TOWARD MEASUREMENT OF SELF-EFFICACY

FOR CROSS-CULTURAL RESEARCH

By

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The members of the Committee appointed to examine the dissertation of SARAH KATHERINE NOWAK find it satisfactory and recommend that it be accepted.

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Abstract

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Current movements toward standards of multicultural competence in psychology focus on the "practitioner" end of the "scientist-practitioner" training model. This study was designed to meet a need for definition and assessment of multicultural competence among "scientists." The purpose of the study was to develop and validate a self-report measure of Self-Efficacy in Cross-Cultural Research (SECCR). Previous self-report measures of multicultural counseling competence have been criticized for measuring participants' perceived ability (i.e., self-efficacy) as opposed to actual multicultural counseling competence (Constantine, 2001a; Constantine & Ladany, 2000; Ladany et al., 1997). In light of these critiques, the instrument developed in this study draws its conceptual base from self-efficacy theory, along with standards of multicultural counseling competence and guidelines for cross-cultural research.

In this study, 374 graduate students in counseling and clinical psychology completed the Research Self-Efficacy Scale (RSES; Bieschke, et al., 1996), the Multicultural Counseling Inventory (MCI; Sodowsky, et al., 1994), the Multicultural Social Desirability Index (MCSD; Sodowsky, 1996), a demographic questionnaire and the author-developed Research Involvement Questionnaire (RIQ) and Self-Efficacy for Cross-Cultural Research (SECCR) measure.

Hypotheses were: 1) Self-efficacy for cross-cultural research is a multidimensional construct comprised of five domains, 2) SECCR full scale scores will be moderately predicted by general research self efficacy and multicultural counseling competence, beyond the prediction provided by multicultural social desirability, and 3) SECCR full scale scores will be predicted by previous cross-cultural/multicultural training and research involvement.

All three hypotheses were at least partially supported. Results for Hypothesis 1 suggest that self-efficacy for cross-cultural research is a construct that can be reliably measured, and that it includes the following dimensions: Cultural Awareness and Conceptualization; Data Collection, Analysis, and Reporting; and Relationships with Community and Collaborators. As predicted in Hypothesis 2, general research self-efficacy and multicultural counseling competence both predicted SECCR scores beyond the prediction provided by other demographic variables and multicultural social desirability. In the test of Hypothesis 3, SECCR subscales showed discriminant validity in that cross-cultural/multicultural training predicted *all three* SECCR subscales, while research experience only predicted the Data Collection, Analysis, and Reporting subscale. Strengths, limitations, future directions, and applications of the SECCR are discussed.

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Dedication

This dissertation is dedicated to my mother, Peg Meyer, for her belief

in my potential that surpassed my own on many occasions.

I literally could not have done this without you, Mom.

CHAPTER ONE

Introduction

Psychological researchers in rapidly increasing numbers are embracing the recent movement to include more diverse samples and measure cultural variables in research. As a result, the issue of cultural competence in research has reached a level of critical importance. In fact, Areán and Gallagher-Thompson (1996) have stated that "the issue of cultural competence is the most important issue to consider when researching an ethnic minority population" (p. 878). Research that is conducted with specific attention to cultural diversity can result in several advantages for the community being researched, for researchers, and for science itself. For instance, culturally sensitive research can result in increased participation and larger sample sizes (Areán & Gallagher-Thompson, 1996; Miranda, 1996). This type of research can also shape a more accurate, and thus scientifically valid understanding of the constructs being investigated (APA, 2003). Further, results from culturally competent research are more likely to reflect actual strengths and needs of the population being studied, thereby informing public policy in a way that is most likely to benefit that population (CNPAAEMI, 2000). This can also lead to improved perceptions of scientific research among ethnic minority populations that may be distrustful of research agendas and motivations of researchers (Shavers, Lynch, & Burmeister, 2000).

One of the first steps for effective training in multicultural or cross-cultural research competence is appropriate assessment. Therefore, the purpose of this study is to develop and validate a self-report measure of Self-Efficacy in Cross-Cultural Research (SECCR). The SECCR has five proposed domains: (a) Researcher Awareness of Self and Social Context, (b) Cross-Cultural Relationships, (c) Cross-Cultural Research Conceptualization, (d) Cross-Cultural Data Collection and Logistics, and (e) Cross-Cultural Data Analysis and Interpretation. This

instrument will integrate features of multicultural counseling competence (Sue, Arredondo, & McDavis, 1992), cross-cultural research competence (Warwick, 1980), and self-efficacy theory (Bandura, 1977) to measure an individual's confidence in her/his ability to conduct culturally responsive research during each stage of the cross-cultural research process.

Although a substantial portion of the literature to be reviewed herein is classified as *multicultural*, the instrument to be developed in the present study is labeled as *cross-cultural* for several reasons. Cross-cultural psychology has been defined as "the explicit, systematic comparison of psychological variables under different cultural conditions in order to specify the antecedents and processes that mediate the emergence of behaviour differences" (Eckensberger, 1972, p. 100). In contrast, multiculturalism has been defined as "a dynamic perspective that values and includes the role of culture in creating knowledge and storing memories…" (Berg-Cross, Craig, & Wessel, 2001, p.849).

Thus, the research methods in cross-cultural psychology serve to define it (Berry, 1980), while multicultural psychology represents more of a perspective than a type of research methodology. The SECCR includes items assessing both a multicultural perspective and specific procedures, methods, and analyses used primarily in cross-cultural research. Previous authors have defined cross-cultural research as one type of multicultural research (Quintana, Troyano, & Taylor, 2001), and the present study will take this view as well. Thus, literature from both multicultural and cross-cultural areas of psychology provides the conceptual basis for the SECCR. Because classic cross-cultural methods emphasize quantitative techniques (Greenfield, 1997), the scope of the SECCR will also be limited to quantitative research.

A tool such as the SECCR that will help advance training in culturally competent research practices is needed in light of the history of misuse, mistreatment, and misrepresentation of ethnicity and race that has occurred in the name of scientific inquiry. Rogler (1999) has described how psychology has a history of using White, middle class values to inform standard research paradigms. This has led to successive generations of researchers applying culturally insensitive methods in naïve and pervasive ways. Examples of current sources of unethical and culturally insensitive research include failure to provide ongoing and complete informed consent (Gil & Bob, 1999; Scott-Jones, 1994), problem-focused or deficit model conceptualization and interpretation (APA, 2003; Gil & Bob; Sue & Sue, 2003), and ethnocentric bias in various stages of the research process (Atkinson, 1993; Callan & McElwain, 1980; Sinha, 1997). Additional examples include the fallacies of objectivity and homogeneity (Davis, Nakayama, & Martin, 2000), inaccurate assessment (APA, 2003; Dana, 1996; Gil & Bob, 1999; Rogler, 1999), and a lack of self-awareness and cultural knowledge on the part of the researcher (Atkinson, 1993; Mio & Iwamasa, 1993; Parham, 1993; Ponterotto, 1993; Sue, 1993).

Historically speaking, the Tuskegee experiment is probably the most infamous example of scientific mistreatment toward a marginalized population. Tuskegee researchers recruited working class African-American participants and observed the course of untreated syphilis from 1932 to 1972, without informing participants when treatment became available in the 1940's (Jones, 1993). In a recent survey of a sample of African-Americans, 51% reported distrust in all medical research as a result of their knowledge of the Tuskegee experiment (Shavers et al., 2000).

These culturally-based ethical violations have been acknowledged by government agencies and professional organizations as they have implemented guidelines and policies to

encourage culturally responsible research practices. For instance, after the Tuskegee experiment became public knowledge, Congress passed the National Research Act of 1974 to protect subjects in human experimentation (Gamble, 1997). In 1985 the American Educational Research Association published guidelines for eliminating race and sex bias in educational research (Scott-Jones, 1994). As a response to issues of under-representation, in 1994 the National Institutes of Health began requiring that all NIH-funded studies include women and ethnic minorities or provide a clear rationale for failing to do so (Miranda, 1996). However, culturally competent research goes far beyond these minimal guidelines and must be taught as not only an ethical necessity, but as a characteristic of effective and valuable research. In fact, Quintana and colleagues (2001) have proposed the term *cultural validity* as a standard by which to evaluate the quality of research in addition to the traditional validity and reliability indicators.

Multicultural Counseling Competencies

Thus far, graduate training programs in psychology have focused almost exclusively on cultural competence as a component of *counseling* training rather than *research* training. Sue, Arredondo, and McDavis' (1992) Multicultural Counseling Competencies have provided a major catalyst in the process of integrating multicultural competence into counseling training. These competencies provide 31 standards of beliefs and attitudes, knowledge, and skills relevant to working with culturally diverse clients. The Professional Standards Committee of the Association for Multicultural Counseling and Development originally developed these standards in an effort to articulate the role of psychologists in today's increasingly diverse society. Sue and colleagues have cited several reasons why there is a need for these standards of competence. First, current training for students in mental health fields exhibits a monocultural focus. Second, there is a sociopolitical reality that counseling can often reflect differing client and counselor

worldviews, which are rooted in historical and current experiences of oppression, racism, and privilege. Third, multicultural research in psychology has a history of espousing a White middle-class value system, which has led to misperceptions and mistreatment of ethnic minority individuals. Fourth, a culturally unaware counselor can cause harm to clients by replicating systems of oppression in the counseling relationship. With few changes, this rationale could also apply as a justification for the need for standards of multicultural research competence.

Self-reported multicultural counseling competence has been positively associated with client satisfaction, client ratings of general counselor competence (Constantine, 2002a) and more advanced, complex levels of racial identity development (Ladany, Inman, Constantine, & Hofheinz, 1997; Neville, et al., 1996; Ottavi, Pope-Davis, & Dings, 1994; Roysircar, Gard, Hubbell, & Ortega, 2005). Although counselor ethnic minority status has been shown to positively correlate with self-reported multicultural counseling competence (Bellini, 2002; Holcomb-McCoy & Myers, 1999), Bellini (2003) found that higher levels of multicultural counseling competence were a stronger predictor of successful counseling outcomes than counselor ethnicity. Self-reported multicultural counseling competence has also been found to correlate inversely with racism scores among both school counselor trainees (Constantine, 2002a) and marriage and family therapists (Constantine, Juby, & Liang, 2001).

Although these competencies have provided ground-breaking advances in counseling diverse populations, they were designed to focus exclusively on the "practitioner" end of the "scientist-practitioner" psychology training model. However, young "scientists" are responding with interest to multicultural topics just as much as young "practitioners." This tidal wave of novice cross-cultural researchers, along with psychology's history of unethical, culturally insensitive, and ethnocentric research practices presents an environment in which graduate

programs can no longer ignore the need to model, teach and assess cultural competence *in research.*

Multicultural and Cross-Cultural Research Competence

The need for multicultural competence in research has been recognized primarily through scattered conceptual pieces outlining suggestions for research with diverse populations (Areán & Gallagher-Thompson; Callan & McElwain, 1980; Dana, 1996; Gil & Bob, 1996; Marin & Marin, 1991; Scott-Jones, 1994). In terms of formal documents, the Advisory Principles for Ethical Consideration in the Conduct of Cross-Cultural Research were developed in 1974 (Tapp, Kelman, Triandis, Wrightsman, & Coelho). These principles contain guidelines related to (a) Responsibilities to the Individuals and Communities Studied, (b) Responsibilities to Collaborators and Colleagues in the Host Community, and (c) Responsibilities to the Discipline and the Research Enterprise. The Guidelines for Research with Ethnic Minority Communities (2000, CNPAAEMI) contain a more detailed and up-to-date list of cultural considerations researchers must take into account when conducting research with various ethnic groups.

> … the guidelines were developed in response to critical concern among all of the nation's ethnic minority psychological associations about the cultural appropriateness of the methodology of much of the research in communities of color and the potential negative impact that may result when findings of such studies are used to inform public policy. (CNPAAEMI, p.iii)

CNPAAEMI (2000) has further asserted that cross-cultural research competence is a skill that must be acquired through didactic and supervised experiential training. They have stated that cross-cultural researchers need not only be competent in basic research abilities, but they must also have specific cultural knowledge of diverse communities they plan to study.

Because these guidelines identify specific components of culturally competent research practices, they represent the closest parallel to the Standards of Multicultural Counseling Competence (Sue et al., 1992) to date. However, these guidelines have not had the exposure, popularity, or influence that the Multicultural Counseling Competencies have had. However, they have helped to contribute to the second official document to recognize the need for cultural competence in research: the American Psychological Association's (APA) Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (2003). Still, only one of the guidelines included in this document addresses issues specific to conducting culturally sensitive research. In Guideline 4, APA encourages culturally sensitive researchers to conduct culture-centered and ethical research. According to APA, this guideline is needed for two main reasons: (a) an increasingly diverse population in the United States, and (b) psychology's history of misrepresenting culturally diverse groups in research.

In sum, guidelines and standards for culturally competent research are just beginning to emerge from professional psychological associations, and have received significantly less exposure, popularity, and influence than the Standards of Multicultural Counseling Competence (Sue, et al., 1992) have received. Further, guidelines for multicultural or cross-cultural research competence have yet to be investigated from an empirical standpoint. Little is known about their correlates, outcomes, and implications for research training. One of the current barriers to investigations in this area has been the virtual absence of instruments measuring multicultural competence from a research-training stance. Although authors like Neville, Worthington, and Spanierman (2001) have recommended that counseling psychology programs include formal evaluations of students' multicultural competence in research, no such measures have been designed specifically for this purpose.

Efforts to assess multicultural *research* competence must consider several limitations that exist in current psychometric approaches to multicultural *counseling* competence. One of the most significant of these limitations has been a lack of convergent validity between self-report measures and other methods of assessing multicultural competence. Constantine and Ladany (2000) and Ladany and colleagues (1997) failed to find significant relationships between self-reported multicultural counseling competence and measures of culturally competent case conceptualizations based on case vignettes given to counselor trainees. Thus, it seems plausible that self-report measures of multicultural counseling competence tend to measure participants' confidence in their multicultural counseling abilities, that is, self-efficacy, rather than their actual multicultural competence (Constantine, 2001a; Constantine, 2001b; Constantine & Ladany, 2000; Ladany et al., 1997). Thus, self-efficacy theory may provide a useful conceptual framework for a measure relying on self-report of multicultural competence because self-efficacy, by definition, is based on self evaluation rather than actual ability.

Self-Efficacy Theory

Self-efficacy has been defined as "expectations or beliefs that one can successfully perform a given behavior." (Hackett & Betz, 1981, p.328). According to Bandura's (1977) original theory of self-efficacy, an individual develops personal self-efficacy expectations for a given behavior or task based on four sources: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Several authors have recommended self-efficacy theory as a valuable framework for enhancing graduate research training (Betz, 1986; Gelso et al., 1988). Furthermore, researchers have found consistent positive relationships between higher levels of self-efficacy for research and research interest (Bard, Bieschke, Herbert, & Eberz, 2000; Bieschke, Bishop, & Garcia, 1996; Bishop & Bieschke, 1998), research

involvement (Bieschke et al., 1996), and research productivity (Phillips & Russell, 1994). Self-efficacy for research has also been found to mediate the relationship between perceived research training environment and research productivity among graduate students (Brown, Lent, Ryan, & McPartland, 1996; Hollingsworth & Fassinger, 2002; Kahn & Scott, 1997). Many authors have cited the dire need to increase research interest, involvement, and productivity among graduate students (Betz, 1986; Gelso et al., 1988; Gelso, Mallinckrodt, & Judge, 1996; Kahn, 2001; Kahn & Scott, 1997; Phillips & Russell, 1994; Stone, 1986). Based on the findings summarized above, increasing students' self-efficacy for research appears to be one effective way to meet these training goals.

Although empirical investigations lend support to the value of self-efficacy theory in research training, they have neglected the unique implications of self-efficacy for research among students conducting multicultural or cross-cultural research. Kiselica (1998) has described how multicultural training can be "unsettling and anxiety provoking" for some students who may have little experience with diverse racial and ethnic groups prior to their graduate experiences. There is a danger that these students will cope with this anxiety through mechanisms such as avoidance and selective attention (Utsey & Gernat, 2002). Some students may also show simplistic, dichotomous patterns of thinking when processing racial information (Steward, Boatwright, Sauer, Baden, & Jackson, 1998). When adopted by multicultural researchers, these are precisely the types of defense mechanisms and coping styles that can lead to ethnocentrism and bias in all stages of the research process. However, according to self-efficacy theory, as one's confidence to perform a given task increases, one's emotional arousal approaches an optimal level (Bandura, 1977), thereby reducing the likelihood of eliciting maladaptive coping strategies. Thus, it seems important to assess and strengthen students' self-

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efficacy for multicultural research over the course of a graduate training program in order to improve their ability to conduct culturally competent research.

Although this specific assertion has yet to be tested empirically, support for basic links between self-efficacy and multicultural competence can be found in counseling training literature. For instance, Sodowsky, Kuo-Jackson, Richardson, and Corey (1998) found that involvement in multicultural research was a significant predictor of multicultural counseling competence. Constantine (2001b) found a positive correlation between self-efficacy for counseling and multicultural counseling competence. Researchers have also found associations between higher levels of multicultural counseling competence and several of Bandura's (1977) sources of self-efficacy expectations. For example, higher self-reported multicultural counseling competence has been associated with more experience with diverse clients (Sodowsky et al.), which provides performance accomplishments, and multicultural coursework (Ottavi et al., 1994; Sodowsky et al.), where vicarious experience and verbal persuasion are likely to occur.

Liu, Sheu, and Williams (2004) have conducted one of the only explicit investigations of self-efficacy and multicultural competence in research. They found positive correlations between self-efficacy for multicultural research and self-reported multicultural counseling knowledge, skills, awareness, and relationships. However, Liu and colleagues' study was limited by the absence of an established instrument that specifically assessed self-efficacy for multicultural research. Clearly, an instrument is needed that integrates specific standards of cultural competence in the assessment of research self-efficacy.

Toward Measurement of Self-Efficacy for Cross-Cultural Research

Thus, the present study sought to develop an instrument measuring Self-Efficacy for Cross-Cultural Research (SECCR). The SECCR assesses confidence in one's abilities to conduct

culturally-responsive research using cross-cultural methodology. This study evaluated the hypothesized five-factor structure of the SECCR and applied tests of convergent and discriminant validity to the instrument. The SECCR instrument will help to advance current perspectives on cultural competence and research training in several ways. First, it will be one of the first instruments to assess competence in multicultural and cross-cultural *research* in light of the deluge of instruments measuring multicultural *counseling* competence. Second, it will respond to the limitations of self-reported multicultural counseling competence by applying self-efficacy theory as a conceptual framework that relies upon self-estimates of ability. Third, it will expand current forms of assessing self-efficacy in research by incorporating specific multicultural research competencies and cross-cultural research techniques.

CHAPTER 2

Literature Review

The theoretical framework for the Self-Efficacy in Cross-Cultural Research (SECCR) measure involves an integration of three conceptual domains: (a) standards of multicultural counseling competence, (b) guidelines for multicultural and cross-cultural research, and (c) self-efficacy theory. Literature relevant to each domain will be reviewed. Specific attention will be given to the strengths and limitations involved in measurement within each conceptual approach. Theoretical applications and measurement in each domain will be integrated to inform the development of the SECCR subscales. Based on this integration, I will provide a description of the conceptual basis for each hypothesized subscale of the SECCR.

