousness, and better academic performance. In addition, those students who reported a greater sense of social connectedness and a stronger social support network also experienced lower levels of acculturative stress. Social connectedness was defined as an aspect of the self that is aware of being in close relation with the social world. This subjective recognition directs individuals' feelings,

thoughts, and behaviors in social situations. “By leaving their countries of origins, international students are deprived of important others who have endorsed their sense of self in the past. As a result, it is likely that their sense of self is shaken, which can result in significant distress” (Yeh & Inose, 2003, p. 24). This study indicates that language difficulty and lack of social support are two significant sources of stress for international students.

Kagen and Cohen (1990) examined factors related to cultural adjustment and found that speaking English in the student’s home in America is a major contributing factor to cultural adjustment, as well as to personal and social adjustment. This has interesting implications for international students, who may live alone, with a spouse, or in housing designated for international students. Any of these situations may limit the students’ opportunities to speak English at home. On the other hand, students who are placed in a dorm with American students may feel hesitant or uncomfortable working on language skills in that environment. Clearly, language related problems can be a significant source of stress for international students. It is not hard to imagine that these language difficulties could impact PAI profiles. Students may have difficulty reading and understanding the test and may endorse significant amounts of stress that could elevate a profile, thus suggesting pathology where language-related adjustment issues are really the source.

Although language problems may be related to many of the stressors that international students face, several of these issues are themselves significant sources of stress. Educational stressors can provide other unique challenges for international

students. These students often come to the United States as extremely high achievers and performers in their home country. The transition to the American education system can be difficult, and language and transition factors can cause students to perform at levels lower than expected. International students often feel a great amount of pressure to perform, and the possibility of not doing well can be very frightening. In addition, international students must adjust to a new educational system with new rules, procedures, and customs. For example, in many countries teachers and students have much more formal, professional relationships than is common in many U.S. institutions. International students may feel shocked and uncomfortable by what is perceived as a lack of respect for teachers by their American peers (Chen, 1999). International students may also have to adjust to educational demands that are very familiar to their American counterparts, such as independent library research, creative or standard essays and term papers, pop quizzes, and active participation in informal class discussions (Mori, 2000).

Another significant stressor for many international students involves social issues. International students often have to deal with culture shock, social isolation and alienation, and racial discrimination and prejudice (Ng, 2006). Culture shock can be an extremely difficult aspect of the transition to American universities. International students may experience a clash between the lifestyle and values of their home culture and values of the dominant American culture. This can be a significant source of stress and discomfort (Chen, 1999). Like domestic students moving from home to attend college, international students may experience homesickness (Wang & Mallinckrodt,

2006). In addition, international students are more likely than domestic students to report loneliness and grief (Mitchell et al., 2007).

Yao (2006) discussed the difference between international and domestic students in terms of alienation, which he defined as a state of feeling confused, lost, lonely, helpless, and desiring a greater sense of social connection and dependence. He concluded that there was no difference between the two groups on this construct and no connection between length of stay in the U.S. and alienation. However, international students who had frequent contact with other students from their home countries reported more satisfaction with their stay than those who had less contact. It would be interesting to extend this research to examine possible similarities between international students and domestic students who have relocated a long distance from their homes.

In addition to social challenges, international students may struggle to adjust to the North American conceptualization of friendship and relationship. The concept of friendship in America is less permanent and more casual than in many other cultures, and international students may perceive Americans' friendly and social characteristics as offers of serious friendship or romantic relationships (Mori, 2000). Students from collectivist cultures may prioritize close relationships in a different manner from most American college students and may feel confused by the emphasis on individualism, independence, assertiveness, and self-reliance (Yeh & Inose, 2003). In addition, they may experience racism and prejudice and may feel rejected by American students (Chen, 1999; Ng, 2006; Rahman & Rollack, 2004). "Over time, international students' disappointment with relationships, combined with their experiences of racial/ethnic

prejudice and discrimination may discourage them from attempting to form deep, significant relationships with Americans” (Mori, 2000, p. 138).

Financial problems are another potential source of stress for international students. Due to government regulations, non-U.S. residents are limited in their opportunities for federal financial aid or employment outside of school, though some international students are funded by their home governments (Mori, 2000). This can make financial difficulties more challenging for international students to resolve, and may lead them to feel pressured to complete their coursework in as little time as possible, thus exacerbating the academic pressure they may be experiencing (Chen, 1999). Financial issues may be connected with legal concerns, such as maintaining the correct documentation and enrolling in the appropriate number of course credits to maintain full-time student status (Ng, 2006).

Although there are many similarities within the international student population, there are important differences as well. Ng (2006) found that educators perceived international students from non-Western cultures as experiencing more difficulty in graduate school than domestic students or students from Western cultures. Students from non-Western cultures must deal with greater cultural adjustment and must face more discrimination in their relationships with American students. Ng (2006) emphasizes the importance of looking at the international student population as having many subpopulations with unique characteristics and needs.

Of specific relevance to college counseling centers, international students may have different conceptualizations of mental health and approaches to treating mental

health issues (Ng, 2006). Mori (2000) reports that mental health services traditionally are underused by international students. In addition, international students are more likely than domestic students to terminate therapy prematurely. “International students’ psychological problems are frequently considered, from their own perspective, to have been caused by phenomenological forces that are beyond the control of the individual. Frequently, they do not view their problems as amenable to help from counseling” (Mori, 2000, p 139). Those international students who do seek counseling may tend to somaticize their psychological problems in an attempt to evade stigma and retain family honor (Mori, 2000).

In a study on attitudes of international students toward professional psychological help, Dadfar and Friedlander (1982) found that international students from Western countries (European and Latin American) were more likely to report positive attitudes toward seeking mental health care than students from non-Western countries (Asian and African). In addition, students who had contact with a mental health care provider in their countries of origin were more likely to seek out mental health care in the United States than students who had no prior contact with mental health professionals. Attitudes toward help seeking were unrelated to length of time in the United States. Overall, international students reported less favorable attitudes toward professional psychological help than American students.

Another study investigating service utilization among international students found that international students were more likely than domestic students to have been hospitalized for psychiatric reasons, which may indicate that international students are

more likely to delay seeking services until their impairment is more significant and their distress more intolerable. International students were more likely to express concern with academic issues than domestic students, and even relational and career concerns often centered on academics. Despite this, the actual academic performance of international students was not significantly different than the academic performance of U.S. students (Mitchell et al., 2007).

Chen (1999) reports that there has been little research concerning the development of culturally relevant and equivalent tools, such as assessment methods and psychological tests, that can be used to define and measure the stressors and special needs of international students. Commonly used measures may need to be modified when they are applied to the targeted international population. The Guidelines for Providers of Psychological Services to Ethnic, Linguistic, and Culturally Diverse Populations (1993) state that culturally competent practitioners

Consider the validity of a given instrument or procedure and interpret resulting data, keeping in mind the cultural and linguistic characteristics of the person being assessed. Psychologists are aware of the test's reference population and possible limitations of such instruments with other populations (p. 46).

It is imperative that clinicians take the cultural and linguistic background of international students into account when interpreting PAI results. In addition, clinicians must be aware of their own cultural background, experiences, attitudes, values, and biases, and how this background may impact their assessment, diagnosis, and treatment of international student clients.

Rural/Urban Status

Another potential transition factor, rural/urban status of the home environment, is mentioned several times in the literature. The research indicates that the rural or urban classification of a student's hometown does not have an impact on his or her experience of homesickness (Burt, 1993; Fisher et al., 1985). However, research suggests that there may be other differences between students from rural and urban backgrounds. As previously discussed, Todd (2003) reported that students from rural backgrounds scored significantly higher on the ALC scale than students from urban backgrounds. Other research indicates that there are differences in average drinking patterns between students based on their home environments. Rural students were more likely to drink at outdoor parties or in vehicles during their first experience with alcohol, while students from urban backgrounds were more likely to drink at bars, house parties, or at events hosted by parents (Fletcher & Skinner, 2006). Alternately, another study indicated that rural students were more likely to abstain from alcohol use than urban students (Booth, Ross, & Rost, 1999). The research on differences between urban and rural students and alcohol use clearly is inconclusive.

Harvin (1955) looked at differences between rural and urban students with respect to the types and severity of problems that they presented with during intake at a university counseling center. No significant differences were found between the two groups in terms of service utilization, or problem type or severity. In another study, Anantharamn (1980) found differences between students from rural backgrounds and students from urban backgrounds in terms of endorsed values. In this study, values were

defined as bases of behavior, dominant and basic interests, motives, and mental character. Anantharamn (1980) found that students from urban backgrounds endorsed more aesthetic and religious values than those from rural areas, while there were no differences between the groups with reference to economic, social, or political values.

Previous research states that rural youth are more likely to encounter problems in preparing for college and career than their urban classmates. Rural youth are more likely to experience a lack of school and community resources, scarcity of employment opportunities, and limited access to needed programs and services (Anderson & Brown, 1997). In addition, a survey of rural teachers indicated that rural teachers have a larger number of classes to prepare for on a daily basis, are more likely than urban teachers to teach classes they are not certified to teach, and feel that they have less access to outside resources than urban teachers (Baird, Prather, Finson, & Oliver, 1994). These differences in rural educators suggest that rural students may face additional educational challenges when transitioning to college. In addition, rural youth are more likely than urban youth to be first-generation college students (Wright, Scherman, & Beesley, 2003), and therefore may be more likely to experience the additional struggles common to those who are the first in their family to attend a university.

Despite the scarcity of resources for rural students, previous research has indicated that students from rural backgrounds report higher career development knowledge and skills. The authors proposed that rural students who chose to attend college may be aware of the limitations they face and seek out the necessary information and opportunities (Anderson & Brown, 1997).

Another study examined the effects of parental attachment on adjustment to college in urban and rural students. They found that rural students reported higher levels of attachment than urban students in terms of the affective quality of their relationship to their parents and their view of parents as facilitators of independence. They also found that parental attachment was positively correlated with college adjustment, so that students who reported a strong attachment to their parents reported a smoother transition to college. The most important aspect of attachment was parents as facilitators of independence (Wright et al., 2003).

A qualitative study of first-generation college students from rural, agricultural backgrounds found that many of the students felt surprised by the cultural differences they experienced when entering the university.

By and large, the participants found themselves unaware of the need to build new relationships, and to cope with a college environment and culture which proved to be extremely dissimilar to that which they had known all of their lives. In a few instances these aspects of the first semester (i.e. cultural diversity, dorm life) were a very difficult and emotionally charged process (Schultz, 2004, p. 49).

These students reported that they often experienced a feeling of disconnectedness, a need for solitude, a desire to “get back to the country” (p. 50), as well as feelings of excitement, pleasure, pride, and accomplishment. These experiences can be attributed to being a rural student in an urban university (Schultz, 2004).

Overall, these studies seem to suggest that while rural students are exposed to fewer academic resources, they do not have more difficulty transitioning to college or

preparing for a career. In addition, previous research is inconclusive in describing the differences in alcohol use between urban and rural students. The previous research suggests that there may or may not be differences between students from rural and urban backgrounds, and these differences may or may not be reflected in scores on the PAI scales and subscales.

Parent Education Level

Parent education is often considered an important variable that impacts students' success in college. It is well-documented that first-generation college students often encounter major hurdles in the college process in a variety of areas, including college involvement, institutional connectedness, and academic and social integration (Lee, Sax, Kim, & Hagedorn, 2004). In general, research indicates that first-generation college students tend to be at a distinct disadvantage with respect to knowledge about college, level of financial income and support from their families, educational degree expectations and plans, and academic preparation in high school (Chen, 1999; Choy, Horn, & Nunez, 2000; Pascarella et al., 2004). "They [first-generation college students] feel the tensions of entering a new territory, and their parents are unable to reassure them. Their fellow college students often seem to be members of a club of insiders to which they do not belong" (Cushman, 2007, p. 44).

A study by Bui (2002) investigated the background characteristics and first-year experiences of first-generation college students. The results indicated that first-generation college students were more likely than their peers with college-educated parents to be ethnic minority students, to come from a lower socioeconomic background,

to have a lower score on the SAT, and to speak a language other than English in the home. In addition, first-generation college students reported feeling less prepared for college and feeling more worried about financial issues than their peers with college-educated parents. They also feared failing college more and reported knowing less about the social environment at the university. This again supports the idea that first-generation college students often feel like “outsiders” at universities (Cushman, 2007).

Additional research has found similar results, concluding that compared to their peers, first-generation college students are more likely to come from low-income families, to be Hispanic, to have weaker cognitive skills (in critical thinking, reading, and math), to have lower degree aspirations, and to have been less involved with peers and teachers in high-school (Pascarella et al., 2004). First-generation college students are also more likely to have children, to expect to take longer to complete their degrees, and to report receiving less encouragement from their parents to attend college. In terms of variables known to be related to academic persistence, first-generation college students were more certain of their academic major than their peers who had college-educated parents. Unfortunately, outcomes for first-generation college students also tend to be poorer than for their peers with more educated parents. First-generation college students complete significantly fewer credit hours, work more hours per week, and have lower cumulative GPA than their peers with college educated parents (Pascarella et al., 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

Lee et al. (2004) investigated the experience of college students across multiple levels of parent education, considering junior high or less, high school, community

college, four-year college, and graduate school. This study is unique in that it extends the focus beyond first-generation college students to consider the impact of multiple levels of parent education. The results indicated that there was a significant difference between levels of parent education and earned income, with increasing levels of annual family income as parent education increased. This indicates that students with more educated parents tend to have more financial resources in their family. First-generation college students had lower high school GPAs, were more likely to serve as the primary wage-earner for their families, were more likely to believe that grades reflect learning, encountered more difficulties understanding the English language, and reported more difficulty transitioning to the university. Students with parents who attended graduate school were more likely than students whose parents graduated from college to have a higher high school GPA and to believe that grades reflect learning.

When viewed as a whole, the literature describing first-generation college students paints a picture of students who face additional challenges and barriers to academic success. These students also may struggle to succeed socially in the college environment as they work to overcome the cultural differences they experience with their peers. Socioeconomic status and race frequently are mentioned as variables that are related to parent education level and may play an important role in understanding the impact of parent education level on college students. Parent education level seems to influence students in a variety of ways, which may be reflected in PAI profiles.

Student Development Theory & Research

In the book *How College Affects Students*, Pascarella and Terenzini (1991) write that in America, college education has historically had a broad mission that defines education,

to include increased self-understanding; expansion of personal, intellectual, and social horizons and interests; liberation from dogma, prejudice and narrow-mindedness; development of personal moral and ethical standards; preparation for useful and productive employment and membership in a democratic society; and the general enhancement of the quality of graduates' post-college lives (Pascarella & Terenzini, 1991, p. 162).

From the earliest American universities, colleges have included in their mission the development of the capacity to think clearly about moral and ethical issues and act accordingly (Whiteley & Yokota, 1988). A variety of models of student development have been presented, accounting for the many ways in which students are expected to grow and change throughout their time at the university. One of the most frequently referenced models was presented by Chickering and Reisser (1991), who presented seven vectors of change that they believe students move along during their college experience. These seven vectors are: developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. The expectation seems to be that students enter college at a somewhat immature level, grow and develop

through their years at the university, and graduate ready to face the world as mature individuals and capable professionals.

In a meta-analysis on how college impacts students, Pascarella and Terenzini (1991) concluded that the college years are a time of substantial student change on a broad front. They identified seven major ways in which research indicates college impacts students. They discuss the development of verbal, quantitative and subject matter competence; cognitive skills and intellectual growth; psychosocial changes such as interpersonal skills, identity, self-concept, and self-esteem; attitudes and values; moral development; educational attainment; and career choice and development. As students progress through college they grow and change in each of these areas.

The meta-analysis reported the largest changes occurring in cognitive and intellectual domains, with students making gains in general verbal and quantitative skill and in their knowledge of the specific subject matter related to their field of study. Compared to freshman, seniors were more effective speakers and writers and show increased ability to reason, solve problems, and think flexibly. This is not surprising; in fact, it would be more surprising if these gains were not found. However, other gains are made as well, in support of the developmental models previously mentioned (Pascarella & Terenzini, 1991).

In the attitudes and values realm, freshman-to-senior shifts toward openness, tolerance for diversity, and social awareness often are reported. These shifts are combined with an increase in liberal political and social values and a decline in traditional attitudes regarding gender roles and rigid religious beliefs. Students also

experienced psychosocial changes, although to a smaller degree than changes in attitudes and values. However the research consistently and reliably indicates that positive change occurs throughout the course of college attendance. Through the college experience, students appear to move toward greater self-definition, personal commitment, and self-understanding. (Pascarella & Terenzini, 1991).

Another meta-analysis on the impact of college reported consistent overall results. In the affective realm, students were found to develop a more positive self-image, a greater sense of intellectual and interpersonal competence, and a greater sense of self-efficacy. Students also were found to show increases in social activism, feminism, alcohol consumption, and support of legal abortions, reiterating the idea that students tend to become more socially and politically liberal throughout their college experience. However, contradictory to other reports previously discussed, this analysis showed that overall students reported a decline in emotional health and psychological well-being over their time in college. The authors attribute these changes to the academic and social stresses of the undergraduate experience and the experience of being away from the security of home for an extended amount of time (Astin, 1993).

In a longitudinal study of students between their tenth grade year and five years after graduation, a generally linear increase in self-esteem was found. Gains occurred gradually and in relatively equal intervals, indicating that as students progressed through the university their self-esteem increased (Bachman & O'Malley, 1977). Overall, the research indicates that over the course of college, students' evaluations of themselves as

worthy, competent, equal to others, and having reason to be proud of their accomplishments increases significantly (Pascarella & Terenzini, 1991).

