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The Relationship Between the Advisory Working Alliance and the Ability to Cope Among Psychology Doctoral Students

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THE RELATIONSHIP BETWEEN THE ADVISORY WORKING ALLIANCE AND
THE ABILITY TO COPE AMONG PSYCHOLOGY DOCTORAL STUDENTS

BY

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CHAPTER I

INTRODUCTION

In this chapter, the relevance of considering the quality of the advisor-advisee relationship with the relative coping ability among psychology graduate students is introduced. The statement of the problem, purpose of the current study, hypotheses, definitions, and limitations of the study are reviewed.

Background and Statement of the Problem

Psychology graduate student stress and coping have been well documented in the research literature (Cahir & Morris, 1991; Dorff, 1998; Heins, Fahey, & Leiden, 1984; Holzman, Searight, & Hughes, 1996; Hudson & O' Regan, 1994; Nelson, Dell'Oliver, Koch, & Buckler, 2001). Psychology graduate doctoral training programs require students to become immersed in the rigors of intense academic study, empirical research and clinical practice. Often this can be at a personal cost to students in terms of delay in normal adult developmental tasks. Anecdotally, students cite they have postponed other life endeavors that many of their peers have accomplished (e.g., marriage, partnering, beginning family, financial stability, career advancement) in order to complete the necessary requirements for doctoral-level of study in psychology. In addition to delayed life tasks, students have noted that the demands of coursework, practicum/internship responsibilities, psychotherapy practice, research involvement, professional conference attendance, research presentations, and job duties contribute to an increased sense of being overwhelmed and distressed (Cushway 1992; Dorff, 1998; Pica, 1998). Therefore,

the balance between personal life, personal well-being, professional development and study becomes an ongoing endeavor for most students.

Psychology graduate students' perceptions of relative balance while in intense advanced training has received attention from investigators interested in training issues, ethics, professional development and psychological well-being and functioning (Ducheny, Alletzhauser, Crandell & Schneider, 1997; Fly, Van Bark, Wienman, Strohm-Kitchener, & Lang, 1997; Forrest, Elman & Gizara, 1997; Tryon, 2000). The issue of balance, coping, and well-functioning for the student is important in that developing psychologists-in-training are most likely being prepared to practice psychology with clients, who are often distressed, anxious, and compromised in their functioning. Within this emotionally-charged, dynamic, clinical environment, the interactions between treating professional and client often raises the stress experienced by the therapist. Research in this area has suggested that poor coping in trainees increases perceived level of stress and an increased likelihood for clinical judgment error and ethical transgression in the future (Kitchener, 1992). Not only is this problematic for client psychotherapy outcomes, in terms of iatrogenic effects, but a backlash is also often felt in terms of the public's perceptions of competence in the profession at large. Furthermore, any ethical indiscretions may resonate for the trainee and the psychology profession should legal matters ensue due to a lapse in standards of practice. Malpractice suits reflect poorly not only on the offending individual and the profession, but are also reflected in the increasing financial burden to psychologists for malpractice insurance, as well as the risk assumed and commensurately disbursed for the insurers.

If it is believed that psychology professional preparedness through academics, clinical training, and research ultimately results in full-functioning psychologists, then how does the profession account for the ethical transgressions and psychological maladaptive coping of some of its members? Perhaps, it is prudent to view early and continued training as a process of challenges and increased coping capability. To that end, an investigation into possible coping factors that may mediate stress during training for doctoral psychology students is warranted.

Social support has been cited as a mediating factor in sustaining graduate students while in training. However, it is imperative to note the type of relationship in which the social support is provided (Sandler & Barrera, 1984). Students may construe such relationships as either helpful or harmful. In an effort to facilitate graduate student productivity, learning and development, psychological training programs attempt to provide supportive relationships with faculty; however, students may not experience these relationships as beneficial. Therefore, an evaluative approach, in terms of the relative impact of training programs' provision of supportive relationship on the graduate student's ability to cope, is necessary to determine whether such supports are indeed perceived as supportive by the student.

With this in mind, the valence and quality of advisor-advisee relationship is of particular interest. Specifically, the working alliance within the advising relationship may yield insight into its effect on graduate student coping. The advisor-advisee relationship is considered the most important relationship a graduate student will have in the course of his/her graduate training (Gelso, 1993; Johnson & Nelson, 1999, Schlosser & Gelso, 2001). Recent preliminary data suggest that a relationship between dropout

rates among doctoral students correlated to advising issues (E.B. Stolzenberg, personal communication, April 10, 2004). Lovitts (2001) has been particularly concerned about doctoral students who give up after five or more years. She has speculated that one contributing factor may be a fundamental breakdown in the relationship between students and their faculty advisors. Additionally, Hollingsworth and Fassinger (2002) have suggested, “working to improve student-faculty research mentoring [advising] may be an important step toward promoting greater research productivity” (p.328). Various key factors have been identified regarding the advisor-advisee relationship, among these are: a) research development and proficiency, b) academic and professional guidance, c) mentorship, and d) role modeling (Gelso, 1993; Gilbert & Rossman, 1992; Tetoni, 1995). In fact, many graduate psychology training programs have delineated elements of focus (e.g., research guidance, professional development, academic guidance, etc.) for the advisor and the advisee in their working relationship together (Forrest & Elman, 1998).

It would appear that great emphasis has been placed on the concept and practice of the advising relationship, yet, only recently has the quality of the advising relationship been objectively measured (Schlosser & Gelso, 2001). The Advisory Working Alliance Inventory (AWAI), developed by Schlosser and Gelso (2001), assesses the psychosocial (interpersonal) and career-related (instructional) aspects of advising; the three subscales of the AWAI are Rapport, Apprenticeship and Identification-Individuation. The construction of the AWAI was based on Bordin’s notion of the supervisory working alliance (Bordin, 1983). He posited the working alliance is “a collaboration for change” that consists of three aspects: a) mutual agreement, b) tasks and c) emotional bonds to sustain the collaboration. Hence, measuring the quality of the working alliance between

advisor and student may provide valuable information about the capacity for student growth as a psychologist-in-training.

To expand further on this notion, within the mentoring literature assignment has been noted as a possible factor to beneficial mentoring relationships (Fagenson-Eland et al., 1997; Ragins & Cotton, 1999). Research to date suggests that when protégés select their own mentors, the mentorship is generally perceived more positively and as providing more mentoring benefits. If this is the case within mentoring perhaps advisor choice in which students choose their own advisors versus being assigned to an advisor may influence students' perceptions of the advisory working alliance. To date only one qualitative study has been conducted that taps into role of advisor assignment, which found that students who chose their advisors experienced more satisfaction within their advising relationships (Schlosser et al., 2003).

If psychology graduate training programs are concerned for the well functioning of the students while in training and if programs want to be informed whether their mechanisms of social support are effective, then an examination of the advising relationship to student coping would be an apparent program goal. The relative quality of the advisory working alliance may have associative value about the student's ability to cope during rigorous training. To that end, due to the perceived, as well as prescribed, nature of the advisor-advisee dyad, it would be important to determine whether the quality of the advising relationship facilitates coping for the psychology graduate student during training. Additionally, an investigation of advisor assignment is warranted to confirm previous results.

Although graduate psychology training programs require students to have advisors during the course of their program tenure, to what degree does the advisor-advisee relationship facilitate students' goals, professional identity and professional development? Does this relationship facilitate graduate student coping during training? If so, what is the magnitude of this facilitation? And, what role does advisor assignment play in the course of an ongoing advisory relationship?

There are several reasons to empirically probe the proposed research area. First, to date no research has been generated to examine the relationship of coping to the advisory working alliance. Second, relatively few empirical studies have been conducted in regards to the advising relationships and limited evidence has been documented regarding the stability of the AWAI as a measuring device. Third, the empirical research that does exist is limited in its ability to generalize to a broader population across various subspecialties. Fourth, variables such as advisor assignment have not been considered in the research to date regarding the AWAI. If we are to promote the AWAI as one of the evaluation tools for professional identity and development in psychology training programs, then a continued investigation is required.

Rationale of the Study

In considering the above statement of the problem, three primary research questions emerge. First, does the quality of the advisory working alliance relate to coping resources for psychology doctoral students in graduate training? Second, does advisor assignment relate to perceived advising working alliance quality? Third, does the recent measure of the advisory working alliance (AWAI) fit as a stable instrument across other applied-psychology disciplines (i.e., clinical, school, neuropsychology)?

The purpose of this study is: (a) to determine if a relationship exists between the advisory working alliance and coping resources for psychology doctoral students, (b) to determine whether a significant difference exists in advisory working alliance perceptions among psychology doctoral students who select their own advisors versus those who are assigned an advisor, and (c) to further investigate the factor structure of the AWAI on a broader population, thereby allowing empirical data to inform program faculty/advisors of students advising needs for academic/professional development.

Hypotheses

Hypothesis I: Relationship of Coping with AWAI

- 1) Coping resources will be significantly related to the Advising Working Alliance Inventory subscale scores of Rapport, Apprenticeship, and Identification-Individuation. Therefore, Rapport, Apprenticeship, and Identification-Individuation will indicate a positive relationship to coping resources.

Hypothesis II: Demographic variable of interest

- 1) Responses on AWAI scores will differ by advisor assignment in which elevated AWAI scores will be reported by students who chose their advisors versus those students whose advisors were assigned by program faculty.

Hypothesis III: Factor Structure of the Advisory Working Alliance Inventory

- 1) Factors underlying the Advisory Working Alliance Inventory will remain psychometrically stable across a broader sample of applied-psychology doctoral students. The data obtained will fit the extant three-factor model of the Advisory Working Alliance Inventory.

Definition of Concepts/Terms

Advisor. The single faculty person who is responsible for guiding the student through the training program. Schlosser and Gelso (2001) noted the term “advisor” is different from mentor. They posited that one can have an advisor who is also a mentor, or, one can have an advisor who is not a mentor, and one can have a mentor who is not his or her advisor. Although other advisor-like terms have been generated, psychology graduate students’ prevailing tendency was to acknowledge an advisor figure in their training experience (Schlosser & Gelso, 2001). Therefore, the term will be used in this study as defined above.

Advisee. With respect to the scope of this study, an advisee is a graduate student in psychology who is pursuing doctoral level of study and has a relationship with a faculty advisor.

Working alliance. The emotional connection, tasks and process between two individuals (i.e., advisor and advisee) working toward mutual goals. Note that only a portion of the total advisor-advisee relationship is considered to be the advisory working alliance (Schlosser & Gelso, 2001).

Coping. The ability to employ personal adaptive strategies and resources to manage stressful challenges during graduate training.

Choice of advisor. A natural process of a student’s self-selecting an advisor to meet his or her program training needs. Choice of advisor is not predetermined by the program faculty. Rather, it is determined by the student and the prospective advisor through interactions in which respective interests, compatibility, and working styles are assessed and a consensus is made to work toward mutual goals (Ragins & Cotton, 1999).

Assigned to advisor. Advising assignment in which it is predetermined, by the program coordinator, training director and/ or faculty, who the appropriate advisor for a particular student will be (Ragins & Cotton, 1999).

Significance of the Study

First, the study will contribute to the emergent research literature by supporting the conceptual importance of the advisory working alliance in the evaluation of the advisor-advisee relationship. Second, this study will extend the current psychometric knowledge of a recently developed instrument, to include diverse applied-psychology training programs. Third, the study will enhance the interpretation of advisory working alliance in terms of its effect on student coping and overall functioning during the training period. Finally, this research will generate other possible research questions about the advising relationship and its impact on student development.

Limitations

- 1) Methodological limits regarding the sample. As participants were sampled from a membership roster of the American Psychological Association student affiliates, the results will not reflect those psychology doctoral students who do not belong to this organization.
- 2) The self-report instruments used in this study may limit interpretation of results in that possible response set behavior could threaten instrument validity. In an effort to control for response set and order effects, the survey packet of instruments were counterbalanced and some of the instrument items were phrased in the reverse (i.e., “My advisor does not encourage my input in discussion.”).

- 3) Due to the sample being assigned into subspecialty groups (i.e., clinical, counseling, school, neuropsychology) for comparison purposes, the results were cautiously interpreted to reflect any generalizations to those subspecialties only.
- 4) Due to the cross-sectional study design, the results of the study will not allow for any interpretation beyond this “snapshot in time.” In other words, maturational issues and specific states of the participant at the time of survey responding may influence the results. Therefore, a doctoral student may respond to a current conflict in the advising relationship than would have at a different point in time. A future research design could include a longitudinal approach to address this issue.
- 5) Self-selection bias is a concern in that only those students who responded to the survey contributed to the data and general results of the study. Therefore, any interpretations of the results must reflect a statement specific to the current study’s respondents.
- 6) The non-experimental research design does not allow any cause and effect relationship to be established. Therefore, results are stated in terms of associations among the variables of interest.

A delimitation to this study is the use of a psychology doctoral student sample. This study does not include students studying in other academic arenas (e.g., medicine, literature, chemistry) nor does it include graduate students studying at the master’s level. The present sample was selected to contribute to the present research utilizing psychology doctoral students.

CHAPTER II

Review of Related Literature

Introduction

The purpose of this chapter is to discuss the theoretical foundation and related research pertaining to this study. This review is relevant to psychology graduate students and will be presented in several key areas of interest: advising/mentoring, Bordin's working alliance theory, Advisory Working Alliance Inventory development, graduate student coping, and psychology graduate student similarities and differences.

Mentoring and Advising Definition

Definitional problems have been noted to arise concerning the term "mentoring" (Carden, 1990) and "advising" (Schlosser & Gelso, 2001). Before presenting the literature review on mentoring and advising, it is important to delineate the meaning between the two respective constructs. Schlosser, Knox, Moskovitz and Hill (2003) provided a most suitable explanation:

Mentoring refers to a positive relationship in which protégés learn professional skills, whereas *advising* refers to a positive or negative relationship in which guidance may or may not be provided with regard to professional skill development (p.179).