Multicultural Counseling Competencies

No definitive set of empirically supported standards of multicultural *research* competence exist. Therefore, I will draw on Sue, Arredondo, and McDavis' (1992) Standards of Multicultural Counseling Competence to formulate a portion of the theoretical basis for the SECCR. This tripartite model of cultural competence is organized into three types of counselor characteristics relevant to working with diverse clients: (a) Beliefs and attitudes, (b) Knowledge, and (c) Skills. Specific standards for each of these characteristics are provided along three dimensions of competence: (a) Counselor Awareness of Own Assumptions, Values, and Biases, (b) Understanding the Worldview of the Culturally Different Client, (c) Developing Appropriate Intervention Strategies and Techniques. The result is a three by three matrix of 31 standards of multicultural counseling competence.

Empirical investigations of these standards of competence have tended to focus on one of four areas: (a) demographic and training correlates of competence, (b) relationships with racial

identity development and racism, (c) client/participant preferences and satisfaction, and (d) comparisons of self-reported multicultural counseling competence to other measures of competence (see also Worthington, Soth-McNett, & Moreno, 2007 for a recent review and content analysis of multicultural counseling competencies research).

Higher levels of self-reported multicultural counseling competence (MCC) have been shown to positively correlate with several demographic qualities of counselors, including being female (Bellini, 2002; Worthington, Mobley, Franks, & Tan, 2000) and a person of color (Bellini, 2002; Holcomb-McCoy & Myers, 1999). However, other studies have failed to find these relationships (Robles-Piña, 2002; Sodowsky, Kuo-Jackson, Richardson, & Corey, 1998). Sodowsky and colleagues have found that experience with diverse clients and multicultural research involvement positively predicted MCC beyond counselor ethnicity. In terms of counseling outcomes, Bellini (2003) has found that higher levels of self-reported MCC predicted successful counseling outcomes for clients better than counselor ethnicity. Other training variables that have been found to relate positively to MCC include previous multicultural coursework (Bellini, 2002; Constantine et al., 2001; Ottavi et al., 1994; Sodowsky et al.) and multicultural workshops (Bellini, 2002).

A significant subset of MCC literature has linked self-reported MCC to higher levels of racial identity development. Specifically, higher levels of MCC are associated with more advanced, complex levels of White racial identity development (Ladany et al., 1997; Neville, et al., 1996; Ottavi et al., 1994; Roysircar et al., 2005), while lower levels of MCC are associated with less developed stages of White racial identity development (Constantine et al., 2001). These findings have been consistent among school counselor trainees (Constantine, 2002b), rehabilitation counselors (Cumming-McCann & Accordino, 2005), and marriage and family

counselors (Constantine et al.). In fact, in a sample of rehabilitation counselors, Cumming-McCann and Accordino found that White racial attitude status added significant prediction of MCC scores beyond education, minority caseload, and multicultural workshops and experiences. It makes sense then that higher self-reported MCC scores correlate negatively with racism among school counselor trainees (Constantine, 2002b) and marriage and family therapists (Constantine et al.).

In the realm of client preferences and ratings, Constantine (2002a) found that self-reported MCC is positively associated with client satisfaction and client ratings of general counselor competence. Fraga, Atkinson, and Wampold (2004) investigated preferences for cultural competencies among Asian-Americans, Euro-Americans, and Latinos and found three competencies that were consistently preferred: (a) "awareness of institutional barriers that prevent students from seeking counseling services" (p. 58), (b) "movement from being culturally unaware to being aware and sensitive to his/her own cultural heritage" (p. 57), and (c) "being able to intervene with institutions on behalf of racial/ethnic minority clients" (p. 58). Pope-Davis and colleagues (2002) conducted a related study using a qualitative approach to measure client perspectives of MCC. Their results revealed that clients' main priority was having their needs met. This critical factor exhibited a complex and dynamic relationship with four other main factors: (a) client characteristics (i.e., expectations, presenting problems, salience of cultural identity), (b) client-counselor relationship (intersections of client and counselor characteristics), (c) client processes (clients' assumed roles in incorporating, dismissing, or understanding culture in the counseling process), and (d) client appraisals (assessment of counseling experience). Research that has compared self-reports of MCC to other measures of competence has shed light on an important limitation of self-report measures of competence. Several researchers have

found significant positive relationships between self-reported MCC and social desirability (Constantine et al., 2001; Constantine & Ladany, 2000; Ladany et al., 1997; Sodowsky, et al., 1998; Worthington et al., 2000). Thus, researchers have sought to compare self-report measures with other methods of assessing MCC. Unfortunately, they have found no significant correlations between self-reported MCC and multicultural case conceptualization ability (Constantine & Ladany; Ladany et al.) or observer ratings of verbal responses during mock counseling sessions (Worthington et al.).

Multicultural and Cross-Cultural Research Competence

Over the past couple decades a few attempts have been made to outline requirements for culturally competent and ethical research. Several conclusions have been drawn about the components of culturally competent research. First, researchers should use culturally appropriate informed consent procedures, including communication of findings (Areán & Gallagher-Thompson; Callan & McElwain, 1980; Dana, 1996; Gil & Bob, 1996; Marin & Marin, 1991; Scott-Jones, 1994). Second, research teams need to be culturally diverse (Gil & Bob). Third, researchers need to employ culturally appropriate assessment, with attention to translation equivalence (Callan & McElwain; Dana; Gil & Bob, Marin & Marin). Fourth, researchers should have appropriate levels of self-awareness and cultural knowledge (Callan & McElwain; Gil & Bob). Fifth, researchers should involve members of the cultural group being studied in the research process (Darou, Hum, & Kurtness, 1993; Davis et al., 2000; Greenwood & Levin, 1998; Marin & Marin; Scott-Jones, 1994) in order to address real community needs versus the researcher's perception of needs (Callan & McElwain, 1980; Gil & Bob). Sixth, researchers should be willing to move beyond quantitative methods to capture an in-depth or phenomenological perspective of the individuals and groups being studied (Dana; Davis et al).

In addition to these general guidelines, authors have provided specific suggestions for conducting research with specific ethnic minority populations. For instance, Areán and Gallagher-Thompson (1996) discussed recommendations for the recruitment and retention of older ethnic minority adults in research. Their recommendations include developing strong relationships with community and family members, soliciting advice from and working directly with key community members (e.g., as leaders and organizers of local senior centers), and providing follow-up information to the community once the research project had ended. Areán and Gallagher-Thompson also recommended providing transportation to and from the research site, or conducting the study in the target community. The former has the advantage of increased confidentiality if participants are concerned about stigma associated with involvement in a clinical study, while the latter may provide a more comfortable atmosphere for participants. Further recommendations included fully educating potential participants about the topic being researched and the benefits of participating, and offering explicit incentives for participation. Finally, Areán and Gallagher-Thompson posited that cultural competence is the most important issue in recruiting and retaining older ethnic minority adults in research. To conduct culturally sensitive research the research setting should be embedded in the cultural community, and research assistants should be bilingual-bicultural, and sensitive to cultural nuances within the ethnic group being studied.

Scott-Jones (1994) has outlined similar recommendations, with an emphasis on research with low-income ethnic minority children. Scott-Jones discussed underreporting or overreporting cases of suspected child abuse as a result of socio-cultural differences between researchers and participants. The author also noted that low-income ethnic minority children are more likely to be recruited by researchers studying psychological and social problems than normal

developmental processes because of minority children's disproportional use of state and federal services. Thus, Scott-Jones recommended that researchers studying this population strive for representative samples and control for socioeconomic status.

Although these conceptual articles have provided useful suggestions for cross-cultural and multicultural research, they lack the cohesion, structure, and organization offered by the Standards of Multicultural Counseling Competence (Sue et al., 1992). The document that has come closest to reaching this goal is the Guidelines for Research in Ethnic Minority Communities (CNPAAEMI, 2000). These standards provide cultural considerations researchers should take into account when conducting research with Asian American/Pacific Islanders, people of African descent, Hispanic, and American Indian participants. The standards are organized into four subsections, which address research considerations specific to each ethnic group.

For instance, the subsection on research with Asian American/Pacific Islanders was prepared by Stanley Sue and Derald Wing Sue of the Asian American Psychological Association. They described 24 points of cultural competence in research, under the domains of 1) Assumptions in conducting research on Asian Americans/Pacific Islanders, 2) Assessment guidelines, 3) Designing the research study, 4) Method, and 5) Interpretation and dissemination.

Likewise, Myers, Abdullah, and Leary of the Association of Black Psychologists developed the guidelines related to conducting research with persons of African descent. The guidelines are organized according to four overarching domains, with several topics included within two of the four domains. The first domain is General Issues for Consideration, which is divided into (a) Underlying assumptions, (b) Demographic context, (c) Race/ethnicity, (d) Sociocultural factors affecting performance, and (e) Communication and language. The second

domain is Methodological issues, Assessment guidelines, and Considerations. The third domain is Research Design/Questions, which includes (a) Cultural sensitivity/appropriateness with measures and instrument selection, (b) Subject/participant selection, and (c) Data analysis, interpretation, and information dissemination. The fourth domain is General Guidelines and Implications for Training.

The National Hispanic Psychological Association, represented by Barona and Barona, has created a Model for Conducting Research with Hispanics to add to the guidelines. This subsection includes Underlying assumptions and hypotheses and Methodological and sampling issues. Barona and Barona also provide a list of eight required skills for researching this population and Implications for training and interventions. Lastly, they present a Model for Conducting Research with Hispanics, which identifies 13 specific culturally competent tasks related to (a) Conceptualization of the study, (b) Methods/procedures, and (c) Interpretation/dissemination.

McDonald, of the Society of American Indian Psychologists, likewise presents a model for conducting research with American Indian Participants. McDonald has listed four main points related to general issues for anyone considering conducting research with American Indian participants, followed by three types of Research design/question issues, questions to expect, and comments. McDonald then delineates Methodology issues/considerations via specific categories of (a) Instrumentation selection, (b) Subjects/participants, (c) Procedures and related issues, and (d) Data analysis. Finally, issues of information dissemination are discussed.

In sum, these Guidelines for Research in Ethnic Minority Communities (CNPAAEMI, 2000) provide specific considerations and recommendations related to cultural competence in all stages of the research process. A major strength of these guidelines is their respect for variations

across ethnic groups in definitions of culturally competent research. This is preferable to guidelines for MCC that lump diverse populations together. However, because the CNPAAEMI guidelines include several subsections with many overlapping points, they are less parsimonious than might be desired for measurement purposes. They may also prove difficult to operationalize because the organization of each subsection varies greatly, and the descriptions vary between lengthy paragraphs and short, discrete provisions. Indeed, these guidelines have not been tested empirically, and to date no instrument has been created to measure multicultural research competence. Perhaps these limitations explain, in part, why the CNPAAEMI (2000) guidelines have not earned the exposure or influence received by the Multicultural Counseling Competencies (Sue et al., 1992).

The CNPAAEMI (2000) guidelines did prove valuable, however, in informing the American Psychological Association's Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (APA, 2003). Six guidelines are outlined in this document for the purpose of expanding the purview of cultural competence across the wide variety of roles that psychologists assume. In particular, Guideline 4 states:

"Culturally sensitive psychological researchers are encouraged to recognize the importance of conducting culture-centered and ethical psychological research among persons from ethnic, linguistic, and racial minority backgrounds." (p. 388)

APA drew substantially from the CNPAAEMI (2000) guidelines in creating this provision, which is elaborated in detail under three main areas of competence: (a) Research generation and design, (b) Assessment, and (c) Analysis and interpretation. Although this format may receive more recognition than the CNPAAEMI guidelines, these APA guidelines suffer

from similar limitations. Namely, they have yet to be tested empirically and may be difficult to operationalize because of their broad and somewhat ambiguous nature.

Many of the recommendations and guidelines reviewed thus far focus on research being conducted in ethnic minority communities within the United States (multicultural research). Most of the principles addressed in this literature could apply to cross-cultural research and have thus been used to inform the present study. However, it is important to review the few ethical guidelines that have been developed with a specific focus on cross-cultural research with a cross-national perspective. One of the first sets of such guidelines is the Advisory Principles for Ethical Consideration in the Conduct of Cross-Cultural Research (Tapp et al., 1974). These principles contain guidelines related to (a) Responsibilities to the Individuals and Communities Studied, (b) Responsibilities to Collaborators and Colleagues in the Host Community, and (c) Responsibilities to the Discipline and the Research Enterprise.

Warwick reproduced and expanded upon these guidelines in 1980. Warwick's ethical guidelines have been organized into three broad sections: (a) Study Design and Research Collaboration, (b) Responsibilities to the Populations Studied, and (c) Professional Responsibilities. The first section of Warwick's (1980) guidelines emphasizes the importance of establishing equitable collaborative relationships with knowledgeable social scientists within the participating culture. This section includes specific suggestions related to maximizing fairness and cultural utility and minimizing exploitation of collaborators in the initial stages of a cross-national study. In the second section, Warwick has proposed guidelines related to ethical and culturally sensitive data collection procedures and informed consent. This section includes unique considerations related to local definitions of personal and public disclosures, political risks, and the use of deception in cross-cultural research. In the Professional Responsibilities

section, Warwick has suggested that cross-cultural researchers know the limits of their competence and maintain high standards of professional judgment. This section also includes several guidelines related to publishing and disseminating cross-cultural research findings. In these guidelines, Warwick asserts that complete and accurate presentation of results should not be limited by funding sources or political implications.

The strength of Warwick's (1980) guidelines for the present study lies in their specific emphasis on conducting culturally competent cross-national research. However, Warwick's guidelines lack the concise, concrete provisions such as those featured in most sections of the CNPAAEMI (2000) standards. Warwick's lengthy, descriptive guidelines would prove even more difficult to operationalize and assess than either the CNPAAEMI or the APA (2003) guidelines. Because there is currently no way to empirically assess levels of cultural competence among multicultural or cross-cultural researchers, we lack information about the development, antecedents, or correlates of cultural competence in research.

Assessment of Multicultural Competence

Thus, there is a need for an instrument that assesses competence in multicultural or cross-cultural research. For clues about the potential strengths and limitations of such an instrument, several measures of multicultural counseling competence will be reviewed. Four primary instruments have been used to measure self-reported MCC, and are described in the following sections.

Cross-Cultural Counseling Inventory (CCCI-R). The CCCI-R (LaFromboise, Coleman, & Hernandez, 1991) was among the first instruments to measure MCC. The 20 items on the CCCI-R are organized in three domains: (a) counselor's self-awareness, counseling communication skills, and understanding of counseling role, (b) counselor's socio-political

awareness, and (c) counselor's cultural sensitivity. In a factor analysis with a sample of 86 university students, an orthogonal three-factor structure was found to account for 63% of the variance in MCC items. All but one of the items loaded on the expected factor with loadings ranging from .55 - .84. LaFromboise and colleagues reported internal consistency reliability (α) of .95 for the total score.

LaFromboise and colleagues (1991) used a focus group of eight psychology graduate students to assess content validity of the items. These students assessed CCCI-R items for appropriate domain classification and representativeness of domain content. Reliability of the CCCI-R was assessed among a group of three expert raters of various ethnic backgrounds. These raters determined appropriate behavioral manifestations of each item and used the CCCI-R to rate counselors on these behaviors as demonstrated in a videotaped mock counseling session. Correlations between raters ranged from .39-.69 and reliability of average rating across raters was .78. It is important to note that LaFromboise and colleagues (1991) originally developed the CCCI-R as an observer measure rather than a self-report measure, although it has been widely used as a self-report measure. This is consistent, however, with LaFromboise and colleagues' suggestion that the CCCI-R could be used for counselor self-evaluation, as well as for training and counseling research.

Several limitations of the CCCI-R are apparent. For example, items were based on a position paper about MCC, as prepared by the Society of Counseling Psychology (APA Division 17). This position paper was a precursor to the more comprehensive Standards of Multicultural Counseling Competence (Sue et al., 1992). Because this position paper only included 11 standards, the CCCI-R has only 20 items. Additionally, LaFromboise and colleagues used a sample of only 86 students to examine the factor structure of the CCCI-R, and merely described

this sample as "quite diverse" in age, ethnicity, and SES without reporting specific numbers or percentages. The factor structure also lacked simple structure, with some items having factor loadings of up to .58 with subscales other than their own. As a result of these limitations, LaFromboise and colleagues warned against "global applications of the CCCI-R" (p.387).

Multicultural Counseling Knowledge and Awareness Scale (MCKAS). The MCKAS (Ponterotto, Gretchen, Utsey, Rieger, & Austin, 1999, as cited in Constantine & Ladany, 2000) is a revised version of the MCAS-B, which was designed to improve upon the CCCI-R. The MCKAS is a 32-item measure of self-reported MCC with two domains: (a) Knowledge, and (b) Awareness. The Knowledge subscale assesses general knowledge in multicultural counseling, while the Awareness subscale measures the degree of ethnocentric bias. Construct validity was provided by a confirmatory factor analysis, in which the proposed two-factor solution provided the best fit to the data. According to the scale's authors (Ponterotto et al., 1999), correlations between the two subscales exist, but the subscales can be viewed as measuring distinct constructs. Ponterotto and colleagues (as cited in Constantine & Ladany) found coefficient alpha values of .92 for the Knowledge subscale and .79 for the Awareness subscale, while Constantine and Ladany found slightly lower alpha values of .90 for the Knowledge scale and .75 for the Awareness scale.

Multicultural Awareness Knowledge Skills Survey (MAKSS). The MAKSS (D'Andrea, Daniels, & Heck, 1991) is a 60-item measure with three 20-item subscales, measuring awareness, knowledge, and skills. This instrument was developed to test the effects of a multicultural training course on counseling graduate students. With this purpose in mind, items for the MAKSS were generated based on instructional objectives of the course. In two different investigations with a sample of 90 graduate students, D'Andrea and colleagues found significant

increases in participants' full scale and subscale scores following a multicultural course. This change was significantly different from a control group. D'Andrea and colleagues reported alpha values of .75 for the Awareness subscale, .90 for the Knowledge subscale, and .96 for the Skills subscale. Constantine and Ladany (2000) subsequently found lower alpha values of .62, .79, and .90, respectively. D'Andrea and colleagues also found moderate pre-test correlations between the subscales, but fairly low post-test correlations, suggesting some independence between the three dimensions of competence.

Convergent validity for the MAKSS was obtained by comparing the Awareness subscale with the Awareness subscale of the MCAS. However, D'Andrea and colleagues (1991) have merely stated that item content "matched" and no correlations were reported. Although D'Andrea and colleagues have not described their instrument development process in detail, it appears that they merely compared their hypothesized three factor structure to several one factor structures based on each subscale. Further, the authors did not report any revisions to the MAKSS based on preliminary analyses and used a sample of only 90 participants. Thus, although the MAKSS appears to be a comprehensive and theory-driven instrument, it is as yet a somewhat unrefined measure of MCC.

Multicultural Counseling Inventory (MCI). The MCI (Sodowsky, Taffe, Gutkin, & Wise, 1994) was introduced in 1994 to better capture the domain of MCC and improve on the instrument development procedures used with the CCCI-R, MAKSS, and MCAS-B. In Study 1, Sodowsky and colleagues tested their initial instrument of 87 items on a sample of 604 participants, which included counseling, school, and clinical psychology graduate students, and psychological association members of all degrees and experience levels.

