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# Factors Impacting Clinical And Counseling Psychology Students Conducting Research With Lgbt Populations

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FACTORS IMPACTING CLINICAL AND COUNSELING PSYCHOLOGY  
STUDENTS CONDUCTING RESEARCH WITH LGBT POPULATIONS

by

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A Dissertation

Submitted to the Graduate Faculty

of the

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In partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

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This dissertation submitted by Daniel Walinsky in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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                  Conducting Research with LGBT Populations

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Daniel Saul Walinsky  
August 23, 2012

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## ABSTRACT

Although a large body of literature exists on training clinical and counseling psychology researchers, scant empirical work has been published that looks at the unique needs of students working with lesbian, gay, bisexual, and transgender (LGBT) populations. This study explores researcher development experiences of those students.

Two hypotheses are tested with a sample of 59 doctoral students in APA-accredited clinical and counseling psychology program. The first hypothesis posits that Exploration and Commitment Factors of the Measure of Sexual Identity Exploration and Commitment (MoSIEC) will account for variance on the Research Outcome Expectations Questionnaire (ROEQ) beyond that accounted for by social cognitive variables such as Research Self Efficacy, Research Training Environment, and Psychosocial Research Mentoring. This hypothesis was partially supported. A hierarchical multiple regression demonstrated that although the Exploration Factor of the MoSIEC accounted for a significant amount of variance beyond social cognitive factors, the Commitment factor did not. The second hypothesis – that students identifying as LGB would score higher on the Psychosocial Factor of the Research Mentorship Experiences Scale – did not result in significant findings. Post-hoc analyses explored differences between four groups of participants: heterosexual and non-heterosexual participants, clinical psychology students and counseling psychology

students, students with and without records of publication or presentation of LGBT-research, and students who had passed comprehensive exams and those who had not. Results and implications for training doctoral students in clinical and counseling psychology who conduct research with LGBT populations are discussed.

## **Chapter I**

### **Introduction and Literature Review**

Counseling psychology researchers have shown increased interest in Lesbian, Gay, Bisexual, and Transgender (LGBT) issues and people during the past twenty years. Indeed, a recent content analysis has shown that the number of articles related to LGBT populations has increased since Phillips, Ingram, Smith, and Mindes' (2003) content analysis from the previous decade (Smith, 2010). Within the past two years, both of the field's flagship journals, the *Journal of Counseling Psychology* and *The Counseling Psychologist*, have published special issues about research with diverse LGBT populations. These special issues, along with professional guidelines that recognize the need to conduct ethical research with LGBT populations, point to the importance of research training that emphasizes cultural competence.

Although research with LGBT people has increased during the past 10 years, some scholars suggest that LGBT people remain invisible in the field of psychological research (Goldfried, 2001; Perez, 2007). Perez suggests that LGBT research lines should be expanded. He recommends further study of LGBT communities that comprises investigations of connection and belonging, technology and the global community, and diversity within communities. Indeed, vast gaps in research exist in the LGBT literature in areas such as transgender issues; intersections between sexual orientation, gender identity, and racial and ethnic identities; and rural LGBT

populations. Despite long histories of articles about lesbians, bisexual women and men, and gay men, the *Journal of Counseling Psychology* published its first article on transgender issues as recently as 2009. A PsycINFO search returned a single result for articles related to transgender populations in *The Counseling Psychologist* and four articles related to transgender populations in *The Journal of Counseling Psychology*.

Indeed, the gaps in this review of literature on factors that impact graduate students pursuing research with LGBT populations reflect the current state of research. While minimal research exists exploring the development and mentorship of LGB students, there is none that addresses the mentoring and developmental needs of transgender students. Due to this paucity of research, it is important to understand factors that impact the graduate students who are being trained to conduct research with LGBT people. Further still, the mentoring and training needs of cisgender heterosexual students conducting research with LGBT populations is a relatively unexplored area, though Bard, Bieschke, Croteau, and Eberz (1998) do note questions that might come up for heterosexual students conducting LGB research. This project will contribute to the professional literature by exploring social cognitive and developmental factors as they influence the development of clinical and counseling psychology students conducting research with LGBT populations.

## **Definitions**

Before going further into the literature, the following paragraphs will provide definitions of terms used throughout this study. While many terms used in this study are familiar to readers, in this section I will define terms that will be important to understand in reading this paper. When writing about sexual orientation and gender

identity, it is worthwhile to note that the categorical terms *lesbian*, *gay*, *bisexual*, and *transgender*” can refer either to people (e.g., *a gay man*) or a social identity category (e.g., *a lesbian identity*, or *a transgender identity*). In this study I investigate people who do research with lesbians, gay men, bisexual men and women, and transgender people. However, there will be times when I refer to lesbian, gay, bisexual, and transgender identities. This is most often the case when discussing the scientific study of identity. While lesbians and gay men are people emotionally and erotically attracted predominantly to other women and men, bisexual men and women are people who are attracted to both men and women (Fassinger & Arseneau, 2007). The term heterosexual refers to a person whose emotional and erotic attractions are focused on people of another biological sex.

The term *transgender* describes a range of gender identities characterized by a self-concept in which gender identity is not defined by natal sex. Transgender identities include: transgender, transsexual, male-to-female, female-to-male, cross dresser, to name a few. While some transgender people view gender as a dichotomous construct (male and female), other transgender people view gender as a more fluid experience. Defining each transgender identity goes beyond the scope of this review of literature. *Cisgender* individuals demonstrate a correspondence between their internal gender identity and the accepted social gender roles expected for their natal sex category (Serano, 2007).

The terms *queer* and *pansexual* can be used to describe fluid sexual orientations and gender identities that are not defined by an individual’s gender, sexual orientation or those of their of sexual or romantic object choice (Kuper, Nussbaum, Musanski,

2012). While the term *queer* was historically used as a slur to degrade – primarily – gay men, its current use often refers to someone who someone who affiliates themselves with the larger lesbian, gay, bisexual, and transgender (LGBT) community (Clark, Ellis, Peel, & Riggs, 2010).