In a study examining personality development across the college years, Constantinople (1968) found that there were consistent increases in the successful resolution of identity issues (a sense of knowing who one is and what one wants out of life) from freshman year to senior year and from one year to the next. Interestingly, when overall maturity was assessed, the results supported the idea that women enter college more mature than men. However, men show greater gains in maturity during the course of four years of college, so that at senior year men were more mature than women. For this study, maturity was operationalized as successfully resolving Erikson's developmental stages (basic trust, autonomy, initiative, industry, identity, intimacy). These gender differences led the authors to question the conduciveness of the college environment for growth in women as well as the possibility that maturity may look different for men and women. It is important to note that this study was conducted several decades ago, and a great deal of cultural change has occurred that has impacted the role of women in society and the college experience as it relates to women. Most likely, different results would be found if the study was replicated today. However, the overall findings of the study may still be valid, and support the Chickering and Reisser (1991) theory that students become increasingly mature each year through the time they spend at college.

Graduate students are an important part of the university system; however, there is much less research discussing developmental factors related to graduate students and

their mental health needs. In a study exploring the mental health needs of graduate students, half of the students surveyed had considered seeking mental health care while a quarter had someone else suggest they seek care. Seventy-four percent of the students surveyed reported having had an emotional problem that interfered with their daily functioning. Graduate students had a variety of reasons for why they would seek care, ranging from academic and career-problems to financial problems, relationship problems, emotional problems, and sexual identity problems. The most commonly reported problems included feeling depressed, feeling overwhelmed, experiencing financial problems, and having difficulty managing various academic and personal demands. Self-reported mental health needs were significantly and positively associated with the competitiveness of the graduate program and the number of semesters spent in school (Hyun, Quinn, Madon, & Lustig, 2006). Understanding the mental health needs of graduate students is an important part of meeting the needs of university students. In light of this study, gaining a clearer understanding of the unique needs of graduate students will shed light on the PAI profiles of this group.

The research indicates that college impacts students cognitively, affectively, and psychologically. While the research is extensive and complex, there is evidence that college students are constantly changing throughout their time at the university. This study will investigate the ways in which this constant state of personal transition impacts PAI profiles.

Research on student development indicates that transition variables such as international or domestic status, geographic distance from home, and parent education

level can influence students' psychological health in complex ways. Research also indicates that the rural or urban status of the home environment may or may not impact student clinical presentation. In addition, demographic variables, such as ethnicity and gender may impact PAI profiles. This study extends the existing research in several important ways. First of all, it expands the research on the PAI to explore implications of the instruments' use with college students. In addition, this research can aid college student professionals in diagnosing and treatment planning. It will also aid university counseling centers in understanding important factors related to using the PAI as a pre-screening tool for treatment assignment. Therefore, it has the potential to contribute to several areas of literature and has both research and practical implications.

CHAPTER III MATERIALS AND METHODS

Research Questions and Hypotheses

This study will investigate several questions:

Research Question 1: Are there significant differences between international and domestic counseling center clients on any of the PAI's clinical scales or subscales, treatment scales, or interpersonal scales?

Previous research does not address this issue; however, anecdotal evidence based on using the PAI as a screening instrument at the University of Tennessee suggests several scales and subscales that may indicate differences between international and domestic students.

Hypothesis 1: There are significant differences between the mean scores of international and domestic college student clients on the PAI clinical, treatment, and interpersonal scales and on the subscales.

Hypothesis 2: There are significant differences between the mean scores of international and domestic college student clients on the PAI scales that address social support and quality of interpersonal relationships. The specific PAI scales involved are: (a) Social Detachment (SCZ-S); (b) Negative Relationships (BOR-N); and (c) Nonsupport (NON). It is expected that international students will score higher than domestic students on each of these scales.

Hypothesis 3: *There are significant differences between the mean scores of international and domestic college student clients on the Thought Disorder (SCZ-T) subscale, with international students scoring higher than domestic students.*

Hypothesis 4: *There are significant differences between the mean scores of international and domestic college student clients on the Stress (STR) scale, with international students scoring higher than domestic students.*

Research Question 2: Are there significant differences between groups of counseling center clients, based on the distance between the students' hometowns and the university, on any of the PAI's clinical scales and subscales, treatment scales, or interpersonal scales?

Previous research does not address this issue; however, it is possible that students who relocate from a greater distance to attend the university will have elevated scores similar to what is predicted for international students, though to a lesser degree.

Hypothesis 1: *There are significant differences between the mean scores of student clients who attend a university close to home and student clients who attend a university far from home on the PAI clinical, treatment, and interpersonal scales and on the subscales.*

Hypothesis 2: *There are significant differences between the mean scores of student clients who attend a university close to home and student clients who attend a university far from home on the PAI scales that address social support and quality of interpersonal relationships. The specific PAI*

scales involved are: (a) Social Detachment (SCZ-S); (b) Negative Relationships (BOR-N); and Nonsupport (NON). On each of these scales it is expected that students far from home will score higher than students close to home.

Hypothesis 3: There are significant differences between the mean scores of student clients who attend a university close to home and student clients who attend a university far from home on the Stress (STR) scale.

Research Question 3: Are there significant differences between groups of counseling center clients, based on their student classification (i.e., freshman, sophomore, junior, senior, graduate student), on any of the PAI's clinical scales and subscales, treatment scales, or interpersonal scales?

Previous research does not address this issue. This may be a significant transition variable; however, it is difficult to hypothesize the direction of influence student classification may have on PAI scales.

Hypothesis 1: There are significant differences between the mean scores of student clients based on university classification (freshman, sophomore, junior, senior, graduate) on the PAI clinical, treatment, and interpersonal scales and on the subscales.

Research Question 4: Are there significant differences between counseling center clients, based on their parents' education level, on any of the PAI's clinical scales and subscales, treatment scales, or interpersonal scales?

Previous research does not directly address this issue. However, the extant literature on first-generation college students indicates that they often face specific struggles (Bui, 2002; Cushman, 2007; Lee et al., 2004; Pascarella et al., 2004). These struggles may be reflected on the PAI scales.

Hypothesis 1: There are significant differences between the mean scores of student clients based on parents' education level on the PAI clinical, treatment, and interpersonal scales and on the subscales.

Hypothesis 2: There are significant differences between the mean scores of first-generation college student clients and student clients who have a parent with a college degree on the Nonsupport (NON) scale, with first-generation college students scoring significantly lower than students with a parent with college experience.

Research Question 5: Are there significant differences between counseling center clients, based on the rural or urban classification of their hometown, on any of the PAI's clinical scales and subscales, treatment scales, or interpersonal scales?

Todd (2003) reported there was a significant difference between the PAI profiles of students from rural backgrounds and students from urban backgrounds, particularly on the ALC scale, with students from rural backgrounds scoring significantly higher than students from urban backgrounds. However, other research suggests that rural students were more likely to abstain from alcohol use than students from other backgrounds (Booth, Ross, & Rost, 1999). It may be that rural students have different patterns of alcohol use than urban students and tend to either drink heavily or not at all. Todd (2003)

did not find any other differences between the two groups on clinical scales, treatment scales, or interpersonal scales.

Hypothesis 1: *There are significant differences between the mean scores of student clients based on rural or urban classification on the PAI clinical, treatment, and interpersonal scales and on the subscales.*

Hypothesis 2: *There are significant differences between the mean scores of rural and urban student clients on the Alcohol Problems (ALC) scale.*

No direction is hypothesized.

Research Question 6: Are there differences between counseling center clients in light of ethnicity or gender, on any of the PAI's clinical scales and subscales, treatment scales, or interpersonal scales?

In the *Professional Manual* for the PAI, Morey (1991) states, "Examination of the PAI scale and subscale means [of the standardization group] suggests that the influence of demographic variables (particularly gender and race) is fairly small" (p. 5). However, the question still merits exploration as the specific impact of demographic variables on the counseling center client population has not been examined.

Hypothesis 1: *There are no significant differences between the mean scores of student clients based on ethnicity or gender on the PAI clinical, treatment, and interpersonal scales and on the subscales.*

Method

All of the data used in this study were obtained from archival data collected as part of routine assessment and treatment programs at a mid-sized southeastern university counseling center. Identifying information was removed to protect the confidentiality of all participants, who had signed informed consent forms allowing their data to be used for archival research. This project was reviewed by the university IRB as an exempted study for archival research.

Participants

Participants were 838 clients seen at the University of Tennessee counseling center between the fall of 2005 and the fall of 2007. The University of Tennessee is a mid-sized southeastern university. According to the most recently updated university information, in the fall of 2006 there were 26,476 students enrolled in the university; 20,435 undergraduate and 6,041 graduate/professional students. There were 5,949 students classified as freshman, 4,613 classified as sophomores, 4,255 juniors, 5,297 seniors, and 321 classified as "other." There were 12,849 male students and 13,627 female students. The racial description of the student body is as follows: 100 American Indian, 673 Asian, 2,137 Black, 412 Hispanic, 21,845 White, and 260 who did not report. There were 751 international students enrolled in the university (University of Tennessee, 2007).

The university is located in Knoxville, Tennessee, which has an estimated population of 175,027. Knoxville is a primarily white, urban area, with 140,576 people identifying as White, 27,065 identifying as Black or African American, 143 identifying as American Indian, 2,296 identifying as Asian, 5,252 identifying as Hispanic or Latino,

1,616 identifying as “some other race,” and 3,331 identifying as multi-racial (United States Census Bureau, 2000).

The counseling center provides counseling and mental health services to University of Tennessee students. All students who pay fees are eligible to use the counseling center and receive the full range of services offered, including individual, couples, and group therapy. Approximately six percent of the university students utilize the counseling center’s services. Approximately two-thirds of these students are women and one-third of the students are male. In terms of race/ethnicity, approximately 9% of the clients are African American, 2% are Asian, 70% are Caucasian, 2% are Hispanic and 17% identify as other (V. Barr, personal communication, May 23, 2008).

Eighty-five percent of the students self-identified as White/Caucasian/European American, while fifteen percent of the students identified as Non-White (including African American/Black, American Indian/Alaskan Indian, Arab American, Asian American/Asian, East Indian, Hispanic/Latino, and Multi-racial). There were 570 women, 263 men, and 5 students who did not report gender. Only data from clients who had completed both the intake form and the PAI were included. A number of clients who participated did not report all relevant data. Those who did not report a piece of data were excluded from the relevant analysis. All of the participants for the study were students at the university; therefore, throughout the results and discussion, the terms “student,” “client,” and “student client” will be used interchangeably.

Procedure

All clients who seek services at the counseling center complete an intake form and the PAI. Students also are given an informed consent form, requesting that they allow their information to be de-identified and used for archival research. They are informed that participation is strictly voluntary and that there will be no foreseeable consequences or rewards associated with allowing their data to be used for research. Data were not used from students who did not sign this informed consent form.

Information from the intake form was entered into the counseling center's computer database, which was used for this study. At intake, clients were assigned identification numbers and all information was de-identified, ensuring the clients' confidentiality. Information relevant to this study included client gender, year in school (freshman, sophomore, junior, senior, or graduate), parent education level, and location of permanent domicile. Parent education was operationalized as the highest level of education completed by either parent.

Two factors were considered in order to explore the impact of geographic location. First, the number of miles between the university and clients' hometowns were determined. Distances were grouped into two categories based on the median split of reported distance from home, with students 199 miles or less from home categorized as close to home and students 200 miles or more from home categorized as far from home. Second, the clients' hometowns were classified as rural or urban, based on the 2000 United States Census, including the changes made to this list by the 2002 Federal Register Notice.

Instrument

The PAI is a self-administered, objective test of personality and psychopathology. It contains 344 items covering 22 non-overlapping scales. The PAI consists of four sets of scales: 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales. Many of the scales also have related subscales (see Appendix A for a description of these scales). The inventory can be self-administered either individually or in groups to adults aged 18 or older, and should be interpreted cautiously when used with adults whose first language is not English. The test manual reports that the PAI has a fourth grade reading level (Morey, 1991). For the purposes of this study, clinical scales, treatment scales, and interpersonal scales will be considered, as well as subscales within each of these areas.

The PAI was developed based on a construct validation framework. A strong emphasis was placed on developing and selecting theoretically appropriate items and on assessing the stability and empirical value of these items. The PAI has been found to have strong psychometric properties. Morey (1991) used coefficient alphas to investigate the internal consistency of the PAI, and reported Chronbach's alphas for scores on each scale and subscale. The reported values for the 18 clinical (non-validity) scales (including median alphas of .81, .86, and .82 for the normative, clinical, and college samples respectively) range from .66 to .94. The reported values for scores on the subscales range from .51 to .89. Test-retest reliability also was assessed, using both clinical and college groups. Each group was administered the PAI on two separate occasions to assess the instrument's temporal stability. The correlations on the 18

clinical (non-validity) scales for each group, as well as a combined sample using data from both groups, ranged from .66 to .90.

The validity of the PAI also has been examined. In terms of construct validity, the presence of the subscales and the selection of items assessing the full range of problem severity help ensure that the breadth and depth of each construct is covered. In the PAI manual, Morey (1991) provides extensive evidence of convergent and criterion related validity by presenting correlation data between various PAI scales and comparable scales of other frequently used diagnostic and personality instruments, such as the MMPI-2, NEO Personality Inventory, and Beck Depression Inventory. Overall, these data show moderate correlations between the PAI scales and analogous scales of other instruments.

Analyses

An independent-samples *t*-test was run to compare the mean scaled scores of international and domestic students. This statistic was chosen to control for different group size by not assuming equal variance between the two groups. Then, a series of multivariate analyses of variance (MANOVAs) were used to compare participants' scaled scores on the other independent variables. In this study, the other independent variables were distance from home, student classification, parent education level, rural or urban classification of hometown, ethnicity, and gender. Dependent variables were participants' scaled scores on the PAI clinical scales, interpersonal scales, treatment scales, and subscales. For each research question separate MANOVAs were run on the clinical, interpersonal, and treatment scales and on the subscales to avoid item overlap.

For each MANOVA yielding significant results, a univariate analysis of variance (ANOVA) was conducted to determine the specific variables contributing to the statistical significance, using the Bonferroni method. Post-hoc pairwise comparisons were then run to determine where the differences between variables were found. Only valid profiles were included in the analysis.

CHAPTER IV

RESULTS AND DISCUSSION

Results

Research Question 1

An independent-samples *t*-test was conducted to evaluate the hypothesis that international and domestic student clients respond differently on the PAI clinical, treatment, and interpersonal scales. Specifically, it was hypothesized that international and domestic clients would differ on the SCZ-S subscale, the BOR-N subscale, the NON scale, and the SCZ-T subscale, and that international students would report higher mean scores on all four scales. There were 815 domestic student clients and 22 international student clients who participated in the study. One student did not report his or her international/domestic status and was excluded from this portion of the study. Levene's test for equality of variances was used because equal variances could not be assumed between the two groups due to the dramatic difference in sample sizes. See Appendix B for a description of means, standard deviations, and *t*-test results for the PAI scales.

The *t*-test on the SCZ-S subscale was significant, $t(21.94) = 2.44, p = .02$, with the average international client ($M = 62.18, SD = 14.12$) scoring higher than the average domestic client ($M = 54.76, SD = 12.83$). The 95% confidence interval for the difference in means ranged from -13.73 to -1.10. The *t*-test on the BOR-N subscale was not significant, $t(22.19) = -0.30, p = .76$, indicating no significant difference between the responses of international students ($M = 61.23, SD = 11.65$) and domestic students ($M = 60.47, SD = 11.87$) on this scale. The 95% confidence interval for the difference ranged

from -5.98 to 4.46. The test on the NON scale was not significant, $t(21.98) = -1.93$, $p = 0.67$, indicating no significant difference between the responses of international students ($M = 61.63$, $SD = 13.45$) and domestic students ($M = 56.09$, $SD = 12.45$) on this scale. The 95% confidence interval for difference in means ranged from -11.60 to 0.43. The t -test on the SCZ-T subscale was significant, $t(21.99) = -2.37$, $p = .03$, with international clients ($M = 72.05$, $SD = 16.20$) scoring higher than domestic clients ($M = 63.76$, $SD = 15.05$). The 95% confidence interval for the difference ranged from -15.53 to -1.04.

Several other significant differences were found between the mean scores of the two groups. On the SCZ primary scale, the t -test was significant, $t(21.97) = -2.91$, $p = .008$, with international clients ($M = 66.32$, $SD = 13.23$) scoring higher than domestic clients ($M = 58.12$, $SD = 12.15$). The 95% confidence interval for the difference ranged from -14.22 to -2.39. On the Obsessive Compulsive (ARD-O) subscale, international clients ($M = 59.38$, $SD = 10.94$) scored significantly higher than domestic clients ($M = 56.59$, $SD = 11.95$), $t(22.43) = -2.14$, $p = .04$. The 95% confidence interval for the difference ranged from -9.99 to -0.17. On the BOR-A subscale, the mean score for international students ($M = 66.00$, $SD = 13.35$) was significantly higher than the mean score of domestic students ($M = 59.51$, $SD = 12.65$), $t(22.03) = -2.25$, $p = .03$. The 95% confidence interval for the difference ranged from -12.47 to -0.52.

Two of the Antisocial (ANT) subscales also showed significant differences between the two groups. The t -test on the Antisocial Behaviors (ANT-A) subscale was significant, $t(23.74) = 2.06$, $p = .05$, with domestic student clients ($M = 50.78$, $SD = 10.00$) scoring significantly higher than international student clients ($M = 47.81$, $SD =$

6.52). The 95% confidence interval for the difference ranged from -0.00 to 5.92. The t -test on the Egocentricity (ANT-E) subscale was also significant, $t(22.01) = -2.15$, $p = 0.043$, with the mean score for international students ($M = 56.59$, $SD = 10.80$) significantly higher than the mean score for domestic students ($M = 51.58$, $SD = 10.15$).