In their principal axis factor analysis, Sodowsky and colleagues found that a four-factor solution fit the data best. The first factor was labeled Multicultural Counseling Skills. It includes items related to retention of clients, recognition and recovery from cultural mistakes, the use of nontraditional assessment methods, counselor self-monitoring, and tailoring interventions to client needs. Items falling in this domain exhibited factor loadings ranging from .30 to .65. The second factor was labeled Multicultural Awareness. These items refer to proactive multicultural sensitivity, extensive multicultural interactions, clinical, and life experiences, broad-based cultural understanding, and multicultural advocacy in organizations. Factor loadings for items in this domain ranged from .33 to .77. The third factor was labeled Multicultural Counseling Relationship. The items refer to relational process with ethnic minority clients, trustworthiness, comfort level, stereotypes of client, and worldview. Factor loadings for this dimension ranged from .38 to .61. The fourth factor was labeled Multicultural Counseling Knowledge. The items relate to culturally relevant case conceptualization and treatment strategies, cultural information, and multicultural counseling research. Items on this scale had factor loadings ranging from .30 to .63.

Sodowsky and colleagues (1994) assessed the content validity of the MCI by conducting a focus group with 14 graduate students who had received 15 hours of multicultural training. According to Sodowsky and colleagues, these students generally agreed on the names and representativeness of the four domains, but also predicted correlations between domains.

In Study 2, Sodowksy and colleagues (1994) contributed further validating evidence using confirmatory factor analysis in a sample of 320 university center counselors. Because they found moderate correlations between the factors (.16-.31), the authors tested a higher-order model. This four-factor model with one higher-order factor accounted for the majority of the

variance of the original four-factor model. However, the goodness-of-fit indices and factor loadings were better for the original model. Thus, the initial four-factor solution was retained. This solution accounted for 35.5% of the variance in MCC and each of the 40 items had their highest loading on their respective factor. Internal consistency reliabilities (αs) were reported as follows: .81 for Multicultural Skills, .80 for Multicultural Awareness, .67 for Multicultural Relationships, .80 for Multicultural Knowledge, and .86 for the full scale MCI. Constantine and Ladany (2000) found similar or higher alpha values of .81, .82, .71, .84, and .91, respectively.

The authors of the MCI have improved upon previous measures of MCC by using larger samples and more extensive statistical analysis. However, several limitations of their study remain. For instance, their initial sample of 604 was 95% Caucasian, which is especially limiting given the authors' prediction that individuals from different ethnic backgrounds will respond differently to the MCI. Sodowsky and colleagues addressed this limitation in their second study, which was only 68% Caucasian. Like previous measures of MCC, the MCI subscales are moderately correlated.

Evaluation of MCC Measures. Overall, several criticisms of MCC measures can be noted (Constantine & Ladany, 2000). First, because validity evidence is mixed, more validation studies are needed. MCC instruments could benefit from tests of convergent and discriminant validity with other measures of related and distinct constructs. Second, there are variations in domains and subscales and diverse factor structures across instruments. This has led to the criticism that the measures lack uniformity in the way they operationalize MCC. Third, the factor structure of these instruments only partially reflects the tripartite structure of the Standards of Multicultural Counseling Competence (Sue et al., 1992). Researchers have found that a two-factor solution

(Ponterotto et al., 1999) or a four-factor solution (Sodowsky et al., 1994) could provide a better fit to MCC data than the hypothesized three-factor solution.

The most important criticism of MCC measures involves the limitations of self-report measures. Several studies have shown that most respondents rate themselves as average or above average on most components of MCC (Holcomb-McCoy & Myers, 1999; Robles-Piña, 2002). This lack of variability in self-estimates is consistent with findings that reveal discrepancies between self-reported MCC and other-rated MCC (Worthington et al., 2000) or multicultural case conceptualization ability (Constantine & Ladany, 2000; Ladany et al., 1997).

Several studies have demonstrated that correlations between self-reported MCC and actual multicultural counseling ability are minimal at best (Constantine & Ladany, 2000; Ladany, et al., 1997; Worthington, et al., 2000). Constantine and Ladany found a lack of convergent validity between self-reported MCC and multicultural case conceptualization abilities with all four measures of MCC previously described after controlling for social desirability. Worthington and colleagues found similar results in a comparison of self-estimated MCC (as measured by the MCI) and others' ratings of competence (as measured by the CCCI-R) in videotaped counseling sessions. However, Worthington and colleagues did find a significant positive relationship between the Knowledge subscale of the MCI and CCCI-R scores.

Further, several of these authors found significant positive correlations between self-reported MCC and social desirability (Constantine & Ladany, 2000; Worthington et al., 2000). Specifically, social desirability positively relates to total scores on the CCCI-R, MAKSS (Constantine & Ladany, 2000), and MCI, along with MCI Relationship subscale scores (Worthington et al., 2000). Taken as a whole, these findings have led some researchers to conclude that MCC instruments "tend to measure anticipated rather than actual behaviors or

attitudes correlated with multicultural competence."(Constantine & Ladany, 2000 p.155). In fact, some researchers have begun to label traditional self-report measures of MCC as measures of multicultural counseling self-efficacy (Constantine, 2001a; Constantine, 2001b). Self-efficacy, by definition, is based on self-estimates of abilities rather than actual abilities.

In a response to aforementioned criticisms of self-reported MCC, Sheu and Lent (2007) developed an instrument based on an integrated conceptual framework of self-efficacy theory and multicultural counseling competency literature. They labeled it the Multicultural Counseling Self-Efficacy Scale—Racial Diversity Form (MCSE-RD). The MCSE-RD is a 37-item measure with three subscales, measuring Multicultural Intervention, Multicultural Assessment, and Multicultural Session Management. Positive correlations with the MCI and a measure of general counseling self-efficacy provided evidence of convergent validity of the MCSE-RD. Nonsignificant correlations with a measure of multicultural social desirability provided evidence of discriminant validity. The MCSE-RD may be an improvement to existing measures of MCC, but it still neglects cultural competence in research training.

As indicated by Sheu and Lent (2007), a self-efficacy approach to the measurement of cultural competence may improve content validity by allowing for the conceptualization of items and results in terms of self-estimates rather than actual competencies. In addition, the theory of self-efficacy is more established and the construct of self-efficacy is more well-defined than the construct of multicultural competence. This may help facilitate valid measurement of multicultural research competence in the Self-Efficacy for Cross-Cultural Research Measure (SECCR) developed in the present study.

Self-Efficacy Theory of Behavioral Change

Self-efficacy has been defined as "expectations or beliefs that one can successfully perform a given behavior." (Hackett & Betz, 1981, p.328). Albert Bandura (1977) was the first to present a unified theory of self-efficacy as a model for behavioral change. According to Bandura, an individual develops personal self-efficacy expectations for a given behavior or task based on four sources. The first of these is performance accomplishments. Indeed, past success is the most important predictor of self-efficacy for a given area. The second source is vicarious experience, or role modeling. Seeing similar others perform a given behavior with success can influence a person's beliefs about his or her own ability for that behavior. This predictor is not as strong as direct experience, but it can play an important role in developing self-efficacy expectations. The third source of self-efficacy information is verbal persuasion. While this path to enhancing self-efficacy is accessible and widely used, its effects can be easily extinguished by disconfirming direct experience. The fourth determinant of self-efficacy is any emotional arousal that accompanies thoughts or actions associated with the task. According to Bandura, stress or anxiety associated with a task can affect self-efficacy directly, by diminishing an individual's estimation of success with the task, and also indirectly by inhibiting actual performance accomplishment. However, the effect of anxiety can be offset by positive contributors to self-efficacy.

According to Bandura's (1977) theory, individuals with higher self-efficacy for performing a given behavior will be more likely to persist in that behavior in the face of obstacles. This proposition has been supported through empirical demonstrations that self-efficacy operates as a mediating variable between skills and performance by influencing effort and persistence (for a review, see Pajares, 1996).

Self-Efficacy Theory: Advances and Expansions

Although Bandura's (1977) original theory will provide the theoretical framework for the present study, it is important to review the historical course of Bandura's theory as expanded and applied in career development literature. This review will demonstrate the appropriateness of self-efficacy theory as a conceptual framework for my instrument with applications in the career development of researchers in training. Because the theory of self-efficacy has been researched extensively, my review will focus on self-efficacy literature most related to scientist-practitioner training. First, I will provide a general review of major findings relating self-efficacy expectations to academic and career development. I will emphasize meta-analyses and literature surveys. Next, I will briefly review literature related to counseling self-efficacy. Finally, I will provide a more in-depth review of self-efficacy expectations in the research training environment.

Academic and career self-efficacy. Hackett and Betz (1981) were the first to apply Bandura's (1977) self-efficacy theory to the realm of career development. In particular, they applied Bandura's theory to the career development of women. They concluded that Bandura's four sources of self-efficacy expectations are adversely affected by the gender-role socialization of women. In this perspective, self-efficacy theory provides a conceptual framework for understanding the under-representation of women in traditionally male-dominated fields. Hackett and Betz have described unique applications to women for each of Bandura's four sources of self-efficacy expectations. First, traditional feminine sex roles do not facilitate access to and positive interpretation of performance accomplishments. Second, there is a lack of female role models in nontraditional career areas to foster vicarious learning. Third, research has found that women pursuing nontraditional careers are less likely than men to receive verbal encouragement

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and more likely to receive resentment (Morgan, 1992). Fourth, research findings have shown that women tend to score higher on measures of anxiety than men, which contributes to emotional arousal.

Hackett and Betz' (1981) self-efficacy approach to the career development of women paved the way for further theoretical advances incorporating self-efficacy theory into the process of career development. One of the major theoretical pieces to emerge was Lent, Brown, and Hackett's (1994) Social Cognitive Career Theory (SCCT). This theory attempts to explain processes through which career and academic interests develop, career-related choices are made, and performance outcomes are achieved. These processes, called sociocognitive mechanisms, include self-efficacy, outcome expectations, and goal representations. SCCT is unique and comprehensive relative to other theories of career development because it also includes person inputs (i.e., race, gender) and contextual affordances (i.e., socioeconomic status) as contributors to learning experiences, which in turn contribute to self-efficacy beliefs and outcome expectations. These self-efficacy and outcome expectations then influence academic and career interests, choices, and performance.

SCCT's inclusion of interactions between person inputs and contextual affordances makes it especially applicable to diverse populations. Thus, SCCT has been applied to the career development of women of color (Byars & Hackett, 1998) as well as specific ethnic groups, such as African-American women (Hackett & Byars, 1996), Mexican-American women (Flores & O'Brien, 2002) and Italian high school students (Lent, Brown, Nota, & Soresi, 2003). SCCT has also been applied with lesbian women and gay men (Morrow, Gore, & Campbell, 1996). Of particular note is the study by Flores and O'Brien, who found significant positive relationships between self-efficacy, interest, and aspirations for nontraditional careers in Mexican American

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women. These and other findings indicate that the construct of self-efficacy expectations may be one of the strongest components of SCCT.

Pajares (1996) conducted an extensive review of research on self-efficacy beliefs in academic settings. He notes that academic self-efficacy has been investigated in two main lines of research. The first addresses college major and career goal choices. Particular attention has been given to sex differences in math and science majors. Pajares concluded that mathematics self-efficacy tends to be more predictive of math interest and choice of math-related courses and majors than either math achievement or math outcome expectations. Pajares also concluded that male college students report higher math self-efficacy than female college students.

In the second area of academic self-efficacy research, researchers have investigated psychological correlates of self-efficacy, including attributions, modeling, problem solving, reward contingencies, self-regulation, social comparisons, strategy training, teaching and teacher education, anxiety, and self-concept. Generally, researchers have found that academic self-efficacy beliefs correlate with other self-beliefs, but effect sizes vary greatly depending on how self-efficacy is measured. Consistent with Bandura's (1977) theory, academic self-efficacy expectations have correlated consistently with motivation and academic persistence. Specifically, Pajares concluded that students with higher self-efficacy use more cognitive and meta-cognitive strategies to persist longer in more difficult academic tasks than students with lower self-efficacy expectations. Pajares also concluded that academic self-efficacy correlates with academic achievement both directly and indirectly via moderating and mediating variables, such as academic goals and self-regulation. Pajares noted that several studies have found academic self-efficacy beliefs to be as strong a predictor of academic performance as ability.

Multon, Brown, and Lent (1991) conducted a meta-analysis that focused exclusively on the relationship between self-efficacy beliefs and the academic outcomes of performance or persistence. In their analysis of 39 studies of normal and high-achieving elementary, high school, and college students (N = 4,998), they found an overall effect size of .34 between self-efficacy beliefs and academic persistence, and .38 between self-efficacy and academic performance. However, Multon and colleagues identified four conditions that tended to moderate these effect sizes. First, they found stronger effect sizes when self-efficacy beliefs were measured immediately post-treatment rather than pre-treatment or in survey research without a treatment. Second, they found stronger effect sizes for relationships between self-efficacy beliefs and academic outcomes with low-achieving students than with average-achieving students. Third, they found stronger effect sizes with high school and college students than with elementary students, indicating some moderating effect of age. Fourth, they found stronger effect sizes when self-efficacy beliefs were measured for more specific and less complex tasks (i.e., basic academic skills vs. course grades).

Self-efficacy expectations have also been studied extensively as they relate to career development and work-related constructs. One of the most replicated findings has been moderate to high correlations between self-efficacy expectations and vocational interests. In fact, these results have led some researchers to question whether self-efficacy expectations, vocational interests, and outcome expectations are, in fact, separate constructs (Lapan & Jingeleski, 1992). However, based on their meta-analysis of 53 studies (N = 37,829), Rottinghaus, Larson, and Borgen (2003) concluded that self-efficacy expectations and interests do, in fact, represent separate, although moderately correlated, constructs. Rottinghaus and colleagues' research expanded upon Lent, Brown, and Hackett's (1994) meta-analysis of 13 studies. Lent and

colleagues reported an average effect size of .53 for correlations between self-efficacy beliefs and interests, whereas Rottinghaus and colleagues found a slightly higher average effect size of .59. These researchers also found three significant moderating variables in the relationship between self-efficacy beliefs and vocational interests: (a) sex, (b) type of measure, and (c) age. Men showed stronger associations between self-efficacy and some types of interests than women, although magnitudes of these differences may be too small (3-7% of variance accounted for by sex) to be practically significant. Type of measure was a more prominent moderator. Correlations were stronger using the Campbell Interest and Skills Survey as compared to the Strong Interest Inventory/Skills Confidence Inventory. Regarding age, stronger relationships were found among working adults, moderate relationships among college students, and weaker relationships among adolescents. However, Rottinghaus and colleagues pointed out systematic variations in the type of interests examined in these studies, which may also have contributed to age differences.

Stajkovic and Luthans (1998) conducted a meta-analysis of the relationship between self-efficacy beliefs and work-related performance. In their sample of 114 studies ($N = 21,616$), they reported an average effect size of .34 for correlations between self-efficacy and work performance. Two variables significantly moderated these relationships: (a) task complexity, and (b) type of research setting. Correlations were stronger when the degree of task complexity was low and when constructs were measured in a simulated work setting rather than in actual work settings.

Self-efficacy expectations have also been found to be important in understanding sex differences in occupational choices. Research has found that males have higher self-efficacy for male-dominated (nontraditional) occupations (Betz & Hackett, 1981; Post-Kammer & Smith,

1994), whereas females have higher self-efficacy for female-dominated (traditional) occupations (Betz & Hackett; Flores & O'Brien, 2002; Nevill & Schlecker, 1988; Post-Kammer & Smith), regardless of ability. These findings have been demonstrated consistently among mixed gender and female samples of university students (Betz & Hackett; Nevill & Schlecker), high school students (Post-Kammer & Smith), and Mexican-American women (Flores & O'Brien). Further, Nevill and Schlecker found that women who reported higher career decision-making self-efficacy were more likely to consider nontraditional occupations.

Counseling self-efficacy. An additional area of self-efficacy research that is relevant to scientist-practitioner training is self-efficacy for counseling. In their review of 32 studies, Larson and Daniels (1998) organized this literature into three general domains: (a) studies examining the correlates of counseling self-efficacy, (b) studies testing interventions designed to increase counseling self-efficacy, and (c) studies examining predictors of counseling self-efficacy. Larson and Daniels concluded that studies show modest to strong positive correlations between counseling self-efficacy and outcome expectations, self-evaluations of past performance, and self-concept. Findings related to counseling self-efficacy and level of training have been mixed. According to Larson and Daniels, counseling self-efficacy correlates positively with counseling experience when counselors with very limited or no experience are compared to those with some experience, whereas the effect of experience on self-efficacy tends to dissipate as counselors advance.

Larson and Daniels (1998) reported a similar phenomenon in studies that measure the effects of interventions designed to influence self-efficacy. Research has shown that beginning practicum classes increase trainees' self-efficacy in counseling, while no significant change has been found after advanced practicum classes. Additionally, positive and negative performance

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feedback following a mock counseling session has been found to positively or negatively influence counseling self-efficacy, respectively. Role plays and modeling techniques have also been found to increase counseling self-efficacy among trainees. Finally, Larson and Daniels identified several predictors of counseling self-efficacy in studies using multiple regression analyses. The strongest predictors were anxiety and perceptions of fraudulence. Other significant predictors included counselor personal characteristics, positive feedback, counseling experience, counseling-related coursework, and perceptions of the supervisory environment and supervisory relationship.

Of particular interest to the present study are a few studies that have focused specifically on multicultural counseling self-efficacy. In one such study, Constantine (2001a) found that multiculturally-focused supervision significantly predicted multicultural counseling self-efficacy beyond the prediction provided by previous multicultural coursework and social desirability. Interestingly, Constantine used the MAKSS (D'Andrea et al., 1991) to measure multicultural counseling *self-efficacy*, despite its original purpose as a measure of multicultural counseling *competence*. Constantine argued that self-reported MCC may actually be measuring self-efficacy rather than competence. Nonetheless, the theory of self-efficacy has not been integrated into the conceptual framework for the MAKSS.

Self-Efficacy in Research

Of the massive self-efficacy literature, most relevant to the present study is the modest portion that addresses self-efficacy expectations for research. Studies of research self-efficacy can generally be classified into two main areas: (a) research self-efficacy and the research training environment, and (b) research self-efficacy and other social cognitive variables (i.e., interest, performance, career goals, and outcome expectations). Although not a major research

thrust, demographic, training, and experience correlates of research self-efficacy have also been examined.

The first of these areas of research is the largest. Overall, research self-efficacy has correlated positively with perceptions of the research training environment (Brown et al., 1996; Gelso et al., 1996; Hollingsworth & Fassinger, 2002; Kahn & Miller, 2000; Kahn & Scott, 1997; Phillips & Russell 1994). Gelso and colleagues found this relationship among graduate students in counseling, clinical, and school psychology. Phillips and Russell found that research self-efficacy was a much stronger predictor of research productivity than was the research training environment. Subsequent refinements of Phillips and Russell's approach have revealed that, among graduate students, research self-efficacy tends to mediate the relationship between perceived research training environment and research productivity (Brown, et al.; Hollingsworth & Fassinger; Kahn & Scott). Brown and colleagues also found sex differences, with males showing a stronger positive relationship between research self-efficacy and productivity and females showing a stronger relationship between research self-efficacy and research training environment. However, these gender differences have not been replicated (Hollingsworth & Fassinger; Kahn & Scott).

Gelso and colleagues (1996) found that research self-efficacy related positively to total scores and to each of the nine subscales of the Research Training Environment Scale (RTES). These subscales include: faculty modeling, positive reinforcement, early involvement in research, learning relevant statistics, guidance in looking inward for research ideas, viewing research as a partly social activity, emphasizing that all research is flawed, learning a variety of investigative styles, and imparting the perspective of research as a wedding of science and practice.