Historically lesbian, gay, bisexual, and transgender identities have often been grouped together. While sometimes it is appropriate to refer to all four identities as a single social category, issues related to gender identity and issues related to sexual orientation are often different. Including transgender issues in name only, without including a proper transgender sample in research when referring to lesbian, gay, and bisexual issues can result in unintentionally maintaining oppression of transgender people. Therefore, based on the most accurate description of the population that I am describing – as well as aspirational standards set forth by scholars and professional guidelines - in this study, I will sometimes refer to lesbian, gay, and bisexual (LGB) people and will sometimes refer to lesbian, gay, bisexual, and transgender (LGBT) people (Israel, 2005; Competencies for Counseling with Transgender Clients: Association for Lesbian, Gay, Bisexual, and Transgender Issues in Counseling).

I use the term *multicultural* to be inclusive of LGBT identities. Although as recently as 2003 scholars distinguished between *multicultural counseling* and *LGBT counseling* (Israel & Selvidge, 2003) multicultural counseling has historically comprised issues of race and ethnicity, rather than issues related to sexual orientation (Abreu, Chung, & Atkinson, 2000). However, LGBT issues are being treated in training programs as multicultural issues. For example, in a sample of 54 counseling and counseling psychology programs, 72 % of syllabi of multicultural counseling

classes addressed LGBT issues (Pieterse, Evans, Risner-Butner, Collins, & Mason, 2009).

While multicultural counseling competencies have been thoroughly discussed in literature, the APA suggests a series of competency benchmarks as a means of assessing student progress. A thorough discussion of competency benchmarking will follow. The competency benchmark document (Fouad et al., 2009) refers to *Individual and Cultural Differences* (ICD), rather than multicultural competencies. ICD is defined as “Awareness, sensitivity and skills in working professionally with diverse individuals, groups and communities who represent various cultural and personal background and characteristics defined broadly and consistent with APA policy” (S13). The document specifically includes gender identity and sexual orientation in its list of individual and cultural differences.

## **Background**

Training programs that follow the *scientist-practitioner* model that was developed at the Boulder Conference in 1949 (also known as the Boulder Model) attempt to foster an educational balance in which students learn skills to produce and consume research in conjunction with learning the necessary skills to practice therapy, conduct assessments, write reports, and provide clinical supervision and consultation. Despite training that emphasizes both research and practice skills, students in training programs that follow the Boulder Model have consistently shown a lower interest in research than in practice (Parker & Detterman, 1988; Zachar & Leong, 2000).

Several authors have described factors within academic departments that contribute to researcher development and have made suggestions for increasing student

research productivity. Inventories to measure the research training environment have been constructed (Gelso, Mallinckrodt & Judge, 1996) and applied to specific settings such as pre-doctoral internship sites (Szymanski, Ozegovic, Phillips, & Briggs-Phillips, 2007). More recently, formal measures of researcher productivity have been constructed, published, and applied (Duffy, Martin, Bryan, & Raque-Bogdan, 2008; Smith, 2010).

Mentoring may be an integral part of training in some psychology programs that follow a scientist-practitioner model and may benefit minority students in counseling and clinical psychology programs. For underrepresented populations mentoring may be one way to encourage minority participation in the field of psychology that has long been insensitive to cultural difference (Evans & Cokely, 2008). While all students may benefit from mentoring, regardless of their sexual orientation, students conducting research with LGBT populations may seek specific types of mentoring from faculty and advanced students. For students who identify as LGBT themselves, some of their needs from a research mentor may differ from the needs of heterosexual students. Indeed research has described ways in which mentoring relationships function for LGBT students in doctoral psychology programs. For instance, LGBT students may seek signs that their mentor is affirming of their sexual orientation and gender identity, provides professional support surrounding the coming out process, and validates experiences of social and academic heterosexism (Lark & Croteau, 1998; Russell & Horne, 2009).

For several reasons, researcher development is important for the sustainability and health of academic psychology. Academic institutions, where most scientist-practitioner models are housed, often require faculty to conduct and publish research in

nationally visible journals as a part of the tenure process (Ceci, Williams, & Mueller-Johnson, 2006; McCormick & Barnes, 2008). While tenure may be one incentive for research productivity, scientist-practitioners in both academic and practice settings are encouraged to produce research that (a) highlights and promotes clinical competence and (b) informs clinicians about the social settings and contexts in which clients live. These functions require accurately aware, culturally sensitive research in order to fulfill both missions (Overholser, 2010).

The productivity of researchers and research institutions has become an increasingly studied topic. In fact, 131 of 252 (roughly 51 %) of peer reviewed articles returned from a 2012 PsycINFO search for “research productivity” was published in the decade between 2002-2012. The remaining 121 articles were published between 1950 and 2001, suggesting that interest in research productivity is becoming increasingly important.

Specific differences may exist between students conducting research with (or who are interested in conducting research with) LGBT populations who identify as lesbians, bisexual women and men, gay men, and transgender people, and heterosexual and cisgender people who with similar research interests. Identifying variables that contribute to students’ beliefs about the outcomes of working on research (research outcome expectations) will contribute to discussions among training programs as they continue to promote researcher development, LGBT mentoring, cultural awareness, and student growth in clinical and counseling psychology programs. Schachter and Rich (2011) introduce a framework for integrating personal identity into curricula. They argue that their framework serves four purposes: (a) providing a unique lens for

observing what happens in educational environments, (b) evaluation of the influence of identity on educational goals and outcomes, (c) understanding ways in which different aspects of identity are related to different educational outcomes, and (d) providing a theoretical platform for supporting future identity-based scholarship. This project is consistent with Schachter and Rich's (2011) position that integrating the personal identities of students into the learning process can be an important factor for student growth and development.

The following review of literature will summarize significant findings and contributions related to researcher development. Although little research has been published that attends specifically to the development of researchers interested in LGBT populations, the focus of this review will be on factors that might contribute to the development of researchers interested in working with these populations. The theoretical positions discussed will be incorporated into the exploration of individual and social cognitive factors that influence the development of students conducting research with LGBT populations.