Research Question 2

The second research question asked if there were differences between groups of counseling center clients based on the distance between the students' hometowns and the university. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the impact of distance from home on scores on the PAI clinical, treatment, and interpersonal scales, and subscales. Separate MANOVAs were run for the clinical, treatment, and interpersonal scales and for the subscales. There were 308 students in the close to home group and 183 students in the far from home group. Three hundred and forty seven students did not report their hometowns and were excluded from this portion of the study. Significant differences were found between the two groups on the clinical, treatment, and interpersonal scales, Wilks's $\Lambda = .94$, $F(18, 472) = 1.66$, $p = .04$. The multivariate η^2 based on Wilks's Λ was .06. Significant differences were not found between the two groups on the subscales, Wilks's $\Lambda = .93$, $F(31, 459) = 1.12$, $p = .31$. Appendix C contains the means and the standard deviations on the clinical, treatment, and interpersonal scales.

Analyses of variance (ANOVA) on the clinical, treatment, and interpersonal scales were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at .05 level. Post hoc analyses to the univariate

ANOVA for the significant scales consisted of pairwise comparisons to find how distance impacted mean scores. The ANOVA on the Aggression (AGG) scale was significant, $F(1, 489) = 4.09, p = .04, \eta^2 = .01$, so that clients far from home scored higher on the AGG scale than clients close to home. The ANOVA on the ANT scale was also significant, $F(1, 489) = 4.19, p = .04, \eta^2 = .01$. Students far from home scored higher on the ANT scale than students close to home. Finally, the test on the Suicidal Ideation (SUI) scale, $F(1, 489) = 5.26, p = .02, \eta^2 = .01$, was significant with student clients close to home reporting higher scores on the SUI scale than student clients far from home. None of the other clinical, treatment, or interpersonal scales revealed significant differences between the groups.

Research Question 3

Next, a MANOVA was conducted to determine the impact of student classification (freshman, sophomore, junior, senior, or graduate student) on the PAI clinical scales, treatment scales, and interpersonal scales. The sample consisted of 130 freshmen, 173 sophomores, 166 juniors, 177 seniors, and 187 graduate students. Five clients did not report their student classification and were therefore excluded from this portion of the study. Once again, separate MANOVAs were run for the clinical, treatment, and interpersonal scales and for the subscales. Significant differences were found among the five classifications on the clinical, treatment, and interpersonal scales, Wilks's $\Lambda = .83, F(72, 3191.42) = 2.19, p < .01$. The multivariate η^2 based on Wilks's Λ was .05. Significant differences were also found among the subscales, Wilks's $\Lambda = .78, F(24, 3176) = 1.65, p < .001$. The multivariate η^2 based on Wilks's Λ was .06.

Appendix D contains the means and the standard deviations on the dependent variables for the five groups.

ANOVA on the dependent variables were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .0125 level. The ANOVA on Anxiety (ANX) scale was significant, $F(4, 828) = 3.34, p = .01, \eta^2 = .02$, along with the ANX-P subscale, $F(4, 828) = 4.33, p = .002, \eta^2 = .02$. The ANOVA on the PAR scale, $F(4, 828) = 4.74, p = .001, \eta^2 = .02$, was significant, as were the three PAR subscales: Hypervigilence (PAR-H), $F(4, 828) = 4.22, p = .002, \eta^2 = .02$, Persecution (PAR-P), $F(4, 828) = 3.48, p = .008, \eta^2 = .02$, and Resentment (PAR-R), $F(4, 828) = 3.27, p = .011, \eta^2 = .02$.

The ANOVA on the ANT scale was significant, $F(4, 828) = 5.01, p = .001, \eta^2 = .02$, as was the ANT-A subscale, $F(4, 828) = 3.99, p = .003, \eta^2 = .02$, and the ANT-E subscale, $F(4, 828) = 4.28, p = .002, \eta^2 = .02$. Other significant subscales included the Cognitive Depressive (DEP-C) subscale, $F(4, 828) = 6.68, p < .001, \eta^2 = .03$, the SCT-T subscale, $F(4, 828) = 3.45, p = .008, \eta^2 = .02$, and the BOR-I scale, $F(4, 828) = 5.14, p < .001, \eta^2 = .02$. No other scales indicated significant differences between the five classifications.

Post-hoc analyses of the univariate ANOVA for the ANX, PAR, and ANT scales consisted of conducting pairwise comparisons to find where the significant differences between year in school were found. Each pairwise comparison was tested at the .0125 level. On the ANX scale, the average junior scored higher than the average graduate student. Freshmen and juniors scored higher than graduate students on the ANX-P

subscale, and freshmen and sophomores scored higher than graduate students on the ANT-A subscale. On the PAR scale, sophomores and seniors scored significantly higher than graduate students. On the PAR-H and PAR-P scales sophomores scored significantly higher than graduate students, while on the PAR-R scale the significant difference was between juniors and graduate students, with juniors scoring higher than graduate students.

On the ANT scale, graduate students scored significantly lower than freshmen, sophomores, and juniors. Specifically on the ANT-E subscale, freshmen, sophomores, and juniors had significantly higher average scores than graduate students. On the SCT-T scale the significant difference was between juniors and graduate students, with juniors scoring higher than graduate students. Freshmen, sophomores, and juniors had significantly higher average scores than graduate students on the BOR-I. All four undergraduate classifications scored higher than graduate students on the DEP-C subscale.

Research Question 4

The next research question asked if there were significant differences between counseling center clients in terms of parent education level. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the effect of education on the PAI clinical scales, treatment scales, and interpersonal scales. The sample consisted of 109 students whose parents had a high school education or less, 124 students who had parents with some college experience, 294 students who had parents who had graduated college, and 258 students who had parents with graduate school experience. Fifty-three

clients did not report the education level of their parents and were therefore excluded from this portion of the study. Significant differences were found among parent education level on the clinical, interpersonal, and treatment scales, Wilks's $\Lambda = .89$, $F(54, 2277.24) = 1.65$, $p = .002$, $\eta^2 = .04$. Significant differences were also found for the subscales, Wilks's $\Lambda = .83$, $F(93, 2248.7) = 1.57$, $p = .001$, $\eta^2 = .06$. Appendix E contains the means and the standard deviations for the dependent variables for the five groups.

Analysis of variances (ANOVA) on the dependent variables were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .025 level. The ANOVA on the ANX scale was significant, $F(3, 781) = 3.85$, $p = .009$, $\eta^2 = .02$, as was the ANOVA on the ANX-P subscale, $F(3, 781) = 6.34$, $p < .001$, $\eta^2 = .02$. The SCZ scale was also significant, $F(3, 781) = 3.35$, $p = .02$, $\eta^2 = .01$. In addition, the STR scale $F(3, 781) = 5.57$, $p = .001$, $\eta^2 = .02$, and the NON scale, $F(3, 781) = 4.81$, $p = .002$, $\eta^2 = .02$, yielded significant ANOVAs. At the subscale level, the ARD-P subscale was significant, $F(3, 781) = 4.12$, $p = .006$, $\eta^2 = .02$. No other scales indicated significant differences between parent education levels.

Post hoc analyses to the univariate ANOVAs consisted of running pairwise comparisons to find where the differences in parental education were found. On the ANX scale, clients who had a parent with graduate school experience reported lower mean scores than clients who had a parent who had graduated college but lacked graduate school experience. On the ANX-P subscale, clients with a parent who had attended some college or had graduated college had significantly higher mean scores than clients who had a parent with graduate school experience. On the SCZ scale, clients whose parents

had a high school education or less had higher mean scores than clients with a parent who had graduate school experience. On both the STR and NON scales, clients whose parents' highest level of education was high school or less had higher mean scores than students who had a parent that had completed college or had graduate school experience. On the Phobias (ARD-P) subscale, students who had a parent with some college experience had significantly higher mean scores than students who had a parent with graduate school experience. In each of the clinical, interpersonal, and treatment scales where there was a significant difference between level of parent education, students who had parents with graduate school experience had lower mean scores than students who had parents with other education levels.

Research Question 5

There were insufficient data in the archive to address this question; therefore there are no results to report.

Research Question 6

A MANOVA was conducted to determine the effect of ethnicity and gender on the PAI clinical, interpersonal, and treatment scales. For the purpose of the analysis student clients were categorized as "White/Caucasian" and "Non-White." There were 647 students in the White/Caucasian group and 108 students in the Non-White group. Eighty- three students did not report their ethnicity and were excluded from this portion of the study. Significant differences were found between the two groups on the primary clinical scales, the interpersonal scales, and the treatment scales, Wilks's $\Lambda = .88$, $F(31, 723) = 3.21$, $p < .001$, $\eta^2 = .12$. Significant differences were also found between the two

groups on the subscales, Wilks's $\Lambda = .92$, $F(18, 736) = 3.57$, $p < .001$, $\eta^2 = .08$. Appendix F contains the means and the standard deviations on the clinical, treatment, interpersonal, and subscales.

Analysis of variances (ANOVA) on the dependent variables were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .05 level. The ANOVA on the PAR scale was significant, $F(1, 753) = 12.95$, $p < .001$, $\eta^2 = .02$. The PAR-H was significant, $F(1, 753) = 9.58$, $p = .002$, $\eta^2 = .013$, as was the PAR-P subscale, $F(1, 753) = 28.98$, $p < .001$, $\eta^2 = .04$. The ANOVA on the SCZ was significant, $F(1, 753) = 10.12$, $p = .002$, $\eta^2 = .01$, as were the subscales SCZ-P, $F(1, 753) = 9.94$, $p = .002$, $\eta^2 = .01$, and SCZ-S, $F(1, 753) = 10.25$, $p = .001$, $\eta^2 = .01$. The ANOVA on the AGG scale was significant, $F(1, 753) = 7.30$, $p = .007$, $\eta^2 = .01$. The significant subscales on the AGG scale were the Aggressive Attitude (AGG-A) scale, $F(1, 753) = 5.04$, $p = .025$, $\eta^2 = .001$, and the Physical Aggression (AGG-P) subscale, $F(1, 753) = 10.09$, $p = .002$, $\eta^2 = .01$. The ANOVA on the NON scale was significant, $F(1, 753) = 11.70$, $p = .001$, $\eta^2 = .02$. Other significant subscales were the Irritability (MAN-I) scale, $F(1, 753) = 7.16$, $p = .008$, $\eta^2 = .01$, and the BOR-A subscale, $F(1, 753) = 4.89$, $p = .027$, $\eta^2 = .01$. With the exception of the AGG-A and AGG-P subscales, on each of these scales Non-White students had higher means than White/Caucasian students.

The final question asked if there were differences among counseling center clients, based on gender, on the PAI clinical, treatment, or interpersonal scales. There were 570 female students and 263 male students who participated. Five students did not report their gender and were excluded from this portion of the study. A one-way

multivariate analysis of variance (MANOVA) was conducted to answer this question. Separate tests were run for the primary clinical, treatment, and interpersonal scales and the subscales. Significant differences were found between males and females on the primary clinical and associated scales, Wilks's $\Lambda = .78$, $F(18, 814) = 12.51$, $p < .001$, $\eta^2 = .22$, as well as the subscales, Wilks's $\Lambda = .70$, $F(31, 801) = 10.84$, $p < .001$, $\eta^2 = .30$. Appendix G, Table G1 contains the means and the standard deviations on the relevant PAI scales for both groups.

Analysis of variances (ANOVA) on the dependent variables were conducted as follow-up tests to the MANOVA. Using the Bonferroni method, each ANOVA was tested at the .05 level. The ANOVA on the following scales were significant: Somatic Complaints (SOM), Somatization (SOM-S), ANX, Cognitive Anxiety (ANX-C), Affective Anxiety (ANX-A), ANX-P, Anxiety-Related Disorders (ARD), ARD-P, Traumatic Stress (ARD-T), Depression (DEP), Physiological Depression (DEP-P), Mania (MAN), Grandiosity (MAN-G), SCZ, SCZ-P, SCZ-S, SCZ-T, BOR-I, BOR-N, ANT, ANT-A, ANT-E, Stimulus Seeking (ANT-S), AGG, AGG-P, ALC, Drug Problems (DRG), SUI, NON, Dominance (DOM), and Warmth (WRM). See Appendix G2 for relevant statistics.

The following scales showed women with higher mean scores than men: SOM, SOM-S, ANX, ANX-A, ANX-C, ANX-P, ARD, ARD-P, ARD-T, DEP, DEP-P, WRM, PAR-R, BOR-I, and BOR-N. The following scales showed men with higher mean scores than women: MAN, MAN-G, SCZ, SCZ-P, SCZ-T, SCZ-S, ANT, ANT-E, ANT-S, ANT-A, AGG, AGG-P, ALC, DRG, SUI, NON, DOM.

Discussion

International and domestic students

The first research question investigated differences in PAI profiles between international and domestic clients. The results indicated that there were significant differences between international and domestic student clients on several scales and subscales. There were not significant differences between the groups on the Validity scales.

There are several possible explanations for this overall difference between the profiles of the two groups. One possibility is that the difference is a function of language ability and that international students responded differently due to difficulty reading and responding to the PAI in the English language. Reading-level analyses of the PAI item book instructions and test items indicate that reading ability at the fourth-grade level is needed to take the test (Morey, 2003). The university where the study was conducted requires students to earn a minimum score on the Test of English as a Foreign Language (TOEFL); however this score is not translated to reading-level, and students may earn the needed score and still struggle with English. Despite this possibility, the differences between the profiles of international and domestic clients were not large enough to indicate that international students were struggling with comprehension issues. In addition, no differences were found between the groups on the Inconsistency (ICN) scale or the Infrequency (INF) scale, which have been associated with reading problems (Morey, 1991), providing further evidence that language difficulties were not the source of the between-group differences.

Another possible explanation for the difference between the two groups is that international students who present for treatment at university counseling centers may be exhibiting more pathology than their domestic counterparts. Previous research indicates that international students are more reluctant to seek mental health support than domestic students (Dadlander & Friedlander, 1982; Mori, 2000; Sue & Sue, 1977). If international students are more hesitant to seek mental health services, then they may delay treatment for longer and present for therapy in higher levels of distress than domestic students. Domestic students may feel comfortable seeking counseling for problems that they perceive as relatively minor, while international students may only be willing to seek counseling for more major issues.

Differences between the profiles of international and domestic student clients also could be due to a variety of personal characteristics, including psychological characteristics of students who choose to study abroad. Or, it could be that international clients endorse more symptoms because of the stress of transition variables, as discussed in the literature review. The elevations may be reflections of the transitions as opposed to reflections of true pathology. Any of these explanations could be valid for the indicated scales and subscales and may be the subject for future investigations.

At the primary scale level, scores on the SCZ scale differed between international student clients and domestic student clients, with international students scoring higher. Average scores on SCZ-S and SCZ-T subscales also differed, with international students scoring higher than domestic students. These results were consistent with the hypotheses based on anecdotal evidence using the PAI in a university counseling center. On all of

these scales, the mean score for international students was significantly higher than the mean score for domestic students (See Appendix B for related means). These differences occurred at a clinically significant level, where the mean score for international student clients was in a range that may alert clinicians to increased pathology and impact diagnosis and treatment planning.

Overall, the SCZ scale measures constructs such as unusual beliefs and perceptions, poor social competence and social anhedonia, disturbances in attention, concentration, and associational processes (Morey, 2003). It would be reasonable to assume that international students may have different worldviews that could be interpreted as unusual in an American cultural context. For example, one of the items on the SCZ scale says “There are people who try to control my thoughts.” There may be certain religious groups or cultural beliefs that support the idea that people, particularly religious figures, can influence the thoughts and mental experiences of one another. This item could also be interpreted as referencing relatives and authority figures that are shaping and directing the thoughts and actions of a younger generation. Students from cultures that place a high value on respect and obedience may interpret this item differently than students from more individualistic cultures that value independence. In addition, the social isolation often faced by international students could lead to elevations on the SCZ scale. This is also a possibility for the SCZ subscales that showed differences between international and domestic students.

The SCZ-S subscale measures social detachment and isolation, experiences that international students would be expected to experience at a higher intensity than domestic

students. International students often are far from their social support system and are working to adapt to another culture. In addition, language and cultural barriers often make it difficult for international students to form new relationships and experience a sense of social connection. Previous research has thoroughly discussed the social challenges international students face, ranging from culture shock to racial discrimination and prejudice to alienation (Chen, 1999; Ng, 2006; Yao, 2006). These factors could certainly influence how international clients perceive their social environment and could increase scores on the SCZ-S subscale.

The SCZ-T subscale focuses on confusion, concentration problems, and thought process disorganization. Moderate to high scores on the SCZ-T subscale can indicate difficulties in concentration, decision-making, self-expression, and communication. Therefore, elevations on the SCZ-T scale could reasonably be related to language or cultural differences between international and domestic student clients. In addition, prior research has indicated that major life transitions can adversely impact psychological functioning and can lead to absent-mindedness (Fisher & Hood, 1987). It is possible that the transition from one country to another requires a great deal of one's limited cognitive and psychological resources. Therefore, students in the midst of such a major transition may appear confused, distracted, or cognitively disorganized. This is one possible explanation for international students' elevated scores on the SCZ-T scale.