In the second major area of literature on research self-efficacy beliefs, researchers have related various components of SCCT to research interest and scholarly activity. The most consistent findings are positive correlations between research self-efficacy, research interest, and outcome expectations, with research self-efficacy serving a mediating function (Bard et al., 2000; Bishop & Bieschke, 1998, Kahn, 2001). For example, Bishop and Bieschke found that research self-efficacy mediated the relationship between Holland's Investigative type interests and research interest. In addition, this relationship was mediated by outcome expectations. While Kahn failed to replicate these relationships in his model of scholarly activity, he did find that research self-efficacy mediated the relationship between perceptions of research training environment and scholarly activity. In Bard and colleagues' comparison of faculty and doctoral students, they found that research self-efficacy accounted for only 7% of the variance in research interest, whereas outcome expectations accounted for 40%. In a study of rehabilitation counselor education faculty, Bieschke, Herbert, and Bard (1998) found that research self-efficacy predicted a significant amount of variance in research productivity, beyond the variance predicted by person inputs, including ethnicity, gender, program, and professorship rank.

Although Bieschke and colleagues (1998) did not find any significant contributions from person inputs, Landino and Owen (1988) did find significant sex and age differences in research self-efficacy among 241 interdisciplinary university faculty. Females and older faculty members were found to have lower research self-efficacy than males and younger faculty members. However, these findings should be interpreted with caution because the sample was only 18% female. In addition, Schoen and Winocur (1988) did not find gender differences in a similar study of 337 interdisciplinary university faculty, with proportional males and females in each discipline.

Measurement of Research Self-Efficacy

Self-efficacy expectations for research have been measured previously by the Self-Efficacy in Research Measure (SERM; Phillips & Russell, 1994), Research Self-Efficacy Scale (RSES; Bieschke et al., 1996), and the Research Attitudes Measure (RAM; O'Brien, Malone, Schmidt, & Lucas, 1998, as cited in Forester, Kahn, & Hesson-McInnis, 2004).

The Self-Efficacy in Research Measure (SERM; Phillips & Russell, 1994) was developed using an assessment of research skills, called the Survey of Research Training (SORT; Royalty & Reising, 1986, as cited in Phillips & Russel), as a model. Items for the SERM were taken directly from the SORT, from other relevant literature, and also through a list of skills and research tasks generated informally by graduate students in counseling psychology. A factor analysis on 23 preliminary items with a sample of 219 graduate students from 12 different psychology programs revealed a four-factor solution: (a) Research Design Skills, (b) Practical Research Skills, (c) Quantitative and Computer Skills, and (d) Writing Skills. Phillips and Russell then generated at least eight items for each of these factors. They found the full scale alpha coefficient to be .96. For the subscales, coefficient alpha was .90 for Research Design Skills, .83 for Practical Research Skills, .93 for Quantitative and Computer skills, and .94 for Writing Skills.

The Research Self-Efficacy Scale (RSES; Bieschke et al., 1996) was developed using the format of the Counselor Self-Efficacy Scale (Johnson, Baker, Kopala, Kiselica, & Thompson, 1989, as cited in Bieschke et al.). The RSES contains 51 items and participants are asked to rank their level of confidence to perform a variety of research tasks on a scale from 0 to 100. Bieschke and colleagues performed a principal components analysis on data from 177 doctoral students in a variety of disciplines. Based on the scree plot analysis, the authors adopted a four-factor

solution as the best fit to the data. The researchers labeled the factors Conceptualization, Implementation, Early Tasks, and Presenting the Results. Bieschke and colleagues found the RSES full-scale coefficient alpha to be .96. For the subscales, coefficient alpha was .92 for Conceptualization, .96 for Implementation, .75 for Early Tasks, and .91 for Presenting the Results. The SERM and the RSES have been the dominant instruments of choice for investigators examining research self-efficacy expectations.

The Research Attitudes Measure (RAM; O'Brien et al., 1998, as cited in Forester et al., 2004), with 23 items, is shorter than the SERM and the RSES. Principal components analysis yielded the following six factors and subsequent subscales: Discipline and intrinsic motivation, Analytical skills, Preliminary conceptualization, Writing skills, Application of ethics and procedures, and Contribution and utilization of resources. O'Brien and colleagues reported the coefficient alpha for the total scores to be .93, while Forester and colleagues found the alpha to be .89. The RAM has shown convergent validity, correlating .88 with total SERM scores, .49 with a measure of research interest, and .52 with a measure of research productivity.

Forester and colleagues (2004) performed confirmatory and exploratory factor analyses on the RSES, SERM, and the RAM items based on responses from 1,004 graduate students in psychology. In the confirmatory factor analyses, they found that no measure fit its hypothesized model. However, in exploratory analyses, they found a four-factor solution that predicted 51% of the variance in research self-efficacy expectations based on 107 items from all three measures. Although no new instrument was developed in this study, Forester and colleagues did label the four domains identified in their joint factor analysis: Data analysis self-efficacy, Research integration self-efficacy, Data collection self-efficacy, and Technical writing self-efficacy.

In summary, the SERM, RSES, and RAM may suffer from problems with structural validity (Forester et al., 2004). However, they have demonstrated external validity in their relationships with theoretically relevant variables such as interest in research (Bard et al., 2000; Bishop & Bieschke, 1998, Kahn, 2001) and perceptions of the research training environment (Brown et al., 1996; Gelso et al., 1996; Hollingsworth & Fassinger, 2002; Kahn & Miller, 2000; Kahn & Scott, 1997; Phillips & Russell 1994). Still, the SERM, RSES, and RAM are probably inadequate to measure self-efficacy expectations for cross-cultural or multicultural research because they do not include critical components of cultural competence such as researcher self-awareness and the ability to establish trust within a multicultural community. Researchers have just begun to investigate self-efficacy for conducting this type of research, perhaps because no instrument yet exists that measures both cross-cultural research competence and research self-efficacy in an integrated way.

Multicultural Research Self-Efficacy

Liu and colleagues (2004) have conducted the only study that examined self-efficacy *and* multicultural competence in research. In a sample of 119 psychology graduate students, Liu et al. examined the extent to which individual factors (e.g., multicultural counseling competency and social desirability) and environmental factors (e.g., multicultural environment and research training environment) are related to multicultural research self-efficacy. The authors used the Multicultural Counseling Inventory (MCI) to measure MCC, the Research Training Environment Scale-Revised (RTES-R) to measure perceptions of research training environment, and the Multicultural Environment Inventory-Revised (MEI-R) to measure perceptions of the degree to which graduate programs address multiculturalism in curriculum, supervision, climate, and research. They also used the Multicultural Social Desirability Scale (MCSDS) to assess the

degree to which participants attempt to make a good impression on others by claiming omnipresent favorable attitudes toward racially diverse communities. To measure multicultural research self-efficacy, Liu and colleagues adapted the Research Instruction Outcome Tool (RIOT; Szymanski, Whitney-Thomas, Marshall, & Sayger, 1994) by adding the word "multicultural" to each item in the original scale.

Liu and colleagues (2004) found positive correlations between confidence in multicultural research ability and self-reported multicultural counseling knowledge, skills, awareness, and relationships. Liu and colleagues also found that higher self-reported MCC and a higher number of multicultural courses taken predicted higher levels of multicultural research anxiety. Multicultural social desirability did not predict significant variance in multicultural research anxiety, confidence, or perceived research utility. These findings are surprising in light of Sodowsky and colleagues' (1998) findings that involvement in multicultural research and multicultural social desirability positively predicted MCC. Thus, there seems to be a complex relationship between MCC, multicultural research competence, and self-efficacy in these areas. Further research is needed to examine these relationships and their impact on scientist-practitioner training in counseling psychology.

Liu and colleagues' (2004) study lacked an established instrument that specifically assessed self-efficacy for multicultural research. Their addition of the word "multicultural" to the RIOT represents a weak attempt to operationalize the construct of multicultural research self-efficacy. Clearly, an instrument is needed that integrates specific standards of cultural competence in the assessment of research self-efficacy.

Toward Measurement of Self-Efficacy for Cross-Cultural Research

In the present study, I hope to address the gap in the "scientist" end of the "scientist-practitioner" continuum as it relates to cultural competence. To do so, I have constructed and validated an instrument measuring Self-Efficacy for Cross-Cultural Research (SECCR). Three main thrusts of conceptual literature in psychology provide the theoretical basis for the SECCR: (a) standards of multicultural counseling competence, (b) guidelines for multicultural and cross-cultural research, and (c) self-efficacy theory. Theoretical models, empirical findings, and prior measurement approaches from each of these areas have been reviewed, and will now be integrated to provide a rationale and conceptual basis for each of the SECCR's five hypothesized domains: (a) Researcher Awareness of Self and Social Context, (b) Cross-Cultural Relationships, (c) Cross-Cultural Research Conceptualization, (d) Cross-Cultural Data Collection and Logistics, and (e) Cross-Cultural Data Analysis and Interpretation. Each of these proposed domains will be described in detail, along with relevant literature that has informed each domain.

Domain 1: Researcher awareness of self and social context. Domain 1 attempts to capture a researcher's self-efficacy for recognizing and considering the impact of his or her own ethnic background and worldview in all stages of the research process. The importance of self-awareness among psychologists has been identified as the first ethical guideline in APA's recently adopted Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists:

"Guideline 1: "Psychologists are encouraged to recognize that, as cultural beings, they may hold attitudes and beliefs that can detrimentally influence their perceptions of and interactions with individuals who are ethnically and racially different from themselves." (APA, 2003, p.382)

One premise of Domain 1 is that researchers are not simply objective parties in the research process and that their own ethnic identity, social privilege, and worldview can affect how they conceptualize and interact with research participants from diverse backgrounds. Although interpretations of data are often based on theory and previous findings, they are also likely to include some subjective judgment about what is "normal" and what is "abnormal" human behavior. Thus, it is essential that cross-cultural researchers understand how their own ethnic background and cultural conditioning, and/or the values espoused by Western scientific theory, may influence interpretation of their results (Quintana et al., 2001).

The Association of Black Psychologists has stated that a researcher's knowledge of self is "…desirable for the meaningful study of all people and requisite, along with self-disclosure, for the study of personas acknowledging African descent…" (CNPAAEMI, 2000, p.6). Furthermore, the National Hispanic Psychological Association has stated that it is crucial for researchers to "Be aware of how their own values affect the conduct of research" (CNPAAEMI, p.10) when conducting research with Latino/a participants.

Standards of MCC (Sue et al., 1992) have been slightly more comprehensive than the CNPAAEMI guidelines on this point. For instance, one of these standards states:

> "Culturally skilled counselors possess knowledge and understanding about how oppression, racism, discrimination, and stereotyping affect them personally and in their work. This allows them to acknowledge their own racist attitudes, beliefs, and feelings. Although this standard applies to all groups, for White counselors it may mean that they understand how they may have directly or indirectly benefited from individual, institutional, and cultural racism (White identity development models)." (p. 77)

This standard refers to relationships between awareness of self and social context, thereby providing a rationale for incorporating both of these competencies into a single domain of the SECCR. This standard also mentions developmental models of White racial identity. Indeed, researchers have found a positive relationship between MCC and awareness of one's own identity as a cultural being. Holcomb-McCoy's (2000) exploratory factor analysis of MCC's revealed that racial identity development emerged as a distinct dimension of competence, along with the traditional factors of awareness, knowledge, and skills. Other researchers have found consistent correlations between self-reported MCC and Helms's (1995) Autonomy status of White racial identity (Ladany et al., 1997; Neville et al., 1996; Ottavi et al., 1994). According to Helms, individuals characterizing this status have an informed, positive commitment to their racial group and have grasped the complexities of racial oppression in a way that allows them to avoid participating in it.

The CNPAAEMI (2000) guidelines have also highlighted the importance of the researcher being aware of the social context of the cultural group being studied. For example, the Asian American Psychological Association states that "To understand Asian Americans/Pacific Islanders, the examination of minority group experiences (history in the United States, experiences with prejudice and discrimination, etc.) and culture is critical" (p.2).

Advisory Principles for Ethical Considerations in the Conduct of Cross-Cultural Research have also informed Domain 1 (Tapp et al., 1974; Warwick, 1980). Specifically, these principles suggest that researchers be aware of their influence within the culture being studied (due to status, wealth, etc. of their native country) and are cautious not to coerce collaborators and participants with this influence. For the purposes of informed

consent, researchers should also identify local cultural definitions of what constitutes public and private information. The principles also note the importance of evaluating potential funding agencies for the extent to which their interests match the host community's interests. According to Tapp and colleagues, culture specific knowledge can also help researchers anticipate unintended direct or indirect consequences of research activities for various members of the community. Overall, Tapp and colleagues have concluded that "familiarity with the culture to be investigated is a crucial element of the competence required for cross-cultural research." (p. 248)

Domain 2: Cross-cultural relationships. Domain 2 of the SECCR captures a researcher's self-efficacy for forging and maintaining cross-cultural research partnerships and trusting community relationships. This domain refers to several types of cross-cultural relationships: (a) relationships with prominent community members for the purposes of showing respect, building trust, and for consultation throughout the research process; (b) collaborative partnerships with indigenous researchers; (c) study participants; and (d) relationships with "cultural informants," that is, persons who have both personal knowledge and professional expertise related to the culture being studied.

Several authors have noted that collaboration with indigenous researchers (Sinha, 1997; Yang, 2000) and building relationships with participants and prominent community members (Greenwood & Levin, 1998; Marin & Marin, 1991) are essential components of culturally competent research. Others have recommended that consulting frequently with community members and respecting their decisions throughout the research process will help to establish the legitimacy of multicultural research endeavors (Darou et al., 1993; Marin & Marin). In fact, Darou and colleagues have identified researchers' lack of respect for local authorities as the main

reason why researchers have not been accepted in the Cree community in northern Quebec. In CNPAAEMI's (2000) guidelines for research in ethnic minority communities, the importance of fostering relationships with indigenous researchers, community members, and/or consultants was uniformly cited in guidelines for research with Asian American/Pacific Islanders, Hispanics, American Indians, and people of African descent. The advisory principles for cross-cultural research provided more specific considerations regarding the need to recognize cultural differences in work habits and professional goals between cross-cultural collaborators (Tapp et al., 1974; Warwick, 1980). Consideration of these differences would then help researchers establish mutually beneficial working relationships.

Some suggestions related to collaboration with indigenous researchers parallel Sue and colleagues' (1992) cultural competency that counselors seek consultation from traditional healers:

"Culturally skilled counselors are not averse to seeking consultation with traditional healers or religious and spiritual leaders and practitioners in the treatment of culturally different clients when appropriate." (p.79)

In addition, Marin and Marin (1991) have suggested that Hispanic research participation can be enhanced when investigators take on roles beyond their researcher role in the communities they study. Their suggestion is similar to Sue and colleagues' (1992) mention of active involvement with minority members outside the counseling setting as a standard for a culturally skilled counselor. Tapp and colleagues (1974) have also advised that cross-cultural researchers contribute to the training and career development of local scholars and continue relationships with the local community beyond the period of the research project. Thus, the

ability to foster productive, trusting, and enduring cross-cultural relationships appears to be a vital component of multicultural competence in both scientific and practical settings.

Sodowsky and colleagues (1994) have found empirical support for this Relationship component to MCC. These researchers performed an exploratory factor analysis when developing their Multicultural Counseling Inventory (MCI) and found that a four-factor solution fit their data best. This four-factor solution included the original Awareness, Knowledge, and Skills dimensions, along with a multicultural Relationship factor of multicultural competence. The Relationship factor showed moderate correlations with the other factors, indicating that all subscales are measuring dimensions of a unified construct of MCC. Ottavi and colleagues (1994) provided support for the validity of this Relationship dimension when they found that more culturally encapsulated statuses of racial identity (Disintegration and Reintegration) correlated negatively with self-reported culturally competent relationships. In contrast, a greater commitment to racial equality (Pseudo-independence) correlated positively with culturally competent relationships.

According to Marin and Marin (1991), fully informing the community about research to be done is another important element in establishing trust, legitimacy, and positive community relationships. The Advisory Principles for Ethical Considerations in the Conduct of Cross-Cultural Research have elaborated on this point (Tapp et al., 1974; Warwick, 1980). Authors of these principles have asserted the importance of using cultural knowledge to identify and inform participants of all features of a cross-cultural study that may influence their willingness to participate. Warwick has also warned against the use of deception and suggested serious consideration of how relationships will be repaired following a cross-cultural study that uses deception. These considerations also relate to the MCC that states:

"Culturally skilled counselors take responsibility in educating their clients

to the processes of psychological intervention, such as goals, expectations, legal

rights, and the counselor's orientation." (Sue et al., 1992, p.80)

Therefore, self-efficacy expectations related to culturally appropriate and effective

methods of obtaining informed consent were also included in Domain 2 of the SECCR.

Domain 3: Cross-cultural research conceptualization. The third domain integrates

standard research conceptualization practices with specific standards of cultural competence that

apply in the initial stages of cross-cultural research. Included are tasks related to reviewing

literature and theory from various sources, including indigenous sources, and designing a

research study that incorporates cultural variables in both the content and process.

The Conceptualization subscale of the Research Self-Efficacy Scale (RSES) provides

much of the framework for the content of Domain 3 of the SECCR. The Conceptualization items

refer to evaluating journal articles, working with others to generate research ideas, synthesizing

current literature, choosing research questions, and formulating a research design. The Research

Design Skills factor of the SERM also informs Domain 3 of the SECCR. This factor represents

skills such as selecting research topics, designing experiments, reviewing literature, formulating

hypotheses, operationalizing variables of interest, and controlling for threats to validity.

Forester and colleagues (2004) conducted a joint exploratory factor analysis of the RSES,

SERM, and RAM and found that a four-factor solution provided the best fit to the data. The

second factor, which was labeled Research Integration Self-Efficacy, is relevant to Domain 3 of

the SECCR. This factor contained 20 items, all from the RSES, and thus resembled the

Conceptualization scale of the RSES.

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These research self-efficacy instruments share common themes that provide theoretical support for a Research Conceptualization domain in the SECCR. However, they have not taken into account many of the extra skills or approaches that a cross-cultural or multicultural researcher must employ in the conceptualization stage in order to conduct culturally responsive research. Sinha (1997) has noted that Western psychological research has tended to show ethnocentrism in three areas of the conceptualization stage: (a) definition of theoretical concepts, (b) choice of topics for research, and (c) choice of instruments and procedures. According to Van de Vijver and Leung (2001), construct bias can occur when a construct does not have the same meaning in different cultures or when the behaviors that represent a given construct vary across cultures.

Thus, Domain 3 of the SECCR contains items that represent many of the tasks described in previous measures of research self-efficacy. However, the items also incorporate the skills necessary to limit the influence of ethnocentric bias in the way cross-cultural research is conceptualized. For instance, the CNPAAEMI (2000) guidelines for multicultural research have emphasized the importance of understanding and measuring within-group differences among participants from the same ethnic group. This is relevant to the conceptualization stage because a culturally competent researcher would consider variations within a cultural group when selecting appropriate research topics, devising research questions, hypotheses, and when selecting the appropriate sample based on the research design.

Within the CNPAAEMI (2000) guidelines, the Asian American Psychological Association has stated that it is appropriate to design a research study that combines various Asian Americans/Pacific Islanders into an aggregate group *only* when the variables being investigated are thought to be common to different Asian groups (e.g., collectivism). The

Association of Black Psychologists has likewise cautioned against "Pan-Africanism" and the Society of American Indian Psychologists has noted that more than 600 recognized tribes exist, and research that fails to incorporate individual tribal culture should be avoided. The guidelines created by the National Hispanic Psychological Association likewise encourage incorporating within-group cultural variations into research, but they have focused on the need to recognize participants' varying language preferences and proficiencies. The consensus among these guidelines is that cross-cultural research should be designed such that cultural groups are conceptualized on multiple levels—as human beings, as members of a broad ethnic group (i.e., Asian), as members of a specific nationality (i.e., Chinese), and as individuals with variations in acculturation, language, and ethnic identity. Thus, Domain 3 includes items related to identifying appropriate cultural variables and levels of analysis.