For the current discussion the same definitions apply.

Mentoring

Much of the research literature regarding mentoring has been generated within the frame of organizational psychology. Many investigations were conducted within corporate business environments in which concerns for the structure, maintenance,

productivity, and effectiveness of the mentoring were examined (Allen & Poteet, 1997, 1999; Fagenson-Eland, Marks & Amendola, 1997; Kanter, 1977; Kram, 1985; Levinson, Darrow, Klein, Levinson, & McKee 1978; Ragins & Scandura, 1999). Levinson et al. (1978) stated mentoring was a relationship between employee and boss in which the transitional figure invites and welcomes the young adult into the professional world by serving as a guide, teacher, and sponsor. Kanter (1977) expanded the definition to include the notion of the alliance between the mentoring dyad as most instrumental for career development outcomes in young adults.

Similarly, Kram (1985) noted mentorship to be a mutually enhancing relationship in which both members of the dyad benefit from the relationship. Mentoring functions, according to Kram (1985), can be divided into two categories: career functions and psychosocial functions. Career functions are “those aspects of the relationship that enhance career advancement”; whereas psychosocial functions are “those aspects of the relationship that enhance sense of competence, identity, and effectiveness in a professional role” (p. 23). Within career functions, the mentor provides sponsorship, exposure/visibility, coaching, protection, and challenging tasks to the young adult in an effort to help the young person effectively navigate in the work world. Interpersonal elements such as, role modeling, acceptance/confirmation, counseling, and friendship are the psychosocial functions the mentor provides to support the mentee’s developing sense of professional identity and competence.

Furthermore, research in the area of mentoring has suggested that mentoring can mediate stress experienced by mentees (Kram & Hall, 1989). To further support this finding, in a study of full-time employees, Sosik and Godshalk (2000) found that mentor

transformational leadership (i.e., relationship-based) related to increased protégé receipt of mentoring functions and decreased job-related stress; whereas mentor laissez-faire leadership (i.e., avoidant or absent) was found to be negatively related to protégé receipt of mentoring functions and increased job-related stress. These researchers concluded that social support provided by mentoring via an interpersonally related and mutually stimulating relationship may help allay job stress.

Advising

Within the academic setting, traditionally the training of graduate students in psychology included a special apprentice-teacher dyad, which functioned to deliver knowledge, skills, and competence in the specific area of study. Historically this relationship was observed in early psychology as evidenced by Breuer and Freud, Wundt and Titchener, as well as many other teaching dyads across various areas of psychology (Watson & Evans, 1991). From these early relationships, a foundation for formal study in graduate training was formulated. The advisor-advisee relationship was born out of the need to train psychology graduate students for professional competence and identity as psychologists. Furthermore, the advising relationship is the primary means of professional socialization.

The effectiveness of the advising relationship has been questioned in regards to its impact on graduate students. Gelso (1993) included the quality of the advising relationship as a necessary factor to consider in promoting research attitudes. He contended that to enhance research attitudes among psychology graduate students,

a sound, stimulating interpersonal relationship between advisor and advisee can have profound impact in the student's research attitudes. To be optimally

effective, the research advisor should offer the student a generally facilitative relationship (empathy, positive regard, genuineness), while at the same time serving as a stimulator of ideas and a model of the scientist who is excited about his or her work. (p. 472)

Recent preliminary findings have suggested that a relationship exists between training program attrition and advising. Specifically, doctoral students who perceive poor advising were found to have higher drop out rates (E.B. Stolzenberg, personal communication, April 10, 2004). Lovitts (2001) has been particularly concerned about doctoral students who give up after five or more years. She has speculated that one contributing factor may be a fundamental breakdown in the relationship between students and their faculty advisors.

Cesa and Fraser (1989) suggested training programs should find methods to encourage the development of good mentor-protégé relationships. They recommended the implementation of an evaluation system. Johnson and Huwe (2003) recommended students and faculty mentors should evaluate the mentoring relationship periodically. Schlosser and Gelso (2001) suggested evaluating the advising relationship by objective means through the lens of the advisory working alliance.

Some evidence has been noted previously in regards to mentoring having impact, yet little evidence is known about the power of advising influence on students. Aspenson and Gersh (1993) explored graduate psychology students' experience of the scientist-practitioner model and how it lends itself to their perceived professional development. They found that students have a more positive perception and attitude toward the scientist-practitioner model when they have connected with faculty role models and

mentors who demonstrate the model. This is consistent with research by Royalty, Gelso, Mallinckrodt and Garrett (1986) in which training environment social/interpersonal interactions were observed to be important in shaping students' perceptions of the scientist-practitioner model. Additionally, Schlosser et al. (2003) noted from their qualitative study that student perceptions of satisfaction regarding their advising relationships were related to choice of advisor (informal assignment), meeting frequency, sense of connection and contact with the advisor, and matching interests. Furthermore, Cronan-Hillix et al. (1986) noted that approximately fifty percent of psychology doctoral students reported having a mentor. This poses a risk to that some students may not have the opportunity to develop within a relationship at all.

Working Alliance Theory

The concept of the working alliance has been primarily associated with psychoanalytic psychotherapy. The development of the therapeutic relationship makes gains toward therapy goals by means of change within a closely bonded relationship (Greenson, 1965; Kozart, 1996). Gelso and Carter (1985) noted that the value of the alliance is to promote therapeutic work.

Horvath and Greenberg (1989) utilized Bordin's tripartite model of alliance and applied it to the development and validation of their Working Alliance Inventory (WAI). These investigators particularly focused on the basis that a strong working alliance consists of the counselor's and client's agreement on the goals and tasks of therapy, as well as the bonds necessary to promote "positive personal attachment" to further the therapeutic work. The measure was found to be effective in measuring the therapeutic working alliance and predicting counseling outcomes and has been used frequently in

psychotherapy research (Kivlighan, Angelone, & Swafford, 1991; Mallinckrodt & Nelson, 1991).

Bordin (1983) posited the notion of a working alliance based model of psychotherapy supervision. He defined the working alliance as “a collaboration for change” in which three aspects are promoted: a) mutual agreements and understandings regarding the change process, b) tasks of each partner toward change, and c) bonds between the partners must be sustained foster change (p.35). He maintained that the “amount of change is based on the building and repair of strong alliances” (p.36). To this end, he suggested the supervisory working alliance as a change relationship in which mutual goals, task, and emotional connectedness facilitate professional psychotherapeutic growth for clinicians.

Efstation, Patton and Kardash (1990) advanced this one step further by applying the WAI to the evaluation of counselor supervision. They developed the Supervisory Working Alliance Inventory (SWAI) to measure the quality of the supervisory relationship. They concluded that the measure’s usefulness had implications for counselor training, specifically in rating supervisor effectiveness and informing the dyad of the ongoing dynamic processes in their change inducing relationship. This was supported in subsequent research as well (Ladany, Ellis, & Friedlander, 1999).

Advisory Working Alliance

The Advisory Working Alliance Inventory (AWAI) was developed by Schlosser and Gelso (2001) to extend Bordin’s working alliance concept to the advisor-advisee relationship. They hypothesized that an advising relationship shared some similarities with the clinical supervisory relationship in psychology. Therefore, they amended items

from the WAI and the SWAI to reflect advising and then added items for additional content. Their validation resulted in a three factor solution: Rapport, Apprenticeship, and Identification-Individuation. Similar to Bordin's working alliance concept: (a) Rapport reflects the degree to which bonds have formed to promote growth toward goals, in that the interpersonal relatedness of the advisor-advisee dyad facilitates change and development, (b) Apprenticeship reflects the task-oriented nature of the alliance in which professional development by task functions is the focus, and (c) Identification-Individuation reflects the degree to which the advisee identifies with the advisor or does not identify with the advisor. Together these factors may be interpreted for meaning as they relate to perceptions of the advising working alliance. To that end, Schlosser and Gelso (2001) suggested its utility to measure the advisory working alliance in advising dyads during the graduate training experience to determine the degree of relationship functioning to meet developmental goals.

It would appear that the AWAI has considerable value with regard to training. However, it must be valid across the population that it is intended to measure. Schlosser and Gelso (2001) developed and validated their Advisory Working Alliance Inventory on a sample of counseling psychology doctoral students from APA – accredited programs only. Although this initial sampling bore evidence for the usefulness of the AWAI among counseling psychology students, it does not address whether these advisory working alliance factors will apply to students other than counseling psychology students in their respective advisor-advisee relationships. Due to the limited sample (i.e., counseling psychology students only) used for AWAI's initial psychometric development; one cannot infer that the results would be applicable to a wider population

of psychology graduate students. Also, the limited research conducted on the AWAI means that opportunities to collect data and replicate findings have been nominal.

Therefore, more research is in order.

Coping among graduate students

Twenty-five percent of clinical psychology students reported depression during their graduate training. The estimated prevalence of seeking psychotherapy was reported in a range of 38% to 75%. Although personal growth was cited as a primary reason for seeking help, due to the high percentage of depression occurrence, speculation about whether the depression was related to stressors in the training environment was also posited (Holzman et al., 1996). The authors cautioned treating psychotherapists to be aware that the trainee's psychological issues may be induced or exacerbated by the emotional demands required when learning to practice psychotherapy. This resonated with earlier work by Guy, Stark and Poelstra (1988) who observed trainees' personal distress from clinical work may result in decreased ability to care for their clients. In studying the advisory working alliance, newly emerging emotional problems for students may be identified and intervened upon prior to any significant student psychological decompensation.

Heins et al. (1984) observed program-specific stresses and coping behavior differences among four groups of graduate students. Law, medical, and psychology students reported higher total stress scores than chemistry students. Psychology students reported higher economic stress, higher stress regarding future career, and more interference in their studies by personal crises than medical students, law students, and chemistry students. Relationship difficulties were cited as the primary crises for

psychology, medical, and law students, whereas chemistry students cited health concerns. Although spouses and significant others were identified as coping resources for all four student groups, seeking help from a “counselor or advisor” was reported twice as often by medical students than other students. No differences were observed among the four groups in seeking help from their professors. However, eighteen percent of the psychology students reported they would most likely seek help from a professor. Although it appears that psychology graduate students reported higher stress than other students, they also reported coping through connection with others, including their faculty. Could this professor be an advisor for the psychology graduate student?

Sandler & Barrera (1984) argued that effective social support could be stress buffering for students; however, the type of social relationship in which the social support is delivered can be interpreted as either helpful or harmful by the student. This is important to note in that graduate psychology programs may provide support, but may not clearly understand the dynamic within the supportive relationship. Therefore, attempts to cope via advising social support may or may not be helpful. A clearer understanding of the advising mechanism provided to students must be explored to determine the degree to which these relationships may mediate coping among psychology doctoral students.

It is interesting to note that psychology graduate student stress research has noted that those students without significant relationships in their lives reported higher stress than those students in supportive significant relationships (Hudson & O’Regan, 1994). Is it possible that the significance of the advising relationship in terms of working alliance

may facilitate coping and decrease perceived stress for the psychology graduate students?

In their study of stress and coping among clinical psychology students, Nelson et al. (2001) found that social support was utilized as a coping strategy, as well as self-care for students who were academically successful. Similarly, Dorff (1998) noted that psychology graduate students reported seeking peer support as their most frequent school-related coping strategy. Farber (1999) found that trainees are more likely to engage in personal therapy if they perceive that their professors value psychotherapy as a supportive tool during training. Similarly, Dearing, Maddux and Tangney (2005), in their study on help seeking in clinical and counseling students, found a positive relationship between students' perceptions of "favorable faculty views of students in therapy and student help seeking" (p. 326). Clearly, the students seek support via the influence of peers and faculty. If this were the tendency among psychology graduate students during training, then it would be fruitful to investigate the power of socially supportive relationships, such as the advising relationship, to determine its impact on student coping. To date, there has not been a single study conducted to review the issue of psychology graduate student coping in relation to the perceived quality of the advising relationship.

Graduate Students

Subspecialties.

Literature concerning psychology graduate students has noted differences and commonalities across the psychology disciplines (Royalty & Magoon, 1985; Ducheny et al., 1997; Tomeo, Arikawa, & Templer, 2000; Tryon, 2000). For example, psychology graduate students have been observed to respond similarly on measures of professional

development, especially in the area of ethics and societal principles. These similarities began to diverge around factors of perceived mentoring, academic research proficiency, and research skill acquisition (Ducheny et al., 1997). To this end, the clinical and counseling students reported more interpersonal and multirole effectiveness in their perceptions of professional development; whereas, non-clinical students (i.e., cognitive, school, developmental, social, experimental, general, health, industrial-organizational) reported more academic proficiency in terms of teaching, publishing, and grant writing with lower estimates of instruction regarding research oriented skills (Ducheny et al., 1997).

Differences have been noted by training model (i.e., Ph. D. versus Psy.D.) as well. Peterson (1985) discussed these training model differences in terms of work culture. Within psychology Ph.D. programs, a tendency for instituting a research culture is “created by the group of investigators who share the values of science...all in an environment that encourages inquiry” (p. 448). He contended that the culture of practice was more inherent to professional school psychology training programs (i.e., Psy.D.) in which students are exposed to elements of professional psychotherapy practice. He also noted that some schools attempted to blend the two cultures into scientist-practitioner models. If these differences exist then perhaps one would see a difference in how the advising relationship would manifest itself. Most notably is the proclivity for Psy.D. students to refer their clinical supervisor as their mentor or advisor; whereas, Ph.D. students typically refer to the research advisor as mentor or advisor.

If professional development factors are viewed differently among subspecialties of psychology doctoral students and training models, then measuring the quality of the

advisory working alliance may yield specific insights into the nature of this important relationship across varying disciplines. Ultimately, such information may be utilized in advisor-advisee discussions to further their efforts to develop the student.