### **Training Doctoral Students as Researchers**

#### **Professional competencies.**

Several sets of competencies issued by accrediting and training bodies stipulate requirements and aspirational guidelines that impact the training of clinical and counseling psychology graduate students. Accreditation by the American Psychological Association (APA) represents the benchmark standard for accreditation of US doctoral programs in psychology. APA accreditation standards are outlined in the *Guidelines and Principles for Accreditation of Programs in Professional Psychology* (Guidelines

and Principles: American Psychological Association Committee on Accreditation, 2007). This document published by the APA Committee on Accreditation (CoA) summarizes the principles, domains, and standards by which programs are measured for receiving and maintaining accreditation. The Guiding Principles indicate that among other requirements, doctoral programs in psychology must (a) be consistent with the philosophy that incorporates the reflective nature of science and practice and (b) attend to individual and cultural differences in all aspects of training. These two domains suggest that students do need to develop awareness and skills for conducting and evaluating research with different cultural groups, including LGBT populations.

***Multicultural research competencies.***

The structure of the Guiding Principles integrates individual and cultural differences (ICD) into all aspects of training. Because of this structure it is difficult to separate the CoA's position on ICD competencies from the CoA position on research competencies. The Guiding Principles state:

The program has and implements a thoughtful and coherent plan to provide students with relevant knowledge and experiences about the role of cultural and individual diversity in psychological phenomena as they relate to the science and practice of professional psychology. (APA Committee on Accreditation, p. 10)

***LGBT issues.***

Despite APA reports and guidelines that highlight the need for training, awareness, and understanding of LGBT people and issues, few publications have addressed issues of specific LGBT competencies for graduate training programs (APA:

Guidelines for Psychotherapy with Lesbian, Gay, and Bisexual Clients, 2000; APA Report of the APA Task Force on Gender Identity and Gender Variance, 2009; Sherry, Whilde, & Patton, 2005). Due to professional mandates and aspirational guidelines indicating the need for competence among psychology trainees working with LGBT people, training programs should be providing sufficient education surrounding LGBT issues.

The only published study that explicitly explores the extent to which APA accredited clinical and counseling psychology programs integrate LGB training into their doctoral programs was conducted by Sherry et al. (2005). Training directors at 204 APA accredited clinical and counseling psychology programs were mailed modified versions of the Multicultural Competency Checklist (MCC; Ponterotto, Alexander, & Griever, 1995). The MCC is a 22-item checklist of competencies to assess six domains of multicultural training. Each domain is assessed by questions that provide dimensionality to domains by assessing for specific domain-based attributions. Domains include Minority Representation, Curriculum Issues, Counseling Practice and Supervision, Research Consideration, Student and Faculty Competency Evaluation, and Physical Environment. Users of the instrument indicate whether or not a specific competency is met. Although the measure is not scored, it is intended to be used by either training directors or several faculty members. The authors suggest that when respondents note unmet competencies, they should list and address action steps toward competency fulfillment.

Sherry et al. (2005) adapted the MCC to address LGB competency. They did so by replacing words that were related to multiculturalism with words that were specific

to LGB issues. In addition to the altered MCC items, seven items were added to explicitly address LGB issues. The altered checklist was sent to training directors at 204 APA accredited clinical and counseling psychology training programs. The 51 % response rate comprised 61 clinical psychology training directors and 43 counseling psychology training directors.

Although a minority of programs indicated that LGB competencies were formally evaluated, a majority of respondents indicated that students were regularly exposed to LGB issues. For example, 89.5 % of programs replied that students receive exposure to LGB issues in practicum experiences and 94.3 % stated that students were exposed to LGB issues between practicum and supervision experiences. In addition, 88.6 % of respondents indicated that their program had a visible LGB faculty member, graduate student, or support staff. While 30.5 % of training directors believed that their programs provided strong training on LGB issues, only 17.1 % of programs indicated that students are evaluated for LGB competencies. A chi-square analysis revealed significant differences between clinical and counseling psychology programs. Significantly more counseling psychology programs required a multicultural course,  $X^2(1) = 14.78, p < .01$ ; discussed LGB issues in a multicultural course  $X^2(1) = 4.45, p < .05$ ; mentored students in LGB research,  $X^2(1) = 6.67, p < .01$ ; and addressed LGB issues in comprehensive examinations  $X^2(1) = 5.02, p < .05$ .

This study highlights the need to increase formal evaluations of LGB material in clinical and counseling programs. Although results indicate that many training directors have the impression that their programs sufficiently address LGB issues, only a limited number of programs indeed evaluate these competencies. Sherry et al. (2005) discussed

several limitations of their study. For example, the authors noted that training directors may not have full knowledge about the content of their training programs, that the study may be limited by the potential for bias associated with self-report measures, that a higher response rate might change results, and that the study was not transgender-inclusive. I noted several limitations of this study. For example, it does not provide any indication of psychometric validity of the MCC. Indeed the MCC may be a useful tool for programmatic self-evaluation. However its psychometrics remain untested for measuring LGB competencies. Indeed, Sherry et al. did not provide sufficient theoretical evidence that replacing “multicultural” constructs with LGB constructs will result in an accurate measure of programmatic LGB competency.

***Competency Benchmarks.***

***The “Cube” model.*** The cube model (Rodolfa et al., 2005) represents a model of core competencies defined at the 2002 Competencies Conference: Future Directions in Education and Credentialing. The model introduced the basic cube structure that was adapted into the competencies benchmark document (Fouad et al., 2009) that operationalized benchmark competencies for evaluating graduate students and interns. This three dimensional model proposes six Foundational Competencies, found on the *x-axis* of the cube, representing the domains that provide the foundations of professional competence. These include Reflective Practice/Self Assessment, Scientific Knowledge and Methods, Relationships, Ethical and Legal Standards/Policy Issues, Individual and Cultural Diversity, and Interdisciplinary Systems. Foundational competencies, represented on the *y-axis* of the cube, provide the necessary building blocks for the six Functional Competencies. Functional Competencies represent the professional

activities of psychologists. These include Assessment/Diagnosis/Conceptualization, Intervention, Consultation, Research/Education, Supervision/Teaching, and Management/Administration. The cube's *z-axis* is comprised of five stages of professional development: Doctoral Education, Doctoral Internship/Residency, Post Doctoral Supervision, Residency/Fellowship, and Continuing Competency. The "Cube" model presents guiding principles for training competencies that suggest that psychologists-in-training demonstrate competency as researchers who are attuned to Individual and Cultural Diversity. The Competency Benchmarks Document standardizes the competencies set forth in the Cube Model by operationalizing the competencies and setting measurable objectives.