Guidelines and suggestions in cross-cultural methodology literature tend to echo the afore mentioned points. For instance, Berry (1980) has discussed the importance of designing cross-cultural research that investigates both universal and culture-specific components of human behavior. Tapp and colleagues (1974) have suggested that the initial stages of cross-cultural research design include an assessment of the significance of the research and its potential value to the host community relative to the costs to the community. These considerations have also provided substance for items in Domain 3.

Domain 4: Cross-cultural data collection and logistics. Domain 4 also derives it conceptual framework from an integration of previous measures of self-efficacy for research, standards of multicultural competence, and literature on specific methodological issues in cross-cultural research. Each of these sources contributed to Domain 4 by providing information relevant to culturally competent data collection methods and logistics across cultures or with

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diverse populations. For instance, the Implementation subscale of the RSES has provided some content structure for Domain 4. The Implementation scale represents tasks needed to conduct and complete a research project, including obtaining general supplies and equipment, performing experimental procedures, collecting data, supervising research assistants and working in a research team. The Practical Research Skills factor of the SERM also informed Domain 4 of the SECCR. This factor represents skills such as keeping records during a research project, collecting data, gathering and utilizing resources. Forester and colleagues' (2004) combined factor analysis of the RSES, SERM, and RAM revealed a factor they labeled Data Collection Self-Efficacy, which supports Domain 4 of the SECCR. This factor contained nine items from the RSES, two items from the SERM, and two items from the RAM.

Again, these content scales tap skills relevant to general competency in the data collection process. However, they do not consider the unique challenges involved in collecting data within diverse communities in a way that is effective, valid, and reliable while demonstrating respect and cultural understanding. This competency requires knowledge of how social and cultural forces may directly impact the data collection process. Van de Vijver and Leung (2001) have identified potential problems that can occur in the cross-cultural data collection process when researchers do not consider social and cultural contexts. For example, method bias can influence results and is based on instrument characteristics, tester-interviewer interaction effects, and the way instruments are administered.

Classic data collection methods may not always be appropriate or effective for cross-cultural samples. Therefore, an additional aspect of Domain 4 involves a researcher's self-efficacy for anticipating the limits of traditional research methodologies with diverse populations

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and for being creative and flexible in the data collection process (Warwick, 1980). Sue and colleagues (1992) have noted a similar multicultural competency in the realm of counseling:

"Culturally skilled counselors…are not tied down to only one method or approach to helping but recognize that helping styles and approaches may be culture bound. When they sense that their helping style is limited and potentially inappropriate, they can anticipate and ameliorate its negative impact." (p.79)

More specifically, the CNPAAEMI (2000) guidelines have stated the importance of tailoring the cross-cultural data collection process to be respectful and understandable to the participants. For example, the Asian American Psychological Association has stated that "Instructions and tasks required of research participants should be conveyed in a language that is understandable to them" (p.4). The National Hispanic Psychological Association has also commented on working with research assistants, warning that "researchers should be cautioned against assuming that Hispanic graduate student assistants have adequate research training and experience." The CNPAAEMI guidelines also include logistical and methodological difficulties that can occur with lengthy instruments, such as a high mortality rate and resulting unrepresentative sample. The Society of American Indian Psychologists has emphasized the importance of researchers showing respect to participants during the data collection process, especially elders, children, physically and mentally handicapped people, and tribal officials.

An area of critical concern in the data collection process in culturally diverse communities is the selection and use of appropriate assessment tools (Callan & McElwain, 1980; Dana, 1996; Gil & Bob, 1996; Marin & Marin, 1991). Instruments may need to be modified or translated for appropriate use in diverse cultures. The instrument translation process can involve several strategies, such as translation, back-translation, translation by committee, and decentering

(Marin & Marin). Each of the four psychological associations that have contributed to the CNPAAEMI (2000) guidelines for research in ethnic minority communities stressed the importance of using instruments that (a) have been standardized on a substantial sample of the ethnic group of interest, (b) are appropriate in terms of language and readability, and (c) are reliable and valid instruments within the culture being studied. Guidelines for cross-cultural research have also contributed to Domain 4 through specific instructions related to creating a comfortable atmosphere for assessing or interviewing cross-cultural research participants (Irvine & Carroll, 1980).

Domain 5: Cross-cultural data analysis and interpretation. Domain 5 of the SECCR represents quantitative data analysis skills that are more commonly employed in cross-cultural research, along with special considerations in the interpretation of research with diverse populations. Some basis for this domain has been drawn from the SERM Quantitative and Computer Skills subscale (Phillips & Russell, 1994). These items refer to knowing which statistics to use, avoiding violations of statistical assumptions, and using multivariate statistics. Forester and colleagues' (2004) factor analysis of the RSES, SERM, and RAM also supported the inclusion of Domain 5. Data Analysis Self-Efficacy emerged as the first factor in this analysis and was comprised of five items from the RSES, nine items from the SERM, and five items from the RAM. The SECCR will focus on data analysis procedures that are specifically relevant to cross-cultural research. Therefore, previous research self-efficacy measures were used more as a guide to the level of specificity for items in this domain of the SECCR, rather than as a source of item content.

For example, none of the previous research self-efficacy measures have included data analyses associated with procedures used to verify cultural applicability of assessment

instruments, such as re-standardization, translation equivalence or measurement equivalence. Assessment tasks were also included in Domain 4. However, the emphasis in Domain 4 is on the selection, formatting, and use of appropriate assessment tools, whereas Domain 5 focuses on statistical and analytical procedures associated with cross-cultural assessment. For instance, Irvine and Carroll (1980) have discussed the importance of factor analysis in evaluating construct validity of assessment tools across cultures. Items in Domain 4 also inquire about respondents' self-efficacy for conducting statistical analyses that measure both between and within-group differences, based on suggestions that culturally competent research encompasses both of these approaches (CNPAAEMI, 2000). Because the value of qualitative methods in culturally competent research has been widely recognized (Dana, 1996; Davis et al., 2000), several items in Domain 4 refer to recognizing the limitations of quantitative methods and identifying aspects of a quantitative cross-cultural study that could be enhanced with qualitative data.

Culturally competent interpretation of results is also included in this domain because there is significant risk of bias during the stage in cross-cultural research in which researchers ascribe meaning to their findings. The multicultural counseling competency most relevant to this states:

"Culturally skilled counselors have knowledge of the potential bias in assessment instruments and use procedures and interpret findings keeping in mind the cultural and linguistic characteristics of the clients." (Sue et al., 1992, p.79)

Psychological research has historically used a deficit model to explain cultural differences, wherein White, middle class value systems were the norm and any deviation was deemed evolutionarily or genetically deficient (CNPAAEMI, 2000; Sue et al., 1992). Thus,

CNPAAEMI guidelines have emphasized the importance of considering alternative explanations for results in research conducted in Asian American/Pacific Islander, Hispanic, and African/African American communities. For instance, the Asian American Psychological Association (AAPA) has advised that in culturally competent research "differences between the groups are not routinely assumed to reflect deviance or undesirable characteristics among Asian Americans/Pacific Islanders (i.e., a deficit model interpretation)" (p.3). Bias and other errors in interpretation of cross-cultural data are less likely to occur if a researcher considers cultural and contextual nuances when interpreting significant differences between groups. The guidelines also urge researchers to consider the value of non-significant differences in cross-cultural comparison results rather than focusing exclusively on differences between cultures.

The Advisory Principles for Ethical Considerations in the Conduct of Cross-Cultural Research include guidelines similar to those mentioned above, but also emphasize the importance of considering how cross-cultural data could be used to inform public policy (Tapp et al., 1974; Warwick, 1980). Tapp and colleagues have suggested that cross-cultural researchers anticipate and address possible misuses of data or culturally biased policy implications. Others have emphasized the need to use information about the context of the data collection when interpreting results from a cross-cultural or multicultural study (Quintana et al., 2001). Indeed, The Association of Black Psychologists has posed a question for researchers when interpreting results from ethnically diverse communities: "Is the cultural background of the subject or client understood well enough to place results in the proper context?"

Further recommendations for culturally competent data analysis and interpretation include appropriate reporting of cultural limitations and generalizability of results (APA, 2003). For instance, Quintana and colleagues (2001) have suggested using psychological characteristics

(i.e., racial identity, acculturation) rather than demographic characteristics (i.e., race) when determining the representativeness of a cross-cultural sample. Researchers can then more accurately interpret the generalizability of their findings.

Overview of the Present Study

Based on previous research on multicultural counseling competence and research self-efficacy, the present study entailed a description and psychometric evaluation of a scale designed to assess self-efficacy for conducting cross-cultural research (the SECCR). This scale was completed by graduate students in counseling and clinical psychology. Participants completed a demographic questionnaire, the SECCR, a measure of general research self-efficacy (the RSES) *or* a measure of self-reported multicultural counseling competence (the MCI), along with a measure of multicultural social desirability (the MCSD) and a research involvement questionnaire designed for the present study. Only moderate correlations were expected between the RSES, the MCI and the SECCR. Although these constructs should converge to some extent, they are also distinct. Participants completed a measure of multicultural social desirability because previous findings indicate that social desirability and multicultural social desirability significantly relate to self-reported MCC (Constantine et al., 2001; Constantine & Ladany, 2000; Ladany et al., 1997; Sodowsky, et al., 1998; Worthington et al., 2000). Sodowsky and colleagues have recommended that "multicultural social desirability may need to be controlled when investigating the correlates of self-reported MCC" (p.261).

Previous studies have found multicultural coursework experiences to be positively related to self-reported MCC (Bellini, 2002; Constantine et al., 2001; Ottavi et al., 1994; Sodowsky et al., 1998) and confidence in multicultural research ability (Liu et al., 2004). Thus, similar relationships were expected in the present study. Based on previous findings that research self-

efficacy correlates with scholarly activity (Bieschke et al., 1996; Kahn, 2001) and productivity (Bieschke et al., 1998; Brown et al., 1996; Hollingsworth & Fassinger, 2002; Kahn & Scott, 1997; Phillips & Russell 1994), I also expected to find correlations between cross-cultural research self-efficacy and research involvement. Overall, the purpose of this study was to determine the preliminary structure and validity for a new self-efficacy for cross-cultural research measure (SECCR). The hypotheses were as follows:

Hypothesis 1: Self-efficacy for cross-cultural research is a multidimensional construct comprised of the following domains: (a) Researcher Awareness of Self and Social Context, (b) Cross-Cultural Relationships, (c) Cross-Cultural Research Conceptualization, (d) Cross-Cultural Data Collection and Logistics, and (e) Cross-Cultural Data Analysis and Interpretation.

Hypothesis 2: SECCR full scale scores will be moderately predicted, in the positive direction, by full scale scores on the RSES, a measure of general research self-efficacy, and full scale scores on the MCI, a measure of self-reported multicultural counseling competence, beyond the prediction provided by multicultural social desirability.

Hypothesis 3: SECCR full scale scores will be positively predicted by (a) the number of previous cross-cultural or multicultural courses and workshops taken by participants, and (b) research involvement (e.g., number of research methods courses taken, work on a thesis or dissertation, collaboration with faculty on a research project).

CHAPTER THREE

Method

Participants

All participants (*n*=374) were graduate students in Master's and Doctoral level programs in counseling and clinical psychology. Purposive sampling was used to recruit participants who met study criteria and were accessible based on faculty email listings from departmental websites. Participants were recruited by contacting faculty in APA-accredited and non-APA-accredited counseling and clinical psychology master's and doctoral programs in the United States. These faculty contacts were asked to forward an email to their students that described the study, requested participation, and contained a link to the survey webpage. For compensation, all participants were able to request a summary of results and enter a raffle prize drawing. The raffle prize winner was able to choose between a six-month subscription to Netflix and a $60 gift certificate to Amazon.com.

A total of 477 participants began the study. The final sample (*n*=374) included the participants who completed at least 90% (89 of 99) of the items in the primary measure developed in the study, the Self-Efficacy for Cross-Cultural Research Measure (SECCR). Independent t-tests were used to compare demographic variables between the final sample and this attrition group (i.e., the 103 participants who failed to meet completion criteria). No significant differences were found between these groups on the variables of gender, age, ethnicity, highest degree earned, current graduate program, or current year in program (*p*>.01).

Of the final 374 participants, 320 (85.6%) were females, 53 (14.2%) were males, and 1 (0.3%) was transgender or intersex. Participants ranged in age from 21 to 60 (*M* = 28.9, *SD* = 7.15). Self-reported ethnic identifications were as follows: 265 (70.9%) Caucasian, 23 (6.1%)

Latino/a, 23 (6.1%) Asian-American/Pacific Islander, 20 (5.3%) Bi or Multiracial, 13 (3.5%)

African-American, 8 (2.1%) Native American, 7 (1.9%) International Students, and 15 (4.0%)

"other." Participants in the "other" category identified as American, Arab American, Caucasian

and Hispanic, Caucasian and Native, Romanian, Egyptian, Indian, Iranian, Jewish, Brazilian,

Irish, and Swedish.

The majority of participants (55.6%) identified a Bachelor's degree as their highest

degree. Another 41.1% endorsed having a Master's degree, while the remaining 3.2% endorsed

having a Ph.D., Psy.D., or other degree. Of the 374 participants, 113 (30.2%) were in a

counseling psychology master's program, 93 (24.9%) in a counseling psychology Ph.D.

program, 65 (17.4%) in a clinical psychology Ph.D. program, 60 (16%) in a clinical psychology

Psy.D. program, 5 (1.3%) in a clinical psychology master's program, and 3 (0.8%) were in a

counseling psychology Psy.D. program. The remaining 35 (9.4%) participants identified their

program as "other" and named programs such as clinical child psychology Ph.D., clinical mental

health counseling, combined clinical/counseling Ph.D., counselor education, developmental

psychology Ph.D., master's in forensic psychology, master's in social work, marriage and family

therapy, rehabilitation counseling, and school psychology. One hundred twenty-two (32.6%)

participants were in the first year of their graduate program, 99 (26.5%) in the second year, 73

(19.5%) in their third year, and 78 (21%) in their fourth year or beyond.

To reduce participants' time involvement and because the large total sample size was

only required for the factor analysis procedures, participants were randomly assigned to one of

two survey formats (see *Procedures*). Of the 374 participants, 159 completed the version of the

survey that included the Research Self-Efficacy Scale (RSES), while 143 completed the version

with the Multicultural Counseling Inventory (MCI). The remaining 72 participants met

completion criteria for the Self-Efficacy in Cross-Cultural Research scale (SECCR) and were

thus included in the factor analyses for Hypothesis 1, but failed to complete enough items (90%)

on subsequent instruments to be included in the analyses for Hypotheses 2 and 3.

Instruments

Demographic Questionnaire

Participants completed a demographic form that included questions about their gender,

age, ethnicity, highest degree earned, degree being sought, program type, and year in program

(see Appendix A).

Research Self-Efficacy Scale (RSES; Bieschke, Bishop, & Garcia, 1996)

The RSES is a 51-item measure of participants' self-estimates of their confidence to

perform a variety of research tasks. The RSES has four subscales: Early Tasks (5 items),

Conceptualization (16 items), Implementation (20 items), and Presenting the Results (8 items).

Two additional items refer to global research self-efficacy. The RSES asks participants to rate

their degree of confidence in their ability to successfully perform each research behavior on a

scale of 0 to 100. These instructions are followed by a list of items such as "Synthesize current

literature" (in the Conceptualization domain) and "Train assistants to collect data" (in the

Implementation domain).

Bieschke and colleagues (1996) used a principal-components factor analysis with an

oblique (Oblimin) rotation to extract four factors that accounted for 57% of the variance in

research self-efficacy. Bieschke and colleagues found the RSES full-scale coefficient alpha to be

.96. For the subscales, coefficient alpha was .92 for Conceptualization, .96 for Implementation,

.75 for Early Tasks, and .91 for Presenting the Results. Subsequent studies have found full-scale

coefficient alphas ranging from .96 to .98 (Bard et al., 2000; Bieschke et al., 1998; Bishop &

Bieschke, 1998; Forester et al., 2004). In the present sample, an alpha reliability estimate of .97 was obtained for the RSES. Validity evidence for the RSES can be found in theoretically-consistent relationships between research self-efficacy (as measured by the RSES) and research interest (Bard et al.; Bishop & Bieschke), outcome expectations (Bishop & Bieschke), and productivity (Bieschke et al.).

Multicultural Counseling Inventory (MCI; Sodowsky, Taffe, Gutkin, & Wise, 1994)

The MCI is a 40-item self-report measure of four dimensions of multicultural counseling competence: Multicultural Counseling Skills (11 items), Multicultural Awareness (10 items), Multicultural Counseling Relationship (8 items), and Multicultural Counseling Knowledge (11 items). MCI items were developed based on an extensive review of literature on multicultural counseling competencies, training, and ethics. The Multicultural counseling skills domain also includes several items reflecting general counseling skills. The MCI includes items such as "When working with minority clients, I find that differences between my worldviews and those of the clients impede the counseling process" (in the Relationship domain), or "I make referrals or seek consultations based on the clients' minority identity development" (in the Knowledge domain). Items are rated on a 4-point Likert scale (1 = very inaccurate to 4 = very accurate).

Sodowsky and colleagues (1994) used a principal-axis factor analysis with an oblique (Oblimin) rotation to extract four factors that accounted for 36.1% of the total variance in MCC. Sodowsky and colleagues reported a Cronbach's alpha of .86 for the full scale MCI, along with alphas of .81 for Multicultural Counseling Skills, .80 for Multicultural Awareness, .67 for Multicultural Counseling Relationship, and .80 for Multicultural Counseling Knowledge. Based on a compilation of studies using the MCI, Constantine and Ladany (2000) reported mean Cronbach's alphas of .87 for the full scale, and .80, .78, .68, and .77 for the Skills, Awareness,

Relationship, and Knowledge domains, respectively. In the present sample, an alpha reliability estimate of .89 was obtained for the full-scale MCI. See Chapter 2 for a review of validity evidence for the MCI.

Multicultural Social Desirability Index (MCSD; Sodowsky, 1996)

The MCSD is a 26-item, true-false measure of attitudes toward ethnic minorities and multicultural social issues. The MCSD assesses one's propensity to create a positive impression by always claiming positive interactions with minorities and favorable attitudes toward all institutional policies that promote diversity. Examples of items are, "I have been annoyed when minority people have expressed ideas very different from mine," and "I believe there should be laws against racist or hate speech." Sodowsky et al. (1998) reported full scale Cronbach's alphas ranging from .75 to .80. In the present sample, an alpha reliability estimate of .69 was obtained for the MCSD. The MCSD has shown moderate interscale correlations with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), indicating some convergent validity but also suggesting that the MCSD measures a construct independent of general social desirability.