This study extended the data of the AWAI by including the responses of graduate psychology doctoral students in varying applied-psychology disciplines and degree programs from both APA-accredited and non-APA-accredited programs. Ultimately, a broader sample from both APA and non-APA approved training programs may provide more generalizable representations of students' experiences and perceptions about the advisor/advisee relationship.

Gender.

There is a startling difference regarding gender among graduate psychology students in that 75% are female and 25% are male (APAGS, 2003). Schlosser and Gelso (2001) found this in their study with 72% female and 28% male respondents contributing to their results. However, these researchers did not find a significant gender difference in relation to the AWAI. Similarly, no gender differences were found between counseling psychology doctoral students in evaluation of the faculty mentor roles in research training (Hollingsworth & Fassinger, 2002).

Gender differences have been noted in terms of the students attracted to differing applied psychology trainings programs or to non-clinical programs in which more male than females have been noted pursuing non-clinical psychology programs. Higher perceived stress has been documented in several studies for female doctoral students (Cahir & Morris, 1991; Heins et al., 1984; Hudson & Regan, 1994; Nelson et al., 1997). Female clinical psychology students have been found to be more likely to succeed and to

use emotional venting as a coping strategy, but report higher levels of increased stress over coursework than their male counterparts (Nelson et al. 2001). Note that most of the prior research has been limited to a single psychology discipline sample.

In terms of the variation in responding on the AWAI, gender differences may be observed with the inclusion of a broader sample. In turn, interpreting the AWAI in regards to student coping and advisor/advisee relationship perceptions may deviate from previous research results due to the inclusion of a wider applied-psychology student sample.

Summary

This chapter reviewed the research literature pertinent to this study's purpose. It discussed the theory and variables of investigative interest. Specifically, it provided an overview of mentoring, advising, coping, working alliance, scale development associated to the population of interest, and psychology doctoral student variables of interest.

CHAPTER III

Methodology

This chapter describes the specifics regarding participants, measures, and procedures used in the study. Proposed instrument validity and reliability data will also be discussed. The study's design and the statistical analyses are discussed in relation to the hypotheses.

Research Design

This study is a non-experimental survey research design in which data is collected via the responses to three questionnaires: Demographic Sheet, the Advisory Working Alliance Inventory, and the Personal Resources Questionnaire. The main purpose of the study was to examine the association between coping resources of doctoral students in relationship to the perceived quality of the advisory working alliance. However, a second goal of the study was to verify the generalizability of the Advisory Working Alliance Inventory (AWAI) to a broader, more inclusive sample of applied-psychology doctoral students. Therefore, the study employed a cross-sectional approach in order to make group comparisons (i.e., counseling, school, clinical, neuropsychology).

Population

In this study, psychology doctoral students who are training in professional areas of psychology and who are student affiliate members of the American Psychological Association were of investigative interest. Specifically, doctoral students in applied-psychology subspecialties areas were sampled. These disciplines have been selected for study for two reasons: (a) the instrument being studied has only been validated using counseling psychology students from APA-approved programs only and (b) differences

between these groups have been cited in the literature which may affect the responses on the AWAI.

According to the American Psychological Association Graduate Student Association (APAGS), approximately 30,000 students are studying psychology at the doctoral level in the United States, with women comprising three-fourths of these students. Additionally, race/ethnicity for this national group is cited as: a) 4% African-American, b) 5% Asian, c) 78% Caucasian, d) 5% Hispanic, e) 1% Native American, f) 2.2% Other, 4% Multiracial, and g) .8% Unspecified. The sample of participants was drawn upon this national group profile and reflects similar demographics in terms of gender and race.

Participants

The participants group consisted of a randomly selected sample of American Psychological Association student affiliates at the doctoral-level of study through a mailing list supplied by APAGS. A simple random sampling technique (i.e., computer generated) ensured participants to have equal probability of being surveyed (Stangor, 1998). Inclusion criteria stated that students must be current doctoral-level psychology graduate students. Thus, master-level graduate students and Ph.D. graduates were excluded from the study. The rationale for the implementation of this exclusion criteria was due to the nature of the long term and close work alliance with faculty advisors during the doctoral psychology program and the current coping resources students employ while in training. Participation in the study was clearly delineated as voluntary. Participants gave informed consent by reading a cover letter (i.e., including implied consent), completing the packet of survey materials, and returning the packet to the

researcher). Demographic information including gender, ethnicity, age, psychology discipline, degree program, years in training program, length of advising relationship, and advisor assignment (i.e., choice versus assigned) were collected.

Seven hundred surveys were sent to a national sample of applied psychology doctoral students. Due to incomplete responses and exclusion criteria (e.g., Ph.D. graduate), 20 of the surveys were unusable for the analyses. Table 1 presents the obtained sample for the study, which comprised of 262 participants of whom 212 (80%) were female and 50 (20%) were male. This is slightly higher but consistent with APAGS (2002) report that graduate student membership was approximately 75% female and 25% male. Participants ranged in age from 22 years to 68 years, ($M = 31.3$, $SD = 8.31$) The overall ethnic makeup of the sample was as follows: 4.6% African American ($n = 12$), 1.5% Afro-Caribbean ($n = 4$), 0.4% African ($n = 1$), 4.2% Asian/Pacific Islander ($n = 11$), 3.1% Asian/East Indian ($n = 8$), 5.7% Latino (a)/Hispanic ($n = 15$), 0.4% Native American ($n = 1$), 77.9% Caucasian ($n = 204$), 1.5% Multiracial ($n = 4$) and 0.8% Other ($n = 2$). Respondents who indicated Other did not specify any additional information about their ethnicity. Of note, the largest percentage of the sample was Caucasian. This figure is consistent yet slightly higher than APAGS (2002) data in which their membership was 68% Caucasian. This sample's ethnicity data reflected APAGS demographic data closely. In which APAGS reported the following: a) 5% African-American, b) 5% Asian, c) 68% Caucasian, d) 5% Hispanic, e) 2% Native American, f) 3% Other, and g) 12% Unknown.

With respect to degree programs, the participants comprised of 59.2% Ph.D., 40.5% Psy.D., and 0.4% Ed.D. students. Applied-psychology disciplines were compiled

as follows: 74.5% Clinical, 12.6% Counseling, 11.1% School, 0.8% Child clinical, and 1.1% Neuropsychology. Different percentages were reported by APAGS as: 60% Clinical, 22% Counseling, 6% Child clinical, and 8% School. There were no numbers reflective of Neuropsychology for APAGS. Twenty-eight participants (10.7%) endorse being in non-APA-accredited program, while 233 (88.9%) reported enrollment in an APA-accredited program.

In terms of years in training program, most student participants reported being in their fourth year of training (22.9%), followed closely by those who were currently in their internship year (21.4%). The remaining students were in the following year of training: 1.1% 1st year, 11.5% 2nd year, 19.5% 3rd year, 10.7% 5th year, and 13% ABD. Additionally, most students were full-time students (87.8%) compared to only 11.5% part-time students.

Participants were asked about their program stage, 119 (45.5%) reported being in the coursework stage of their training. Twenty-two students (8.4%) stated they were in the proposal stage, 46 (17.6%) students were in the dissertation stage, and 29 (11.1%) were in the internship stage. Forty-six of the participants revealed they were in various combinations of stages (e.g., dissertation defended/internship ongoing). See Table 1 for specific categories and respective frequencies.

Table 1

Table of Frequency Distributions of Demographic Variables

Variable	Frequency	Percent
Gender		
Female	212	81.0
Male	50	19.0
Ethnicity		
African American	12	4.6
Afro-Caribbean	4	1.5
African	1	0.4
Asian/Islander	11	4.2
Asian/Indian	8	3.1
Latino/Hispanic	15	5.7
Multiracial	4	1.5
Native American	1	0.4
Caucasian	204	77.9
Other	2	0.8
Degree		
Ph.D.	155	59.2
Psy.D.	106	40.5
Ed.D.	1	0.4
Discipline		
Clinical	195	74.4
Counseling	33	12.6
School	29	11.1
Child Clinical	2	0.8
Neuropsych	3	1.1
Program type		
APA	233	88.9
Non-APA	28	10.7
Training year		
1 st year	3	1.1
2 nd year	30	11.5
3 rd year	51	19.5
4 th year	60	22.9
5 th year	28	10.7
Internship year	56	21.4
ABD	34	13.0
Participation		
Full-time	230	87.8
Part-time	30	11.5

Table 1

Table of Frequency Distributions of Demographic Variables (continued)

Variable	Frequency	Percent
Program stage		
Coursework	119	45.4
Proposal defense	22	8.4
Dissertation (active)	46	17.6
Dissertation defense	2	0.8
Internship (active)	29	11.1
Internship (ended)	11	4.2
Courses/Internship	2	0.8
Proposal/Internship	1	0.4
Dissertation defense/ Internship (active)	3	1.1
Dissertation (active)/ Internship (active)	17	6.5
Dissertation (active)/ Internship (ended)	10	3.8

Research Instruments

The instruments used in this study include the *Advisory Working Alliance Inventory* (AWAI) (Schlosser & Gelso, 2001), the *Personal Resources Questionnaire* (PRQ) (Osipow, 1981) and a demographic questionnaire.

Advisory Working Alliance Inventory. The AWAI was developed by Schlosser and Gelso (2001) and measures the working relationship between the advisor and advisee. The AWAI is a 30-item self-report inventory in which respondents indicate their agreement on a 5-point Likert scale (i.e., 1= strongly disagree to 5= strongly agree). The AWAI consists of three subscales: (a) Rapport, (b) Apprenticeship, and (c) Identification-Individuation. There are 11-items in the Rapport subscale in which the interpersonal relationship between the advisor and advisee is measured. High scores indicate a strong interpersonal connection within the advisor-advisee alliance, whereas low scores indicate a weak or strained interpersonal relationship. The Apprenticeship subscale, consisting of 14 items, measures the degree to which the advisor facilitates the advisee's professional development. High scores indicate an advising alliance in which the advisee perceives that the advisor facilitates appropriate professional development and learning. Low scores indicate a working alliance that is considered unproductive and non-facilitative. The five-item Identification-Individuation subscale indicates the degree to which the advisee wishes to identify or not identify with his or her advisor. The items on the subscale are reversed scored; therefore, high scores indicate a strong identification with the advisor. Low scores indicate a weak identification with the advisor or separation of identity from the advisor. Internal consistency estimates were evaluated for AWAI total

and subscales (scores for coefficient alpha ranged between .86 and .90). Test-retest reliability estimates were satisfactory, with Pearson r correlations between .75 and .92.

Personal Resource Questionnaire (PRQ), (Osipow, 1981), a domain of the *Occupational Stress Inventory*, is a 40-item, 5-point Likert-type self-report measure of perceived coping resources. Responses are indicated from “rarely” (1) to “most of the time” (5) on four subscales (Recreation, Self-care, Social Support, Rational/Cognitive) that assess several aspects of coping resources. The Recreation subscale measures the extent to which the individual makes use of and derives pleasure/relaxation from regular recreational activities, the Self-care subscale measures the extent to which the individual regularly engages in personal activities to reduce or alleviate chronic stress, the Social Support subscale measures the extent to which the individual feels support and help from others, and the Rational/Cognitive coping subscale measures the extent to which the individual possesses and uses cognitive skills in the face of work-related stresses. Normative scales are reported as T-scores. High scores indicate highly developed coping resources and lower scores reflect deficient coping skills. Reliability estimates for the PRQ was reported to be .89 (Osipow, 1998). Note that participants were instructed to apply the term “work” in the PRQ to their perceptions of the work in the graduate school context.

Demographic Questionnaire. A demographic questionnaire was developed by the researcher to acquire information regarding the following indices: age, gender, race/ethnicity, degree sought, psychology discipline, training program APA accreditation status, duration of program enrollment, advisor acquisition, advisor assignment, and

length of time with current advisor. Much of the data was collected for exploratory purposes.

Procedure

The participants, current psychology doctoral students, were selected randomly through an APA mailing list of graduate affiliates nationally. A research protocol was developed to survey graduate students on the constructs of interest. Prior to any survey materials being distributed a pre-notification postcard was mailed to prospective participants. This has been shown to enhance return rate (Weathers, Furlong, & Solorzano, 1993). Each potential participant received a packet that includes a letter of the study's intent (including implied informed consent) and the measures. All survey materials were clearly labeled. The cover letter stated the intent of the study is to examine the relationship between advisors and advisees as it relates to coping resources. Potential participants were informed that the completion and return of the survey materials implies a voluntary consent to participate in the study. Questionnaires were counterbalanced to avoid any ordering effects on responding (Stangor, 1998). A stamped return envelope was included in the packet in an effort to increase respondent return.

An incentive was offered in which the participants were informed that upon completion and return of the survey, they would be eligible, by lottery, to win a gift certificate redeemable at a national bookstore. Participants were instructed to complete the lottery response card and return it by mail separately from the returned surveys packets to ensure anonymity of survey responses. The lottery prizes consisted of four \$25 gift certificates and each entry would receive four chances to win. The lottery was

held after the study's data collection stage and four gift certificates were sent to the winning recipients.

Follow-up reminder postcards were sent to those who did not respond two weeks after the packet mailing to improve return rate (Weathers et al., 1993). The three mailings (i.e., announcement cards, survey packets and follow-up cards) yielded an overall return rate of 40%. Due to 20 unusable, incomplete data sets, the sample ultimately tallied 262 with a usable return rate of 37%.

Participants were able to request the results of the study by writing the researcher after the study was completed. Each packet was identified with a numerical code after the packet was returned. Participant anonymity was ensured by overtly requesting that the participants to avoid any identification by name or by any other descriptive means.

Returned data was held by the researcher in a locked file cabinet.