*Competency Benchmarks document.*

Fouad et al. (2009) report on the Competencies Benchmarks document, the result of the Competency Benchmarks Work Group (CBWG). The CBWG document codifies benchmark behaviors of psychology students at three levels of training: practicum, internship, and practice. The CBWG document reflected several major changes in the cube model (Rodolfa et al., 2005). The Foundational Competencies were supplemented to include the dimension Professionalism, the Functional Competencies were altered by separating Teaching and Supervision into separate competencies, and Advocacy was added as a final competency. Each Foundational and Functional Competency is broken into smaller sections that comprise the competency. Components were further divided into behavioral skills needed for three training levels: readiness for Practicum, Readiness for Internship, and Readiness for Entry to Practice.

Each training level relates to the acquisition of an essential component that is then behaviorally described.

The behaviors associated with the Foundational Competencies *Scientific Knowledge and Methods* and *Individual and Cultural Differences* along with the Functional Competency *Research/Evaluation* all relate to training graduate students who conduct research with LGBT populations. For example, the Foundational Competency *Scientific Knowledge and Methods* is divided into three sections. The section *Scientific Mindedness* is further divided into essential competencies for progressive levels of training. The training level *Readiness for Practicum* is defined as having acquired skills associated with critical scientific thinking. The training level *Readiness for Internship* is signified by the application of scientific methods to professional practice. The training level *Readiness for Practice* is defined as having acquired the skills to independently apply scientific methods to practice.

Both cultural competencies and research skills are integral to the CBWG document. This integration demonstrates ways in which students are expected to be able to apply multicultural awareness to research work. Because *Individual and Cultural Differences (ICD)* include specific references to gender, gender identity, and sexual orientation, psychology programs that use the competency benchmark approach to assessing student progress are likely to assess ways that students integrate ICD into their research. Therefore, training programs have some responsibility for integrating multicultural and research training to strengthen student competency in culturally sensitive, scholarly work.

Feedback from training programs that have used the competency benchmarks to assess student learning resulted in a streamlined revision of the competency benchmarks in 2012. Although the revisions simplify the benchmarks, Individual and Cultural Diversity as well as Scientific Knowledge and Evaluation remain competencies (Benchmarks Evaluation System).

### **Training models.**

The *Guidelines and Principles for Accreditation of Programs in Professional Psychology* (American Psychological Association Committee on Accreditation, 2007) indicates that integration of Science and Practice is one of four Professional Principles and Values considered when accrediting doctoral programs in psychology. Other guidelines and professional standards affirm a commitment to integrating science and practice. For example, the Society for Counseling Psychology ([http://div17.org/students\\_defining.html](http://div17.org/students_defining.html)), the Committee of Counseling Psychology Training Programs (CCPTP; <http://www.ccptp.org/policiesandprocedures/sciencepractice.html>), the Council of University Directors of Clinical Psychology (CUDCP; <http://chp.phhp.ufl.edu/cudcp/>) and the Society for Clinical Psychology (<http://div12.org/>) all explicitly endorse a model of training and practice that relies on integrating research and practice. In the next section, I will discuss programs that use a Scientist-Practitioner training model as well as training models that emphasize practice. I will review the development of different training models as well as present research findings that describe different types of training programs in detail.

*Scientist-Practitioner model.*

The Scientist-Practitioner model (Boulder Model) of training was adopted at the Boulder Conference on graduate education in 1949 (Overholser, 2010). This model integrates science and practice into doctoral training. Although explicit standards of percentages of training hours dedicated to science or to practice are not stated by the CoA, scientist-practitioner programs are guided by the general principle of providing sufficient training in both research and practice. Although the model was developed with the expectation that most psychology students would gravitate toward the science of psychology, in fact, a majority of students who attend scientist-practitioner programs demonstrate more interest in clinical or counseling practice (Zachar & Leong, 2000). Indeed, one consistent critique of the Boulder Model has been the low levels of research productivity of doctoral-level psychology students (Gelso, 2006).

Suggestions regarding the reasons that students lean toward clinical practice have included ones based on personality, departmental climate, vocational interest, and clinical and academic interests. For example, although Gelso (2006) noted that a majority of students who enter doctoral programs wish to pursue a clinical practice, their departments do not do enough to bolster research productivity. Further, studies have demonstrated that interest in research and interest in practice remain longitudinally stable and consistent over the period of a decade, with a baseline assessment conducted during doctoral training (Leong & Zachar, 1991; Zachar & Leong, 2000).

Although the scientist-practitioner training model is valued in many academic circles, the role of the scientist-practitioner outside of a training department is less

clear. Overholser (2010) advanced a set of standards to define the vocational activities of the scientist-practitioner. This set of 10 criteria for clinical psychologists is described in detail with the indication that counseling and experimental psychologists could apply the structure to their own professional field. Overholser discusses three domains of competencies for the scientist-practitioner. These include contribution to the field through scholarly work, maintaining active clinical practice, and the integration of science and practice of psychology. Each domain is further described as explicit criteria. Contributing to the field through scholarly work includes the criteria of (a) remaining active in the production of scholarship, (b) contributing to scholarship at a national level, and (c) extending scholarship beyond teaching. The second domain, remaining active in clinical practice, is also comprised of three criteria including (a) provision of clinical service on a regular basis; (b) using specific clinical training, knowledge, and professional awareness when providing clinical services; and (c) providing both clinical supervision and direct clinical service. The third domain, integrating science and practice, is comprised of four criteria. These include (a) honoring recommendations for evidence-based practice, (b) focus on issues that are central to clinical psychology, (c) working with medical or psychiatric patients, and (d) using valid measures with strong psychometric properties.