Research Involvement Questionnaire

Expanding upon previous methods of assessing scholarly activity (Kahn & Scott, 1997) and research productivity (Bieschke et al., 1998), I developed a new Research Involvement Questionnaire (RIQ) for this study. The initial version of the RIQ included 17 items related to the number of research methods courses taken, progress on a thesis or dissertation, experience on a research project in psychology not affiliated with a course, publications and presentations in progress, accepted, or completed (see Appendix B). For each question there was a follow-up question asking how many of the courses or research experiences contained a multicultural or

cross-cultural focus. Exploratory factor analysis with a principal axis extraction and orthogonal (varimax) rotation was conducted on the items from the Research Involvement Questionnaire for data reduction purposes and to distinguish the number of dimensions that characterize research involvement.

No a priori predictions were made about the factor structure of the RIQ. One, two, and three-factor models were tested to examine the range of factor structures that could be supported by the 17 items. The two-factor solution was selected as the best fit to the data and as the most theoretically interpretable structure for the RIQ. This solution accounted for 44% of the variance, which was 17.5% more variance than the one-factor solution. The scree plot analysis also supported a two-factor solution (the first five eigenvalues were 5.92, 1.70, 1.21, 1.02, .95). In the three-factor solution, the third factor was small and not theoretically interpretable. Based on the initial factor analysis, six items were dropped from the original version of the RIQ because they did not load cleanly on the factors and included content that was not deemed essential to the construct of research involvement. The rotated factor matrix for the final two-factor solution for the 11 retained items is shown in Table 1. The first factor, which was labeled General Research Experience (5 items), accounted for 28.0% of the variance after rotation, and had an alpha reliability of .85. The second factor, which was labeled Cross-Cultural/Multicultural Training (6 items), accounted for 20.1% of the variance after rotation, and had an alpha reliability of .77. The full scale 11-item RIQ had an alpha reliability of .85.

Table 1

Varimax-Rotated Factor Matrix for New Research Involvement Questionnaire: Two-Factor Solution

	Factor	
Abbreviated Item	1	2
General Research Experience		
Research project involvement	**.745**	.270
Manuscripts published/submitted	**.767**	.216
Conference presentations	**.848**	.050
Progress on master's thesis	**.619**	.110
Progress on dissertation	**.578**	.338
Cross-Cultural/Multicultural Training		
Cross-cultural research methods courses taken	.159	**.360**
Cross-cultural research methods workshops taken	.256	**.555**
Multicultural/cross-cultural counseling courses taken	-.056	**.635**
Multicultural/cross-cultural counseling workshops taken	.154	**.736**
Involvement in multicultural/cross-cultural research projects	.435	**.587**
Manuscripts with cross-cultural/multicultural focus published/submitted	.435	**.481**

Note. The highest factor loading for each item is shown in bold face.

New Self-Efficacy for Cross-Cultural Research Measure (SECCR)

Item generation. Items for the SECCR were developed based on an extensive review of literature on multicultural counseling competence and multicultural and cross-cultural research guidelines, recommendations, and ethical standards. This information was integrated with a review of domain content of several measures of general research self-efficacy to develop items that reflect the scope of the cross-cultural research process. Twenty to 30 items were generated for each of the SECCR's five domains, resulting in 124 total items. After pilot testing the SECCR was trimmed to 99 items. This 99-item version was used in the large data collection (see Appendix C). Following data collection and analysis, the revised version of the SECCR contained 73 items. Items were retained or eliminated based on their content validity evaluation, item factor loadings, and their representation of the construct of cross-cultural research self-efficacy.

Content validity evaluation. Similar to the method used by LaFromboise and colleagues (1991), a panel of five faculty members who specialize in cross-cultural or multicultural research reviewed the SECCR for appropriateness and representativeness of items within each domain prior to data collection. Panel members were asked to categorize each item into one of the five hypothesized domains, based on their impressions of the best conceptual fit. They were also asked for editing suggestions to improve clarity of items, and for suggestions as to which, if any, items should be removed from the instrument. Panel members were also given the opportunity to suggest additional items.

An SPSS cross-tabulation analyses was conducted on the panel members' data to determine the percentage of agreement of item classification among these judges. Kappa values were also calculated to provide an index of agreement that corrects for chance agreement.

Because cross-tabulation analyses yield the percentage of agreement between 2 judges, a total of 10 analyses were conducted to compare all judges with each other. Percentages of agreement ranged from 57.7% to 72.7%, $M = 67.3\%$. Kappa values ranged from .47 to .66, $M = .58$. These values reflect fairly good judge agreement. Results from an SPSS Frequencies analysis at the item level revealed that at least 3 out of 5 judges (60%) agreed on the domain classification for 114 of 123 items (92.6%) of the items. The last item in the instrument is a global measure of one's overall confidence in her/his ability to conduct cross-cultural research, and is thus not classified into a domain.

Pilot test. As recommended by Kraut and colleagues (2004), a pilot test was conducted prior to data collection in order to pretest informed consent, instructions, debriefing, and online presentation format of the instruments. A representative pilot sample of five graduate students took the online version of all instruments. This sample included one master's level counseling psychology student, one clinical psychology PhD student, one clinical psychology Psy.D. student, and one beginning and one advanced counseling psychology Ph.D. student. This sample was diverse in terms of age, gender, and ethnicity. The data from this sample was not statistically analyzed. Instead, the participants served as a focus group that was conducted to collect qualitative information about the ease, organization, and clarity of the presentation format, along with time spent completing the online questionnaires.

Based on feedback from this focus group, several changes were made to the presentation of the on-line survey. The primary concern among the focus group members was that there were too many items to complete and that it took too long to complete them (45-65 minutes). Thus, the SECCR was cut from 124 items to 99 items. Items were chosen for exclusion because they: (a) did not reach a level of 60% agreement on content validity among the judges (see above), (b)

were deemed confusing by the focus group, or (c) were redundant. A progress gauge was also added to inform on-line participants when they were 50% done, 75% done, and so forth. Several focus group members also reported that they experienced feelings of inadequacy when they reported having little confidence in their abilities to conduct certain research tasks. In order to decrease this discomfort, this statement was added to the consent form: "…please keep in mind that the questions are designed to cover a broad range of abilities and most participants will not have experience in all of the areas included in the questions." Additionally, the debriefing page was expanded so that it described what each instrument was specifically designed to measure. The length of time required to complete this new version of the survey was estimated at 35-50 minutes.

Procedure

Based on feedback from the focus group, it was decided that only half the sample would take the Multicultural Counseling Inventory (MCI), while the other half would take the Research Self-Efficacy Scale (RSES) in order to decrease the total items (and time involvement) for each participant. Thus, participants were randomly assigned to one of two versions of an on-line survey, both of which were developed and automated through SurveyMonkey.com. Approximately half the sample completed a version with the demographic questionnaire, Self-Efficacy for Cross-Cultural Research measure (SECCR), RSES, Research Involvement Questionnaire (RIQ), and Multicultural Social Desirability Scale (MCSD) (in that order). The other half completed a version which included the demographic questionnaire, SECCR, MCI, RIQ, and the MCSD (in that order). Information about the study, request for participation, and a link to one of the two versions of the survey were sent via email to faculty in various psychology graduate programs nationwide. Thus, random assignment to the RSES or MCI survey version

occurred at the program level. Faculty were asked to distribute the email to their graduate students. Students who choose to participate followed a link from the email to the survey, which brought them to the informed consent page. Prior to completing any survey questions, all participants clicked on an icon stating they have read the informed consent information and agreed to participate in the study. After completing all items on all instruments, participants were directed to a debriefing page. This page also contained instructions for entering the raffle. The presentation order of the instruments could not be randomized due to limitations of SurveyMonkey.com. Presentation order was therefore determined according to the importance of the various measures to the present study and to minimize expectancy effects.

Internet data collection methods have been subject to several criticisms that pertain to the present study (Gosling, Vazire, Srivastava, & John, 2004); namely, that samples are not sufficiently diverse, that results from internet data will differ significantly from results based on traditional data collection methods, and that the anonymity provided by the internet compromises the integrity of the data. However, in their meta-analysis comparing internet findings with traditional findings, Gosling and colleagues provided convincing evidence to challenge each of these criticisms. For instance, they concluded that while internet-based samples do not typically reflect the diversity of the U.S. population, they are at least as diverse as typical samples recruited from universities. Gosling and colleagues also found alpha reliabilities and scale intercorrelations for the Big Five Inventory to be nearly identical between online and paper-and-pencil versions of the instrument. Additionally, several authors have reviewed evidence suggesting that the anonymity of the internet can actually facilitate the disclosure of personal information and results in less socially-desirable responding (Gosling et al.; Kraut et al., 2004).

As suggested by Gosling and colleagues (2004), there was a question at the beginning of the series of questionnaires asking respondents if they have already completed the survey in order to limit the potential for repeat participants. Participants who selected the affirmative response to this question were automatically directed out of the survey. Overall, internet data collection methods were expected to increase convenience and decrease time spent participating in the present study, thereby improving response rates from the graduate student population.

CHAPTER FOUR

Results

Dimensions of Cross-Cultural Research Self-Efficacy (Hypothesis 1)

The first hypothesis stated that self-efficacy for cross-cultural research is a multidimensional construct comprised of the following domains: (a) Researcher Awareness of Self and Social Context, (b) Cross-Cultural Relationships, (c) Cross-Cultural Research Conceptualization, (d) Cross-Cultural Data Collection and Logistics, and (e) Cross-Cultural Data Analysis and Interpretation. Exploratory factor analysis procedures in SPSS were used to test this hypothesis. According to Floyd and Widaman (1995), exploratory factor analysis is the method of choice for identifying latent variables and eliminating items to develop clean loading patterns for those variables. This study employed a principal-axis analysis with an orthogonal (varimax) rotation, based on Floyd and Widaman's recommendation that principal-axis is the extraction method of choice to determine underlying latent variables among a set of measured variables. Sodowsky and colleagues (1994) also used principal-axis analysis when they developed the MCI. An orthogonal rotation was chosen to promote a cleaner distinction between factors and better simple structure, although subsequent subscales were expected to be correlated.

In the present study a five-factor solution was first examined to test the hypothesized structure of the SECCR. The first seven eigenvalues were 42.33, 4.52, 3.13, 2.58, 2.09, 1.99, and 1.60. In the five-factor solution the fifth factor was small and difficult to interpret. Thus, one-, two-, three-, and four-factor models were subsequently analyzed. The one-factor solution suggested that there is a general dimension or factor of cross-cultural research self-efficacy because most of the items had at least modest to moderate positive loadings on the factor. However, coherent differences in item content emerged between factors in subsequent multi-

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factor solutions. In the two-factor solution, important conceptual distinctions between cultural awareness and relationship building skills were not differentiated. In the four-factor model, the fourth factor was not very interpretable and subscales based on the factors were less reliable than subscales based on the three-factor model. Thus, a three-factor solution provided the best fit to the data.

The initial three-factor solution accounted for 48.99% of the variance in participants' self-efficacy for cross-cultural research. The first factor, labeled Cultural Awareness and Conceptualization, accounted for 17.94% of the variance. This factor included items related to the researcher's cultural self-awareness, understanding of the target community, and study design skills. The second factor was labeled Data Collection, Analysis, and Reporting and was defined by items representing logistical elements of cross-cultural research, along with skills in the areas of data analysis, interpretation, and reporting results. This factor accounted for 15.94% of the total variance in cross-cultural research self-efficacy. The third factor, which was labeled Relationships with Community and Collaborators, accounted for 15.11% of the variance and was defined by items related to multiple aspects of relationship-building in a research context.

Following this series of initial factor analyses, 26 items were dropped from the 99-item version of the SECCR. Items were dropped because they did not load cleanly onto one of the three factors or their content was covered by other items with higher factor loadings. A follow-up exploratory factor analysis with a three-factor extraction and orthogonal rotation was conducted on the remaining 73 items (see Table 2). All retained items had a factor loading of at least .34 on their primary factor. While many items had cross-loadings, 89% (65 items) had at least a .1 difference between their highest and next highest factor loading. I was conservative in the

number of items deleted because the purpose of these analyses was to create a second, and not

necessarily final, version of the SECCR.

Table 2

Varimax-Rotated Factor Matrix for New Self-Efficacy for Cross-Cultural Research Measure: Three-Factor Solution

	Factor		
Abbreviated Item	1	2	3
Cultural Awareness and Conceptualization			
Culturally ethical research activities	**.461**	.154	.286
Effect of my beliefs on theoretical framework	**.589**	.232	.326
Effect of my values when comparing cultural groups	**.683**	.203	.349
My cultural background/participant obligation	**.547**	.140	.310
Effect of my beliefs on data collection methods	**.623**	.210	.308
Limits of my knowledge of ethnic groups	**.611**	.091	.302
Participant perceptions of my race	**.629**	.324	.385
Effect of my values on views of "normal/abnormal"	**.663**	.154	.274
Effect of my cultural background when different from participants	**.763**	.046	.264
Historical/social climate of participants' culture	**.481**	.188	.351
Cultural definitions of public/private information	**.497**	.313	.374
Anticipate misuses of data	**.459**	.315	.229
Cultural context of theory	**.497**	.339	.292
Define culture	**.583**	.303	.237
Consider language/dialect differences	**.530**	.132	.469
Evaluate need for deception	**.484**	.323	.177
Evaluate journal articles for approach to diversity	**.558**	.362	.253
Study ethnic groups on multiple levels	**.533**	.447	.261
Review literature for cross-cultural research ideas	**.522**	.282	.249
Evaluate cultural differences and similarities	**.617**	.284	.290
Review theories within target culture	**.610**	.188	.204
Identify relevant contextual variables	**.644**	.308	.188
Rationale for cross-cultural study	**.557**	.362	.048
Culturally appropriate data collection	**.643**	.388	.355
Ensure instructions understood by participants	**.553**	.177	.411
Recruit diverse sample	**.584**	.209	.323
Interpret results within social/historical context	**.638**	.333	.364
Cultural differences in response style	**.638**	.310	.297
Implications for future cross-cultural research	**.616**	.349	.096
Assess needs of cultural group	**.402**	.284	.376

Table 2 (continued)

Abbreviated Item	Factor		
	1	2	3
Data Collection, Analysis and Reporting			
Quantitative vs. Qualitative in cross-cultural research	.267	**.479**	.238
Cross-cultural written proposal	.229	**.535**	.298
Evaluate funding sources	.356	**.424**	.368
Test universal behaviors	.390	**.605**	.185
Test culture specific behaviors	.417	**.640**	.164
Enhance quantitative study with qualitative	.306	**.474**	.333
Informed consent	.273	**.348**	.316
Instrument translation	.152	**.341**	.339
Re-norm instrument in new cultural group	.180	**.656**	.296
Obtain Human Subjects (etc.) approval	.282	**.536**	.276
Organize data	.132	**.615**	.210
Multiple forms of data collection	.325	**.458**	.309
Use appropriate statistics	.197	**.750**	.158
Obtain funding	.241	**.375**	.337
Analyze within-group/between-group differences	.305	**.580**	.225
Evaluate internal validity	.225	**.688**	.211
Recognize implications of all results	.364	**.595**	.186
Cross-cultural measurement equivalence	.111	**.739**	.185
Defend cross-cultural thesis/dissertation	.389	**.583**	.237
Use statistical programs	.053	**.758**	.073
Verify translation equivalence	.082	**.649**	.223
Identify limitations	.307	**.532**	.200
Evaluate external validity	.290	**.661**	.213
Relationships with Community and Collaborators			
How I may be perceived by indigenous collaborators	.333	.267	**.484**
Build trust with cultural community	.215	.159	**.604**
Consult with cultural community	.183	.232	**.614**
Get ideas from cultural community	.188	.169	**.603**
Establish relationships with indigenous collaborators	.209	.275	**.663**
Relationships with cultural leaders	.225	.204	**.759**
Long-term cross-cultural relationships	.308	.108	**.625**
Provide immediate benefits to community	.369	.195	**.537**
Gain support from cultural community	.376	.285	**.590**
Training local scholars	.360	.290	**.548**
Culturally appropriate compensation	.220	.305	**.482**
Recruit diverse research assistants	.235	.242	**.484**

Table 2 (continued)

Abbreviated Item	Factor		
	1	2	3
Alleviate distrust in data collection	.366	.336	**.579**
Ask community about methods	.256	.181	**.638**
Accommodate participants' limitations	.346	.115	**.501**
Work with diverse research assistants	.297	.200	**.436**
Provide comfortable environment	.431	.289	**.554**
Disseminate results to community	.244	.283	**.544**
Present findings to community	.275	.386	**.571**

Note. The highest factor loading for each item is shown in boldface.

In the 73-item three-factor solution, Factor 1 contained 31 items and accounted for 18.55% of the total variance. Factor 2 contained 23 items and accounted for 15.44% of the variance. Factor 3 contained 19 items and accounted for 14.39% of the total variance. Three subscale scores were derived for the SECCR by computing participants' mean scores on all items within each of the three factors. Full scale SECCR scores were derived by computing the mean score on all 73 items. Alpha reliabilities for the three subscales (Cultural Awareness and Conceptualization; Data Collection, Analysis, and Reporting; and Relationships with Community and Collaborators) and for the full scale SECCR were .95, .95, .94, and .98, respectively. Table 3 shows the means, standard deviations, and intercorrelations among the SECCR subscale and full scale scores. All of these Pearson product-moment correlations were statistically significant ($p<.01$). This is consistent with the existence of a general dimension of cross-cultural research self-efficacy, with at least three distinguishable but strongly related components.

The factor analysis of the SECCR did not differentiate all of the 5 hypothesized domains. Thus, Hypothesis 1 was only partially supported. The hypothesized Cross-Cultural Relationships domain corresponds well with the new Relationships with Community & Collaborators domain (Factor 3). Items from the hypothesized Cross-Cultural Data Collection and Logistics domain that emphasized relationship building in the context of data collection also loaded on this dimension. The new Cultural Awareness & Conceptualization dimension blends many items from two of the hypothesized domains: (a) Researcher Awareness of Self and Social Context and (b) Cross-Cultural Research Conceptualization. Items from other a priori domains also loaded on the new Cultural Awareness & Conceptualization factor if they emphasized cultural understanding over general research skill. In contrast, the new Data Collection, Analysis, &

Reporting dimension contains items that emphasize general research skill over cultural understanding. This dimension primarily blends items from (a) the hypothesized Data Collection & Logistics domain, and (b) items from the hypothesized Data Analysis and Interpretation domain that address data analysis. In summary, although the SECCR items did not identify five distinct dimensions, as hypothesized, all of the SECCR content is represented in the three derived dimensions, which tend to blend relevant content from the original five domains.

Table 3

Means, Standard Deviations, and Correlations Among SECCR Scales

Scale	*M*	*SD*	1	2	3	4
1. Cultural Awareness and Conceptualization	4.67	.73	__			
2. Data Collection, Analysis, and Reporting	4.32	.86	.77**	__		
3. Relationships with Community and Collaborators	4.60	.76	.80**	.72**	__	
4. SECCR Total Score	4.54	.72	.94**	.91**	.89**	__

*Note. **p<.01*

Correlates of Self-Efficacy for Cross-Cultural Research

Pearson product-moment correlation coefficients were computed between SECCR scores, hypothesized predictor variables, and other demographic variables to provide initial validity evidence for the SECCR (See Table 4). Self-efficacy for cross-cultural research, as measured by full scale SECCR scores, was found to correlate positively with participants' current year in their graduate programs, and with all hypothesized predictor variables (research self-efficacy in general, multicultural counseling competence, general research experience, and cross-cultural/multicultural training). The SECCR subscales tended to exhibit correlation patterns that were similar to those found with the full scale. The exception involved subscale 3: Relationships with Community and Collaborators. This subscale correlated positively with participants' age and not with their current year in program. The Data Collection, Analysis, and Reporting domain (subscale 2) was the only subscale of the SECCR that correlated significantly with research experience (as measured by subscale 1 of the Research Involvement Questionnaire). Variables that were found to correlate with at least one of the SECCR scales or one of the hypothesized predictor variables were included in the hierarchical regression analyses for Hypotheses 2 and 3.