Data Analysis

Five statistical analyses were conducted for this study consisting of (a) descriptive statistics, (b) Canonical Correlation Analysis, (c) Confirmatory Factor Analysis, (d) Exploratory Factor Analysis, and (e) Multiple Analysis of Variance.

For demographic purposes, means, standard deviations, ranges, and percentages were calculated to describe the sample population in terms of gender, ethnicity, age, discipline, degree program, and other variables contained in the Demographic Sheet. Possible gender response difference on the measures was explored by means of multiple analysis of variance (MANOVA) rather than by a series of t-test to avoid elevation of Type I error (Tabachnick & Fidell, 1996).

Due to the goal of this study to examine the relationship between the predictor variables and criterion variables, a Canonical Correlation Analysis was computed to test the relationship between the AWAI subscales and the PRQ coping resources subscales. Specifically, this analysis was utilized to relate advising working alliance factors (Rapport, Apprenticeship, and Identification-Individuation) with coping resources (Recreation, Selfcare, Social Support, and Rational-Cognitive).

Multivariate analysis of variance (MANOVA) was performed on the AWAI factors to determine whether the advisor assignment grouping variables (e.g., student choice versus program assigned) affect AWAI responses.

Confirmatory Factor Analysis (CFA) was computed to test the stability of the proposed factor model and construct validity of the AWAI on a broader sample of psychology doctoral students. Schlosser and Gelso (2001) noted that further psychometric validation of the instrument was needed, especially due to the observed high intercorrelations between the AWAI total score and the subscales suggesting a possible general alliance factor. An Exploratory Factor Analysis (EFA) was conducted to explore possible emergent factors on the applied-psychology student sample.

Additional exploratory analyses were performed on demographic variables of interest as an exploratory analysis of the current data set and to derive research questions for a future program of research.

Summary

This chapter reviewed methodological issues pertaining to the study. Additionally, methods of participant recruitment and characteristics were described. Measures utilized in this study were: (a) demographic questionnaire, (b) the AWAI, and

(c) the PRQ. Procedures for measure administration were outlined in detail. Data analysis relevant to the study was described.

CHAPTER IV

RESULTS

Introduction

This section will report the results of the statistical analyses conducted from the obtained 262 participants in the study. In particular, the statistical analyses presented in this chapter will be comprised of Descriptive Statistics, Canonical Correlation Analysis, Confirmatory Factor Analysis, Exploratory Factor Analysis (Principal Components Analysis) and Multivariate Analysis of Variance.

Descriptive Statistics

Responses were gathered from 262 participants on three separate measures: the Demographic Questionnaire, the Advisory Working Alliance Inventory (AWAI-student version) and the Personal Resource Questionnaire (PRQ). Descriptive statistics using SPSS version 14.0 were generated on the demographic variables, as well as on the scores of the AWAI and PRQ. Means, a measure of central tendency, and standard deviations were calculated for the AWAI, PRQ and demographic variables with continuous data (see Table 2). Advising demographic variables were computed as frequency distributions as well (see Table 3). A separate table was generated to reflect the reasons for advisor change on a subset of respondents who have had multiple advisors (See Table 4).

Other demographic variables of interest were described in Table 3. Of the 262 respondents, 259 reported having an advisor; however three did not due to recent advisor reassignment. Approximately two-thirds (63%) of the sample reported they chose their own advisor, whereas a little more than one-third (37%) had advisors assigned to them.

In terms of length of advising relationship, 17% the study's students reported being with their advisor for 6 months to 1 year, 19% reported 1 to 2 years, 34% reported 2 to 3 years, 20% for 4 to 5 years, and 10% reported being with their advisor for more than 5 years.

In terms of frequency of advising meeting, 22% of the students reported they meet with their advisor once per semester. Sixteen percent of the sample stated they met with their advisor once a week and 27% reported going to advising session at least once a month to once every two months. Eleven percent stated meeting with the advisor on an as needed basis. Of particular note, nearly 7% observed they rarely met with their advisor, some noting 1 to 2 times per year or as infrequent as 2 times in 4 years. Some students (3.4%) stated meeting with advisor by email or phone only.

In response to the question "Have you had more than one advisor?" 42% of the sample endorsed having more than one advisor during their training career. Fifty-eight percent reported having only one advisor to date. Table 4 details the specific reasons for advisor changeover. In particular, staffing changes in terms of faculty resignations (i.e., leaving the university) accounted for (25.2%) of the reasons for advisor change. Selecting a different advisor due to research interests and match accounted for 17.1%. Many students (9%) reported switching to their dissertation chair as their primary advisor. Seven percent reported their advisor's role changed within the department thereby forcing the student to reselect a new advisor. Personality conflict comprised 7.2% of the sample for advisor changeover. Five percent reported switching due to an unsupportive advisor. Some students (5.4%) endorsed having more than two different advisors during their training program. Students stated other reasons, such as

sabbatical/leave (2.7%), program rotates advisors (1.8%), group advising format (0.9%), student probation (0.9%), student change to another program (0.9%), training program reassigned student to different advisor (1.8%), program faculty share advising responsibility (4.5%), advisor retired (4.5%) or advisor died (1.8%). Four of the 111 students (3.6%) reported no reason for advisor change.

Exploratory Analyses of Gender Differences

A multivariate analysis of variance (MANOVA) was utilized to compare the respective scores of males and females on the AWAI and PRQ measures to determine whether significant differences exist between the two groups. A MANOVA was selected in opposition to a series of t-tests on the same sample to avoid the elevation of possible Type I error (Tabachnick & Fidell, 1996). Non-significant *F*-scores revealed no group gender differences in Total AWAI scores and its subscale scores of Rapport, Apprenticeship, and Identification-Individuation (see Table 5). Additionally, there were no significant group differences in gender for Recreation, Selfcare and Rational Cognitive. However, a statistically significant gender difference in responding was noted for one subscale of the PRQ, Social Support, ($F [1, 260] = 5.8, p < .01$) with males reporting higher levels of perceived social support than females. This finding is contrary to Nelson et al.'s (2001) research which observed that female clinical psychology graduate students utilized verbal emotional expression (e.g., venting) as primary coping style and felt greater support from family and friends. The current finding was based in a much larger national sample ($N= 262$) versus the prior research sample at a single university ($N= 53$).

Table 2

Table of Means and Standard Deviations of Age, AWAI and PRQ

Variable	Mean	Standard Deviation
Age	31.34	8.31
AWAI Rapport	46.11	7.66
AWAI Apprenticeship	48.01	10.85
AWAI Identification- Individuation	17.39	3.80
AWAI Total	111.52	19.79
PRQ Recreation	49.00	9.73
PRQ SelfCare	53.63	10.20
PRQ SocialSupport	53.90	7.08
PRQ RationalCognitive	50.32	8.21

Note. AWAI = Advisory Working Alliance Inventory, PRQ = Personal Resources Questionnaire.

Table 3

Table of Frequency Distributions of Advising Demographic Variables

Variable	Frequency	Percent
Advisor acquired		
Yes	259	98.9
No	3	1.1
Advisor assignment		
By choice	165	63.0
Assigned	96	36.6
Duration of advising relationship		
6 mos-1yr	44	16.8
1yr – 2yrs	49	18.7
2yrs- 3yrs	88	33.6
4yrs- 5yrs	52	19.8
< 5years	27	10.3
No advisor	1	0.4
Frequency of advising		
Multiple times/week	2	0.8
Weekly	43	16.4
Bi-weekly	31	11.8
Monthly	41	15.6
Bi-monthly	31	11.8
Once per semester	58	22.1
As needed	28	10.7
Rarely-never	6	2.3
1-2 times per year	8	3.1
2 times in 4 years	2	0.8
Work submission only	2	0.8
Other (email, phone)	9	3.4
Multiple Advisors		
Yes	111	42.4
No	151	57.6

Table 4

Table of Frequency Distributions of Reasons for Advising Change

Variable	Frequency	Percent
Reasons for Advisor Change		
More than 2 advisors	6	5.4
Advisor's role changed	8	7.2
Sabbatical/Leave	3	2.7
Program rotates advisors	2	1.8
Student switched program	1	0.9
Student probation	1	0.9
Personality conflict	8	7.2
Group format advising	1	0.9
Program assigned	2	1.8
Resigned	28	25.2
Unsupportive advisor	6	5.4
Research match	19	17.1
Shared Advising Responsibility	5	4.5
Advisor death	2	1.8
Dissertation chair	10	9.0
Retired	5	4.5
No reason given	4	3.6
Total	111	100

Table 5

Table of Means and Standard Deviations for AWAI and PRQ by Gender

Scale	Females (N= 212)		Males (N= 50)		Totals (N=262)		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Total AWAI	112.17	19.95	108.78	19.02	111.52	19.79	1.18
Rapport	46.27	7.62	45.48	7.90	46.12	7.66	.42
Apprenticeship	48.24	11.00	47.04	10.21	48.01	10.85	.49
Identification- Individuation	17.66	3.82	16.26	3.54	17.39	3.80	5.57
PRQ Recreation	48.38	9.96	51.64	8.26	49.01	9.73	4.59
PRQ Selfcare	53.04	10.36	56.16	9.21	53.63	10.20	3.82
PRQ Social Support	53.40	6.95	56.06	7.29	53.90	7.08	5.82*
PRQ Rational Cognitive	49.83	8.20	52.42	8.00	50.32	8.21	4.07

Note. * $p < .05$

Recreation, Selfcare, Social Support and Rational Cognitive are subscales of the Personal Resources Questionnaire (PRQ). Rapport, Apprenticeship, Identification- Individuation are subscales of the Advisory Working Alliance Inventory (AWAI).

Table 6

Pearson Correlation Coefficients between the AWAI and the AWAI subscales and the PRQ subscales

	PRQ SocSup	PRQ RatCog	PRQ Recreat	PRQ SelfCare
AWAI	.16*	.10	.05	.06
Rapprt	.17**	.11	.06	.06
Apprentice	.15*	.10	.07	.04
Identif	.05	-.01	.05	.09

Note. N = 262. AWAI = Advisory Working Alliance Inventory; Rapprt = Rapport; Apprentice = Apprenticeship; Identif = Identification-Individuation; PRQ = Personal Resources Questionnaire; SocSup = Social Support; RatCog = Rational Cognitive; Recreat = Recreation; SelfCare = Self Care. ** = $p < .01$.

Analyses of Hypotheses

Three statistical tests: Canonical Correlation Analysis (CCA), Multiple Analysis of Variance (MANOVA) and Confirmatory Factor Analysis (CFA) were performed on the data to test the hypotheses proposed in this study.

Advising Relationship and Coping

To test Hypothesis I, a Canonical Correlation Analysis (CCA) was computed by SPSS 14.0 to examine the salient relationships between two sets of variables. The first stated that advisory working alliance variables (Rapport, Apprenticeship, Identification-Individuation) will be significantly related to coping resource variables (Recreation, Selfcare, Social Support, Rational Cognitive). Therefore, scores on Rapport, Apprenticeship and Identification-Individuation will indicate a positive relationship to coping resources.

The goal of CCA is to produce linear combinations of two sets of variables that maximize the correlations between them. As noted by Thompson (2004), CCA “can best honor the nature of reality that most researchers want to study...where most effects have multiple causes and most causes have multiple effects” (p. 285). By considering all the variables simultaneously, one can gain an understanding of how each contributes to the other. In particular, this study attempted to explore the relationship between one set of predictor variables pertaining to advisory working alliance (Rapport, Apprenticeship and Identification-Individuation) with a criterion set of variables reflecting personal coping resources (Recreation, Selfcare, Social Support, and Rational Cognitive).

The canonical correlation analysis produced three pairs of canonical variables, also known as canonical variates. Canonical variates are uncorrelated with each other.

The second canonical correlation maximizes the correlation between the two sets of variables once the variance of the first canonical variable pair is removed.

The first canonical correlation was .25, the second was .11 and the third canonical correlation was .10. When taken together, the canonical correlations were statistically significant (Chi square = 22.22, $df = 12$, $p = .035$). However, the canonical correlation for the second canonical variate after the effect of the first canonical variate was removed did not yield a significant result (Chi square = 6.06, $df = 6$, $p = .416$). Furthermore, a non-significant result was found for the third canonical variate after the first and second canonical variates were removed (Chi square = 2.70, $df = 2$, $p = .259$). Therefore, only the first canonical variate may be interpreted.

The first canonical variate was characterized by high positive loadings on Rapport ($r = .73$) and Social Support ($r = .72$). Medium positive loadings were noted on Rational Cognitive ($r = .64$) and Apprenticeship ($r = .57$). The remaining variables (Identification-Individuation, Recreation, and Selfcare) failed to meet the minimum criteria of .30 or greater for interpretation (see Table 7). These results suggest that doctoral psychology students' perceptions of Rapport and Apprenticeship in the advisory working alliance are positively related to their perceptions of coping in terms of Social Support and Rational Cognitive ability. The squared canonical correlation for this pair was .06 suggesting that the relationship is small. Therefore, only part of the Hypothesis I was supported by Rapport and Apprenticeship positively relating to Social Support and Rational Cognitive ability. No relationship was found for Identification- Individuation, Recreation and Selfcare.

It is not surprising that two of the three AWAI variables (Rapport and Apprenticeship) were associated with higher scores on the coping resources variables of Social Support and Rational Cognitive ability. Many items in the Rapport subscale certainly reflect an underlying theme of social support in the advisor-student dyad. Similarly, items in the Apprenticeship subscale tend to reflect task- and goal-oriented elements within the advisory working alliance that resonate with the student's Rational Cognitive ability to use cognitive skills to deal with work-related stress.