Overholser (2010) makes a significant contribution by defining the vocational criteria and domains of the scientist-practitioner. In doing so, Overholser describes the scientist-practitioner model as a set of individual competencies and work tasks rather than as a training model. Indeed Overholser's model does enumerate the roles of the scientist-practitioner. As indicated by the author it requires some amendment for

application by counseling psychologists. For example, Overholser indicates that clinical scientist-practitioners work with medical or psychiatric patients. Scientist-practitioners with a counseling psychology background are encouraged by Overholser to apply the scientist-practitioner domains to their own work settings. Often these include medical or psychiatric settings, university counseling centers, private practices, or community mental health clinics ([http://div17.org/students\\_differences.html](http://div17.org/students_differences.html)).

The relevance of the scientist-practitioner model to the professional identities of clinical and counseling psychologists has been discussed and challenged. Some view the trend of students becoming disproportionately inclined toward practice as evidence that the model is outdated (Myers, 2007; Overholser, 2010; Vespia & Sauer, 2006). Regardless of the reasons for a preponderance of graduate students choosing to focus on practice, the paucity of students who continue to pursue scientific inquiry after training has led to questions about the utility and effectiveness of the scientist-practitioner model. In order to better understand the choices that students make about pursuing practice and science, Leong and Zachar (1991) developed the Scientist-Practitioner Inventory (SPI). Zachar and Leong (2000) then conducted a 10-year longitudinal study on the stability of career interests of graduate students who preferred practice and graduate students who preferred science. Leong and Zachar noted three assumptions made in the scientist-practitioner literature. The first was that scientific and practice training were very different. The second assumption was that some people were more drawn to science and that some were more drawn toward practice. The final assumption was that people inclined toward science were less inclined toward practice and that those inclined toward practice were less inclined toward science.

With three separate studies, Leong and Zachar (1991) developed and validated a Scientist-Practitioner Inventory (SPI) for Psychology. In the first study, SPI items were generated, the factor structure of the measure was assessed, internal consistency and test-retest reliability of the SPI were measured, response-set problems with the SPI were examined, and the SPI and concurrent validity of the SPI and Holland's (1985) Vocational Preference Inventory (VPI) were established. The authors then completed a cross-validation study with another sample of graduate students to better validate the criterion-related validity and the construct validity of the SPI. In a third study, the reliability and validity of the SPI were validated with a sample of undergraduate students.

The first study (Leong & Zachar, 1991) began by developing two lists of activities. One list was of activities common to scientists and the second was a list of activities common to practitioners. Forty-two items were generated with 21 items on both the practitioner and scientist scales, respectively. Each item was scored on a 5-point Likert scale with anchors ranging from *very low interest* to *very high interest*. Graduate student participants ( $N = 192$ ) in clinical, counseling, and experimental psychology programs from two universities comprised the sample. Seven major factors were extracted following an exploratory principal components analysis. Discreet scientist and practitioner dimensions emerged. Each dimension, however, was shown to be multifactorial. Within the scientist dimension four subscales were identified: Research Activities, Statistics and Design, Teach/Guide/Edit, and Academic Ideas. Within the practitioner dimension three subscales were identified: Therapy Activities, Clinical Expert/Consultant, and Tests and Interpretations. Crossloadings and groupings

among scientist items and groupings among practitioner items suggested an underlying structure that was confirmed by computing a second-order factor solution. Two factors accounting for 75.3 % of the common variance were extracted. These two factors were the scientist factor and the practitioner factor. The sample showed a scientist-factor mean of 64.2 ( $SD = 17.8$ ) and a practitioner-factor mean of 66.2 ( $SD = 22.0$ ). There were no significant gender differences on the scientist factor. Women, however, scored significantly higher on the practitioner factor. Of note was the negative correlation between scientist and practitioner factors, demonstrated by the strong negative correlation ( $r = -.65$ ) between practitioner and scientist items.

Construct validity of the SPI (1991) was completed by comparing the measure with Holland's (1985) Vocational Preference Inventory (VPI). Leong and Zachar hypothesized a positive relationship between scientist items and the Investigative type on the VPI and a negative relationship between scientist items and the Social type on the VPI. Indeed, in undergraduate samples a positive correlation of .54 ( $p < .01$ ) was found between the scientist interests and the Investigative type and a correlation of -.35 ( $p < .01$ ) was observed between scientist interests and the Social type. Conversely, in the same undergraduate samples a correlation of .62 ( $p < .01$ ) was observed between practitioner interests and the Social type whereas a negative correlation of -.34 ( $p < .01$ ) was observed between practitioner interests and the Investigative type.

In a 2000 study, Zachar and Leong published 10-year longitudinal data on the stability of scientist and practitioner interests. Although the Scientist-Practitioner Inventory (SPI; Leong & Zachar, 1991) demonstrated six-month test-retest reliability, such reliability was insufficient to uphold Zachar and Leong's (1991) claim that

Scientist and Practitioner features could be categorized as personality features. From the original 204 respondents from Leong and Zachar's 1991 study, 160 were located, contacted, and sent a follow-up SPI, resulting in a response rate from the original sample was 50 % ( $n = 102$ ). Correlation for scientist interests between data sets was found to be .50 ( $p < .001$ ) and correlation for practitioner interests was .73 ( $p < .001$ ). In the original sample correlation between scientist and practitioner interests was -.52 ( $p < .001$ ) and in 2001 the correlation between these interests was found to be -.44 ( $p < .001$ ). These correlations demonstrate stability in scientific and practice interests as well as a stable, negative correlation between practice and scientific interests across the 10-year period.

Among other findings in this study, Zachar and Leong also found that clinical and counseling psychologists reported medium to low interest in scientific activities and medium to high interest in practice activities. *T* tests showed significant differences between clinical-counseling psychology graduates and graduates from experimental psychology programs on every factor scale of the SPI. From these results, Zachar and Leong suggest that students who graduate from scientist-practitioner are less interested in research design and are more interested in therapy and clinical activities.

#### ***Models that emphasize practice.***

Clinical-scientist, clinical-scholar, and practitioner-scientist models all reflect the practice-focused training endorsed at the Vail Conference in 1973 (Cassin, Singer, Dobson, & Altmaier, 2007; Norcross, Castle, Sayette, & Mayne, 2004). This conference addressed fears that trainees were receiving insufficient training in practice. At the Vail Conference, attendees endorsed the Psy.D training model (Vespia & Sauer,

2006). Unlike Ph.D. degrees in clinical, counseling, and experimental psychology that are modeled on the integration of research and practice, Psy.D. programs train students with an explicitly clinical focus.