There were also significant differences between international and domestic clients on the ARD-O subscale, which measures symptoms and features related to symptomatic and personality elements of obsessive-compulsive disorder. However, the ARD-O scale

is less correlated with traditional markers of anxiety and neuroticism than the other Anxiety Related Disorder (ARD) subscales, suggesting that high scores may indicate the use of obsessional strategies as a means to control anxiety through order and predictability. If the full scale ANX is within normal limits, the obsessional tactics may be working effectively (Morey, 2003). It is possible that international students facing significant stressors are employing these obsessional strategies to help impose a higher degree of order and predictability on the environment and manage the anxiety they are experiencing.

Research indicates that international students often are highly driven and highly successful in their home countries (Chen, 1999). Students who are highly driven may be more likely to exhibit obsessive-compulsive personality characteristics that drive them to meticulously complete work and help them to succeed academically. International students reported low to moderate elevations on this scale, indicating that they may be perceived as detail-oriented, conforming, and somewhat rigid in thoughts and behaviors. Mean scores were not at a diagnostically significant level and most likely are not causing international students distress. However, these characteristics may be part of a profile that describes international student clients as studious, detail-oriented, and somewhat rigid in their approach to academic life.

The analysis showed significant differences between international and domestic clients on the BOR-A subscale, with international students scoring higher than domestic students. This subscale measures emotional responsivity, and individuals with high scores on this scale often manifest rapid and extreme mood changes and a propensity to

alternate rapidly between various negative affects (Morey, 2003). The difference between international and domestic students could be partially due to different cultural standards of appropriate emotional expression. Previous research has identified both cross-cultural differences and similarities in physiological reaction patterns, emotional behavior, and emotional regulation (Mesquita & Frijda, 1992; Soto, Levenson, & Ebling, 2005). For example, a study comparing emotional expression during conflict in European American and Chinese American couples found that European American couples expressed more positive and less negative emotional behavior than Chinese American couples (Tsai, Levenson, & McCoy, 2006). This is just one example of research examining cultural differences in the regulation and expression of emotion. It is possible that different culture standards for responding to affect contributed to international clients' elevated scores on the BOR-A subscale.

This elevation could also be indicative of the extreme stress that international students face. International students may be presented with more stressors than domestic students, which can trigger strong, often negative, emotional reactions. International students may have scored higher on this scale because they are experiencing and reacting to more emotional triggers and more stress.

Two of the ANT subscales indicated significant differences between international and domestic clients. The ANT-A subscale measures antisocial behaviors, and is the only subscale where domestic clients scored higher than international clients. This scale points to current or historical antisocial acts, often involving difficulties with authority and social convention (Morey, 2003). The mean difference between the two groups was

smaller for this subscale than for the others. Both groups scored in the low to moderate range, which may indicate some minor historical antisocial acts or perhaps some resistance to authority. One possible explanation for the difference between groups is the cultural emphasis placed on obedience and respect for authority. Research indicates that cultures place varying emphasis on respect for authority. For example, one study indicated that Latina and African American girls showed more respect for their mothers and placed a higher value on respecting parental figures than European American girls (Dixon, Graber, & Brooks-Gunn, 2008). If students from different cultures place a higher value on respecting authority, this may be reflected in their ANT-A scores.

The ANT-E subscale also indicated differences between the two groups, with international clients reporting higher mean scores than domestic clients. The ANT-E subscale measures egocentricity and self-centeredness as well as low regard for others and the opinions of others. High scorers may take advantage of others in order to satisfy their own goals and impulses (Morey, 2003). However, higher scores are often obtained in younger people (ages 18 to 29), and both international students and domestic student clients fell in the normal range for this age group.

International students may have slightly higher mean scores than domestic students as a reflection of their willingness to leave their families and home countries in order to pursue higher education. Although international students often intend to return home and provide financial support for their families, the decision to leave requires a degree of independence and ego-strength. Average means for international student

clients were still well within the normal range, so the slightly higher elevations of international students on this subscale may indicate a higher level of independence.

The BOR-N subscale and the NON subscale were expected to indicate differences between international and domestic clients; however no differences were found between the two groups on these scales. The BOR-N subscale examines historical ambivalent, intense relationships where one has felt exploited or betrayed (Morey, 2003). While previous research indicates that international students often experience difficulties in relationships with American students (Mori, 2000), these students do not necessarily have a history of ambivalent and negative relationships. They may have a strong and supportive history of interpersonal relationships in their home country. They also may expect difficulties in forming new friendships, and may not see this process as one in which they feel exploited or betrayed. It is possible that international students do not perceive as much difficulty in relationships with American students as previously thought. Although at this point it is impossible to determine which of these explanations is most accurate, it is clear that in this study international students did not report a stronger history of negative relationships than domestic students.

In a similar vein, it was expected that international student clients would have higher mean scores on the NON support. This hypothesis was not supported, suggesting that there is no difference in the amount of perceived social support among international and domestic clients. It was expected that international students, who are often further from their support system than domestic students, would feel less supported and less content with the availability of close interpersonal relationships. However, international

students may experience a great deal of support from their family and friends, even though they may be very far away. Technology makes it possible to connect with people who are very far away, and the use of e-mail, cell phones, and web cameras may help facilitate a sense of support for students who are far from home. It is also possible that programs established at the university to support and assist international students help the students experience support even when they are so far from home.

There are several significant limitations related to this element of the study. First and foremost, there was a drastic difference between the number of international student clients and the number of domestic student clients. It is well documented that international students are more reluctant to seek mental health support than domestic students (Dadfar & Friedlander, 1982; Mori, 2000; Sue & Sue, 1977). In addition, the university where this study took place has a relatively small international student population. This makes it more challenging to gather a sufficient number of international student client participants. In addition, in this study clients were referred to the PAI from intake. Intake counselors who had questions about international students' language skills and ability to complete the PAI may have chosen not to recommend the clients to take the PAI. Therefore, the number of international students in the sample may under-represent the number of international students receiving treatment at the counseling center. Unfortunately, the small number of international students reduces the generalizability of the results.

It is important to once again note that this study looked at differences between international and domestic university counseling center clients, not simply international

and domestic university students. Much of the previous research discussed addressed international students in general, and therefore may or may not apply to the international student client population.

It is also important to note that where differences were found between international and domestic clients, they were relatively minor. These differences point to areas that may be useful for clinicians to consider as possible differences between international and domestic students, but do not necessarily point to diagnostic differences between groups. It is possible that at times elevations on certain scales, particularly the SCZ, SCZ-S, SCZ-T, and ANT-E scales, may cause clinicians to take special note of international students' PAI profiles and classify them as more at risk than their domestic counterparts. This may or may not be appropriate, as these elevations may reflect the transition between cultures rather than pathology. Clinicians are cautioned to carefully consider the level of the elevation and other contextual variables before making diagnostic or treatment decisions.

Future research with a larger sample of international students should be conducted to further investigate differences between international and domestic students on the PAI. In addition, it would be useful to investigate other factors related to the transitions experienced by international students, such as language difficulties, acculturation, and social isolation. These specific factors may play more of a role than overall status as an international student. It is also possible that the experience of international students varies greatly depending on their country of origin. There may be more extreme cultural differences between some countries and dominant American culture. For example, a

student from Canada studying in the U.S. may face much less cultural transition than a student from Korea.

Distance from home

The second research question examined differences in PAI profiles based on clients' distance from home, and the results indicated that PAI profiles for clients close to home were significantly different from the profiles of clients far from home. This was true for the clinical, treatment, and interpersonal scales; however, there was no significant difference between the groups for the subscales. This was partially consistent with the hypothesis that there would be overall differences in the PAI profiles of students close to home and students far from home. As discussed in the literature review, relocating to a university can be a significant life transition which can impact psychological functioning (Brooks & DuBois, 1995; Burt, 1993; Fisher et al., 1985). It is possible that this major transition could have impacted students' PAI profiles. It is important to note that the effect size was quite small for all of these results, indicating that only a small percent of the variance between the two groups is explained by distance from home.

It was specifically hypothesized that differences would be found between the groups on the NON scale and the BOR-N and SCZ-S subscales. The results did not support this hypothesis. There are a variety of possibilities for why these hypotheses were not supported. Each of these scales addresses students' perception of the quality of their interpersonal relationships and the support that they receive. If there were not significant differences between students based on their distance from home, it may be that students at the university were responding based on a previous history of positive

interpersonal relationships and a strong base of social support in their hometown. It could also be that students who grew up in difficult family situations found increased social support at the university and actually experienced improvements in the quality and quantity of their interpersonal relationships after leaving home. In addition, many of the clients who took part in this study had been at the university for several years, and may have built a strong social support system regardless of how far they moved to attend college. As with international students, technology may limit the impact of distance on psychological health, as students can easily contact friends and family at home via cell phone, web camera, and e-mail.

Significant differences were found between the two groups on the ANT scale, with clients far from home scoring higher than clients close to home. Item content on this scale explores indicators of egocentricity, poor empathy, adventurousness, and antisocial attitudes and behaviors (Morey, 2003). This is an interesting scale to consider with a college student population, where excitement seeking and egocentrism are often viewed as developmentally appropriate characteristics. In fact, as previously mentioned, moderately elevated scores are fairly common in young adults, particularly young men (Morey, 2003). It is possible that students who choose to attend college far from home are more prone to adventurous and risk-taking behaviors, thus elevating their ANT scale score. These students may be more drawn to the challenge of moving far from home and creating a new life for themselves. Concurrently, students who choose to remain close to home for college may be less stimulus-seeking and adventurous.

When looking at the mean scores on the ANT scale for clients close to home and clients far from home, neither is even within a standard deviation of the clinical range. This does not seem to indicate that students far from home represent more clinical characteristics of antisocial personality disorder. Rather, they may be slightly more egocentric and adventurous than students who choose to stay close to home.

Differences between student clients far from home and student clients close to home were also found on the AGG scale, with students far from home obtaining higher mean scores than students close to home. The AGG scale is a treatment scale that, at the full scale level, assesses attitudes and behaviors related to aggression, anger, and hostility. Both low and high scores on this scale can be indicative of problems. Low scores on the AGG scale suggest a person who is unassertive and may have difficulty standing up for himself or herself, while high scores suggest a person who is perceived as impatient, irritable, and quick-tempered (Morey, 2003). Though there were statistically significant differences between students far from home and students close to home, both groups had means well within the normal range. Therefore, the results do not seem to indicate clinically significant differences between the two groups.

It is possible that students far from home have needed to be more assertive and self-sufficient as a function of being far from the social support of their families. These students may be required to take care of life tasks more independently than students close to home, such as setting up a new bank account, overseeing car repairs, and so on. This could contribute to the minor difference that was found between the groups. It is also possible that students who choose to attend college far from home are characterologically

slightly more assertive or hostile than students who choose to attend college close to home, though further research is certainly needed to substantiate this possibility.

The final difference between student clients far from home and student clients close to home was found on the SUI treatment scale, with students close to home reporting higher mean scores than students far from home. This scale is directly related to thoughts of suicide and related behaviors and focuses on ideation rather than intent or action (Morey, 2003). Average scores on this scale are below a T-score of 60. On the PAI, a score of 70 or greater indicates areas that should be the focus of clinical attention as they represent a significant pattern of difficulties. Both students close to home and students far from home reported mean scores within the average range for this scale. In fact, for both groups one standard deviation away from the mean score was only slightly above 60. Therefore, neither group is reporting extreme suicidal ideation. However, there is a difference between the groups, and it is interesting to ponder what factors may contribute to this difference. It could be that clients who experience suicidal ideation are more reluctant to travel to a university far from their families and social support, and therefore are more likely to attend a university closer to home. It could also be that having family close can at times be a source of stress and could elevate responses to questions on this scale. Further research is needed to understand this difference.

There are several limitations to this portion of the study. Although there were similar numbers of students in the close to home and far from home groups, the categorizations were very broad. Students with 199 or fewer miles between the university and their hometown were considered close to home, while students with 200 or

more miles between the university and their hometown were considered far from home. It would be interesting to investigate the impact of distance from home by looking at distance in 100 mile increments. This was not an option for this study because so many of the subjects were from towns close to the university. In order to roughly match the size of the groups it was necessary to divide them into these two groups. A larger sample with more students from varying distances would be useful.

In addition, even when differences were found between the two groups, the differences were relatively minor. Statistical significance does not necessarily equate with clinical significance, and the difference between student clients close to home and student clients far from home may not be clinically significant in most cases.

As previously mentioned, future research could investigate the impact of various distances from home, looking at distance in 100 mile increments. It would also be interesting to study students' attitudes regarding distance from home; for example, student perception of whether they were close to home or far from home, and how desirable the distance was. Previous research has suggested that attitudes toward being far from home are more important than the actual distance (Mooney, Sherman, & Presto, 1991), and this may be one reason that the current study did not find many significant differences when considering distance alone. It would be interesting to see how frequent trips home and regular contact with friends and family mediate distance from home and impact the psychological health of students.

Student classification

The third transition variable considered in this study was student classification, or status in the university system. One potential problem with this variable is that it was reported by subjects who may have had varying definitions of what qualified classification. Some clients may have considered only what year in the university they were, for example defining themselves as juniors because they were in their third year at the university, disregarding the number of course hours they had accumulated. Others may have relied on the number of course hours. These varying definitions may have complicated the results. In addition, students often enter the university with college credit from Advanced Placement courses or classes at community colleges, so classification may not accurately represent the transitional stage of students. In addition, nontraditional students may be in different developmental stages and may be impacted very differently by these transition variables. It is also possible that these results are a function of student age more than year in school.

It was hypothesized that there would be differences between clients' PAI profiles based on their student classification as freshmen, sophomores, juniors, seniors, or graduate students. This general hypothesis was supported. As students progress through the university, a variety of transitions occur. The first, and perhaps most momentous, transition occurs when students begin college. There is a shift to a new educational system, with a different structure and system than high school. Class format and expectations change, and first-year students must adjust accordingly. For students who move into dorms, a new living situation and social system require further adaptations. Many students are making decisions for themselves for the first time, deciding

independently when they wake up and fall asleep, what they eat, and so on. These are significant life transitions. As students move through the years in college, they face regular changes in what is expected of them, where they live, and how they spend their time. The very structure of the university system, with the semester format and summer and winter breaks, creates a system of almost constant transition. Similarly, students in graduate school also experience major life changes, as they once again adapt to a new educational system and new expectations. Many leave full-time jobs to become full-time students, or work to balance a job, school, and family. All of these transitions may impact psychological health and adjustment and may impact PAI profiles. The various demands of each year may have created differences in PAI profiles among student classifications.

The results indicated that there were significant differences among several PAI scales based on student classification. Once again, the effect size was quite small, indicating that only a small percent of the variance between the two groups was explained by student classification. The trend in these differences was that undergraduate students of various classifications had higher mean scores than graduate students. There are several possible explanations for this trend. First, the typical undergraduate student is younger than the typical graduate student. Graduate students have more than the benefit of age; they also have already been through the undergraduate experience and are likely more familiar with the university system. They also achieved admittance into graduate school, suggesting that they had some degree of success at the undergraduate level. These clients are more likely to have chosen a career path, which may provide a sense of

identity, self-confidence, and stability. These all provide possible explanations for why graduate students have lower mean scores on multiple scales and subscales than undergraduate students. In addition, fewer students pursue a graduate education than an undergraduate education. Because graduate school is more selective, it is also possible that the average graduate student is higher functioning than the average undergraduate student.

The first specific scale where differences existed between student classifications was the ANX scale, which indicates the degree of tension and negative affect experienced by the respondent. The significant difference on this scale was between juniors and graduate students, with juniors scoring higher than graduate students. At first this result may seem counter-intuitive. Juniors are in the middle of their college experience and may seem to be experiencing much less transition and stress than graduate students or other undergraduate classes. However, juniors may be a position where they are beginning to consider what life after college will look like. They may begin to experience stress about getting into graduate school or finding a job. Graduate students may feel more settled into a career path and thus experience less anxiety. It is interesting to note that all classifications of students reported relatively high levels of anxiety, all above 60t (see Appendix D for all relevant means). This indicates that anxiety may be an important part of the clinical picture for most university counseling center clients, regardless of their student classification.

At the subscale level, on the Physiological Anxiety subscale (ANX-P) freshmen and juniors had higher mean scores than graduate students. This scale focuses on overt

signs of stress and physical tension, such as trembling hands, shortness of breath, sweating hands, and complaints of an irregular heartbeat (Morey, 2003). Once again, this could be due to the different life phases of undergraduates and graduate students, with freshmen and juniors experiencing or anticipating greater transitions. It is also possible that the demands of these specific years in the university are more stressful than the demands of graduate school. Or, it could be possible that by the time students reach graduate school they have developed strategies for coping with physical anxiety and therefore report less of it. Interestingly, once again all four undergraduate classifications reported high levels of physiological anxiety, all above 60t.

Significant differences were found on the PAR scale and all three related subscales: PAR-H, PAR-P, and PAR-R. On the PAR scale, sophomores and seniors reported significantly more paranoia than graduate students. This scale measures characterological suspiciousness, interpersonal mistrust, and hostility (Morey, 2003). It is important to note that all of the student classifications had means below 60t, which generally reflects openness, trust, and willingness to forgive. One standard deviation from the means was still under 70t, which may indicate increased sensitivity, tough-mindedness, and skepticism, but is not indicative of full-blown paranoia or interpersonal suspiciousness. Therefore, these differences most likely do not indicate diagnostic differences and may not reflect clinically significant differences. Sophomores and seniors may be slightly less trusting than graduate students, perhaps as they experience shifts in their social groups that level out as students reach graduate school. This could

also be a developmental issue, as students sort out a balance between trust and cautiousness.