Advisor Assignment

A Multiple Analysis of Variance (MANOVA) was conducted for Hypothesis II, which stated that students who chose their advisors versus students who did not choose their advisors would report higher scores on the AWAI and the AWAI subscales. In terms of advisor assignment, in which doctoral psychology students endorsed either choosing their own advisor or having an advisor assigned to them by program faculty, statistically significant group differences were observed on Total AWAI score ($F [1, 261] = 18.22, p < .01$), Apprenticeship ($F [1, 261] = 24.65, p < .01$), Rapport ($F [1, 261] = 8.11, p < .01$), and Identification-Individuation ($F [1, 261] = 5.18, p < .05$). These results suggest that students who choose their advisor reported higher levels of rapport, apprenticeship, identification-individuation, and overall advisory working alliance than their "advisor- assigned" counterparts. These results are consistent within the body of mentoring literature in which protégés perceive more professional development benefits from their mentoring relationships when they have chosen the mentor (Fagenson-Eland et al., 1997; Ragins & Cotton, 1999; Schlosser et al., 2003).

Table 7

Correlations and Standardized Canonical Coefficients between Coping Resource Variables and Advisory Working Alliance Variables

Variable	<u>First canonical variate</u>	
	Correlation	Canonical coefficient
Coping resources		
Recreation	-.07	-.40
Selfcare	-.01	-.30
Support	.72	.75
Rational Cog	.64	.66
AWAI		
Rapport	.73	1.10
Apprenticeship	.57	.28
Identification- Individuation	-.05	-.90

AWAI Factor Structure Stability

The present confirmatory factor analysis model (see Figure 1) was specified via Structural Equation Modeling (SEM) and analyzed using AMOS version 6.0 in an effort to test Hypothesis III in this study. Hypothesis III stated that the factors underlying the Advisory Working Alliance Inventory would remain psychometrically stable across a cross section of applied psychology doctoral students. The confirmatory factor analysis will demonstrate that the proposed three-factor model will fit the obtained data.

A Chi-square was conducted to evaluate the significance of covariances among the measured variables that were not accounted for in the model. Therefore, the chi-square goodness-of-fit statistic tests the null hypothesis in which the variance-covariance matrix for the freed model of parameters equals the variance-covariance matrix of the specified model. Of interest, when interpreting the chi-square value for model testing, a researcher hopes to not reject the null hypothesis thereby interpreting that the specified model fits the data.

A Goodness-of-Fit Index (GFI) was computed to examine the difference between the sample covariances and the implied covariances. In particular, GFI determines the extent to which the data's obtained factor structure fits the hypothesized factor structure model. In order for a factor structure to be deemed a "good fit" with the data, a goodness-of-fit index must meet or exceed .90. Along with GFI, the Root Mean-square Residual (RMR) was calculated to evaluate the average residual value for the variance-covariance matrix reproduced by the hypothesized model and the actual variance-covariance matrix. Byrne (1998) has suggested that a value of .05 or less designates a good-fitting model.

A Root Mean Square Error of Approximation (RMSEA) and an Adjusted Goodness-of-Fit Index (AGFI) were implemented for this model study as well. The RMSEA provides information about the estimated population fit to the data; as such, values approaching zero are desirable and a values of .08 or less is considered a reasonable error of approximation. The AGFI simply adjusts the GFI for the number of degrees of freedom used during the model estimation. The range for AGFI is zero to one, with one noting perfect fit. Acceptable values for good fit must been .90 or greater.

For the above indices, values for three models are presented. The models are: the default model (hypothesized & tested model), saturated model (perfect model), and independence model (worst model). The default model's values will be compared to the values of the saturated model and the independence model (see Table 8).

Goodness-of-Fit Indices

Chi-square Test. The default model obtained chi-square value was 1082.745, $df = 402$, $p < .001$, and was compared to the saturated model's chi-square value of 0.00, $df = 0$, $p > .05$ and the independence model's chi-square value of 4020.567, $df = 435$, $p < .001$. The chi-square p-value was significant for the default model, which suggests that the model does not fit the data. Note that a non-significant p-value for chi-square suggests that the model fits the data adequately. Since the default model yielded a significant p-value then it is interpreted that the hypothesized model does not fit the data adequately.

Goodness-of-fit index (GFI). A Goodness-of-fit index of .75 was computed for the default model, as compared to 1.00 for the saturated model and .218 for the independence model. Recalling the minimum acceptance criteria of .90 to indicate "good

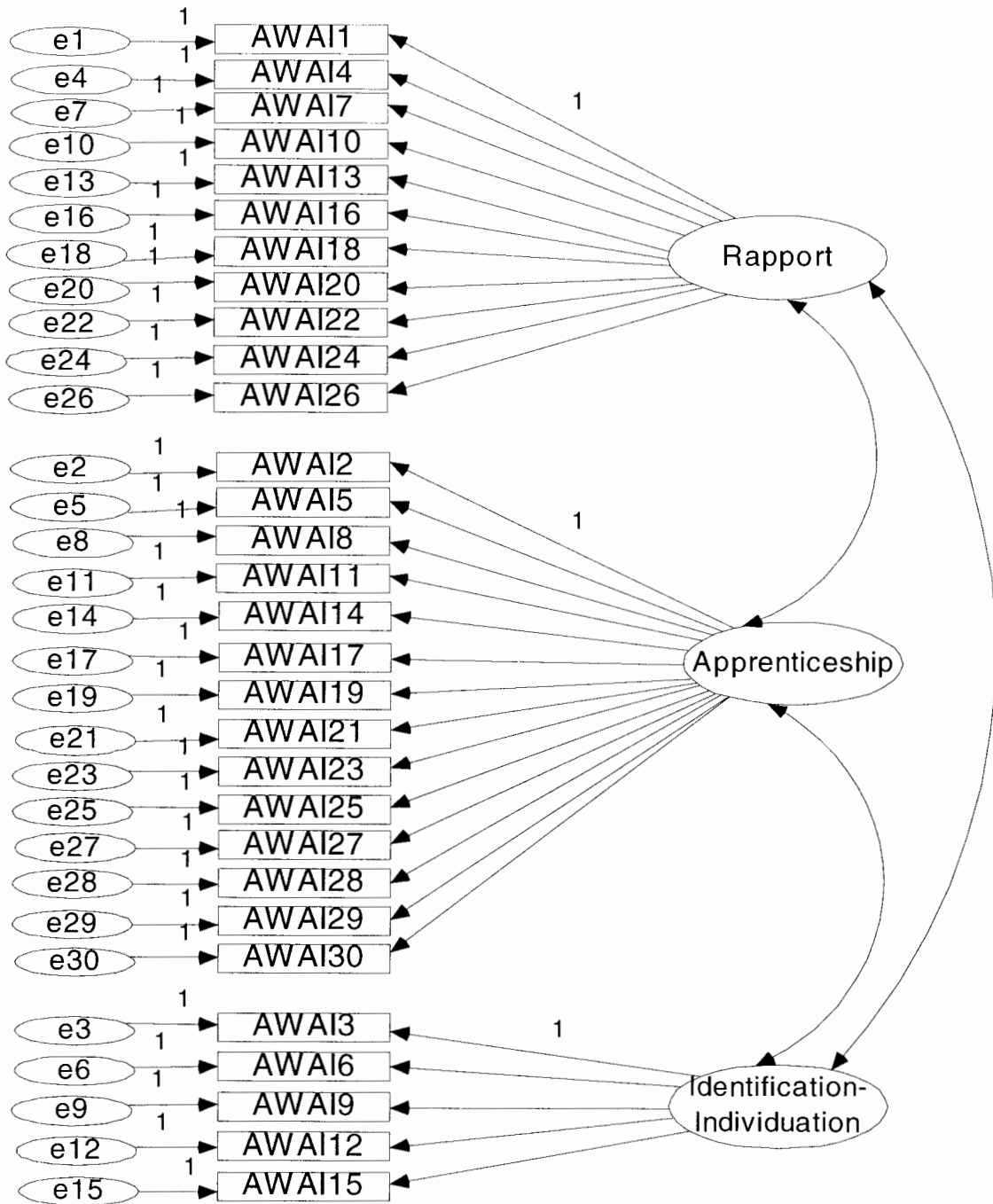
fit” by the GFI, the obtained value falls below the acceptance level and therefore indicates the default model’s lack of fit with the data set

Root Mean-square Residual (RMR). A Root Mean-square Residual of .102 was calculated for the default model. RMR values of .000 and .428 were obtained for the saturated model and the independence model, respectively. With the criteria of good model fit set a .05 or less, it appears that the default model RMR value approximates the saturated model value more than the independence model value, but does not yield a “good fit”.

Root Mean Square Error of Approximation (RMSEA). The default model RMSEA value was .086 in relation to 0.00 and .178 for the saturated and independence models, respectively. Byrne (1998) noted that a RMSEA value of .08 or less is considered a reasonable error of approximation. As such, it appears the default model approximates the reasonable error of approximation but does not satisfy the minimum criteria.

Adjusted Goodness-of-Fit Index (AGFI). An Adjusted Goodness of Fit value of .712 was obtained for the default model. GFI values of 1.00 and .164 were obtained for the saturated model and independence model, respectively. The AGFI for the default model failed to meet the minimum criteria of .90 to qualify the model for adequate fit.

Hypothesis III was not supported by these results. The specified, extant three-factor model did not fit the obtained data. It may be that the AWAI factor structure may differ when given to broader sample of applied-psychology doctoral students than with counseling doctoral students alone.



Hypothesized path model for AWAI-Student Version

Figure 1. Hypothesized Path Model for AWAI-Student Version

Table 8

Confirmatory Factor Analysis Summary of Models

	Chi-square	GFI	AGFI	RMR	RMSEA
Degrees of Freedom	403				
Alpha level (p)	0.00				
Default Model	1082.74*	.750	.712	.102	.086
Saturated Model	0.00	1.00	1.00	.000	.000
Independence Model	4020.567*	.218	.164	.428	.178

Note. GFI= Goodness-of-fit index, AGFI= Adjusted Goodness-of-fit index, RMR= Root

Mean Residual, RMSEA = Root Mean Square Error of Approximation

Exploratory Factor Analysis (Principal Components Analysis)

Due to poor model fit resulting from the Confirmatory Factor Analysis, a supplemental analysis, by Principal Components Analysis, was performed on the obtained data to determine the underlying factor structure of the AWAI with the current sample of applied-psychology doctoral students. A Bartlett's test of sphericity was calculated to determine if the obtained data set was normally distributed. Results of the test (chi-square = 3853.685, $p < .001$) suggested the data was normal in distribution and therefore a factor analysis procedure could be utilized. A Kaiser-Meyer-Okin (KMO) measure of sampling adequacy was also computed to test the amount of variance within the data that could be explained by factors. KMO values greater than 0.6 are acceptable, but values closer to 1.0 are considerably better. The KMO value of .93 was more than acceptable for the current data set. With the criteria for sampling adequacy met, the implementation of a factor analysis procedure was deemed appropriate on the data set.

Utilization of Kaiser's criterion for inventory items with eigenvalues equal to one or greater were kept for further factor analysis. The purpose of eigenvalues is to explain the proportion of variance that is accounted for by each factor. Items with factor loadings equal to or greater than .40 were also used for further analysis. Varimax rotation was used to yield simple structure. A total of six possible factors were extracted by the analysis with four factors containing all items with loadings greater than .40 (see Table 9).

Although the six-factor solution accounted for 61% of the variance, in examination of the six-factor solution, with eigenvalues greater than 1.0, the sixth factor

contained only two items that did not reveal a common construct. Therefore, a six-factor solution was tabled in favor for an examination of a 2-factor, 3-factor, 4-factor and 5-factor solution.

A scree plot was produced during the exploratory factor analysis and represented a graphical depiction of the eigenvalues in decreasing order as it relates to the possible number of components in a measure. Scree plots serve as an alternative to the “eigenvalues greater than 1.00” criteria to decide which components should be extracted and retained for rotation in order to arrive at a final solution. The point at which the scree breaks or “elbows” denotes that components above the break are to be retained for analysis. In this study, the scree plot revealed four emergent factors (see Figure 2).

All factor solutions were analyzed and upon inspection the 4-factor solution was deemed most appropriate to describe the data when in conceptual combination with the proportion of total variance explained by the solution and the proportion of variance accounted for by each factor in the solution.

Factor Loadings.

Four emergent factors were indicated by eigenvalues greater than 1.0, with 54% of the total variance explained. The items on the AWAI-student version yielded factor loadings of .40 or greater as follows: Factor 1, Items 1, 10, 13, 15, 16, 18, 20, 24, 26; Factor 2, Items 5, 11, 14, 17, 21, 28, 29, 30; Factor 3, Items 2, 8, 19, 25; and Factor 4, Items 3, 6, 9, 12, 23. In reviewing the emergent factors, the represented themes appear to be similar to the earlier factor results found by Schlosser and Gelso (2001) with one notable exception as it might suggest response differences by training model (i.e., degree

program). The current themes reflected from the 4-factor solution were Rapport (9 items), Task Focus (8 items), Apprenticeship (4 items), and Identification-Individuation (5 items). Four items (Items 4, 7, 22, 27) were not included in the 4-factor solution due to minimal factor loadings, which failed to meet the .40 criteria for inclusion. The proportion of variance accounted for by each factor was Rapport (16%), Task Focus (15%), Apprenticeship (13%) and Identification-Individuation (10%). Table 7 represents the factors with item loadings.

The nine items under Rapport, with factor loadings ranging from .45 to .74, suggest the degree to which the advisor and the student interpersonally connect in their relationship. High scores indicate a strong interpersonal connection, whereas low scores indicate a weak interpersonal connection.

Eight items were revealed in the Task Focus subscale, with factor loadings ranging from .52 to .77. Items under the Task Focus subscale pertain to the degree to which the advisor helps the student with to stay focus on the requirements of the graduate program, as well as their work together. High scores indicate a highly effective advisory working alliance in terms of the facilitation of the student's development and progress through his or her graduate program. Low scores indicate an inefficient and unproductive advisory working alliance that does not meet the task-related needs of the student to move through the training program.