Table 4

Intercorrelations Between SECCR Scales, Demographic, and Other Predictor Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SECCR Factor 1	—												
2. SECCR Factor 2	.77**												
3. SECCR Factor 3	.80**	.72**											
4. SECCR Total	.94**	.91**	.89**										
5. Gender	-.06	-.01	-.03	-.04									
6. Ethnicity	.09	.01	.06	.06	.05								
7. Age	.03	-.01	.12*	.04	.07	.04							
8. Year	.12*	.17**	.10	.14**	-.01	.06	.25**						
9. MCSD	.09	.04	.15*	.10	-.13*	-.01	-.02	-.15**					
10. RSES	.57**	.64**	.51**	.63**	-.17*	.01	-.03	.20*	-.01				
11. MCI	.54**	.52**	.56**	.60**	.07	.14	.18*	.30**	.05	NA			
12. RIQ Factor 1	.10	.30**	.08	.17**	.16*	.10	.08	.66**	-.21**	.26**	.25**		
13. RIQ Factor 2	.25**	.29**	.23**	.28**	.05	.24**	.17**	.41**	-.07	.32**	.45**	.48**	—

Note. **p<.01, *p<.05; sex: 1 = female, 2 = male; ethnicity: 0 = Caucasian, 1 = people of color.

Predicting Cross-Cultural Research Self-Efficacy from General Research Self-Efficacy and Multicultural Counseling Competence (Hypothesis 2)

The second hypothesis stated that cross-cultural research self-efficacy will be moderately predicted, in the positive direction, by research self-efficacy (RSES) and multicultural counseling competence (MCI), beyond the prediction provided by multicultural social desirability (MCSD). Significant correlations relating cross-cultural research self-efficacy (SECCR) to both research self-efficacy (RSES) and multicultural counseling competence (MCI) provided preliminary support for hypothesis two (see Table 4). Gender, age, and year in program were found to be correlated with at least one of the predictor variables, so they were included as control variables in the regression equations.

Hierarchical multiple regression analyses in SPSS were used to measure the specific variance in cross-cultural research self-efficacy accounted for by gender (step 1), age and year in program (step 2), multicultural social desirability (step 3), and multicultural counseling competence and research self-efficacy (step 4). By entering these predictor variables in this order, I could determine how much variance in cross-cultural research self-efficacy (SECCR) was determined by general research self-efficacy (RSES) or multicultural counseling competence (MCI) scores beyond the variance accounted for by demographic characteristics and multicultural social desirability. Two hierarchical regression analyses were conducted: (a) one with RSES scores in step 4 for the portion of the sample that completed the RSES ($n = 145$), and (b) one with MCI scores in step 4 for the portion of the sample that completed the MCI ($n = 138$).

Table 5 summarizes the results of the hierarchical regression analysis in which the RSES scores were included. The R^2 change statistics show that gender (step 1), and age and year in program (step 2) did not account for significant variance in cross-cultural research self-efficacy

Table 5

Summary of Hierarchical Regression Analysis for General Research Self-Efficacy Variables
Predicting Self-Efficacy for Cross-Cultural Research

Variable	*B*	*SE B*	*β*	ΔR²
Step 1				.03
Gender	-.39	.20	-.16	
Step 2				.03
Gender	-.42	.20	-.17*	
Age	.00	.01	.00	
Year in program	.09	.05	.17	
Step 3				.04*
Gender	-.40	.19	-.17*	
Age	.00	.01	.00	
Year in program	.10	.05	.17*	
MCSD	.04	.02	.20*	
Step 4				.34***
Gender	-.12	.16	-.05	
Age	.01	.01	.07	
Year in program	.00	.04	.00	
MCSD	.05	.01	.23**	
RSES	.04	.00	.61***	

Note. *p<.05, **p<.01, ***p<.001

(although gender had a small significant beta weight). When multicultural social desirability was added in step 3, an additional 4.0% of the variance in cross-cultural research self-efficacy was explained. Multicultural social desirability was a significant predictor of cross-cultural research self-efficacy ($\beta = .20$, p<.05). When general research self-efficacy was added in step 4, an additional 34% of the variance in cross-cultural research self-efficacy was explained. In the final equation (step 4) only multicultural social desirability ($\beta = .23$, p<.01) and general research self-efficacy ($\beta = .61$, p<.01) contributed unique prediction of cross-cultural research self-efficacy.

Table 6 summarizes the results of the hierarchical regression analyses in which MCI scores were included. The R^2 change statistics show that gender (step 1) did not account for significant variance in cross-cultural research self-efficacy. When age and year in program were added in step 2 an additional 6% of the variance in cross-cultural research self-efficacy was explained, but only year in program had a significant beta weight ($\beta = .23$, p<.01). Unlike in the other half-sample (see Table 5), multicultural social desirability (step 3) did not predict cross-cultural research self-efficacy scores. When multicultural counseling competence was added in step 4 an additional 31% of the variance in cross-cultural research self-efficacy was explained. In the final regression equation, only multicultural counseling competence contributed unique prediction of cross-cultural research self-efficacy in the context of all predictors ($\beta = .59$, p<.001).

Table 6

Summary of Hierarchical Regression Analysis for Multicultural Counseling Competence Variables Predicting Self-Efficacy for Cross-Cultural Research

Variable	B	$SE\ B$	β	ΔR^2
Step 1				.00
Gender	.05	.14	.03	
Step 2				.06*
Gender	.06	.14	.04	
Age	.00	.00	.03	
Year in program	.10	.04	.23**	
Step 3				.00
Gender	.07	.14	.04	
Age	.00	.01	.03	
Year in program	.10	.04	.24**	
MCSD	.00	.02	.02	
Step 4				.31***
Gender	-.02	.12	-.01	
Age	.00	.01	-.05	
Year in program	.02	.03	.05	
MCSD	-.01	.01	-.05	
MCI	1.21	.15	.59***	

Note. *p<.05, **p<.01, ***p<.001

Predicting Cross-Cultural Research Self-Efficacy from Research Experience and Cross-Cultural/Multicultural Training (Hypothesis 3)

The third hypothesis stated that SECCR full scale scores will be predicted by (a) the number of previous cross-cultural or multicultural courses and workshops taken by participants, and (b) research involvement (e.g., number of research methods courses taken, work on a thesis or dissertation, collaboration with faculty on a research project). Hierarchical regression was used to measure the specific variance in cross-cultural research self-efficacy (SECCR) accounted for by gender and ethnicity (step 1), age and year in program (step 2), multicultural social desirability (MCSD) (step 3), and general research experience and cross-cultural/multicultural training (RIQ subscales) (step 4). Significant Pearson product-moment correlation coefficients were reported earlier relating cross-cultural research self-efficacy to both general research experience and cross-cultural/multicultural training, thereby providing preliminary support for Hypothesis 3 (see Table 4). Gender, ethnicity, age, and year in program were found to be correlated with at least one of the predictor variables, so they were included in the regression equation. Ethnicity was re-coded as a dichotomous variable, where Caucasian = 0 and all other ethnic groups = 1.

Table 7 shows a summary of the hierarchical regression results for Hypothesis 3. The R^2 change statistics show that the variables in step 2 (gender, ethnicity, age and year in program) accounted for significant variance (4%) in cross-cultural research self-efficacy beyond that provided by gender and ethnicity alone (step 1). However, only year in program had a significant beta weight in step 2 (β = .20, p<.001). In step 3, multicultural social desirability did not contribute additional prediction. In step 4, general research experience and cross-cultural/multicultural training (RIQ subscales) accounted for an additional 5% of the variance in

cross-cultural research self-efficacy, but only scores from the cross-cultural training subscale of the RIQ, and not scores from the general research experience subscale, predicted SECCR scores. This result suggests that a cross-cultural emphasis in research and clinical training has a larger impact on self-efficacy for cross-cultural research than research training and experience without a cross-cultural focus. Also note that year in program no longer contributed unique prediction of cross-cultural research self-efficacy once cross-cultural training and experience were included in the equation.

Table 7

Summary of Hierarchical Regression Analysis for Research Involvement Variables Predicting Self-Efficacy for Cross-Cultural Research

Variable	*B*	*SE B*	*β*	ΔR²
Step 1				.01
Gender	-.12	.11	-.06	
Ethnicity	.16	.09	.12	
Step 2				.04*
Gender	-.12	.11	-.06	
Ethnicity	.14	.09	.09	
Age	.00	.01	.01	
Year in program	.09	.03	.20**	
Step 3				.01
Gender	-.09	.11	-.05	
Ethnicity	.13	.09	.09	
Age	.00	.01	.00	
Year in program	.10	.03	.21**	
MCSD	.02	.01	.09	
Step 4				.05**
Gender	-.11	.11	-.06	
Ethnicity	.06	.09	.04	
Age	.00	.01	-.01	
Year in program	.04	.04	.09	
MCSD	.02	.01	.10	
RIQ Research Experience	.01	.01	.06	
RIQ Cross-Cultural Training	.03	.01	.23**	

Note. $*p<.01, **p=.001$

Follow-up hierarchical regression analyses were conducted to further examine the finding that cross-cultural training was a stronger predictor of cross-cultural research self-efficacy than was general research experience. Three hierarchical regression analyses were conducted to measure the variance in each of the SECCR subscales accounted for by the predictor variables in Hypothesis 3. The criterion variable for the first of these analyses was SECCR Cultural Awareness and Conceptualization scores (Factor 1). The criterion variable for the second analysis was SECCR Data Collection, Analysis, and Reporting (Factor 2) scores. The criterion variable for the third analysis was SECCR Relationships with Community and Collaborators scores (Factor 3). Otherwise, each equation was identical to those in the previous analyses for Hypothesis 3 (i.e., with gender and ethnicity entered as step 1, age and year in program added in step 2, multicultural social desirability added in step 3, and dimensions of research involvement added in step 4). I was particularly interested in whether the two dimensions of research involvement might predict the three separate dimensions of cross-cultural research self-efficacy differently. As shown in Table 8, the cross-cultural training dimension of research involvement was found to predict significant variance in all three dimensions of cross-cultural research self-efficacy. However, the general research training dimension of research involvement was only found to predict significant variance in the Data Collection, Analysis, and Reporting domain (Factor 2) of the SECCR. These results are theoretically sensible in that Factors 1 and 3 of the SECCR include a larger focus on cultural competence, while Factor 2 of the SECCR tends to emphasize general research skills. Also of note, multicultural social desirability was a significant, though very modest, predictor of the relationships dimension of cross-cultural research self-efficacy.

Table 8

Summary of Hierarchical Regression Analyses for Research Involvement Variables Predicting Three Dimensions of Self-Efficacy for Cross-Cultural Research

	SECCR Subscale Criterion Variables					
	Cultural Awareness & Conceptualization		Data Collection, Analysis, & Reporting		Relationships with Community & Collaborators	
Predictor Variables	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.02		.00		.02
Gender	-.08		-.02		-.04	
Ethnicity	.12*		.06		.12*	
Step 2		.03*		.05**		.03**
Gender	-.08		-.02		-.06	
Ethnicity	.12		.04		.10	
Age	.00		-.06		.10	
Year in program	.17**		.23***		.13*	
Step 3		.01		.00		.02*
Gender	-.07		-.02		-.04	
Ethnicity	.10		.04		.10	
Age	.00		-.06		.10	
Year in program	.12**		.23***		.16*	
MCSD	.09		.03		.14*	
Step 4		.03**		.08***		.03**
Gender	-.07		-.05		-.04	
Ethnicity	.06		.00		.06	
Age	-.02		-.06		.07	
Year in program	.13		.00		.10	
MCSD	.09		.05		.14*	
RIQ Research Experience	-.05		.24**		-.04	
RIQ Cross-Cultural Training	.22**		.20**		.21**	

Note. *p<.05, **p<.01, ***p<.001

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CHAPTER FIVE

Discussion

The purpose of this study was to develop and validate a self-report measure of Self-Efficacy in Cross-Cultural Research (SECCR). This instrument was designed to meet a need for definition and assessment of multicultural competence on the "scientist" end of the "scientist-practitioner" training model. In this study, graduate students in counseling and clinical psychology completed the Research Self-Efficacy Scale (RSES; Bieschke, et al., 1996), the Multicultural Counseling Inventory (MCI; Sodowsky, et al., 1994), the Multicultural Social Desirability Index (MCSD; Sodowsky, 1996), a demographic questionnaire and the author-developed Research Involvement Questionnaire (RIQ) and Self-Efficacy for Cross-Cultural Research (SECCR) measure. Results of the study showed partial support for Hypothesis 1, which related to the expected factor structure of the SECCR. Hypotheses 2 and 3 addressed the validity for the SECCR and were both supported. In this chapter, I will discuss these findings in further detail, address the methodological considerations in the study, discuss the current status and future directions for the SECCR, and draw final conclusions.

Structure of Self-Efficacy for Cross-Cultural Research (SECCR)

Results from this study suggest that self-efficacy for cross-cultural research is a construct that can be reliably measured, and that it includes the following dimensions: Cultural Awareness and Conceptualization; Data Collection, Analysis, and Reporting; and Relationships with Community and Collaborators. The first dimension—Cultural Awareness and Conceptualization—is consistent with previous measures of multicultural counseling competence, all of which contain a distinct awareness dimension (D'Andrea et al., 1991; LaFromboise et al., 1991; Ponterotto et al., 1999, as cited in Constantine & Ladany, 2000;

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Sodowsky et al., 1994). I did not expect that cultural awareness would combine with cross-cultural research conceptualization skills to produce a single dimension. In retrospect, however, the findings seem sensible. It is reasonable to conclude that a researcher's awareness of self and cultural context would be more relevant during the designing and planning phases of research than in the subsequent data collection and analysis phases, which may involve more general research skills.

This interpretation of Dimension 1 further supports the emergence of Dimension 2—Data Collection, Analysis, and Reporting—as a distinct facet of self-efficacy for cross-cultural research. Like the SECCR, all previous measures of research self-efficacy contain domain distinctions between conceptual and analytical skills (Bieschke et al., 1996; O'Brien et al., as cited in Forester et al., 2004; Phillips & Russell, 1994). Unlike the SECCR, previous measures of research self-efficacy have also tended to distinguish data collection, analysis, and/or reporting/writing. Failure to find these distinctions in the SECCR could mean that once cultural competence is included in the assessment of research self-efficacy, more refined distinctions between general research skills are not as strong.

The third dimension of the SECCR emerged as hypothesized, with an emphasis on Relationships with Community and Collaborators. A distinct relationships dimension of cultural competence in counseling has also been supported empirically in prior research. Sodowsky and colleagues (1994) found that their data supported a relationships dimension of multicultural counseling competence when they developed the MCI. However, Sue and colleagues (1992) did not include a distinct relationships dimension in their standards of multicultural counseling competence. Thus, there has been a discrepancy between theory and empirical data in the realm

of cultural competence. Future research could further examine this disparity to define and assess standards of cultural competence in a more definitive manner.

In sum, the three-factor structure of the SECCR covers the expected content, but in a less differentiated way than was predicted in the hypothesized five-factor model. The three-factor structure of the SECCR is consistent with previous measures of multicultural counseling competence which are also comprised of two to four factors (D'Andrea et al., 1991; LaFromboise et al., 1991; Ponterotto et al., 1999, as cited in Constantine & Ladany, 2000; Sheu & Lent, 2007; Sodowsky et al., 1994). In contrast, the SECCR contains fewer dimensions than previous measures of general research self-efficacy, which contain four to six factors (Bieschke et al., 1996; O'Brien et al., as cited in Forester et al., 2004; Phillips & Russell, 1994). Thus, self-efficacy for cross-cultural research is a construct with components that may be organized more like MCC than general research self-efficacy.

Validity Evidence

Initial convergent validity evidence for the SECCR was provided by positive correlations with measures of general research self efficacy, multicultural counseling competence, cross-cultural/multicultural training, and research involvement. For example, general research self-efficacy and multicultural counseling competence both provided additional prediction of SECCR scores beyond that provided by other demographic variables. For instance, year in program predicted SECCR scores, but not when research self-efficacy or MCC were also taken into account. That is, students who were farther along in their programs tended to have higher self-efficacy for cross-cultural research than newer students *because* they had higher self-estimates of research ability and cultural competence, which were ultimately more important determinants of SECCR scores than year in program. Similarly, year in program no longer predicted unique

variance in cross-cultural research self-efficacy once research experience and multicultural training were included as predictors. The positive relationship found in this study between self-efficacy for cross-cultural research and MCC replicates Liu and colleagues' (2004) similar results relating these variables.

The size of the Pearson correlations and beta weights for the RSES and MCI scores provide better evidence of convergent validity than discriminant validity for the SECCR. Research self-efficacy and multicultural counseling competence were found to be strong rather than moderate predictors of self-efficacy for cross-cultural research. The SECCR, RSES, and MCI (arguably) all measure self-efficacy for various areas of graduate level training in counseling and clinical psychology. Although the concept of self-efficacy as used in the present study refers to a set of *domain-specific* self-beliefs (Lent & Brown, 2006), there may be a broader set of self-beliefs related to graduate level academic tasks in psychology that has impacted participants' scores on all measures.

Further convergent validity evidence for the SECCR was provided by modest correlations between SECCR scores and previous research experience, and cross-cultural/multicultural training. These relationships were not found in Liu and colleagues' (2004) similar study of multicultural research self-efficacy, multicultural environment, and research training environment. These discrepant findings could be attributed to the present study's improvement on Liu and colleagues' methodology. Recall that Liu and colleagues measured multicultural research self-efficacy by merely adding the word "multicultural" to each item on the Research Instruction Outcome Tool (RIOT; Szymanski et al., 1994). It seems likely that the SECCR measure provides a more theoretically and empirically appropriate assessment than the adapted RIOT.

When the variance predicted by both research experience and cross-cultural/multicultural training was taken into account, research experience no longer contributed unique variance to full scale SECCR scores. Further analysis of this finding revealed support for discriminant validity of the SECCR subscales. Whereas cross-cultural/multicultural training predicted all three SECCR subscales, research experience only predicted the Data Collection, Analysis, and Reporting subscale of the SECCR (see Table 8). Thus, participants with more general research experience or involvement had higher self-efficacy for the general research tasks included in subscale 2 of the SECCR. This finding is consistent with previous research linking general research self-efficacy with general research involvement and productivity (Bieschke et al., 1996; Phillips & Russell, 1994). In contrast, previous cross-cultural/multicultural training predicted *all three scales* of the SECCR. This finding is consistent with past research relating previous multicultural coursework and multicultural workshops to MCC (Bellini, 2002; Constantine et al., 2001; Ottavi et al., 1994; Sodowsky et al., 1998). The fact that general research experience *did not* predict two of the three SECCR subscales indicates that the three SECCR subscales are measuring different dimensions of self-efficacy for cross-cultural research. In addition, the fact that cross-cultural/multicultural training, as compared to general research experience, was a stronger predictor of SECCR scores further supports the conclusion that self-efficacy for cross-cultural research is closer conceptually to MCC than to general research self-efficacy.