On the PAR-H and PAR-P subscales, sophomores scored significantly higher than graduate students. The PAR-H subscale focuses on suspiciousness and monitoring the environment for real or imagined slights while the PAR-P subscale focuses on the belief that one has been treated unfairly and that others are intentionally working to undermine one's interests (Morey, 2003). Once again, both of these differences may be attributed to a developmental stage where students see their social group change from freshman year and wonder if they are able to trust the stability of interpersonal relationships. Graduate students have had more relationship experience and may have an easier time determining who they will trust and mistrust. Sophomores may be in the early stages of establishing an identity as an adult and may struggle to feel that they are treated fairly and treated as adults. Graduate students may have worked through many of these identity and interpersonal issues and may therefore report less paranoia. The PAR-R subscale measures bitterness and cynicism in relationships and a tendency to hold grudges and blame others (Morey, 2003). Juniors reported more interpersonal resentment than graduate students. Similar explanations may account for these differences, with developmental differences impacting students' reported level of paranoia.

On the ANT scale, freshmen, sophomores, and juniors scored significantly higher than graduate students. As previously discussed, some level of stimulus-seeking, egocentricity, and adventurousness is common in young adults, and is often viewed as developmentally appropriate. Many students see college as a time to take risks and try

new things. However, as students approach graduation and enter graduate school some of these behaviors are viewed as less appropriate. Students become ready to enter the world of work or graduate school as adults, and some of the impulsiveness decreases. Therefore, it makes sense that graduate students would score lower on this scale than younger undergraduates.

On the ANT-E subscale, freshmen, sophomores, and juniors had higher mean scores than graduate students. These findings can likely be explained with the same rationale as the ANT scale. On the ANT-A subscale freshmen and sophomores scored higher than graduate students. It is possible that students earlier in their academic career may be more impulsive, mischievous, or reckless. This may be due to developmental factors, or even to the fact that students who engage in more illegal acts or irresponsible behaviors may drop out or be dismissed from the university, and therefore less likely to progress to graduate school.

Significant differences were also found on the DEP-C, SCZ-T, and BOR-I subscales. The DEP-C scale measures thoughts of worthlessness, hopelessness, and personal failure as well as indecisiveness and difficulty concentrating (Morey, 2003). All four undergraduate classifications scored higher than graduate students on this subscale. It may be that undergraduate students as a whole experience more cognitive depression than graduate students. This could be due to the selectiveness of graduate school; perhaps the people who are cognitively depressed do not apply to or gain admittance to graduate school. This scale also taps into self-efficacy, self-esteem, and self-confidence. Perhaps getting into graduate school and working toward a certain career increases one's

self-confidence. Or, perhaps graduate students (who tend to be older) have more positive self-evaluations than undergraduate students. In addition, undergraduate students may be more likely to have difficulty concentrating and making decisions.

The SCZ-T subscale also taps into difficulties with focus, concentration, decision-making, and self-expression. Juniors scored significantly higher on this subscale than graduate students. This could be related to the stress juniors may experience, as discussed earlier in this section. The BOR-I scale focuses on uncertainty about major life issues and feelings of emptiness, lack of purpose, and lack of fulfillment (Morey, 2003). Freshmen, sophomores, and juniors had significantly higher average scores than graduate students. When viewed from a developmental perspective, it seems logical that students earlier in their educational and vocational career would experience less certainty and purpose than students closer to reaching their academic and occupational goals.

Future research could limit some of these confounding variables by assessing for age and clarifying what is meant by student classification. In addition, it would be interesting to have a larger sample size or a sample from another university counseling center to further clarify these findings. It is important to remember that the question is investigating classification in university counseling center clients, not just university students.

Parent education level

The fourth transition variable considered was parent education level. The results indicated that there were significant differences among PAI profiles of counseling center clients based on parent education level. This was true for the clinical, treatment, and

interpersonal scales as well as the subscales. It seems to fit that parent education has an impact on the experience of students which would be reflected on the PAI profile. It is well-documented that, compared to their peers, first-generation college students are at a disadvantage with respect to basic knowledge about college education, level of family income and financial support, educational degree expectation and plan, and academic preparation in high school (Pascarella et al., 2004). Therefore, attending college may be a bigger life transition for first-generation college students than for students who have parents with college experience. And, in a broader sense, it makes sense that parent education would impact clients' responses to PAI items. In areas where there were significant differences between groups of students based on their parents' education level, parental education was inversely related to measured pathology. Therefore, the student clients seem to benefit from their parents' higher levels of education. It is also important to note that the effect size is quite small for all of these results, indicating that only a small percent of the variance between any two groups was explained by parent education level.

It was hypothesized that first-generation students would have higher mean scores on the NON scale than students who had parents with a college education. This hypothesis was supported, with students who were first-generation college students reporting higher mean scores than students who had a parent that had graduated from college or had some graduate school experience. This is consistent with previous research that has found that first-generation college students lack support from their family and friends (Lee et al., 2004) and lack the informational support that parents with

a college degree can provide (Choy et al., 2000). It therefore fits that first-generation college students perceive their environment as socially unsupportive.

Similar results were found on the STR treatment scale, with first-generation college students reporting higher mean scores than students who had a parent that had graduated from college or had some graduate school experience. First-generation college students may perceive the university environment as more stressful than their peers with parents who have college experience. Students with parents who have been to college receive the benefit of their parents' knowledge and experiences. Parents may be able to normalize the stress of college and provide the needed information and support. On the NON and STR scales, all groups had means in the normal range, indicating that they generally viewed their life as stable and predictable and perceived social support as readily available. One standard deviation above the mean placed clients in the moderate range of both scales, experiencing moderate levels of stress and difficulty and some dissatisfaction with the availability of social support. The difference between the two groups was relatively minor, although statistically significant.

Significant differences also were found on the ANX scale, with students who had a parent who had graduated from college reporting higher scores than students who had a parent with graduate school experience. Therefore, it seems that parents' graduate school experience may help to reduce students' anxiety. Or, perhaps students with a parent who had graduate school experience perceived college as less anxiety-provoking. Another possibility is that parents with graduate school experience have equipped their children with coping skills to navigate the stress of academia, coping skills to which less educated

parents did not have access. Overall, anxiety levels were moderate, indicating that the students were experiencing some stress that they were worried about.

On one subscale, ANX-P, the groups differed also, students who had parents who had attended some college or had graduated from college reporting significantly higher mean scores than students with parents who had graduate school experience. Once again, students who had parents with graduate school experience had lower scores, in this case indicating less physiological anxiety. Again, students with parents with graduate school experience may perceive college as less anxiety-provoking or may be better equipped with coping skills to manage academic stress.

On the SCZ scale, first-generation college students obtained higher mean scores than students whose parents had graduate school experience. First-generation college students may experience more confusion, distractibility, and difficulty focusing as the university provides more novel and perplexing stimuli. They may experience some cultural adjustment, similar to international students, as they learn a new system and environment. This could also create a sense of social detachment and alienation, as other students appear to effortlessly adjust to the college environment. Mean scores for all the groups ranged from *t*-scores in the mid-50s to very low 60s, with one standard deviation above the mean falling in the upper 60 to low 70 *t*-scores. In this range, individuals may be perceived as withdrawn and unconventional and may feel somewhat alienated from others. Scores in this range are not suggestive of active schizophrenic episodes.

On the Phobias subscale (ARD-P), students whose parents had some college experience had significantly higher mean scores than students who had parents with

graduate school experience. This scale assesses for several of the most common phobias, including fear of heights, public transportation, social exhibition, and enclosed spaces (Morey, 2003). More information on the content of phobias is needed to offer possible explanations for the differences on this scale based on parent education. Scores for all groups were in the normal range, with one standard deviation above the mean indicating only the possibility of specific fears, without the likelihood of avoidance behaviors that may impact level of daily functioning. It does not seem that there is a clinically significant difference in phobias between students based on their parents' level of education.

As with the other questions investigated, in many of the cases where statistical differences were found, there is not necessarily a clinical difference between the groups, particularly in terms of diagnosing psychopathology. While some groups showed slightly higher mean scores that may lead clinicians to follow-up more closely with certain scales, there was not a large difference between any of the means. It is unlikely that parent education level impacts PAI profile in a way that would impact diagnosis or treatment. In this study the highest reported level of parental education was considered, not the combination of parent education levels. Therefore, if one parent had graduate level experience and one parent had no college experience, the student was placed in the group with parents who had graduate school experience. However, it is possible that the parent without college experience was primarily responsible for raising the student, or even that the parent with graduate school experience did not live in the home with the child as educational decisions were made. This would certainly impact the educational

information available to the child and the support that he or she received. It would be interesting to explore students' perceptions of how their parents' education level impacted their own educational experiences.

It is important to remember that the question is investigating the impact of parental education on university counseling center clients, not just university students. These results are not descriptive of a random sample of university students, but may represent a group of students in significantly more distress and experiencing more mental health problems than the average college student. This is particularly salient when discussing first-generation college students. These students may have less information about mental health issues and services, may have a greater stigma against mental illness, and may be more reluctant to seek treatment than their peers with more educated parents. Therefore, they may be less likely to attend a university counseling center for relatively minor issues, so that those who are seen may report more distress and/or pathology. Students with more educated parents may be more psychologically-minded and more sophisticated in their knowledge of mental health and psychological services. These differences in attitudes toward help-seeking may also contribute to the differences in PAI profiles based on parent education.

Future research could also explore students' attitudes toward their parents' education and the support they perceive from their parents in terms of academic information and support. It is also quite possible that socioeconomic status acts as a confounding variable, and may be an interesting area to explore.

Rural/urban hometown

The next transition variable considered was the rural or urban classification of the student's hometowns. Unfortunately, there were not sufficient students from rural hometowns to run a statistical analysis on the groups. This could be partly due to the way that hometowns were coded as rural or urban. Client hometown was part of the information collected for this study; however home address was not. The United States Census Bureau categorizes specific locations as rural or urban, but does not categorize towns as a whole. While it is possible to look up a specific address and identify it as rural or urban, it is not possible to identify an entire town as rural or urban. Instead, a population count is provided of how many people in a town live in a rural urban and how many people live in an urban area. Towns where over half of the population lived in urban areas were coded as urban, whereas towns where over half of the population lived in rural areas were coded as rural. There were no cases where there was an even split between those living in rural and urban areas. Based on this coding system, it is possible that some students did not live in the area of town where the majority of the population lived. Therefore, a student who grew up in a rural area could have been classified as urban or vice-versa.

Future research is needed to find a better method for categorizing towns as rural or urban. One possibility is to collect the street address of clients' home residence. Another possibility is to explore alternate ways of classifying areas as rural or urban. For example, one previous study used the size of the students' hometowns and graduating classes to classify an area as rural or urban. Students from a hometown with a population below 50,000 and a graduating high school class of less than 400 were categorized as

rural (Wright et al., 2003). There are certainly problems with this operationalization as well, particularly when discussing suburbs that may be in urban areas but have populations below 50,000, or the magnet and private schools that often have smaller graduating classes. However, it is important to explore various ways to define rural and urban and to classify students accordingly. It may even be useful to explore students' perceptions of the urban/rural classification of their hometown and rural/urban classification of the university. It is also important to note that only a small percentage of the U.S. population is currently rural, suggesting that no matter how data is collected it may be difficult to obtain a large rural sample.

Race/ethnicity

The final area of investigation was the impact of demographic variables on the PAI clinical, treatment, and interpersonal scales. The first demographic variable considered was ethnicity. Significant differences were found in the profiles of White/Caucasian clients and Non-White clients. Significant average differences were found on the PAR, PAR-H, PAR-P, SCZ, SCZ-P, SCZ-S, AGG, AGG-A, AGG-P, NON, MAN-I, and BOR-A scales. Non-White student clients had higher mean scores than White/Caucasian student clients on each of these scales with the exception of the AGG scale. For most of the scales the effect sizes were small as were the differences between the means. Results were consistent with previous research examining the use of the MMPI-2 with ethnic minorities, which indicated that differences often were found between White participants and minorities. The mean differences were consistently small and in all cases represented a difference of six T-scores or less (Graham, 2006).

One possible explanation for the differences between White and Non-White clients is that there is test bias, so that the test is reflecting factors related to ethnicity instead of the psychological constructs it is designed to measure. However, this seems relatively unlikely. The differences are fairly consistent with other research evaluating the impact of ethnicity on personality testing (Greene, 1987; Todd, 2003). In addition, a number of steps were taken to minimize the likelihood of test bias on the PAI. Every item on the test was reviewed by a bias panel consisting of men and women of diverse racial and ethnic backgrounds. Members of the panel identified items that might reflect demographic factors, such as culture or socioeconomic status, instead of the emotional or behavior problems that they targeted. The identified items were removed. Next, the psychometric properties of each item were examined as a function of demography. Items that had different meanings for different demographic groups were removed. This does not eliminate mean demographic differences in scale scores. Morey (2003) provides the example of an item inquiring about stealing. The item may have a similar meaning for identifying antisocial personality for both men and women yet still be more common in men. The difference is not a function of test bias but of a gender difference in the disorder. These precautions and the small size of the differences between groups reduce the risk of test bias. Overall, there are several important and statistically significant differences between the PAI profiles of the two racial/ethnic groups, the results of this study's analyses do not provide sufficient evidence for test bias or suggest that the PAI is invalid for use with Non-White college students.

If the assumption of test bias is rejected, then the differences between the two groups may suggest real differences between the two groups on these dimensions. Significant differences were found between the two groups on the PAR scale and the PAR-H and PAR-P subscales. This is consistent with previous research (Todd, 2003). As previously discussed, the PAR scale focuses on vigilance in monitoring the environment for potential threats, a tendency to be resentful and hold grudges, and a readiness to spot unfairness in the way that the respondent has been treated by others (Morey, 2003). The PAR-H scale focuses on hypervigilance and mistrust while the PAR-P scale focuses on feelings that one is being treated inequitably and that there is intentional effort by others to harm him or her. In this study, the mean score on the PAR scale for Non-White students was 59.1 with a standard deviation of 11.72 (see Appendix F for other related means). Scores in this range tend to be indicative of someone who is somewhat sensitive, tough-minded, and critical. It is possible that this is a function of attitudes common to individuals described by various minority identity-development models. For example, Atkinson, Morten, and Sue (1998) present a Minority Identity Development model, where the third stage is referred to as the Resistance and Immersion stage. In this stage individuals often reject dominant society and culture and experience a sense of distrust and dislike for members of the dominant culture.

The university involved in this study is a primarily White, southern, semi-urban university, and it may be that Non-White student clients responded to items on the PAR scale and related subscales as a reflection of their ethnic identity development or as a reflection of very real prejudice and discrimination. In some cases, hypervigilance may

be an adaptive response to an environment that poses a real threat. Although the university strives to provide a safe and supportive environment for all students, it is likely that despite these efforts prejudice exists.

The responses of Non-White clients on these scales also may reflect their adjustment responses to a major transition. Their scores may indicate reactions to experienced prejudice in the absence of their typical systems of emotional and social support. This would be particularly likely for students coming from an environment that was more racially diverse or where their own ethnic group represented the majority population. These factors could make it more difficult for Non-White students to feel that they could trust the people and environment around them.

A second set of differences between White and Non-White clients was found on the SCZ scale and the SCZ-P and SCZ-S subscales. The difference between the two groups on the SCZ scale was approximately 4t, with Non-White participants scoring higher than White participants. Clinically speaking, this is a relatively minor difference that would likely have very little diagnostic impact. However, the difference could suggest that Non-White students may be perceived as slightly more withdrawn, aloof, and unconventional. This may be explained by similar rational as the PAR scale and subscales. It may be that Non-White students appear more aloof or withdrawn as a result of their own phase of identity development and a rejection of the dominant culture. It could also be a reaction to a new environment that at times feels different and threatening. Or, perhaps Non-White students seem more withdrawn as a function of different cultural norms for emotional expression and regulation.

The SCZ-S subscale measures social detachment and isolation. This may fit within the framework currently presented for the PAR scales and the SCZ scale. A sense of social detachment in Non-White students is particularly possible as the university where the study took place is predominately White. Non-White students in a developmental phase of rejecting the dominant White culture have a much smaller group of racially similar students with whom to identify.

The SCZ-P subscale measures the experience of unusual perceptions and sensations, magical thinking, and other unusual ideas that may include delusional beliefs (Morey, 2003). There was a 3.34 t difference between White and Non-White student clients, with the mean for Non-White student clients at 51.84 t , with a standard deviation of 11.22. Scores in this range are not suggestive of psychotic experiences, and even a full standard deviation above this score may suggest unconventional thinking but not delusions, hallucinations, or other psychotic experiences.

The same explanation used for the PAR scales and the SCZ and SCZ-S scales may be valid for the NON scale. Non-White students had a mean score on the NON scale of 60 t , with a standard deviation of 12, as compared to White students who had a mean score of 56 t and a standard deviation of 12. Once again, these are relatively minor differences but may reflect a real difference in the experience of White and Non-White college students. The perceived lack of social support may be related to being a minority student, particularly for those students who came from areas where there was more ethnic diversity or more people who shared their ethnic background.

In addition, differences between White and Non-White students were found on the MAN-I subscale. This scale focuses on the presence of strained relationships due to the client's irritation with the inability of others to keep up with their plans and entertain their possibly unrealistic ideas (Morey, 2003). Non-White students reported significantly higher mean scores than White students. Means in the reported range indicate people who may be mildly impatient and easily frustrated but who are generally tolerant of others and adaptable in the face of frustration. It is possible that this elevation fits within the framework currently under discussion. Non-White students may feel more easily irritated by a dominant culture that they do not identify with and may actively reject. They may feel annoyed that others do not understand their cultural perspectives and that they have to make more adjustments than their White peers.