The Apprenticeship subscale consisted of 4 items, with factor loadings ranging from .67 to .84. Items in this subscale reflect the degree to which the student perceives himself or herself as an apprentice to the advisor. High scores indicate an advising working alliance in which the student feels the advisor facilitates appropriate professional

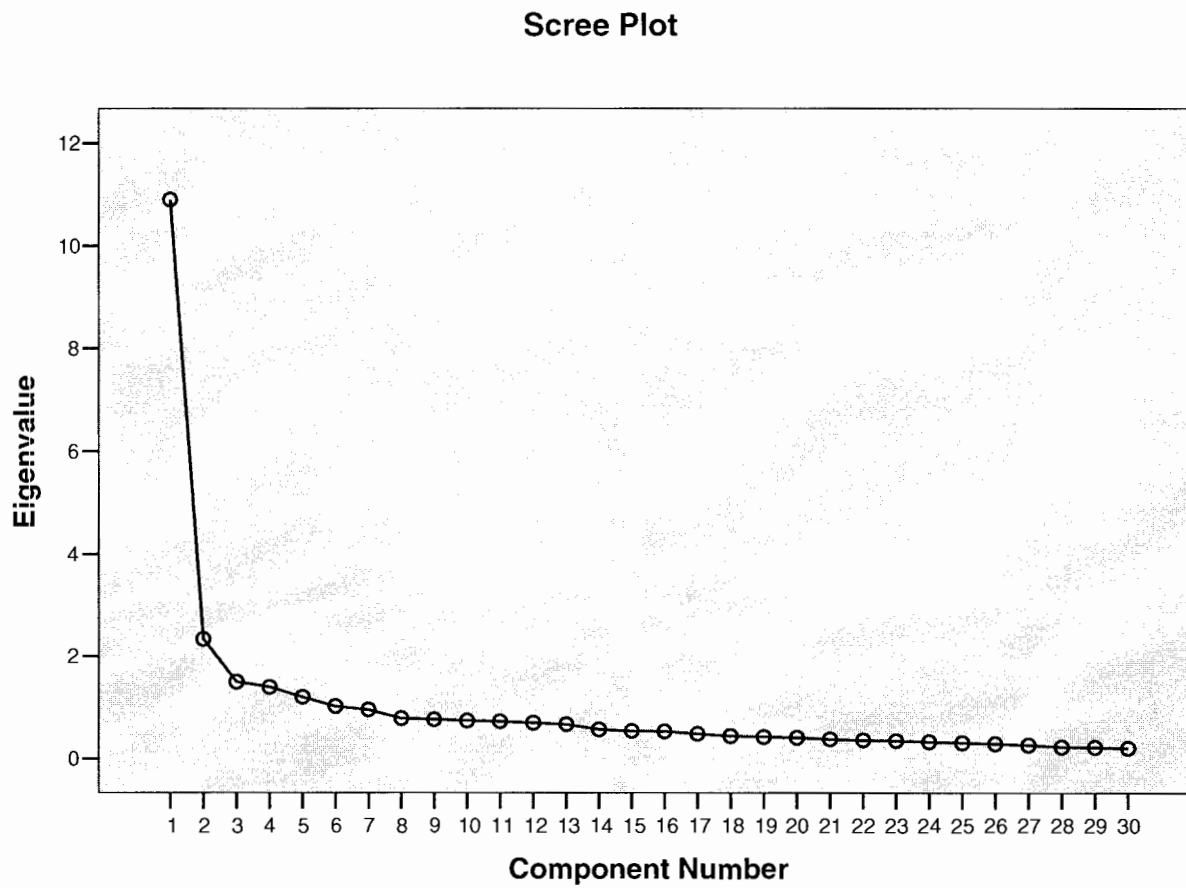


Figure 2. Scree Plot Depicting 4-Factor Extraction

Table 9

Advisory Working Alliance Inventory (AWAI) Items and Factor Loadings

Factor	Factor Loading
Factor 1 (Rapport)	
AWAI 1	.708
AWAI10	.590
AWAI13	.720
AWAI15	.604
AWAI16	.511
AWAI18	.743
AWAI20	.450
AWAI24	.612
AWAI26	.583
Factor 2 (Task focus)	
AWAI5	.703
AWAI11	.776
AWAI14	.522
AWAI17	.657
AWAI21	.666
AWAI28	.466
AWAI29	.536
AWAI30	.605
Factor 3 (Apprenticeship)	
AWAI2	.836
AWAI8	.812
AWAI19	.731
AWAI25	.671
Factor 4 (Identification)	
AWAI 3	.657
AWAI6	.688
AWAI9	.647
AWAI12	.544
AWAI23	.531

Note. AWAI=Advisory Working Alliance Questionnaire item number. Refer to

Appendix E for item description.

development, whereas low scores are indicative of a working alliance in which the student perceives a lack of interest on the advisor's part to be included in the work as an apprentice.

The five items that comprise the Identification subscale, with factors loadings ranging from .53 to .69, measure the degree to which the student wishes to identify or not identify with the advisor. Higher scores suggest a strong identification with the advisor, whereas lower scores suggest a weak identification with the advisor.

Means, standard deviations and reliability estimates are presented in Table 9. Internal consistency of the AWAI (4-factor model) items was evaluated by calculating Cronbach's alphas. Coefficient alphas for the Rapport, Task Focus, Apprenticeship, and Identification subscale were .87, .87, .83, and .75, respectively. The coefficient alpha for AWAI Total was .93 (see Table 10). In Table 11 correlations are presented. AWAI total was significantly correlated to Rapport ($r = .86, p < .001$), Task Focus ($r = .89, p < .001$), Apprenticeship ($r = .67, p < .001$) and Identification ($r = .76, p < .001$). As noted in Table 10, all of the subscales were significantly correlated with each other.

In consideration of the Schlosser and Gelso (2001) three-factor model of advisory working alliance, the four emergent factors may suggest response differences by training model in that the current sample contained students who were pursuing varying degrees (i.e., Ph.D., Psy.D., or Ed.D.). In particular, the division of the earlier proposed Apprenticeship subscale into Task Focus and Apprenticeship subscales for this data seems to indicate a difference in how students train. Ph.D. and Ed.D. programs put more

emphasis on research, whereas Psy.D. programs tend to concentrate in more clinical applications.

The data suggests that the participants view their advising relationships differently. Several respondents wrote in the term “supervisor” on their demographic questionnaire. This may account for the factor layout of Apprenticeship, which reflect professional development through collegial mechanisms (e.g., networking, collaborating, introducing).

Additional Analyses of Demographic Variables of Interest

Group differences on selected demographics variables of interest were computed using MANOVA to explore possible group differences for training model (degree), program type, duration of advising relationship, training year, discipline, meeting frequency and advisor change.

In an effort to explain the lack of factor model fit for the AWAI in this study, it was thought that possible response differences by training model might exist in this sample. Significant group differences were noted for training model (degree program) ($F [6, 514] = 2.95$, Wilks' Lambda = .93). Ph.D. students reported more positive perceptions of Apprenticeship within their advising relationships than their Psy.D. or Ed.D. peers ($F [2, 259] = 4.02$, $p < .05$).

Previous research sampling in the development of the AWAI- student version, sampled doctoral psychology students from APA-accredited programs only. It was thought that possible response differences might exist between APA-accredited program students and non-APA program students. No significant group differences were observed for program type ($F [3, 257] = 1.73$, Wilks' Lambda = .98). Students from APA-

accredited programs responded similarly on the AWAI to students from non-APA-accredited programs on the AWAI measure.

In terms of determining whether significant group differences occurred for duration of advising relationship, no significance differences were noted on the AWAI indices ($F [15, 698] = 1.009, p > .05$; Wilk's Lambda = .94). Therefore, the sample responses did not differ by length of time in the advising relationship. The same result occurred for full-time versus part-time status. No significant differences in response to the AWAI were observed ($F [3, 256] = 1.68, p > .05$; Wilk's Lambda = .98). Full-time students responded similarly on the AWAI as part-time students.

Students' status in the training year showed no difference in response ($F [18, 716] = 1.08, p > .05$; Wilk's Lambda = .927) on the AWAI indices. Therefore, students ranging from 1st year of training to 5th year to internship/dissertation year all recorded similar responses on the AWAI measure.

It was thought that differences in response might occur by psychology discipline. No significant differences in response were observed among the applied-psychology doctoral students ($F [12, 675] = .858, p > .05$; Wilk's Lambda = .96). Students, regardless of discipline (e.g. clinical, counseling, child clinical, school, neuropsychology) responded similarly on the AWAI measure.

Students who endorsed having more than one advisor scored similarly to students who had only one advisor during their training. No significant group differences were noted ($F [1, 260] = .805, p > .05$; Wilk's Lambda = .991) on the AWAI total score and subscale scores.

Table 10

Means, Standard Deviations, and Reliability Estimates for 4-factor AWAI Measure

		Mean	SD	Alpha
Total AWAI	Scale			
	Item			
Rapport	Scale	37.41	6.33	.87
	Item	4.16	.19	
Task Focus	Scale	28.62	6.86	.87
	Item	3.57	.22	
Apprenticeship	Scale	12.01	4.28	.83
	Item	3.00	.28	
Identification	Scale	16.95	3.98	.75
	Item	3.39	.25	

Note. N = 262. AWAI = Advisory Working Alliance Inventory. Likert scale, 5- point scale for all AWAI items: 5= strongly agree, 3= neutral, 1= strongly disagree.

Table 11

Pearson Correlation Coefficients between the AWAI and the subscales

	AWAI	Rapport	Task Focus	Apprentice	Identification
AWAI	1.00				
Rapport	.86**	1.00			
Task Focus	.89**	.67**	1.00		
Apprentice	.67**	.41**	.49**	1.00	
Identification	.76**	.58**	.59**	.38**	1.00

Note. ** = $p < .001$.

Advising meeting frequency by AWAI subscales and total AWAI score was computed to determine if differences would emerge. Significant group differences were noted on Rapport, Apprenticeship and total AWAI score ($F [36, 730] = 4.16, p < .01$; Wilk's Lambda = .576). Students who met with their advisors multiple times per week reported higher scores on Rapport ($F [12, 249] = 3.89, p < .01$, Apprenticeship ($F [12, 249] = 10.24, p < .01$) and total AWAI ($F [12, 249] = 6.93, p < .01$) indices than students who met with their advisors less frequently. No group differences were noted on Identification-Individuation.

Summary

Based on the statistical analyses conducted on the collected data, Hypothesis I was only partially supported in the current study. Within the Advisory Working Alliance construct, Rapport and Apprenticeship subscale scores related positively to Social Support and Rational Cognitive ability in term of coping resources among psychology doctoral students. Identification-Individuation was not found to be related to coping resources. Hypothesis II was supported in that students who chose their advisors reported higher scores on the AWAI and its subscales than students who did not choose their advisors. Hypothesis III was not supported in that the proposed three-factor model failed to fit the obtained data set. Therefore, the psychometric stability of Advisory Working Alliance Inventory (AWAI-student version) was not confirmed on the current sample of applied psychology doctoral students. A supplemental analysis suggests a 4-factor solution for the AWAI with the obtained data.

CHAPTER V

Summary, Conclusions and Recommendations

This chapter summarizes the data analyses results in this study, as well as presents conclusions and discussion on the findings relevant to this investigation. First, a summary of previous research and related hypotheses will be discussed as a frame for the present study. Second, a summary of the study's findings and a discussion of its relevance in the investigation will be presented. Third, implications for doctoral-level psychology training will be discussed. Fourth, a description of the study's strengths and limitations will be posited. Lastly, recommendations for future directions of empirical research will be suggested.

Summary of Previous Research

Doctoral-level psychology student training is a rigorous, intense, and often demanding, endeavor that disrupts students' life balance and contributes to increased personal distress (Cushway, 1992; Holzman, 1996; Dorff, 1998; Pica, 1998). Being mindful of the ethical imperative of psychology training programs to produce well-functioning psychologists, research on graduate student coping, to date, has been limited to studies examining the role of social support (Sandler & Bandera, 1984; Heins et al., 1984; Hudson & O'Regan, 1994). It has been demonstrated that psychology graduate students report more distress than other professional school graduate students; however, they tend to report higher levels of coping through social connection. This coping mechanism is of interest to study in the context of supportive relationships within the training program itself, such as supportive relationships with faculty.

Within most recent history, the advisory relationship has gained attention in the research literature regarding psychology graduate training, especially in the research training arena (Gelso, 1993; Hollingsworth & Fassinger, 2002; Lovitts, 2001; Royalty et al., 1986; Schlosser & Gelso 2001; Schlosser et al., 2003; Schlosser & Gelso, 2005). Although the advising relationship has been cited by students to be the most important relationship in their formative training years (Gelso, 1993; Johnson & Nelson, 1999; Schlosser & Gelso, 2001), limited empirical research exists in regards to the investigation of related variables contributing to a supportive and productive advising relationship. In particular, no studies have been undertaken to examine how the advising relationship relates to students' ability to cope while in training.

Schlosser and Gelso (2001) developed an instrument to measure the working alliance in the advisee-advisor dyad. In addition to the initial psychometric development of the Advisory Working Alliance Inventory (AWAI), they found positive correlations between the AWAI and advisee research self-efficacy and research attitudes. These findings suggest that the perceived quality of the advisory working alliance relates to students perceptions of their development in research training. With this in mind, if previous research has found that supportive relationships are coping factors for graduate students and advising relationships are considered significantly important to them, plus students' perceptions of their advisory working alliance can predict professional development, then studying the relationship between the advisory working alliance and coping would be of interest and informative for training and development issues for programs, faculty and students.

This study focuses on the advisory working alliance and personal coping resources for applied-psychology doctoral students. It is concerned with the relationship between the advisory working alliance factors (rapport, apprenticeship, identification-individuation) and the coping abilities of students during doctoral-level training.