The findings relating multicultural social desirability (MCSD) to cross-cultural research self-efficacy were mixed. MCSD was a significant predictor of self-efficacy for cross-cultural research in one (half) sample but not the other. Prior studies with similar variables have also produced mixed results. For instance, Liu and colleagues (2004) found no significant relationship between multicultural research self-efficacy and multicultural social desirability. However,

several other researchers have found that social desirability and multicultural social desirability are significantly related to self-reported MCC (Constantine et al., 2001; Constantine & Ladany, 2000; Ladany et al., 1997; Sodowsky et al., 1998; Worthington et al., 2000). Questions remain as to the meaning of these inconsistent findings. To help address these questions, future studies with the SECCR should continue to include a measure of multicultural social desirability. In any case, the SECCR showed convergent validity with the RSES and the MCI beyond the influence of multicultural social desirability.

Methodological Considerations

Methodological strengths of this study included its large sample size, nation-wide representation of graduate students in psychology and adequate representation of ethnic diversity (i.e., 29.1% people of color). Rigorous procedures were employed to examine the content validity of the instrument with expert judges, and a pilot test helped to improve data collection procedures. Furthermore, this study was designed to provide both self-report (e.g., RSES and MCI) and behavioral (RIQ) validity evidence for the SECCR. In addition to the SECCR, this study produced a Research Involvement Questionnaire, which appears to be a reliable and valid measure of research experience and cross-cultural/multicultural training.

Limitations of this study included the large attrition rate, although no significant differences in demographic characteristics were found between those who completed the SECCR and those who did not complete the survey. The sample was 85.6% female. This represents a substantial gender imbalance, although it should be noted that 75% of first-year graduate students in psychology are female (Pate, 2000). Still, any gender differences found in this study should be interpreted with caution, and future studies utilizing the SECCR should seek a larger representation of males.

Self-Efficacy for Cross-Cultural Research Measure (SECCR): Strengths, Limitations, and Future

Directions

This study produced an initial version of the SECCR, with three subscales and solid support for its reliability and validity. The strengths of this instrument in its current form include its internal consistency reliability and its comprehensiveness in representing the construct of self-efficacy for cross-cultural research. The instrument's convergent validity with measures of research self-efficacy, multicultural counseling competence, research experience, and cross-cultural/multicultural training indicates that the SECCR measures what it was designed to measure.

Limitations of the current version of the SECCR include its length and the high correlations among its subscales. The simple structure of the instrument is adequate but not ideal, as there are many items with high (>.3) factor loadings on multiple factors. However, 65 of the 73 items have factor loadings with at least a .1 difference between highest and second highest loading. Items that did not meet this criterion and were not deemed essential for content representativeness were eliminated. Some of the results of the study suggest that self-efficacy for cross-cultural research could be treated as a one dimensional construct (e.g., the high correlations among subscales, the large difference in eigenvalues between first and second factors). However, the three-factor structure is supported by the conceptual consistency of item content within each domain, the relatively equal variances accounted for by each factor, and the discriminant validity evidence provided by the prediction of research experience by only subscale 2. Furthermore, the correlations found among the SECCR subscales are equal to or less than the correlations found among the subscales of other MCC assessments (Sheu & Lent, 2007; Sodowsky et al., 1994). To maintain its primary focus, the current study did not examine relationships between the SECCR

subscales and the subscales of the MCI and RSES. Such analyses could provide further validity evidence for the SECCR. Given the overall results, it is probably best to think of the self-efficacy for cross-cultural research construct as having a hierarchical structure. A general dimension exists but more refined distinctions or components can also be identified at a lower-level in a hierarchical representation. The existence of a general dimension probably reflects the fact that the students or researchers with experience or training in multicultural research are likely to have been exposed to each subdomain to some extent, thus increasing multicultural self-efficacy in general.

The SECCR is subject to some of the same criticisms of previous measures of MCC. For instance, most respondents rated themselves between "somewhat sure" and "fairly sure" that they were able to perform cross-cultural research tasks. This finding is consistent with studies in which most respondents have rated themselves as average or above average on most components of MCC (Holcomb-McCoy & Myers, 1999; Robles-Piña, 2002). Thus, the SECCR suffers from the same "everyone is above average" phenomenon as measures of MCC.

The SECCR has limited applicability to qualitative research methods and for researchers outside the social sciences. The instrument also refers to "diverse communities" of research participants in a general way, and thus is limited in its ability to measure self-efficacy for research with any specific cultural group. The SECCR could feasibly be adapted for specific cultural groups, with two recommendations. First, the ethnic group name could be substituted for "cultural community" in relevant items. Second, the appropriate ethnic group subsection in the Guidelines for Research in Ethnic Minority Communities (CNPAAEMI, 2000) could be used to make decisions about items to keep and eliminate in developing a shorter version of the SECCR focusing on one specific cultural group.

The demonstrated reliability and validity of the SECCR means that it could be used in its current form to measure self-efficacy for cross-cultural research among graduate students in psychology. Future research endeavors would benefit from a briefer version of the SECCR to increase participation and reduce attrition rates. Follow-up analyses could be done to evaluate a version of the SECCR that contains about 30 items (i.e., 10 per domain) and cross-validation studies could be done in new samples. Items could be selected based on balancing subscale content representativeness and reliability with good factor loadings and brevity. The high reliability of the current version of the SECCR suggests that a shorter version would have satisfactory reliability. It would also be informative to conduct a confirmatory factor analysis of a shortened SECCR measure in a new sample to formally test the adequacy of the three-dimensional structure.

Future studies could also examine the utility of the SECCR for research and applications involving research training, skill development, and interest in conducting cross-cultural research. Correlates of the measure could be investigated to identify important factors contributing to, and resulting from, investigators' confidence in their ability to conduct culturally competent research. Cross-cultural self-efficacy expectations could be compared to research participants' ratings of the investigators' cultural competence in research. This would provide information about the relationship between confidence and actual ability in the realm of multicultural competence. The SECCR could also be used to measure pre- to post-test changes associated with training or interventions designed to boost self-efficacy for cross-cultural research.

Conclusions

In summary, self-efficacy for cross-cultural research is a new construct with the potential to expand current conceptions of multicultural competence. As the field of psychology continues

to embrace the multicultural movement, research on multicultural counseling competence can no longer claim infancy. It is time to expand, clarify, and apply definitions of cultural competence across the spectrum of activities performed by psychologists. This study, with its contribution of the Self-Efficacy for Cross-Cultural Research measure, takes a step in this direction. Further refinement of this instrument is warranted for maximum utility.

Research with the SECCR could extend into the realms of research training, program development, student recruitment and retention, and continuing education. New training methods could be developed to foster enthusiasm for research and respect for multiculturalism in young researchers. Ultimate goals for this type of research include increased multicultural competence among researchers and advances in the quality, accuracy, and value of psychological research.

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APPENDIX A

Demographic Questionnaire

Demographic Questionnaire

1. Sex: Female____   Male____   Transgender or Intersex____

2. Age:____

3. Ethnicity:

        African American____   Asian American/Pacific Islander____
        Caucasian____   Chicano(a)/Latino(a)/Hispanic____
        Native American____   Bi or Multiracial____
        International student____
        Other (Specify)_____

4. Highest Degree Earned:

        Bachelor's____
        Master's____
        PhD____
        PsyD____
        Other (specify)_____

5. Current Graduate Program:

        Counseling Psychology Masters____   Counseling Psychology PhD____
        Clinical Psychology Masters____   Clinical Psychology PhD____
        Counseling Psychology PsyD____   Clinical Psychology PsyD___
        Other (specify)_____

6. Current Year in Program (circle one):

1   2   3   4   5   6   7   8+

APPENDIX B

Research Involvement Questionnaire

Research Involvement Questionnaire

The following questions ask about your research training and involvement. Please circle the response that best fits your level of training and experience.

1. How many undergraduate and graduate level research methods courses have you taken, including any in which you are currently enrolled?

0   1   2   3   4   5   6+

2. How many undergraduate and graduate level research methods courses have you taken that have included training in cross-cultural and/or multicultural research methods?

0   1   2   3   4   5   6+

3. How many workshops/seminars (not including courses) have you taken on cross-cultural or multicultural research methods?

0   1   2   3   4   5   6+

4. How many undergraduate and graduate level courses have you taken in multicultural or cross-cultural counseling?

0   1   2   3   4   5   6+

5. How many workshops/seminars (not including courses) have you taken in multicultural or cross-cultural counseling?

0   1   2   3   4   5   6+

6. In your graduate program, how many different psychology research projects have you helped to conduct? Note: this includes involvement in one or more of the following components: project conceptualization, research design, literature review, data collection, data entry/analysis, writing, editing. Please include any current projects. Do not include projects affiliated with a class.

0   1   2   3   4   5   6   7   8   9+

7. Of the above projects, how many had a cross-cultural or multicultural focus?

0   1   2   3   4   5   6   7   8   9+

8. Please indicate the number of manuscripts you have authored/co-authored that have been submitted for publication or have been published.

0   1   2   3   4   5   6   7   8   9+

9. Of these, how many had a cross-cultural or multicultural focus?

0   1   2   3   4   5   6   7   8   9+

10. Please indicate the number of conference presentations you have authored/co-authored based on empirical research findings.

0   1   2   3   4   5   6   7   8   9+

11. Of these, how many had a cross-cultural or multicultural focus?

0   1   2   3   4   5   6   7   8   9+

12. Which of the following best describes your progress on a Master's thesis in psychology? (circle one)

(a)   I have not completed a thesis and am not currently working on a thesis
(b)   I am generating ideas/conducting a literature review for a thesis
(c)   I am collecting data for a thesis
(d)   I am organizing/analyzing data for a thesis
(e)   I am writing the results and/or discussion sections for a thesis
(f)   I have completed a thesis

13. Which of the following best describes your thesis (circle one):

(a)   Quantitative
(b)   Qualitative
(c)   Theoretical/Conceptual
(d)   Not applicable

14. Please rate the extent to which your thesis has/had a multicultural or cross-cultural focus:

(a)   No multicultural or cross-cultural focus beyond considerations related to sample characteristics
(b)   Some multicultural or cross-cultural focus
(c)   Strong multicultural or cross-cultural focus
(d)   Not applicable

15. Which of the following best describes your progress on a dissertation in psychology? (circle one)

(a)   I have not completed a dissertation and am not currently working on a dissertation
(b)   I am generating ideas/conducting a literature review for a dissertation
(c)   I am collecting data for a dissertation
(d)   I am organizing/analyzing data for a dissertation
(e)   I am writing the results and/or discussion sections for a dissertation
(f)   I have completed a dissertation

16. Which of the following best describes your dissertation (circle one):

(a)   Quantitative
(b)   Qualitative
(c)   Theoretical/Conceptual
(d)   Not applicable

17. Please rate the extent to which your dissertation has/had a multicultural or cross-cultural focus:

(a)   No multicultural or cross-cultural focus beyond considerations related to sample characteristics
(b)   Some multicultural or cross-cultural focus
(c)   Strong multicultural or cross-cultural focus
(d)   Not applicable

APPENDIX C

Self-Efficacy for Cross-Cultural Research Measure

Self-Efficacy for Cross-Cultural Research Measure (SECCR)

The following items represent tasks you might engage in when conducting cross-cultural and/or multicultural research. For each item, please indicate how sure you are of your ability to successfully perform the given task.

Response choices for each item:
Very unsure
Fairly unsure
Somewhat unsure
Somewhat sure
Fairly sure
Very sure

*1. Inform all participants of features in my cross-cultural study that may influence their willingness to participate.

*2. Assess the needs of a cultural group to help guide research conceptualization.

*3. Avoid research activities that may be ethical in my cultural community, but would not be considered ethical in the cultural community I am researching.

*4. Recognize how the historical, social and political climate of the cultural community I plan to study may affect my research with that community.

*5. Build trust with the cultural community I plan to study.

*6. Identify when to include acculturation level as a variable in a cross-cultural research study.

*7. Use appropriate procedures to translate an existing instrument into the language of the community I plan to study.

*8. Provide culturally appropriate forms of compensation to community members for their participation.

*9. Conduct research in a way that takes into account how I may be perceived by indigenous collaborators based on my race/ethnicity as a researcher.

10. Train research assistants from diverse cultural backgrounds to collect data.

*11. Identify strengths and limitations of using quantitative versus qualitative methods in cross-cultural research.

*12. Consult frequently with members of the cultural community I am studying over the course of the research project.

13. Obtain materials/supplies/equipment needed for cross-cultural data collection.

14. Identify variables that may interfere with the variables I plan to study directly in a cross-cultural study.

*15. When conducting cross-cultural research that compares two or more cultures, analyze both within-group and between-group differences.

*16. Organize my proposed cross-cultural research ideas in writing.

*17. Evaluate the internal validity of a cross-cultural research study.

18. Conduct a cross-cultural study in a way that considers how my background may be different from members of the community I will study.

*19. Recognize potential implications of both statistically significant and non-significant results in a cross-cultural study.

*20. Anticipate possible misuses of data from a cross-cultural study.

21. Synthesize literature from diverse sources to help formulate cross-cultural research questions.

22. Use knowledge of the values and customs of a specific culture to help me interpret data collected in that culture.

*23. Disseminate research results to the participants and their community in local media outlets and in the local dialect(s).

24. Identify policy implications of research results that will benefit the host community in which the research was conducted.

*25. Identify aspects of a theory that may not fit within the cultural context of the community I plan to study.

26. Assess the significance of my research and its potential value to the cultural community relative to the costs to the community I plan to study.

*27. Evaluate the extent to which the interests of potential funding agencies match the host community's interests.

*28. Ask for ideas and comments about my research from members of the cultural community I plan to study.

29. Apply knowledge of specific cultural norms and customs of the community I plan to study in my research design.

*30. Conduct statistical analyses to determine if an instrument will measure the same concept in different cultures.

31. Design a cross-cultural research study in a way that limits the effects of my own biases and assumptions about the culture I am studying.

*32. Defend a thesis or dissertation on a cross-cultural research topic.

33. Interpret research in a way that considers how my own biases and assumptions about different cultural groups affect how I view the results.

*34. Use statistical programs (e.g., SPSS) to analyze cross-cultural data.

*35. Recruit research assistants from diverse cultural backgrounds to help with the data collection process.

*36. Conduct statistical analyses to verify translation equivalence between assessment instruments in two different languages.

37. Apply knowledge of specific cultural norms and customs of the community I plan to study in the way I interact with participants and community members.

*38. Use appropriate procedures to norm an instrument for a cultural group that was originally developed in a different cultural group.

*39. Obtain approval to pursue research from appropriate committees (e.g. Human Subject's Committee and/or equivalent in foreign nations).

40. Develop hypotheses that can be researched in a way that respects the culture of the diverse community I plan to research.

*41. Present my cross-cultural research findings to members of the cultural community I have studied.

*42. Design a cross-cultural research study that tests behaviors thought to be universal across cultures.

*43. Identify and report limitations in a cross-cultural research study.

*44. Establish relationships with indigenous researchers for collaboration on cross-cultural research projects.

*45. Collect data in a way that helps to alleviate distrust participants from diverse backgrounds may have about scientific research.

*46. Organize data that has been collected in a foreign country for analysis.

*47. Develop relationships with leaders and respected members of the cultural community I plan to study.

48. Separate my personal beliefs and assumptions about diverse cultural groups from scientific research about each group.

*49. Evaluate the external validity of a cross-cultural research study.

50. Ensure reasonable participant anonymity in a cross-cultural research study.

51. Recognize different social, historical, and political influences on each culture when comparing and interpreting data from two or more cultures.

52. Identify results that may be due to actual cultural differences versus those that may be due to methodological artifacts.

*53. Understand how my beliefs and assumptions about different cultural groups affect the theoretical framework I use to conduct research.

*54. Design a cross-cultural research study that tests behaviors thought to be culture specific.

*55. Use multiple forms of data collection (e.g., written self-report, verbal self-report, behavioral observation, etc.) in cross-cultural research studies.

*56. Ask members of the community I will study for suggestions on how to make my data collection process more culturally appropriate.

*57. Identify aspects of a quantitative cross-cultural study that could be enhanced with qualitative data.

*58. Provide accommodations for any limitations (e.g., transportation) community members may encounter when participating in a cross-cultural study.

*59. Work with a team of research assistants from diverse cultural backgrounds during the data collection process.

60. Understand possible cultural differences in professional goals between myself and indigenous collaborators.

*61. Define how culture will be identified in a cross-cultural research study (e.g., nationality, race, ethnicity, etc.).

*62. Identify appropriate statistical analyses to test cross-cultural research hypotheses.

*63. Continue a relationship with the local research community beyond the period of the cross-cultural research project.

*64. Provide an environment for assessment, interviewing, or experimentation that is comfortable for participants in a cross-cultural study.

65. Use information about the context of the data collection to assist in interpreting the results of a cross-cultural study.

*66. Understand how my own values and cultural background affect my basis for comparing and contrasting different cultural groups in research.

67. Follow cultural expectations regarding social conduct when conducting research in a foreign community.

*68. Consider potential language and dialect differences within the ethnic group I plan to study in my research design.

*69. Provide the cultural community I will study with immediate benefits from participating in my research.

*70. Identify how my cultural background may create a sense of obligation among potential participants from another culture.

*71. Understand how my beliefs and assumptions about different cultural groups affect the data collection methods I choose.

*72. Determine if the need for deception in a cross-cultural research study outweighs the potential harm to researcher-participant relationships.

*73. Evaluate journal articles in terms of their appropriate and responsible approach to cultural diversity.

*74. Interpret research results in a way that takes into account the social, historical, and political context of the cultural community I am researching.

75. Establish mutually agreed upon forms of compensation (e.g., funding, co-authorship, professional advancement) with indigenous collaborators.

76. Show the cultural community I plan to study how my research will directly help them.

*77. Design research studies that investigate ethnic groups on multiple levels, (e.g., as individuals, Chinese, Asian).

*78. Recognize the limits of my own knowledge of various ethnic groups and its impact on all stages of the cross-cultural research process.

*79. Review literature from diverse sources to generate cross-cultural research ideas.

*80. Obtain funds to help pay for cross-cultural research.

*81. Identify what constitutes public and private information in the cultural community I plan to study.

*82. Try to gain support for my research within the cultural community I plan to study.

*83. Understand the strengths and limitations of investigating cultural differences versus cultural similarities in a research study.

*84. Conduct a cross-cultural research study in a way that takes into account how I may be perceived by participants based on my race/ethnicity/nationality as a researcher.

*85. Collect data in a way that takes into account specific cultural values, norms, and customs of the community I plan to study.

*86. Contribute to the training and career development of local scholars in the community I plan to study.

87. Work in collaboration with a culturally diverse team of researchers.

*88. Understand how my values, biases, and assumptions about different cultural groups affect what I view as "normal" and "abnormal" behavior.

89. Recruit participants in a way that respects their culture.

*90. Recognize the effects of cultural differences in response styles in the way I interpret survey data from a cross-cultural study.

*91. Review theories that have been developed within the culture(s) I plan to study.

*92. Ensure that instructions are clearly communicated and understood by participants in a cross-cultural study.

*93. Identify relevant contextual variables (e.g., socioeconomic status, religious affiliation) to measure as part of a cross-cultural study.

*94. Recruit a sample that represents individual differences within the cultural community I plan to study.

*95. Develop a logical rationale for a cross-cultural study.

*96. Identify and report implications for future cross-cultural research based on my results.

*97. Understand how my own cultural background affects the way I conceptualize, conduct, and interpret research with participants from a different cultural background.

98. Choose assessment instruments for a cross-cultural study with demonstrated reliability and validity for the ethnic group I plan to study.

99. Please rate how sure you are of your overall ability to complete a cross-cultural research project.

Note. * = items retained following data analysis and editing.