Significant differences were also found between the two groups on the AGG scale and the related AGG-A and AGG-P subscales. The AGG scale focuses on aggression, anger, and hostility. The AGG-A subscale looks at aggressive attitudes, focusing on hostility, poor control over the expression of anger, and a belief in the instrumental usefulness of aggression. The AGG-P subscale examines physical aggression and the tendency to physically express anger, including damage to property, threats of violence, and engaging in physical fights (Morey, 2003). The results indicated that White clients had higher mean scores on the AGG scale, indicating more aggression and hostility. However, Non-White clients had higher scores on the AGG-A and AGG-P subscales. In each of these areas, there were relatively small differences in means, suggesting statistical significance but most likely not clinical significance. On this scale all of the mean scores

were low, in a range that suggested clients reported reasonable control over the expression of aggression. The results in this section are somewhat inconsistent, and suggest that despite the minor differences between groups, aggression is not a prominent piece of the clinical picture for either White or Non-White student clients.

Finally, differences were found between White and Non-White student clients on the BOR-A subscale. This scale measures affective instability, and focuses on rapid mood changes, emotional responsiveness, and poor emotional control. Once again, there was a fairly minor difference between White and Non-White students on this scale, indicating statistical significance but relatively low clinical significance. Both White and Non-White students reported mean scores in a range that indicates relatively stable mood and adaptive affective regulation. The difference between the groups may indicate that Non-White students are slightly more likely to experience extreme shifts in mood. This could be attributed to cultural factors, as it is possible that other cultures are more accepting of emotional displays and expression of negative emotionality (Mesquita & Frijida, 1992). Non-White students' elevations on the BOR-A subscale may also fit with the slight elevations on the MAN-I subscale and the tendency to become more easily irritated. It is possible that this is a function of developing an identity as a minority and adjusting to a different cultural experience.

One major limitation of this portion of the study is that students were categorized as either White or Non-White. This system has major disadvantages. There are significant cultural differences and experiences between various groups of Non-White students. For example, the experience of an African American male in modern U.S.

culture will likely be very different than the experience of an Asian American woman or a Latino male. In addition, multi-racial students may have a very different cultural experience than students who identify exclusively with one ethnicity (Dana, 1998). For this study, the small sample size of Non-White students prohibited analyses of the differences between ethnic groups. Future research should investigate differences among PAI profiles of different ethnic groups, moving beyond the White/Non-White categorization.

Even using the White/Non-White categorization, there were significantly less Non-White clients than White clients. It would have been much more powerful if the investigation had included a higher number of Non-White students. In addition, it is possible that there are several key variables that interact with ethnicity to impact the PAI profile of students. For example, socioeconomic status has previously been identified as interacting with ethnicity on personality assessments (Greene, 1987). A previous study examining the use of the MMPI with African American participants did not identify any differences between the scores of Black and White students when participants were matched for sex, age, residence, employment, years of education, marital status, and socioeconomic status (Bertelson, Marks, & May, 1982). Future research should investigate the use of the PAI with ethnically diverse populations while considering these variables.

Many of the possible explanations for the differences uncovered in this study implied that Non-White student clients experienced some sort of unique transition when moving to the university. This is not necessarily the case. Students may have come from

an environment very similar to the university, or may have even come from the same town where the university is located. This once again indicates the importance of understanding the rural/urban background of students as well as other factors that may influence the magnitude of the transition to the university.

In addition, this study investigated race/ethnicity and PAI profiles in university counseling center clients, not in the general student population. This group may or may not be representative of the student body as a whole. Research indicates that minority individuals are less likely to utilize counseling services than Caucasian individuals (Steward, Jackson, & Jackson, 1990). A study by Kearney, Draper, and Baron (2005) reported that White students attended more counseling sessions than other ethnic groups and reported that least amount of distress at intake. This suggests that the Non-White clients may represent a more distressed segment of the minority student population. Therefore, just as further research is needed to understand the impact of ethnicity on PAI profiles, further research is needed to understand the differences between university students and university counseling center student clients.

Gender

Gender was the second demographic variable considered in this study. Significant differences were found between men and women on the PAI clinical, treatment, and interpersonal scales and on the subscales. Gender accounted for 22% of the variance on the clinical, treatment, and interpersonal scales and 30% of the variance on the subscales. The results indicated significant differences between men and women on many of the scales and subscales, differences that may be both statistically and

clinically significant. These results are consistent with previous research that examines differences between males and females on the MMPI-2. Important differences in the raw scores were found between men and women, which led to the development of separate norms for the two groups. These norms were developed based on the assumption that the differences are a reflection of different levels of willingness to disclose certain symptoms and problems, rather than actual differences in pathology or personality characteristics (Graham, 2006).

Egloff and Schmukle (2004) discuss the substance model and the artifact model as two possible explanations for why women routinely score higher than men on self-report measures of trait anxiety. They describe the substance model, which posits that gender difference in personality tests accurately reflects gender differences in personality traits and psychopathology. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, American Psychiatric Association, 2000) reports different prevalence rates for many of the disorders by gender, and it is possible that the PAI is detecting differences among the genders in psychopathology. For example, the DSM-IV-TR reports that the lifetime prevalence rate of Antisocial Personality Disorder is three percent for men and one percent for women. This study indicated that there was a significant difference between men and women on the ANT scale and all three ANT subscales (ANT-E, ANT-S, ANT-A), with men scoring higher than women. The differences between the means were higher than for many of the other areas considered, at approximately 6t for the full scale. It is possible that the PAI is detecting the difference in the prevalence of Antisocial Personality Disorder and related characteristics.

Alternately, the artifact model hypothesizes that sociocultural factors result in women and men holding different values about the importance of possessing certain attributes and that these values bias self-reports of personality. This could lead to differences on personality inventories that do not reflect corresponding gender differences in the personality constructs under investigation, thus assuming that the personality scales are not perfectly valid measures of their constructs (Egloff & Schmulke, 2004). For example, in this study women scored significantly higher than men on the WRM treatment scale. This scale measures the degree to which a person is interested in and comfortable with attachment relationships. Higher scores on this scale suggest a person who is warm, friendly, and sympathetic, while lower scores suggest someone who appears somewhat distant in close relationships (Morey, 2003). In mainstream American culture, women are expected to be warm and responsive to interpersonal relationships. It is more socially appropriate for a man to be perceived as cold or distant than a woman. Although there was not a large difference between the genders on this scale, the difference could indicate societal expectations as much as true differences between men and women in displayed warmth.

If the substance model is accepted, then the differences found in this study are a reflection of real differences between men and women on the personality constructs measured. However, if the artifact model is accepted, then the differences found indicate that the PAI may not be perfectly valid and test bias may exist. As previously discussed, the authors of the PAI took several precautions to prevent test bias from being present in the PAI. However, the magnitude of the differences found in this study calls into

question the effectiveness of these steps. Significant differences were found on a majority of the scales and subscales. A possible solution for this problem is to create separate norms for men and women on the PAI. The MMPI-2 uses separate norms for men and women, and it may be useful to further investigate the differences between men and women on the PAI and to consider separate norms.

Throughout this discussion, it is important to remember that this study was investigating differences between university counseling center clients, not just between groups of students. It is generally reported that men are more hesitant to seek counseling than women and that women are more likely to become clients than men (Robertson & Fitzgerald, 1992). This difference is reflected in utilization in university counseling centers, where women make up two-thirds of the client population (Rando, Barr, & Aros, 2008). Since men are more reluctant to seek treatment, they often wait until they are in greater psychological distress and experiencing more symptoms of mental illness than women. Therefore, the differences in PAI profiles between men and women may reflect attitudes toward help-seeking and psychological-mindedness. However, while this may explain some of the gender differences in profiles, it is important to note that men scored higher than women on about the same number of scales as women scored higher in men. This relatively even split suggests that neither gender is reporting overall increased pathology; rather they are describing different symptoms and different sources of distress. It is therefore possible that the differences can be generalized to include all men and women. Future research should compare the PAI profile of counseling center clients and

with a random sample of university students to better understand similarities and differences between these groups.

Limitations

There are several limitations of the study as a whole. First of all, students completed intake paperwork that included demographic data. In many cases students did not provide answers to all of the prompts for information, so some data were missing. The missing data could have impacted the overall results. Second, there were several instances where the difference between the size of the groups was substantial. This is particularly obvious in the investigation of differences between international and domestic students. The study would be much more powerful if the groups had been matched and there were more international students. In order to adjust to the differences between group size, students were often categorized into broad groups (i.e., close to home vs. far from home, White vs. Non-White). Finer distinctions between groups would provide more information regarding the relationship between transition variables and PAI profiles.

In addition, several of the research questions had very broad hypotheses, where differences were expected between groups on the overall profiles as well as the subscales. With this broad of hypotheses, some false positives may have been found. While this does not invalidate any of the findings, future research would be useful to help further understand and verify the significant results that were found.

As previously discussed, this research took place at a midsized university in the southeast. It is possible that this student body population is different from students at

other universities of different sizes and in different locations. Perhaps there are differences between international students who choose to come to a university in this region of the country and those who choose to go elsewhere. Perhaps students at this university report different experiences and have different profiles than students at other universities. Each of these possibilities limits the generalizability of the results. In addition, it would be interesting to compare the results of this study to a study that looked at the same variables for university students in general. This would provide useful comparisons between university students and university counseling center clients. Therefore, future research is needed to extend these findings.

Conclusions

Overall, the results of this study indicated that there were differences between PAI profiles of university counseling center clients based on transition variables, such as student status (international or domestic), distance from home, student classification (freshman, sophomore, junior, senior, graduate student), and parent education level. In addition, there were significant differences between the PAI profiles of university counseling center clients based on ethnicity and gender. Although significant statistical differences were found when considering each of these variables, in the majority of cases the differences were not clinically significant, particularly in terms of diagnosis or screening. The PAI is currently used as a screening tool in university counseling centers to help determine if clients are at risk, where they should be placed on a wait-list based on problem severity, and what level of practitioner should work with the client. The differences between PAI profiles based on transition variables were generally minor in

terms of differences in means and effect size. Therefore, it is not likely that these variations would alter a decision about client treatment or that clients are at risk of being misdiagnosed or inappropriately prioritized as urgent. Overall, the research suggests that the PAI is appropriate for use as a screening tool in university counseling centers.

However, differences were found which suggests that transition variables may impact (even if only slightly) the PAI profiles of counseling center clients. If this is the case, then the question is how should clinicians interpret these differences? If someone in the midst of a transition has elevated scores on any of the related PAI scales or subscales, should the clinician dismiss this elevation as normative and part of the transition process? Or, should the clinician interpret the elevation as indicative of some sort of pathology related to a psychologically challenging major transition? Or, should the elevations be interpreted as part of normal developmental stages? As with any assessment, in order to meaningfully understand any piece of assessment information, it is important to consider the context of the larger clinical picture presented by the individual. Therefore, PAI results should be included as part of a larger assessment that takes into account various transitional factors present in the individual's life and the perceived impact of these transition variables.

REFERENCES

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- American Psychological Association. (1993). Guidelines for providers of psychological services to ethnic, linguistic, and culturally diverse populations. *American Psychologist*, 48(1), 45-48.
- Anantharamn, R.N. (1980). The effect of sex, social class and rural-urban locality on values. *Journal of Psychological Researchers*, 24, 112-114.
- Anderson, S., & Brown, C. (1997). Self-efficacy as a determinant of career maturity in urban and rural high school seniors. *Journal of Career Assessment*, 5, 305-315.
- Atkinson, D.R., Morten, G., & Sue, D.W. (1998). *Counseling American minorities* (5th ed.). New York: McGraw Hill.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey-Bass.
- Bachman, J., & O'Malley, P. (1977). Self-esteem in young men. A longitudinal analysis of the impact of education and occupational attainment. *Journal of Personality and Social Psychology*, 35, 365-380.
- Baird, W.E., Prather, J.P., Finson, K.D., & Oliver, J.S. (1994). Comparison of perceptions among rural versus nonrural secondary science teachers: A multistate survey. *Science Education*, 78, 555-576.
- Bell, J., & Bromnick, R. (1998). Young people in transition: The relationship between homesickness and self-disclosure. *Journal of adolescence*, 21, 745-748.

- Benton, S.A., Robertson, J.M., Tseng, W., Newton, G.B., & Benton, S.L. (2003). Changes in counseling center client problems across 13 years. *Professional Psychology: Research and Practice*, 34, 66-72.
- Bertelson, A.D., Marks, P.A., & May, G.D. (1982). MMPI and race: A controlled study. *Journal of Consulting and Clinical Psychology*, 50(2), 316-318.
- Boccaccini, M.T., & Brodsky, S.L. (1999). Diagnostic test usage by forensic psychologists in emotional injury cases. *Professional Psychology: Research and Practice*, 30, 253-259.
- Booth, B.M., Ross, R.L., & Rost, K. (1999). Rural and urban problem drinkers in six southern states. *Substance Use and Misuse*, 34(4&5), 471-493.
- Brooks, J.H., & DuBois, D.L. (1995). Individual and environmental predictors of adjustment during the first year of college. *Journal of College Student Development*, 36, 347-360.
- Bui, K.V. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experiences. *College Student Journal*, 36(1), 3-11.
- Burt, C.D. (1993). Concentration and academic ability following transition to university: An investigation of the effects of homesickness. *Journal of Environmental Psychology*, 13, 333-342.
- Charles, H., & Steward, M.A. (1991). Academic advising of international students. *Journal of Multicultural Counseling and Development*, 19, 173-181.

- Chen, C.P. (1999). Common stressors among international college students: Research and counseling implications. *Journal of College Counseling*, 2, 49-65.
- Chickering, A.W., & Reisser, L. (1993). *Education and identity* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Choy, S.P., Horn, L.J., & Nunez, E. (2000). Transition to college: What helps at-risk students and students whose parents did not attend college. *New Directions for Institutional Research*, 27(3), 45-63.
- Constantinople, A. (1968). An Eriksonian measure of personality development in college students. *Developmental Psychology*, 1(4), 357-372.
- Costello, R.M., Tiffany, D.W., & Grier, R.H. (1972). Methodological issues and racial (Black-White) comparisons on the MMPI. *Journal of Consulting and Clinical Psychology*, 38(2), 161-168.
- Cushman, K. (2007). Facing the culture shock of college: First generation college students talk about identity, class, and what helps them succeed. *Educational Leadership*, 64(7), 44-47.
- Dadfar, S., & Friedlander, M.L. (1982). Differential attitudes of international students toward seeking professional psychological help. *Journal of Counseling Psychology*, 29(3), 335-338.
- Dana, R.H. (1998). Multicultural assessment of personality and psychopathology in the United States: Still art, not yet science, and controversial. *European Journal of Psychological Assessment*, 14(1), 62-70.

- Dana, R.H. (2000). *Handbook of cross-cultural and multicultural personality assessment*. Mahway, NJ: Lawrence Erlbaum.
- Diller, J.V. (2004). *Cultural diversity: A primer for the human services*. Belmont, CA: Brooks/Cole.
- Dixon, S.V., Graber, J.A., & Brooks-Gunn, J. (2008). The roles of respect for parental authority and parenting practices in parent-child conflict among African American, Latino, and European American families. *Journal of Family Psychology*, 22(1), 1-10.
- Douglas, K.S., Hart, S.D., & Kropp, P.R. (2001). Validity of the Personality Assessment Inventory for forensic assessments. *International Journal of Offender Therapy and Comparative Criminology*, 45, (2), 183-197.
- Egloff, B., & Schmukle, S.C. (2004). Gender differences in implicit and explicit anxiety measures. *Personality and Individual Differences*, 36(8), 1807-1815.
- Fisher, S., Frazer, N., & Murray, K. (1984). The transition from home to boarding school: A diary-style analysis of the problems and worries of boarding school pupils. *Journal of Environmental Psychology*, 4, 211-221.
- Fisher, S., & Hood, B. (1987). The stress of transition to university: A longitudinal study of psychological disturbance, absent-mindedness and vulnerability to homesickness. *British Journal of Psychology*, 78, 425-441.
- Fisher, S., & Hood, B. (1988). Vulnerability factors in the transition to university: Self-reported mobility history and sex differences as factors in psychological disturbance. *British Journal of Psychology*, 79, 309-320.

- Fisher, S., Murray, K., & Frazer, N.A. (1985). Homesickness, health and efficiency in first year students. *Journal of Environmental Psychology*, 5, 181-195.
- Fletcher, P.C., & Skinner, K. (2006). Do drinking practices at university differ among students coming from urban and rural centers? A preliminary examination of knowledge, attitudes, and beliefs. *College Student Journal*, 40, 332-342.
- Gelso, C., & Fretz, B. *Counseling Psychology* (2nd ed.). New York: Harcourt, Inc.
- Graham, J.R. (2006). *MMPI-2: Assessing personality and psychopathology* (4th ed.). New York: Oxford University Press.
- Greene, R.L. (1987). Ethnicity and MMPI performance: A review. *Journal of Consulting and Clinical Psychology*, 55(4), 497-512.
- Groth-Marnat, G. (2003). *Handbook of psychological assessment* (4th ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Harvin, A. (1955). Student counseling needs with reference to rural-urban differences. *Personnel and Guidance Journal*, 34, 10-12.
- Helfritz, L.E., & Stanford, M.S. (2006). Personality and psychopathology in an impulsive aggressive college sample. *Aggressive Behavior*, 32, 28-37.
- Holmbeck, G.N., & Wandrei, M.L. (1993). Individual and relational predictors of adjustment in first-year college students. *Journal of Counseling Psychology*, 40, 73-79.
- Hyun, J.K., Quinn, B.C., Madon, T., & Lustig, S. (2006). Graduate student mental health needs: Needs assessment and utilization of counseling services. *Journal of College Student Development*, 47(3), 247-266.