The first hypothesis was designed to investigate the extent to which students coping resources can be accounted for by perceptions of the advisory working alliance. The second hypothesis examined whether observed group differences were noted in responding based on advisor assignment (i.e., student-choice or program-assigned). The third hypothesis explored the psychometric stability of the AWAI three-factor model.

Summary and Discussion of Findings

Advising Relationship and Coping

Results of the canonical correlation analysis revealed a statistically significant positive relationship between the advisory working alliance variables Rapport and Apprenticeship to the coping resources variables, Social Support and Rational Cognitive ability. These findings confirmed part of the first stated hypothesis - that coping resources would be positively related to the perceptions of the advisory working alliance. The results revealed that applied-psychology doctoral students' coping scores in social support and rational cognitive ability were positively related to their scores in rapport and apprenticeship on the AWAI. In other words, the more rapport and apprenticeship a student perceives in the advising relationship, the more likely he or she will report positive perceptions of social support and ability to cognitively deal with work-related stress issues.

The importance of this finding has significance for training, student functioning and student development. Students who cope well usually train well and can manage graduate work stressors adequately (Heins et al., 1984; Nelson et al., 2001). The current investigation results suggest that perceptions of positive supportive advising relationships, in particular the advisory working alliance of the advising relationship, relates to students who engage in healthy coping resources such as seeking social support and cognitive problem solving strategies. Emphasis on reviewing the quality of the advising relationship by students, program directors and faculty advisors may yield significant information on the quality of the advising relationship, as well as the impact it has on student functioning.

This finding is consistent with other research that investigated supportive relationship in training environments (Dearing et al., 2005; Dorff, 1999; Nelson et al., 2001). In particular, it lends support to Sandler and Barrera's (1984) claim that when students perceive positive social support, the negative effects of stress were not manifested. Similarly, they found that conflicted support networks yielded a negative buffering effect on stress in students. One interpretation is that students were able to cope better during their educational experience with the aid of positive supportive relationships.

The results of the current study are also consistent with the work reported in the mentoring literature which suggests that social support provided by mentoring in an interpersonally and mutually stimulating relationship reduces job-related stress (Sosik & Godshalk, 2000). Perhaps positive perceptions of the advising relationship have a

buffering effect on stress for psychology doctoral students? Future research in this area may include a stress index in addition to a coping index to answer this question.

As reported earlier, no significant findings were found between Identification-Individuation subscale (AWAI) and Recreation and Selfcare subscales (PRQ). Therefore, this result did not contribute to the proposed hypothesis. This was not surprising given the variables' dissimilarity with each other. Items relating to Identification-Individuation, such as, "My advisor and I have different interests" are not easily associated to the coping items about Selfcare (i.e., "I get regular physical checkups") or Recreation ("When I need a vacation I take one."). In reviewing the premise for the advisory working alliance's Identification-Individuation factor, to determine the degree to which the advisee wishes to identify or not identify with his advisor, it is understandable that Recreation and Selfcare are not associated with Identification-Individuation.

Overall, the hypothesis that the advisory working alliance factors related to coping abilities was only partially supported, since Rapport, Apprenticeship were the only significant variables related to Social Support and Rational Cognitive ability.

Advisor Assignment

Results of the multiple analysis of variance revealed that a statistically significant difference was found in regards to advisor assignment. There was a significant difference on the AWAI scores based on whether students chose their advisor or whether the advisor was assigned to them. The study results found that choice of advisor yielded more positive perceptions of the advisory working alliance. Students who chose their advisors tended to report higher scores on advisory working alliance, whereas students who were assigned their advisors tended to report lower scores of advisory working alliance.

As expected, these findings support this quantitative study's second hypothesis and are consistent with the Schlosser et al. (2003) qualitative study results which found that graduate students satisfaction perceptions of their advising relationships included choice of advisor as an important contributing element. This is also consistent within the research in terms of formation of the mentoring relationship. These studies cite that mentorships in which the protégés choose their own mentors (informal mentorships) are evaluated as being more effective, meaningful and satisfying (Fagenson-Eland et al., 1997; Ragins & Cotton, 1999) than those that are formally assigned.

It may be important for graduate psychology training programs interested in student-faculty supportive relationships to embrace the notion of students choosing advisors. Although many programs do allow for student choice, there are times when students are assigned to an advisor. As an example, in this study 63% of the students chose their advisor versus 37% that were formally assigned to an advisor. Students must be proactive as well. Johnson and Huwe (2003) suggested that students who are looking to be mentored should be proactive in their search to find the right "fit" with a mentor during doctoral-level psychology training. Based on the results of this research and the Schlosser et al. (2003) results, it would benefit the advisory working alliance when students have the freedom in their programs to choose an advisor and to switch if needed. These advisor-advisee relationships may be characterized by more commonalities and more shared assumptions and expectations about the function of the relationship than advisor-advisee relationships that are mandated.

AWAI Factor Structure

The factor structure of the extant 3-factor model of the AWAI was not confirmed by results from the confirmatory factor analysis. Therefore, no support was found for Hypothesis III, which stated that the AWAI factor structure would remain stable across a broader sample of applied-psychology doctoral students. The obtained goodness-of-fit indices (GFI) suggest that the hypothesized model does not meet the criteria that would suggest goodness-of-fit. Recall that the goodness-of-fit indices tests whether the data obtained from the current sample fits the hypothesized model. In this analysis, none of the goodness-of-fit indices met the criteria for good model fit. This means that when the AWAI data obtained on a national sample of applied-psychology students was imposed on the AWAI hypothesized 3-factor model, the result was poor model fit. In other words, this student sample responded differently than the student sample used when the AWAI was first developed. Differences within the applied-psychology student sample may account for this non-significant finding.

Due to the lack of previous research on the AWAI use with other psychology populations it is not possible to relate these findings with other study results. However, Schlosser and Gelso (2001) did suggest that future research work on the appropriateness of the AWAI should be considered with psychology graduate students in other disciplines than counseling psychology. They also suggested that a confirmatory factor analysis should be performed to test the stability of the factors. In this regard, the present study sought to extend the current knowledge base on the AWAI by including a broader sample group and performing a confirmatory factor analysis. Due to lack of model fit results, perhaps replicating a confirmatory factor analysis of the AWAI on a national sample of

counseling psychology doctoral students would yield different results from the current study's finding and be consistent with prior results per Schlosser and Gelso (2001).

With respect to speculating about the obtained data poor fit with the AWAI three-factor model, perhaps differences in sample responses on the AWAI can be attributed to training model. Psy.D. students may have responded differently from the Ph.D. students in term of their perceptions of an advisory working alliance. In fact, significant differences by training model (degree program) were noted regarding perception of Apprenticeship. Ph.D. students reported more positive perceptions of Apprenticeship within their advising relationship than their Psy.D. peers. It is possible that these training models may influence how students perceive elements of apprenticeship.

The AWAI developers spoke of measuring Apprenticeship in terms of the degree to which the advisor facilitates the advisee's professional development (Schlosser & Gelso, 2001). Items within the Apprenticeship subscale included statements, such as "I am an apprentice of my advisor", "My advisor helps me conduct my work within a plan", and "My advisor has invited me to be a responsible collaborator on his/her work." Although a small sampling, these items may be more reflective of the research culture in Ph.D. programs rather the practice culture found in Psy.D. programs (Peterson, 1985).

Furthermore, and anecdotally, although the questionnaire instructions were clearly stated as, "the term 'advisor' in the following questions refers to the faculty person who is responsible for your academic/ professional development", some student participants wrote in the term "clinical supervisor" to describe the title of the person who they thought of as their advisor. Future research should consider continued psychometric development on the AWAI by replicating, with an exploratory factor analysis, the emergent factors

when a Psy.D. population is sampled only or use the SWAI (Efstation et al., 1990). Also, qualitative research may produce insights into the perceive nature of what an advisor provides in Psy.D. programs.

Additional AWAI Factor

An exploratory factor analysis was conducted on the obtained data to explore the possible underlying factors of the AWAI when used on a sample of applied-psychology students. This was done as a supplemental analysis since no hypothesis was generated a priori. Results from the principal components analysis revealed that four factors emerged on the AWAI across 26 items. These were: Rapport, Task Focus, Apprenticeship, and Identification. With the exception of Task Focus, this finding is consistent with Schlosser and Gelso's (2001) work on the AWAI- student version. Interestingly this finding also converges with Schlosser and Gelso's (2005) results of their Advisor version of the AWAI, in which a Task Focus factor emerged in their analysis, as well as Rapport and Apprenticeship factors. In fact many of the items under Task Focus were similar between the current study and the AWAI-advisor version study. It seems that when using a national applied-psychology student sample, the AWAI-student version measure breaks into a 4-factor model versus a 3-factor model. Replication of these results would offer stability in interpretation of factors. A test-retest study would be necessary as well.

The present results may suggest that the AWAI-student version when administered to applied-psychology doctoral students yielded a similar factor structure to the initial psychometric development, except for the emergence of a Task Focus factor. The importance of the current study's finding is suggestive that the AWAI need further psychometric development in order to be utilized and interpreted for a broader applied-

psychology doctoral student sample. Future research should consider replication of this study with another national student sample.

In speculating on the reasons for a 4-factor AWAI model to be generated with the obtained data, it may be that students across training models and student who have frequent contact with advisors perceive Apprenticeship and Task focus areas of the advisory working alliance differently. As noted previously, there were observed group differences responding between Ph.D. and Psy.D. students. Yet no differences were noted for psychology discipline, APA-accreditation, full- versus part-time study, duration of advising relationship, and whether a student had more than one advisor. However, an interesting group difference finding did appear in terms of students who meet with their advisors multiple times per week reported more positive perceptions in Rapport, Apprenticeship and Total AWAI scores. This suggests that training model and meeting frequency play a role in student perceptions of advisory working alliance. Inclusion of training model and meeting frequency for future research may provide additional support to these findings.

Demographic Variable of Interest

In the current study, most students reported having an advisor. In fact only three reported having no advisor, which was due to recent changes in advisor assignment (e.g., left university). These findings are consistent with Schlosser and Gelso's (2001) data result in which the entire sample of counseling psychology students reported having advisors. However, within the mentoring literature, results from an earlier study by Cronan-Hillix et al. (1986) reported that only half of the graduate student respondents endorsed having a mentor. What can account for such a difference in findings?

Although the scope of this study is limited to the discussion of advising relationships, it may be wise to consider the overlap between mentoring and advising. Recall that positive supportive social relationships impact student success by the provision of a buffering mechanism to stress (Sandler & Barrera, 1984). Certainly mentoring, by its definition, is perceived as a supportive positive relationship, but some advising relationships are perceived positively, like a mentoring relationship.

Perhaps, training model and discipline area contribute to these findings in a unique way. Cronan-Hillix et al. (1986) sampled psychology graduate students at a single university in psychology subspecialties, such as: clinical, ecological, developmental, industrial/organizational, social, and experimental; whereas, Schlosser and Gelso (2001) sampled psychology graduate students at selected APA-accredited counseling psychology programs. The current study sampled from a national psychology graduate student population who were studying at various APA-accredited and non-APA-accredited applied-psychology programs (i.e., clinical, counseling, school, child clinical, neuropsychology). It was clinical students, Cronan-Hillix et al. (1986) observed, who noted being minus a mentor more than their social and experimental student counterparts. They posited that this could be due to less opportunity to connect with faculty via research activities. However, this researcher would argue that opportunities to develop close ties with faculty exist in other areas of applied-psychology training, such as, clinical supervision, conferencing, coursework, and practicum. These opportunities, in addition to the research activity requirement for applied-psychology students, may account for the large advisor-relationship endorsement.

Due to psychology students reports that their advising relationships are the most important relationship in their training (Gelso, 1993; Johnson & Nelson, 1999; Schlosser & Gelso, 2001), more research is necessary to tease out the factors contributing to whether a student has an advisor or not. Clearly, with such contrasting findings, future research in this area should consider a large national study, inclusive of clinical and non-clinical students, to examine the opportunities and means by which students and advisors form a relationship.

Implications for Training

The premise of this study is that knowledge of a student's perceptions of the advising relationship and abilities to cope during rigorous training would be beneficial information for training programs, students and faculty. This information would be an integral component to proactively building program policy, evaluating advising relationship quality and productivity, and alerting students and faculty to problems areas should they arise.

This study provides training programs, students, and faculty with additional data about the advisory working alliance and how it may play a role in coping resources for students when seeking social support and problem-solving graduate work-related stress. Therefore, the utility of the AWAI student version for applied-psychology doctoral students is exciting in terms of informing the students and advisors about the nature of their working alliance. Considering that doctoral student attrition research has cited advising relationship failure as a major factor for doctoral student drop out (Lovitts, 2001), methods to assess advising relationships should be embraced by training programs and added to their evaluative program policies. Other researchers have suggested

training program implementation of a systematic evaluative approach to measuring professional development for students, including a review of the faculty-student relationship (Ducheny et al.1997; Goodyear et al.1992; Elman & Forrest, 2004; Elman, Illfelder-Kaye & Robiner, 2005; Johnson & Huwe, 2001; Johnson, 2002).

Training programs and advisors may want to focus on the advising relationship as a means of intervention for student growth and development. In particular, when working with students who are having difficulties meeting program requirements and stages of professional development, training programs, as well as advisors, should be conscious that students' perceptions of the advisory working alliance may facilitate coping resources, reduce stress and promote professional development. Additionally, students, training programs and faculty should be aware that advising relationships that are formed by student choice versus program assigned yield students with more positive impressions of their advisory working alliance.

Limitations of the Study

The research design for this study was fundamentally sound and balanced. Given the rationale, methodology, results and recommendations posited in the study, certain limitations were noted and must be considered for future research.