Although there are fewer Psy.D. programs than Ph.D. programs, those programs that follow the Vail model admit and graduate more students annually than do Ph.D. programs. These differences have led to roughly equal numbers of doctoral-level psychologists with Psy.D.s and Ph.D.s. Indeed, Psy.D. programs recently award 30 % of doctoral degrees in psychology (Norcross et al., 2004).

Considerable heterogeneity exists among Psy.D. programs. Some of the differences are related to the educational institutions that house the programs: psychology departments, universities, or in stand-alone professional schools. Differences between Ph.D. and Psy.D. training models surely exist. The body of research that highlights differences between training models, however, is incomplete and what literature there is explores professional aspirations among students, rates of mentoring, and descriptive differences in theoretical position between training models (Cassin et al., 2007; Clark, Harden, & Johnson, 2000).

Cassin et al. (2007) reported differences among psychology students in clinical and counseling programs as well as between Ph.D. and Psy.D. students. Consistent with their hypotheses, counseling psychology students aspired to work in more academic settings, such as university counseling centers, than did clinical psychology students who showed preference to work in hospital settings. Further, Ph.D. students reported greater research productivity than Psy.D. students. Ph.D. students ( $n = 195$ ) reported

completing an average of 1.6 manuscripts, 0.5 book chapters, and 6.7 presentations. Psy.D. students ( $n = 125$ ) completed 0.1, 0.0, and 0.8 of these works, respectively.

Cassin et al. (2007) also found differences in theoretical orientations among students and faculty. For example, students and faculty in Psy.D. programs more regularly endorsed psychodynamic, humanistic, or interpersonal orientations while their counterparts in Ph.D. programs more consistently endorsed a cognitive-behavioral orientation. Clinical students reported greater research productivity than did counseling students. Clinical students ( $n = 347$ ) reported publishing 1.0 manuscripts, 0.3 book chapters, and 4.1 presentations. Counseling students ( $n = 151$ ) reported 0.7, 0.2, and 3.3 publications, respectively.

In a study of mentoring relationships among clinical Ph.D. and Psy.D. students, Clark et al. (2000) found that Ph.D. students were significantly more likely to be mentored. The authors posit that the larger student-to-faculty ratio often found in Psy.D. programs explains why Psy.D. students often believed that their faculty did not have time for mentoring. Despite the statistical likelihood that students in Ph.D. programs would receive more mentoring than Psy.D. students, findings showed that Psy.D. students reported higher levels of overall satisfaction with their programs than did Ph.D. students (Clark et al., 2000). Clark et al. noted this counterintuitive finding; however, they did not posit explanation.

However, despite perceptions that Psy.D. programs do not emphasize psychological science, Rossen and Oakland (2008) found that few significant differences exist in the amount of research training that is received by students in Ph.D. and Psy.D. programs. In fact, the authors found only one significant difference between

required coursework in Ph.D. and Psy.D. programs, with Psy.D. programs requiring significantly more coursework in qualitative research design.

Rossen and Oakland (2008) point to several methodological factors that may have impacted results. For example, using an untested survey may have led to biased results. Further, although their questionnaire asked respondents to indicate the specific topics in coursework, their data analysis treated each topic as an individual course, even if two topics (e.g., computer aided analysis and introduction to statistics) were taught in the same course. This may have led to misrepresenting the number of statistics courses actually taught. Finally, programs that do not emphasize research and statistical training may have been less inclined to respond to the survey.

Regardless of limitations, Rossen and Oakland's (2008) results may challenge beliefs about Psy.D. training models. Further studies of similarities and differences in research training between Psy.D. and scientist-practitioner models may lead to a more nuanced understanding of common and divergent factors in the professional development of psychologists. The current study will contribute to this body of literature by sampling both Psy.D. and Ph.D. students. Statistical analyses of differences between these groups may help to understand the researcher development of Psy.D. and Ph.D. students conducting research with LGBT populations.

**Researcher development.**

***Research training environment.***

Because research training is a central component of the scientist-practitioner model, the study of researcher development is useful. Studying the environments in which researchers are trained is one way to increase understanding of researcher

development. The research training environment (RTE) was conceptualized as an identifiable and measurable construct that reflected the conditions within training programs, departments, and universities that communicate attitudes toward research and science. Gelso (2006) posited that the RTE can influence a student's research self-efficacy. He further suggested that RTEs might influence students in scientist-practitioner programs who are more focused on their development as practitioners than scientists.

Gelso (1979) originally suggested that 10 factors comprise the RTE. These included (a) modeling appropriate scientific behaviors by faculty, (b) positive reinforcement of student's scientific activity, (c) involving students in research early in training in unthreatening ways, (d) teaching students to look inward for meaningful research questions at developmentally appropriate times, (e) emphasizing the social aspects of science, (f) recognition that all scientific studies are imperfect, (g) teaching and valuing varied approaches to research, (h) modeling of merging of science and practice, i) showing students how research can be accomplished in practice settings, and (j) teaching students to be logicians rather than statisticians. Due to research failing to support this final proposition, it was dropped from Gelso's (1993) revision of the RTE theory.

The Research Training Environment Scale (RTES; Gelso, Mallinckrodt, & Royalty, 1991) reflects these nine theoretical positions. Because the RTES had several flaws in design, including inconsistent numbers of items on each subscale and alpha coefficients lower than .50 on two subscales, Gelso, Mallinckrodt, and Judge (1996) revised the RTES and constructed the RTES-R. The RTES-R differs from the RTES in

that (a) subscales each contain six items, (b) it reflects the nine supported theoretical positions, and (c) it demonstrates convergent validity with the Attitudes Toward Research measure (Royalty, Gelso, Mallinckrodt, & Garret, 1986), the shortened Scientist-Practitioner Inventory (Leong & Zachar, 1991), and the Self-Efficacy in Research Measure (Phillips & Russell, 1994).