- Kagen, H., & Cohen, J. (1990). Cultural adjustment of international students. *Psychological Science*, 1, 133-137.
- Kazantzis, N., & Flett, R. (1998). Family cohesion and age as determinants of homesickness in university students. *Social Behavior and Personality*, 26, 195-202.
- Kearney, L.K., Draper, M., & Baron, A. (2005). Counseling utilization by ethnic minority college students. *Cultural Diversity and Ethnic Minority Psychology*, 11(3), 272-285.
- Lee, J.J., Sax, L.J., Kim, K.A., & Hagedorn, L.S. (2004). Understanding students' parental education beyond first-generation status. *Community College Review*, 32(1), 1-20.
- Mesquita, B., & Frijda, N.H. (1992). Cultural variations in emotions: A review. *Psychological Bulletin*, 112(2), 179-204.
- Mitchell, S.L., Greenwood, A.K., & Guglielmi, M.C. (2007). Utilization of counseling services: Comparing international U.S. college students. *Journal of College Counseling*, 10, 117-129.
- Mooney, S.P., Sherman, M.F., & Presto, C.T. (1991). Academic locus of control, self-esteem, and perceived distance from home as predictors of college adjustment. *Journal of Counseling and Development*, 69, 445-448.
- Morey, L.C. (1991). *Personality Assessment Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Morey, L.C. (2003). *Essentials of PAI assessment*. New York: John Wiley & Sons.

- Mori, S. (2000). Addressing the mental health concerns of international students. *Journal of Counseling and Development*, 78, 137-144.
- Mowbray, C.T., Mandiberg, J.M., Stein, C.H., Kopels, S., Curlin, C., Megivern, D., Strauss, S., Collins, K., & Lett, R. (2006). Campus mental health services: Recommendations for change. *American Journal of Orthopsychiatry*, 76, 226-237.
- Ng, K. (2006). Counselor educators' perceptions of and experiences with international students. *International Journal for the Advancement of Counselling*, 28, 1-19.
- Pascarella, E.T., & Terenzini, P.T. (1991). *How college affects students*. San Francisco, CA: Jossey-Bass.
- Pascarella, E.T., Pierson, C.T., Wolniak, G.C., & Terenzini, P.T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education*, 75(3), 249-284.
- Rahman, O., & Rollack, D. (2004). Acculturation, competence, and mental health among South Asian students in the United States. *Multicultural Counseling and Development*, 32, 130-142.
- Robertson, J.M., & Fitzgerald, L.F. (1992). Overcoming the masculine mystique: Preferences for alternative forms of assistance among men who avoid counseling. *Journal of Counseling Psychology*, 39(2), 240-246.
- Romain, P.M. (2000). Use of the Personality Assessment Inventory with an ethnically diverse sample of psychiatric outpatients. *Dissertation Abstracts International*, 61 (11-B), 6147.

- Rondo, R., Barr, V., & Aros, C. (2008). The association for university and college counseling center directors annual survey. *AUCCCD*.
- Rosselli, M., Ardila, A., Lubomski, M., Murray, S., & King, K. (2001). Personality profile and neuropsychological test performance in chronic cocaine-abusers. *International Journal of Neuroscience*, 110, 55-72.
- Schultz, P.F. (2004). Upon entering college: First semester experiences of first-generation rural students from agricultural families. *The Rural Educator*, 26(1), 48-51.
- Schwartz, A.J. (2006). Are college students more disturbed today? Stability in the acuity and qualitative character of psychopathology of college counseling center clients: 1992-1993 through 2001-2002. *Journal of American College Health*, 54, 327-337.
- Soto, J.A., Levenson, R.W., & Ebling, R. (2005). Cultures of moderation and expression: Emotional experience, behavior, and physiology in Chinese Americans and Mexican Americans. *Emotions*, 5(2), 154-165.
- Steward, R.J., Jacson, M.R., & Jackson, J.D. (1990). Alienation and interaction styles in a predominantly White environment: A study of successful Black students. *Journal of College Student Development*, 31, 509-515.
- Stokols, D., Shumaker, S.A., & Martinez, J. (1983). Residential mobility and personal well-being. *Journal of Environmental Psychology*, 3, 5-19.

- Storch, E.A., Storch, J.B., & Killiany, E.M. (2005). Self-reported psychopathology in athletes: A comparison of intercollegiate student-athletes and non-athletes. *Journal of Sports Behavior*, 28, 86-97.
- Sue, D.W., & Sue, D. (1977). Barrier to effective cross-cultural counseling. *Journal of Counseling Psychology*, 24(5), 420-429.
- Terenzini, P.T., Springer, L., Yaeger, P.M., Pascarella, E.T., & Nora, A. (1996). First generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education*, 37(1), 1-22.
- Todd, W.R. (2004). Race/Ethnicity and the Personality Assessment Inventory (PAI): The impact of culture on diagnostic testing in a college counseling center. (Doctoral dissertation, Temple University, 2004). *Dissertation Abstracts International*, 65, 5425.
- Tognoli, J. (2003). Leaving home: Homesickness, place attachment, and transition among residential college students. *Journal of College Student Psychotherapy*, 18, 35-48.
- Tsai, J.L., Levenson, R.W., & McCoy, K. (2006). Cultural and temperamental variation in emotional response. *Emotions*, 6(3), 487-497.
- United States Census Bureau (2000). Factfinder, Knoxville city, Tennessee. Retrieved June 20, 2008 from www.factfinder.census.gov.
- University of Tennessee (2007). University of Tennessee Knoxville Factbook 2006-2007. Retrieved June 20, 2008, from www.oira.tennessee.edu/factbook.

- Wang, C.D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology, 53*, 422-433.
- Whiteley, J.M., & Yakota, N. (1988). The freshman year experience: Character development in the freshman year and over four years of undergraduate study. *Resources in Education, 43*, 1-44.
- Wright, D., Scherman, A., & Beesley, D. (2003). The effects on parental attachment on the college adjustment of rural and non-rural students. *Rural Educator, 25*(2), 10-14.
- Yao, R.K. (2006). Social factors relating to alienation experienced by international students in the United States. *College Student Journal, 40*, 303-315.
- Yeh, C.J., & Inose, M. (2003). International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. *Counselling Psychology Quarterly, 16*, 15-28.

APPENDIXES

APPENDIX A

PAI Clinical, Interpersonal, and Treatment Scales

Clinical scales	
Somatic Complaints (SOM)	Focuses on preoccupation with health matters and somatic complaints associated with somatization or conversion disorders. Subscales include Conversion (SOM-C), Somatization (SOM-S), and Health Concerns (SOM- H)
Anxiety (ANX)	Focuses on phenomenology and observable signs of anxiety, with an emphasis on assessment across different response modalities. Subscales include Cognitive (ANX-C), Affective (ANX-A), and Physiological (ANX-P).
Anxiety-Related Disorder (ARD)	Focuses on symptoms and behaviors related to specific anxiety disorders- particularly phobias, traumatic stress, and obsessive-compulsive symptoms. Subscales include Obsessive-Compulsive (ARD-O), Phobias (ARD-P), and Traumatic Stress (ARD-T).
Depression (DEP)	Focuses on symptoms and phenomenology of depressive disorders. Subscales include Cognitive (DEP-C), Affective (DEP-A), and Physiological (DEP-P).
Mania (MAN)	Focuses on affective, cognitive, and behavioral symptoms of mania and hypomania. Subscales include Activity Level (MAN-A), Grandiosity (MAN-G), and Irritability (MAN-I).
Paranoia (PAR)	Focuses on symptoms of paranoid disorders and on more enduring characteristics of the paranoid personality. Subscales include Hypervigilance (PAR-H), Persecution (PAR-P), and Resentment (PAR-R).
Schizophrenia (SCZ)	Focuses on symptoms relevant to the broad spectrum of schizophrenic disorder. Subscales include Psychotic Experiences (SCZ-P), Social Detachment (SCZ-S), and Thought Disorder (SCZ-T).
Borderline Features (BOR)	Focuses on attributes indicative of a borderline level of personality functioning, including unstable and fluctuating interpersonal relationships, impulsivity, affective lability and instability, and uncontrolled anger. Subscales include Affective Instability (BOR-A), Identity Problems (BOR-I), Negative Relationships (BOR-N), and Self-Harm (BOR-S).
Antisocial Features (ANT)	Focuses on history of illegal acts and authority problems, egocentrism, lack of empathy and loyalty, instability, and excitement-seeking. Subscales include Antisocial Behaviors (ANT-A), Egocentricity (ANT-E), and Stimulus-Seeking (ANT-S).
Alcohol Problems (ALC)	Focuses on problematic consequences of alcohol use and features of alcohol dependence.
Drug Problems (DRG)	Focuses on problematic consequences of drug use (both prescription and illicit) and features of drug dependence.

PAI Clinical, Interpersonal, and Treatment Scales Continued

Treatment scales	
Aggression (AGG)	Focuses on characteristics and attitudes related to anger, assertiveness, hostility and aggression. Subscales include Aggressive Attitude (AGG-A), Verbal Aggression (AGG-V), and Physical Aggression (AGG-P).
Suicidal Ideation (SUI)	Focuses on suicidal ideation, ranging from hopelessness to thoughts and plans for the suicidal act.
Nonsupport (NON)	Measures the impact of recent stressors in major life areas.
Treatment Rejection (RXR)	Focuses on attributes and attitudes indicating a lack of interest and motivation in making personal changes of a psychological or emotional nature. Higher scores reflect increased risk of treatment noncompliance and early termination.
Interpersonal scales	
Dominance (DOM)	Accesses the extent to which a person is controlling and independent in interpersonal relationships. This scale reflects a bipolar dimension, with a dominant style at the high end and a submissive style at the low end.
Warmth (WRM)	Accesses the extent to which a person is interested in supportive and empathic personal relationships. This scale reflects a bipolar dimension, with a warm, outgoing style at the high end and a cold, rejecting style at the low end.

APPENDIX B

Comparison of International and Domestic Students on PAI Scales

Clinical & treatment scales	International		Domestic		<i>t</i> test	df	95% CI
	M	SD	M	SD			
SOM	54.14	6.99	52.22	9.81	-1.25	23.29	-5.07 - 1.25
ANX	66.14	11.06	65.15	13.99	-0.41	22.85	-5.97 - 4.00
ARD	61.63	10.52	57.33	12.99	-1.88	22.76	9.94 - 0.43
DEP	66.36	14.84	64.02	13.42	-0.73	21.93	-8.98 - 4.29
MAN	53.59	10.48	52.45	10.94	-0.49	22.25	-5.80 - 3.59
PAR	57.68	10.91	54.94	11.65	-1.16	22.31	-7.64 - 2.15
SCZ	66.32	13.23	58.02	12.15	-1.41	21.97	-14.22 - -2.39
BOR	65.68	12.46	61.89	11.7	-1.41	22.01	-9.37 - 1.78
ANT	53.72	6.01	52.56	10.64	-1.41	24.04	-4.17 - 1.84
AGG	49.10	13.07	51.95	11.2	-0.8	21.84	-2.98 - 8.70
ALC	47.91	6.40	50.68	10.7	1.02	24.28	-0.14 - 5.69
DRG	50.36	10.93	49.56	12.00	1.96	22.39	-5.73 - 4.09
SUI	57.63	14.95	55.03	14.16	-0.35	22.03	-9.02 - 4.36
STR	57.41	7.56	56.74	11.31	-0.4	23.61	-4.10 - 2.76
NON	56.01	12.45	61.68	13.45	-1.93	21.98	-11.60 - 0.43
RXR	36.68	9.59	39.26	10.12	1.24	22.28	-1.72 - 6.88
DOM	45.23	10.66	46.79	11.72	0.67	22.39	-4.77 - 2.08
WRM	44.32	11.4	47.53	11.54	1.30	22.18	-7.40 - 0.45

* $p < .05$.

Comparison of International and Domestic Students on PAI Scales Continued

Subscales	International		Domestic		<i>t</i> test	df	95% CI
	M	SD	M	SD			
SOMC	51.77	7.59	50.43	9.92	-0.81	22.98	-4.77 – 2.08
SOMS	57.68	8.73	54.21	10.95	-1.83	22.82	-7.41 – 0.46
SOMH	51.36	9.09	51.05	10.02	-0.16	22.4	-4.40 – 3.76
ANXC	68.68	12.77	65.98	13.52	-0.98	22.29	-8.43 – 3.03
ANXA	62.73	10.72	62.47	13.60	-0.11	22.87	-5.09 – 4.57
ANXP	61.64	10.76	62.26	14.50	0.27	23.11	-4.23 – 5.48
ARDO	56.59	10.94	51.51	12.16	-4.97	22.43	-9.99 – -0.17
ARDP	56.55	11.95	54.56	11.73	-0.77	22.11	-7.33 – 3.37
ARDT	61.27	14.00	59.38	14.66	-0.63	22.26	-8.17 – 4.38
DEPC	67.00	14.12	63.84	14.87	-1.03	22.28	-9.49 – 3.17
DEPA	70.05	15.76	63.89	14.87	-1.81	21.94	-3.12 – 8.66
DEPP	55.41	13.90	58.18	11.47	0.98	21.87	-3.12 – 8.66
MANA	52.32	8.02	53.11	11.48	0.45	23.38	-2.84 – 4.42
MANG	49.64	10.97	49.71	10.98	0.30	22.15	-4.85 – 4.96
MANI	56.55	12.33	53.46	11.72	-1.16	22.04	-8.60 – 2.43
PARH	60.68	14.39	56.55	13.04	-1.33	21.94	-10.57 – 2.30
PARP	53.68	9.93	50.31	10.29	-1.57	22.24	-7.82 – 1.08
PARR	55.09	9.74	55.39	11.36	0.14	22.57	-4.08 – 4.68
SCZP	51.23	7.06	48.97	10.29	-1.46	23.48	-5.45 – 0.95
SCZS	62.18	14.12	54.76	12.83	-6.61	21.95	-13.83 – -1.10
SCZT	72.05	16.20	63.76	15.05	-5.21	21.99	-15.53 – -1.04
BORA	66.00	13.35	59.51	12.65	-6.24	22.03	-12.47 – -0.52
BORI	65.82	13.13	63.13	11.78	-0.95	21.92	-8.56 – 3.18
BORN	61.23	11.65	60.47	11.87	-0.30	22.19	-5.98 – 4.46
BORS	55.68	11.21	53.64	12.23	-0.94	22.37	-7.07 – 2.99
ANTA	47.81	6.52	50.78	10.00	2.06*	23.75	-0.00 – 5.92
ANTE	56.59	10.80	51.58	10.15	2.15*	22.01	-9.85 – -0.18
ANTS	56.32	9.93	54.16	12.00	-1.00	22.69	-6.62 – 2.31
AGGA	53.64	12.92	49.59	12.42	-1.14	22.01	-9.83 – 1.74
AGGV	45.46	9.62	49.23	11.92	1.81	22.78	-0.55 – 8.11
AGGP	52.27	9.65	50.11	10.48	-1.03	22.36	-6.49 – 2.17

**p* < .05

APPENDIX C

Means and Standard Deviations for Close and Far Students

Clinical & treatment scales	Close		Far	
	M	SD	M	SD
SOM	51.58	9.63	52.09	9.7
ANX	64.82	14.06	64.16	13.99
ARD	57.56	12.56	55.38	12.43
DEP	62.81	13.41	62.11	12.49
MAN	51.65	11.02	53.48	11.45
PAR	54.37	11.25	54.49	10.99
SCZ	56.85	12.01	56.21	10.7
BOR	61.46	11.73	62.37	11.55
ANT	51.49	10.23	53.48	10.99
AGG	51.74	11.43	53.99	12.25
ALC	50.94	11.13	50.59	9.63
DRG	49.33	11.92	51.01	12.97
SUI	55.32	14.58	52.43	11.52
STR	56.39	10.73	56.43	11.48
NON	53.88	10.83	53.88	10.83
RXR	39.25	9.58	39.02	10.01
DOM	46.31	11.7	48.27	11.91
WRM	47.95	11.41	49.13	11.46

APPENDIX D

Means and Standard Deviation by Student Classification

Clinical & treatment scales	Freshman		Sophomore		Junior		Senior		Graduate	
	M	SD	M	SD	M	SD	M	SD	M	SD
SOM	52.57	9.88	52.02	9.14	53.60	10.43	52.40	10.18	51.15	9.14
ANX	66.75	14.41	65.31	13.88	67.69	13.72	63.84	14.42	63.00	13.01
ARD	57.33	13.73	57.52	12.97	58.11	13.28	57.52	14.22	56.92	10.86
DEP	64.60	14.20	65.44	13.43	65.06	13.39	64.75	13.48	61.12	12.62
MAN	52.16	10.70	53.00	11.33	52.13	10.07	52.93	11.64	52.27	10.89
PAR	55.29	11.74	56.46	11.72	55.84	11.55	56.03	13.43	51.87	8.96
SCZ	57.66	12.24	58.72	12.43	59.06	12.01	58.72	12.51	56.95	10.17
BOR	63.33	12.42	62.78	12.15	62.73	11.22	61.99	12.65	59.77	10.17
ANT	54.05	10.78	54.00	11.22	53.04	11.35	52.56	53.12	52.1	10.95
AGG	51.22	12.01	50.44	10.20	52.40	11.36	53.19	11.91	52.1	10.95
ALC	51.26	11.43	51.98	11.78	50.39	9.72	50.58	10.63	49.11	9.51
DRG	49.94	11.65	49.25	11.79	49.64	11.61	50.48	13.03	48.63	11.49
SUI	56.24	16.44	55.41	14.50	55.07	13.44	55.72	14.57	53.59	12.34
STR	55.86	10.93	56.12	11.72	57.10	11.38	56.64	11.60	57.86	10.51
NON	55.29	12.66	55.39	12.54	56.52	12.17	57.88	13.50	39.55	9.60
RXR	39.35	10.31	39.56	10.72	38.42	9.97	39.28	9.92	39.55	9.61
DOM	46.11	11.55	47.26	11.37	44.65	11.95	47.53	11.73	47.83	11.74
WRM	48.50	11.97	47.66	11.73	47.72	10.84	46.24	11.79	47.52	11.28