There are number of methodological limitations. This study used a non-experimental design to measure the relationship of variables within the advisory working alliance and coping abilities for students. Therefore, the results do not imply a causal direction in relationship. For example, could advisory working alliance rapport and apprenticeship cause social support and rational cognitive ability in coping or vice versa? Neither is true, as this study's design clearly shows an association for the variables to be

related to each other. Although a causal direction cannot be proven, rapport and apprenticeship were positively associated with social support and rational cognitive ability in personal coping resources.

Another consideration of the present study's limitation is measurement. The self-report instruments used in this study may limit interpretation of results in that possible response set behavior could threaten instrument validity. Although an effort to control for response set was implemented by counterbalancing surveys and reverse item phrasing, it cannot be ruled out. It would appear unlikely that simple self-report measures alone can converge into a full explanation of the individual's experience. As such, generalizing the results must be made cautiously and should refer to the expressed situation of the present study.

There are methodological limits regarding sampling. The present study sampled a portion of doctoral-level psychology students from the membership roster of the American Psychological Association. Therefore, doctoral psychology students who were not APA affiliates were not included in the sample. The results can only be interpreted within the present study's sampling group and cannot extrapolate to non-APA affiliate students. Future research should consider including this latter group to expand the generalizability of findings.

Due to the time of the data collection (i.e., summer), an overall return rate of 40% was realized. However due to 20 incomplete data sets, a response rate of 37% was attained. Perhaps mailing surveys at the beginning of the fall semester may have produced more returned surveys in that the students may be more likely to respond when they are entering the next academic year versus at the end or in between academic years.

Additionally, perhaps a mail protocol similar to Schlosser and Gelso (2001), in which surveys were mailed at three separate intervals and interspersed with reminder cards, could facilitate a higher response rate and larger sample size.

Although this research expanded the findings on the AWAI by including applied-psychology students from disciplines other than counseling psychology (i.e., clinical, counseling, school, neuropsychology), the results must be cautiously interpreted to reflect any generalizations to applied-psychology students only. Results cannot be interpreted for graduate psychology students in research psychology disciplines. As noted in the present findings, group differences were observed for training model (i.e., Ph.D. vs. Psy.D.) but not for psychology discipline. Future research should include measures that reflect the differences in training models.

Due to the cross sectional study design, this study's results will not allow for any interpretation other than what is accounted for by the "snapshot in time." The present study examines the participant responses at a specific moment; therefore, it does not account for maturational processes over time. However, it does take into account the specific state of the participant at the time of survey responding. Therefore, a doctoral student may respond on the measures, in a specific manner, to a current conflict in the advising relationship than would have been different at another point in time. A future research design could include a longitudinal approach to address this issue.

A delimitation to this study was the use of a psychology doctoral student sample. This study did not include students studying in other academic arenas (e.g., medicine, literature, chemistry) nor did it include graduate students studying at the master's level.

The present sample was selected to contribute to the present research utilizing applied-psychology doctoral students.

Several strengths should be noted in the study. First, this is the first investigation to examine the relationship between the advisory working alliance and coping abilities for psychology doctoral students. Second, it extends the research literature base in that it provides data on a broader sample of the population. Third, it lends support to the concept and importance of the advisory working alliance in advising relationships during training. Fourth, it adds further psychometric evidence for the AWAI when sampling applied-psychology students.

Research Implications

The present research examined whether there was a relationship between the advisory working alliance and applied- psychology doctoral students' coping resources. In addition, it examined advisor assignment and the psychometric stability of the AWAI.

Future research on students' perceptions of the advisory working alliance and coping abilities should consider inclusion of a stress measure, in addition to a coping index, to answer the potential mediational effect of the advisory working alliance.

Due to the present study's findings regarding the role of advisor assignment as predictive for positive perception of advisory working alliance, future research should include survey items about advisor assignment, as well as questions about advisor acquisition (i.e., whether a student has an advisor or not). A large national study, inclusive of clinical and non-clinical students, to examine the opportunities and means by which students and advisors form a relationship would be informative.

As a relatively new instrument, the AWAI has proven to be useful to glean information concerning the quality of the advising relationship. Psychometric development of the AWAI should continue in four areas. First, a replication of an exploratory factor analysis on a national sample of counseling psychology students may challenge the present study's results of an emergent 4-factor model of the AWAI and revert to a 3-factor model. Second, conducting a confirmatory factor analysis on a national sample of counseling psychology doctoral students may find model fit with the 3-factor AWAI model. Third, replicating an exploratory factor analysis with the AWAI when a Psy.D. population is sampled only. Fourth, and last, when using a national applied-psychology student sample, the AWAI-student version measure breaks into a 4-factor model versus a 3-factor model. Replication of the current study would offer stability in interpretation of factors. A test-retest study would be necessary as well.

Due to training model group differences noted in the study, qualitative research may produce insights into the perceived nature of what an advisor provides in Psy.D. programs. Training model and meeting frequency play a role in student perceptions of advisory working alliance, therefore inclusion of training model and meeting frequency indices may provide additional support to these findings in future research.

Ideally a longitudinal study examining the advisory working alliance, coping resources and stressors throughout the duration of training may provide insight into the magnitude of impact of the advising relationship over time.

Conclusions

This research found empirical evidence that highlights the need to research the advisory working alliance and coping in psychology doctoral training. Major findings

include: (a) a significant positive relationship between advisory working alliance factors of Rapport and Apprenticeship to Social Support and Rational Cognitive ability in coping resources, (b) the importance of advisor assignment in terms of perceived working alliance, and (c) the emergence of an AWAI 4-factor model.

The findings of this study support the premise of investigating students' perceptions of their advising relationships and the coping mechanisms they employ during stressful training. Therefore, suggesting the importance of careful attention to these variables in developing and implementing training program policies regarding the evaluation of student growth.

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Appendix A

Dear Potential Research Participant,

I am a doctoral candidate in Counseling Psychology. I am collecting data for my dissertation and would appreciate your assistance. I am conducting a study concerning the relationship between the advisor-advisee alliance and coping resources among psychology doctoral students. Your voluntary participation will be greatly appreciated.

If you are a *current* clinical, counseling, or school psychology doctoral student, I invite you to take approximately 10 minutes to complete the following self-report measures: demographic questionnaire, the Advisory Working Alliance Inventory, and the Personal Resource Questionnaire. Please be sure to follow the instructions for each scale and do not leave any items blank.

If you decide to participate in this study, I ask that you complete all the brief questionnaires, place the completed survey into the stamped, self-addressed envelope provided, and mail the packet promptly. Your participation is strictly voluntary therefore, you may discontinue your participation at any time. In return for your participating and mailing back the survey, you will be entered for four chances to win a \$25 gift certificate award. Just fill out and mail the stamped lottery card separately from your survey responses.

Your participation will remain anonymous. Your packet will be coded numerically and all records will be referred to by this code. To preserve confidentiality, the key for the code will remain in a locked file in my office. I will have the only access to the file cabinet. The data collected will be used for this research project's purpose only. To further ensure anonymity, please do not place your name or any other identifying information on the survey materials.

If you have any questions about this study or would like a copy of the results, please contact me at (732)-672-5209 or email me at farrelmb@shu.edu. You may also contact Dr. Laura Palmer at (973)-275-2740.

This project has been reviewed and approved by the Seton Hall University Institutional Review Board for Human Subjects Research. The IRB believes that the research procedures adequately safeguard the subject's privacy, welfare, civil liberties, and rights. The Chairperson of the IRB may be reached at (973)-275-2977 or 313-6314.

Thank you very much for considering participation in this study. Your informed consent is implied by the completion and return of the survey materials to the researcher.

Sincerely,

Margaret J. Farrelly, Ed.M.
Ph.D. Candidate
Seton Hall University

Appendix B

Dear Fellow Doctoral Psychology Student,

Hope you are finding your summer relaxing & restorative. With the fall term rapidly approaching, thoughts of research may be dancing in your head. I know it is in mine! In the next two weeks you will receive a research survey reflecting my dissertation project about advising relationships. It will take only minutes of your time. Not only would your participation be most appreciated, but you'll establish good research karma too! As a thank you, you'll be eligible for four chances in a lottery for a \$25 gift card.

Best regards,
Margaret J. Farrelly, Ed.M.,
Doctoral Candidate
Seton Hall University

Appendix C

Dear Fellow Graduate Student,

Just a reminder... I invite you to complete the advising relationship mail survey you received a couple of weeks ago. Please refer to the enclosed letter and informed consent statement in the survey packet. Remember participation is completely voluntary. Your help would assist a fellow graduate student in her dissertation research, plus you get four chances to win a \$25 gift certificate! Thanks for considering participation in this study.

Best regards,

Margaret Farrelly

Seton Hall University

Appendix D

Please complete all of the categories to the best of your ability.

1. **Sex:** male female
2. **Age:** _____ years old
3. **Race/ Ethnicity (check all that apply)**
 - African American
 - Afro-Caribbean
 - African
 - Asian/ Pacific Islander
 - Asian/ East Indian
 - Latino (a)/Hispanic
 - Native American/Alaska Native
 - Caucasian
 - Other (specify) _____
4. **Degree being sought: (check one)**
 - Ph.D.
 - Psy.D.
 - Ed.D.
 - Other: _____
5. **Training program discipline: (check one)**
 - Counseling psychology
 - Clinical psychology
 - School psychology
 - Child clinical psychology
 - Other (specify) _____
6. **Program type: (check one)**
 - APA- accredited training program
 - non-APA accredited training program
7. **Year in training program?**
 - 1st year 5th year
 - 2nd year Internship year
 - 3rd year ABD
 - 4th year
8. **Your program requires you to participate in: (check one)**
 - full-time study part-time study
9. **What program stage are you in?**
 - Coursework (pre-proposal)
 - Proposal defended
 - Dissertation (ongoing)
 - Dissertation (defended)
 - Pre-doctoral internship (current)
 - Pre-doctoral internship (completed)

The term "advisor" in the following questions refers to the faculty person who is responsible for your academic/professional development.

10. **Do you have an advisor?**
 - Yes
 - No
11. **Advisor assignment: (check one)**
 - You chose your advisor
 - Program faculty chose an advisor for you
12. **How long (i.e., length of time) have you been with your advisor? (check one)**
 - 6 months to 1 year
 - 1 year to 2 years
 - 2 years to 3 years
 - 4 years to 5 years
 - more than 5 years
13. **How often do you meet with your advisor?**
 - Weekly (once per week)
 - Bi-weekly (twice per month)
 - Monthly (once per month)
 - Bi-monthly (every two months)
 - Once a semester
 - Other (specify) _____

14. Have you had more than one advisor during your doctoral graduate studies?

- Yes
- No

If yes,
why? _____

Appendix E

Advisory Working Alliance Inventory – Student Version (AWAI-S)

These 30 items pertain to your perceptions about your relationship with your advisor. For the purposes of this study, the term advisor is referring to the faculty member that has the greatest responsibility for helping guide you through your graduate program (e.g. advisor, major professor, committee chair, dissertation chair). Please respond to the items using the following scale:

	Strongly Disagree		Neutral		Strongly Agree
	1	2	3	4	5
1. I get the feeling that my advisor does <u>not</u> like me very much.	1	2	3	4	5
2. My advisor introduces me to professional activities (E.g. conferences, submitting articles for journal publication)	1	2	3	4	5
3. I do <u>not</u> want to be like my advisor.	1	2	3	4	5
4. My advisor welcomes my input into our discussions.	1	2	3	4	5
5. My advisor helps me conduct my work within a plan.	1	2	3	4	5
6. I tend to see things differently from my advisor.	1	2	3	4	5
7. My advisor does <u>not</u> encourage my input into our discussions.	1	2	3	4	5
8. My advisor has invited me to be a responsible collaborator in his/her own work.	1	2	3	4	5
9. I do <u>not</u> want to feel similar to my advisor in the process of conducting work.	1	2	3	4	5
10. My advisor is <u>not</u> kind when commenting about my work.	1	2	3	4	5
11. My advisor helps me establish a timetable for the tasks of my graduate training.	1	2	3	4	5
12. My advisor and I have different interests.	1	2	3	4	5
13. I do <u>not</u> feel respected by my advisor in our work together.	1	2	3	4	5
14. My advisor is available when I need her/him.	1	2	3	4	5
15. I feel like my advisor expects too much from me.	1	2	3	4	5
16. My advisor offers me encouragement for my accomplishments.	1	2	3	4	5
17. Meetings with my advisor are unproductive.	1	2	3	4	5
18. I do <u>not</u> think that my advisor believes in me.	1	2	3	4	5
19. My advisor facilitates my professional development through networking.	1	2	3	4	5
20. My advisor takes my ideas seriously.	1	2	3	4	5
21. My advisor does <u>not</u> help me stay on track in our meetings.	1	2	3	4	5
22. I do <u>not</u> think that my advisor has my best interests in mind.	1	2	3	4	5
23. I learn from my advisor by watching her/him.	1	2	3	4	5
24. I feel uncomfortable working with my advisor.	1	2	3	4	5
25. I am an apprentice of my advisor.	1	2	3	4	5
26. I am often intellectually “lost” during my meetings with my advisor.	1	2	3	4	5
27. I consistently implement suggestions made by my advisor.	1	2	3	4	5
28. My advisor strives to make program requirements as rewarding as possible.	1	2	3	4	5
29. My advisor does <u>not</u> educate me about the process of graduate school.	1	2	3	4	5
30. My advisor helps me recognize areas where I can improve.	1	2	3	4	5

Appendix F

Personal Resources Questionnaire (PRQ), (Osipow, 1981)

If you are interested in using the PRQ and would like to obtain a copy, please contact Psychological Assessment Resources (PAR) at 818-698-3003 or www.patinc.com for permission.

Appendix G

Lottery Entry Card

As a thank you for completing the research survey, please fill out this card to enter a lottery for four chances to win a \$25 gift card from Barnes & Noble Bookstore. Good Luck!

Name: _____

Address: _____

Email Address (optional) _____