In order to shorten the RTES-R, eight items were chosen for each subscale with the intention to choose the six best items. Items were chosen for best fit with Gelso's (1993) theory. An additional 28 items were constructed resulting in subscales that reflected theory, each with eight items. The 72-item scale was piloted on counseling psychology students at four universities. All participants ( $N = 173$ ) completed the instrument. Four to six weeks following the first testing period, 33 % of participants ( $n = 57$ ) completed the instrument again. The strongest six items from each subscale were retained. Items were assessed for stability by using each item's test-retest correlation coefficient ( $r$ ). Each item's contribution to internal consistency was established by determining what Cronbach's alpha would be without each item. Finally, item-subscale correlation coefficients were assessed. The resulting measure contained 30 items from the original RTES and 24 new items. The measure demonstrated increased reliability over the RTES with subscales showing the following Cronbach's Alpha coefficients: Faculty Modeling (.81), Positive Reinforcement (.73), Early Involvement in Research (.73), Relevant Statistics (.80), Looking Inward (.82), Science as a Social Experience (.76), All Experiments Flawed (.57), Varied Investigative Styles (.85), and Wedding Science and Practice (.82). Cronbach's Alpha for the entire measure was found to be .90.

Gelso (2006) amended his theoretical position on RTE by reducing the number of factors associated with RTE from nine to six. Despite this modification in the RTE theory, the RTES-R has not been further modified and tested. Current RTE factors include (a) modeling of appropriate scientific behaviors and attitudes, (b) formal and informal positive reinforcement of research activity, (c) involvement in research at early stages of training and in unthreatening ways, (d) recognition in training of the imperfect nature of research, (e) pedagogical commitment to varied approaches to research, (f) and demonstration of the interaction between science and practice.

Gelso (2006) suggested that faculty can model the appropriate behaviors and attitudes of a researcher by being involved in research in ways that communicate to students that their reasons for conducting research go beyond their academic requirements. Faculty should further share excitement about research through overt discussions of sharing ideas with students.

A second factor that may influence student research productivity is consistent and diverse reinforcement of students' own research. Gelso (2006) suggested that faculty and departments can provide enthusiastic support both through interpersonal communication as well as through departmental awards. Research productivity can therefore be linked to departmental funding for travel to conferences and research related activities.

Understanding and changing the ways in which students are first exposed to research may affect their attitudes toward conducting research. Gelso (2006) suggested that in many training programs, students' first exposure to research is through a statistics course. Without undermining the significance of statistics, Gelso concluded

that other exposures to research (e.g., research seminars, research team work) might provide more affirming research experiences to new students. In addition to increasing interest in conducting research, it is suggested that early exposure to research *in vivo* may decrease anxiety associated with conducting research. Indeed, if Gelso's hypotheses were correct, exposure to different types of research might impact student research self-efficacy by (a) providing new, successful outcome expectations, and (b) offering students different early research experiences that are associated with less anxiety, both propositions consistent with self-efficacy theory (Bandura, 1977; Lent, Brown, & Hackett, 1994).

Students should have an understanding of the imperfect nature of conducting scientific research. Gelso (2006) stated that students should be taught that research does not exist in a bubble and that the perfect research project is a fantasy. Demonstrating imperfections in research to students will allow students to approach the research process with less pressure to complete a perfect project.

Gelso's (2006) fifth proposition was that students should have exposure to various methods of research. This proposal was based on the idea that with more exposure to different methodologies, students will best be able to learn how to match a methodology with a research question. Additionally, when students are exposed to various methodologies, they are more likely to attach themselves to methods that best suit their personality. Indeed Gelso cites studies that have demonstrated increased research productivity among students in programs that teach various methods of research.

The final proposition posited by Gelso (2006) was the adjoining of science and practice. Gelso suggested that modeling and discussion of the elements of science and practice that inform each other should be emphasized.

***Research mentorship.***

Research mentorship is one of the factors that has regularly been conceptualized as being associated with researcher development. Despite a lack of a formally agreed upon definition of mentorship, Kram (1988) suggested nine formal domains of mentorship. These included (a) providing direct training and instruction; (b) offering acceptance, support, and encouragement; (c) role modeling; (d) sponsoring students for awards and opportunities; (e) providing research opportunities; (f) helping to increase mentee exposure; (g) protecting mentee; (h) providing professional counsel and guidance; and (i) friendship. Mentorship in researcher development has been described from a number of theoretical stances and continues to be a topic of interest for counseling and clinical psychologists as demonstrated by the ongoing 25-year discussion of the topic (Benishek, Bieschke, Park & Slattery, 2004; Brown, Daly, & Leong, 2009; Evans & Cokley, 2008; Gelso, 2006; Hollingsworth & Fassinger, 2002; Royalty & Reising, 1986). However, as Benishek et al. suggested, there is no agreed upon behavioral definition of mentorship and research mentorship. Therefore, it is difficult to evaluate the usefulness of specific mentor and mentee behaviors in relationship to researcher development.

Despite the lack of explicit consensus on specific behavioral qualities of a research mentorship relationship, research mentorship experiences are considered to be useful to students who are developing skills as scientists (Benishek et al., 2004).

Hollingsworth and Fassinger (2002) explored the roles that faculty research mentors play for doctoral students in counseling psychology. This study was guided by five research questions. The authors queried: (a) the effect of the research training environment (RTE) on research mentorship, research productivity, or research self-efficacy; (b) the potential for a research mentoring relationship to mediate the relationship between RTE and productivity; (c) if self-efficacy beliefs mediated the effects of RTE on productivity; (d) if controlling for past beliefs about research changes relationships between RTE, self-efficacy, research mentoring, and research productivity; and (e) if relationships among these variables are moderated by student gender or scientific status of a training program.

In order to measure these variables, Hollingsworth and Fassinger (2002) used five measures. Four of these measures, including RTES-R (Gelso et al., 1996), the Self-Efficacy in Research Measure (SERM; Phillips & Russell, 1994), the Past Attitudes Towards Research scale (Royalty, Gelso, Mallinckrodt, & Garnett, 1986), and a predictor of research productivity created by Kahn and Scott (1997) were previously published. A final measure, the Research Mentoring Experiences Scale (RMES; Hollingsworth and Fassinger, 2002) was created specifically for this study. Participants for this study ( $N = 194$ ) were identified by training directors from 25 APA-accredited counseling psychology doctoral programs.