Means and Standard Deviation by Student Classification Continued

Subscales	Freshman		Sophomore		Junior		Senior		Graduate	
	M	SD	M	SD	M	SD	M	SD	M	SD
SOMC	49.83	10.26	50.39	9.65	52.06	10.91	50.50	10.24	49.57	8.30
SOMS	55.29	12.15	53.81	10.18	55.56	11.23	54.02	11.03	53.01	10.18
SOMH	51.41	9.30	50.88	9.14	51.81	10.25	51.24	10.67	50.21	10.41
ANXC	66.95	13.77	66.73	13.16	67.87	13.25	64.71	14.38	64.42	12.89
ANXA	63.99	14.25	62.16	13.67	64.60	13.21	61.31	13.75	60.83	12.81
ANXP	64.18	14.96	62.14	14.86	65.15	14.39	61.09	14.04	59.50	13.04
ARDO	50.86	12.28	51.16	10.26	51.14	11.93	51.90	13.04	52.87	11.02
ARDP	55.31	12.54	54.93	11.35	56.34	12.77	53.55	11.53	53.26	10.64
ARDT	59.18	15.53	59.74	15.06	59.77	14.25	60.31	15.66	58.37	13.01
DEPC	65.28	14.98	65.88	15.20	65.99	14.28	63.84	15.20	59.24	13.61
DEPA	63.50	14.8	64.76	14.38	63.68	14.47	65.49	14.79	62.79	13.35
DEPP	58.19	11.59	58.83	11.40	58.91	12.01	58.42	10.86	56.46	11.73
MANA	52.66	10.73	53.89	11.80	54.08	11.18	53.18	12.41	51.79	10.65
MANG	48.70	11.05	49.22	10.72	48.61	10.55	50.45	11.56	51.04	10.84
MANI	54.25	12.26	54.40	12.30	53.07	11.14	53.67	12.20	52.62	11.01
PARH	57.08	13.76	58.19	13.25	56.61	12.20	58.31	14.76	53.44	10.87
PARP	50.35	9.42	51.82	11.14	50.95	10.24	50.99	12.06	48.09	7.62
PARR	55.74	11.12	56.09	12.01	56.93	11.71	55.68	12.10	52.91	9.27
SCZP	49.46	9.43	49.18	10.23	51.21	11.97	48.11	10.49	48.41	8.79
SCZS	53.39	13.72	54.78	12.32	53.49	11.87	58.83	13.75	55.62	12.61
SCZT	64.02	15.00	65.11	16.11	66.51	14.19	63.72	14.73	60.86	15.07

Means and Standard Deviation by Year in School (continued)

Subscales	Freshman		Sophomore		Junior		Senior		Graduate	
	M	SD	M	SD	M	SD	M	SD	M	SD
BORA	60.45	13.42	59.67	12.96	59.42	12.29	59.59	13.56	59.43	11.48
BORI	65.05	12.20	64.45	12.22	64.39	11.01	62.94	12.07	60.05	11.13
BORN	60.70	11.80	60.83	12.24	61.11	12.12	61.90	13.03	58.23	9.86
BORS	55.19	12.05	54.68	13.52	54.51	12.08	52.44	11.97	52.21	11.29
ANTA	51.95	9.63	51.57	10.81	50.94	10.22	51.27	10.03	48.22	8.50
ANTE	52.92	10.42	53.01	10.30	52.70	10.68	50.95	10.19	49.40	9.03
ANTS	55.35	12.24	55.57	12.89	54.33	12.83	54.10	11.23	52.03	10.55
AGGA	50.00	12.42	48.21	11.72	50.11	12.13	50.65	13.46	49.56	12.21
AGGV	49.96	11.70	49.68	12.08	49.24	12.37	49.25	12.08	47.84	11.13
AGGP	49.79	10.19	50.51	10.88	47.75	9.53	51.48	11.76	49.17	9.40

APPENDIX E

Means and Standard Deviation by Parent Education

Clinical & treatment scales	High school		Some college		College graduate		Graduate school	
	M	SD	M	SD	M	SD	M	SD
SOM	52.00	9.13	52.97	10.52	52.56	9.83	51.31	9.22
ANX	64.39	13.60	66.23	14.06	66.96	14.00	63.17	13.26
ARD	59.39	12.73	59.92	12.37	57.67	13.31	55.69	12.43
DEP	64.88	12.64	64.33	13.00	64.47	13.58	62.68	13.34
MAN	51.58	10.64	52.41	12.48	53.63	10.96	51.57	10.27
PAR	56.19	10.16	55.70	10.88	55.08	12.58	54.02	11.45
SCZ	60.62	12.25	59.41	11.65	58.24	12.71	56.60	11.61
BOR	62.24	10.95	62.61	10.58	62.20	12.70	61.38	11.38
ANT	52.15	10.35	51.07	10.70	52.69	10.49	53.24	10.74
AGG	50.91	10.71	50.83	11.19	52.28	11.19	52.11	11.07
ALC	49.21	9.47	50.36	11.05	51.43	10.16	51.39	11.41
DRG	50.34	12.62	49.07	11.66	49.69	11.67	49.30	12.02
SUI	55.59	13.88	54.57	14.18	51.97	14.79	54.88	13.41
STR	61.20	11.11	57.86	11.39	56.02	11.57	55.45	10.29
NON	60.04	12.74	56.77	11.94	55.14	12.73	55.26	11.81
RXR	38.59	8.83	38.79	9.58	39.55	10.38	39.09	10.39
DOM	46.70	11.81	45.12	11.97	46.49	11.81	47.54	11.59
WRM	45.56	10.54	47.05	10.85	47.88	11.76	47.45	11.37

Means and Standard Deviation by Parent Education Continued

Subscales	High school		Some college		College graduate		Graduate school	
	M	SD	M	SD	M	SD	M	SD
SOMC	49.49	8.36	51.66	10.79	51.05	10.45	49.33	8.81
SOMS	54.83	11.14	54.53	11.07	54.92	11.09	53.04	10.4
SOMH	50.73	9.22	51.48	10.55	50.67	9.49	50.81	9.97
ANXC	65.89	13.24	67.18	13.20	67.61	13.62	64.30	13.34
ANXA	60.84	13.44	62.12	13.94	64.04	13.49	61.61	13.02
ANXP	61.78	13.70	64.24	14.81	63.99	14.60	59.22	13.21
ARDO	52.30	12.34	54.02	12.52	52.25	12.25	50.23	11.52
ARDP	54.96	11.05	57.53	12.68	54.59	11.73	53.08	11.28
ARDT	62.37	15.25	59.57	13.51	59.27	15.02	58.54	14.28
DEPC	64.17	14.14	65.33	14.38	63.73	15.10	63.02	14.70
DEPA	65.16	13.01	63.79	13.86	64.04	14.75	62.99	14.06
DEPP	59.68	11.21	57.65	11.24	59.22	11.65	56.49	11.31
MANA	52.08	11.05	53.09	11.46	53.88	11.77	52.57	10.95
MANG	48.52	9.56	49.48	11.64	50.48	10.92	49.04	10.92
MANI	53.63	12.77	53.54	13.00	54.62	11.71	52.61	10.73
PARH	58.42	12.51	57.55	12.05	56.30	13.17	55.71	13.71
PARP	50.84	8.36	50.00	9.45	51.02	11.28	49.60	10.13
PARR	56.31	11.09	56.36	11.12	55.30	12.01	54.52	10.68
SCZP	49.54	10.55	49.92	9.60	49.07	10.8	48.17	9.27
SCZS	57.23	11.86	55.61	12.75	54.43	13.28	54.07	12.53
SCZT	66.29	15.85	65.20	14.36	64.45	15.32	62.08	14.95

Means and Standard Deviation by Parent Education Continued

Subscales	High school		Some college		College graduate		Graduate school	
	M	SD	M	SD	M	SD	M	SD
BORA	60.57	11.94	59.54	11.86	59.96	13.42	59.02	12.69
BORI	60.68	10.47	16.10	11.30	63.22	12.21	62.73	11.61
BORN	60.70	10.47	61.10	11.30	60.87	12.63	59.68	11.90
BORS	53.17	12.06	53.73	11.74	53.66	12.47	53.72	11.48
ANTA	49.86	9.00	49.86	9.77	50.69	10.04	51.43	10.35
ANTE	51.16	10.99	50.57	10.36	51.95	9.77	52.10	10.36
ANTS	54.61	12.56	52.45	11.32	54.23	11.98	54.68	12.09
AGGA	50.07	12.51	48.68	11.63	50.45	12.42	49.23	12.58
AGGV	49.70	12.07	49.02	12.19	48.93	11.59	49.39	12.16
AGGP	51.38	12.36	50.04	9.99	49.88	10.03	49.60	9.83

APPENDIX F

Means and Standard Deviation by Ethnicity

Clinical & treatment scales	White		Non-white	
	M	SD	M	SD
SOM	52.49	9.83	52.30	9.93
ANX	65.70	13.93	63.58	12.71
ARD	57.25	12.95	59.84	12.51
DEP	64.30	13.37	63.69	13.07
MAN	52.16	10.74	54.15	13.07
PAR	54.52	11.46	58.82	11.72
SCZ	57.75	12.20	61.81	12.69
BOR	61.74	11.74	63.78	11.32
ANT	52.16	10.36	52.80	9.21
AGG	52.16	11.16	49.10	9.02
ALC	50.22	10.55	50.70	9.07
DRG	49.09	12.01	51.48	12.21
SUI	54.99	14.53	57.35	13.27
STR	56.48	11.28	56.66	10.82
NON	55.74	12.55	60.18	12.16
RXR	39.39	10.10	38.18	9.91
DOM	46.59	11.86	46.55	11.70
WRM	47.53	11.70	45.60	10.23

Means and Standard Deviation by Ethnicity Continued

Subscales	White		Non-white	
	M	SD	M	SD
SOMC	50.28	9.69	51.74	11.16
SOMS	54.59	10.84	54.00	13.3
SOMH	51.45	10.23	50.35	9.89
ANXC	66.39	13.46	65.73	12.93
ANXA	63.02	13.56	60.55	12.42
ANXP	62.78	14.41	59.87	13.53
ARDO	51.42	12.05	53.59	12
ARDP	54.45	11.76	56.57	11.57
ARDT	59.39	14.8	60.71	14.17
DEPC	63.9	14.83	64.46	15.27
DEPA	64.15	14.4	64.23	13.83
DEPP	58.49	11.29	56.63	11.3
MANA	53.35	11.44	52.03	10.94
MANG	49.16	10.86	51.25	11.22
MANI	53.14	11.44	56.37	12.59
PARH	56.12	13.00	60.31	12.98
PARP	49.61	9.56	55.20	12.3
PARR	55.39	11.37	56.74	10.77
SCZP	48.50	9.87	51.84	12.1
SCZS	54.46	12.91	58.73	12.33
SCZT	63.89	14.98	65.19	16.25
BORA	59.27	12.60	62.19	13.27
BORI	63.11	11.88	64.43	11.35
BORN	60.24	11.83	62.55	11.41
BORS	53.67	12.15	53.02	10.76
ANTA	50.19	9.60	50.93	10.03
ANTE	51.56	10.07	52.37	10.27
ANTS	53.96	11.85	53.88	10.14
AGGA	49.19	12.42	52.12	13.32
AGGV	49.09	11.97	49.00	11.76
AGGP	49.45	10.11	52.85	11.35

APPENDIX G

Table G1

Means and Standard Deviations by Gender

Clinical & treatment scales	Females		Males	
	M	SD	M	SD
SOM	53.06	10.18	50.62	8.51
ANX	66.76	13.92	61.83	13.35
ARD	58.42	12.85	55.47	12.95
DEP	65.76	13.69	62.67	12.81
MAN	51.51	10.56	54.85	11.37
PAR	55.45	11.92	54.13	11.37
SCZ	57.33	12.18	60.43	12.10
BOR	62.43	11.7	61.10	11.82
ANT	50.57	9.84	56.97	10.74
AGG	50.77	10.32	54.40	12.76
ALC	49.44	9.59	53.17	12.18
DRG	48.98	11.55	50.89	12.81
SUI	54.00	13.53	57.43	15.18
STR	56.76	11.29	56.77	11.07
NON	55.51	12.78	57.94	11.75
RXR	39.01	9.78	39.76	10.79
DOM	46.09	11.74	48.15	11.50
WRM	48.26	11.00	45.56	12.47

Means and Standard Deviations by Gender Continued

Subscales	Females		Males	
	M	SD	M	SD
SOMC	50.89	10.42	49.55	8.46
SOMS	55.67	11.26	51.39	9.45
SOMH	51.33	10.34	50.46	9.22
ANXC	67.51	13.13	62.94	13.80
ANXA	63.94	13.36	59.32	13.41
ANXP	63.54	15.05	59.44	12.52
ARDO	52.13	12.28	50.64	11.86
ARDP	55.43	11.53	52.97	11.98
ARDT	60.17	14.74	57.86	14.31
DEPC	64.23	15.09	63.24	14.34
DEPA	64.29	14.71	64.63	13.54
DEPP	59.13	11.61	55.84	10.97
MANA	53.02	11.35	53.37	11.53
MANG	47.76	10.21	54.10	11.29
MANI	53.41	11.59	53.92	12.12
PARH	56.91	13.24	56.11	12.75
PARP	50.57	10.5	10.13	9.85
PARR	56.05	11.57	53.95	10.70
SCZP	48.54	9.94	50.16	10.81
SCZS	54.16	12.61	56.89	13.37
SCZT	63.24	15.23	65.75	14.81
BORA	59.65	12.71	59.76	12.76
BORI	63.79	11.85	61.98	11.69
BORN	61.61	11.89	57.99	11.43
BORS	53.25	11.98	54.75	12.70
ANTA	48.70	8.94	55.11	10.43
ANTE	50.18	9.72	55.10	10.43
ANTS	52.89	11.52	57.10	12.44
AGGA	49.69	12.22	49.74	13.01
AGGV	48.86	12.19	49.81	11.15
AGGP	48.81	8.79	53.12	12.93

Table G2

Significant Effects for the PAI Scales by Gender

Source	<i>df</i>	<i>F</i>	<i>p</i>	η^2
SOM	1	11.50	.001***	.14
ANX	1	23.19	.000***	.03
ARD	1	9.40	.002**	.01
DEP	1	4.34	.037*	.01
MAN	1	17.17	.000***	.02
PAR	1	2.32	.128	.00
SCZ	1	11.70	.001***	.01
BOR	1	2.33	.127	.00
ANT	1	71.73	.000***	.08
AGG	1	19.04	.000***	.02
ALC	1	22.8	.000***	.03
DRG	1	4.55	.033*	.01
SUI	1	10.67	.001***	.01
STR	1	0.00	.992	.00
NON	1	6.82	.009**	.01
RXR	1	0.98	.324	.00
DOM	1	5.63	.018**	.01
WRM	1	9.94	.002**	.01

* $p < .05$ ** $p < .01$ *** $p \leq .001$

Significant Effects for the PAI Scales by Gender Continued

Source	<i>df</i>	<i>F</i>	<i>p</i>	η^2
SOMC	1	3.35	.068	.00
SOMS	1	28.57	.000	.03
SOMH	1	1.35	.246	.00
ANXC	1	21.04	.000	.03
ANXA	1	21.45	.000	.03
ANXP	1	14.79	.000	.02
ARDO	1	2.72	.100	.00
ARDP	1	7.99	.005	.01
ARDT	1	4.51	.034	.01
DEPC	1	0.80	.373	.01
DEPA	1	0.39	.535	.00
DEPP	1	15.00	.000	.02
MANA	1	0.17	.678	.00
MANG	1	64.7	.000	.07
MANI	1	0.33	.567	.00
PARH	1	0.66	.418	.00
PARP	1	0.34	.561	.00
PARR	1	6.18	.013	.01
SCZP	1	4.51	.034	.01
SCZS	1	8.14	.004	.01
SCZT	1	4.97	.026	.01
BORA	1	0.01	.914	.00
BORI	1	4.26	.039	.01
BORN	1	17.10	.000	.02
BORS	1	2.70	.101	.00
ANTA	1	81.99	.000	.09
ANTE	1	44.00	.000	.05
ANTS	1	22.82	.000	.03
AGGA	1	0.00	.958	.00
AGGV	1	1.16	.282	.00
AGGP	1	31.71	.000	.04

* $p < .05$

** $p < .01$

*** $p \leq .001$

VITA

Lauren Hines Shaw was born in a northwest suburb of Chicago on June 9, 1981. She was raised in Wauconda, IL and graduated from Wauconda High School in 1999. Lauren attended Huntington University, where she majored in Psychology and Oral Communications and minored in Sociology. From there, she moved to Knoxville where she completed her doctorate in Counseling Psychology at the University of Tennessee, Knoxville. She completed her pre-doctoral internship at the University of Tennessee Counseling Center.