To assess the mediating relationship of mentoring between training environment and research productivity, the authors first established existing relationships between training environment and mentorship and between training environment and research productivity. Once these relationships were established, a regression analysis allowed

the researchers to partial out the effects of the research training environment. A significant relationship ( $\beta = .45, p < .001$ ) was determined between RTE and research mentoring. The same process was used to determine that RTE and self-efficacy and RTE and research productivity were related. The authors found that research-efficacy predicted research productivity ( $\beta = .36, p < .001$ ). In a regression analysis, the authors found that three variables significantly predicted research productivity: past attitudes toward research ( $\beta = .38, p < .001$ ), research mentorship ( $\beta = .38, p < .001$ ) and research self-efficacy ( $\beta = .28, p < .001$ ). Finally, the authors found no significant gender interactions with any variable. These results suggest that RTE, past attitudes toward research, research mentorship, and research self-efficacy all significantly influence research productivity.

#### ***Mentoring racial and ethnic minority students.***

Racial and ethnic minority students in clinical and counseling psychology programs are likely to not have the same experiences in graduate school as White students. Although mentoring heterosexual racial and ethnic minority students may be behaviorally different than mentoring LGBT students, parallels between the experiences of marginalization of both groups of students may similarly impact the mentoring relationship. Further, it is important for mentors of LGBT students of Color to be mindful of the intersections of sexual, gender, and racial/ethnic minorities (Russell & Horne, 2009). Despite efforts to admit and retain students and faculty of Color, people of Color remain underrepresented in psychology departments (Evans & Cokely, 2008). Minority students are more likely to have firsthand experience with the impact of negative or hostile campus climates than are students who are members of

dominant groups. Further, minority students in clinical and counseling psychology programs may feel disenfranchised by the historical trend of under-representation of minority populations in psychological research, training, assessment, and clinical supervision (Rogers & Molina, 2006). Because of the impact of stress related to the aforementioned factors, minority students in clinical and counseling psychology programs may benefit from mentorship that explicitly addresses challenges of being a doctoral psychology student who falls outside of social hegemonies (Chan, 2008; Evans & Cokley, 2008; Lark & Croteau, 1998).

Minority students may benefit from mentoring relationships that are similar to other mentorship relationships that model professional behaviors in addition to interactions that validate the experiences of members of their identity groups, such as discussion of social privilege, race, and racism (Chan, 2008). Further, mentorship of minority and multiple minority graduate students may address the specific issues that group members face in professional psychology fields.

Several authors have discussed mentorship as related to minority identity (Benishek et al., 2004; Chan, 2008; Evans & Cokley, 2008; Lark & Croteau, 1998). Evans and Cokley (2008) summarized some of the experiences that African American women may encounter while developing a research program. They discussed roles of mentors for African American women and summarized specific mentorship goals in mentoring relationships with pre-doctoral students. They defined mentoring as a set of roles that include guidance; role modeling; teaching and sponsorship of a junior professional by a more experienced professional; and providing knowledge, advice, challenge, and counsel (Clark et al., 2000). They made five major suggestions for pre-

doctoral research mentorship for African American women. They suggested that mentors should: (a) demonstrate enthusiasm and awareness for students' experiences, (b) provide early and consistent research experiences for students, (c) encourage more advanced students to integrate self-knowledge into research, (d) teach students research methodologies that are rigorous as well as culturally sensitive, and (e) integrate discussions of discrimination into the mentoring relationship. The authors noted that despite increases in visibility of ethnic minorities and women faculty members in psychology departments, the proportion of African American faculty have not increased at similar rates (Rogers & Molina, 2006). In light of the disproportionately small number of available African American faculty, it may be challenging for some African American students to find local mentors. This has led to suggestions that minority students be mentored both by a primary mentor for specific research-related activities and a secondary mentor who provides support for some of the challenges that arise that are specifically related to social biases (Benishek et al., 2004; Evans & Cokley, 2008).

Chan (2008) conducted a Grounded Theory (GT) study of mentoring ethnic minority, pre-doctoral psychology students. The study included four mentor-mentee dyads. The specific fields of psychology were unspecified. Mentee participants included a female, first-generation student from Mexico; a second-generation Asian-American female student; a third-generation Hispanic female student; and an African American male student. Mentors included a biracial female doctoral student, a Euro-American recently-graduated female, a Euro-American female doctoral student, and a recently graduated Euro-American female. Results of this study included themes that

were anticipated and themes that were unanticipated. Expected themes included providing information and advice, coaching, exposure and visibility, making connections, sharing personal stories and humor, responsiveness, validation, providing feedback, and reciprocal relationships. Themes that were unexpected included talking about race and racism, giving time, being proactive, flexibility and working on goals, and giving gifts and other resources.

The results of this study suggested specific themes related to minority student mentoring. As with other GT studies, the constructs that were presented do not claim external validity. However, the results of this study could inform the development of instruments by suggesting topic areas that are important to mentoring minority students who are conducting LGBT research.

Schachter and Rich (2011) developed a model of Identity Education (IdEd) that specifically integrates students' personal identity into their education. The authors define identity as:

the individual's dynamic self-understandings and self-definitions used to structure, direct, give meaning to and present the self, that are negotiated intra- and interpersonally across the lifespan within sociocultural contexts, along with the psychosocial processes, meaning-systems, practices and structures that regulate their continued development (p. 223)

They further define IdEd as the intentional process of contributing to the psychosocial processes related to students' identity development. Their model posits that integrating identity into education can help students develop identities that can be observed by others and self. For example, the educator practicing from an IdEd

perspective would be concerned with developing definable characteristics in students (e.g., empathy) that can be seen by others and that the student can identify internally. They also note the “integrative-holistic” (p. 225) aspects of identity development that allow for personal meaning-making of educational content when teaching from an identity education perspective. IdEd also allows for integrating cognitive meaning into the education process, contributing to an individual’s understanding of oneself by illuminating the biases and values of a professional field so that the student can decide on its personal congruence. Finally, an IdEd approach might increase motivation for students to understand the relationship between their education and their personal identity. Therefore an IdEd approach is intentional in its integration of identity into learning processes for the sake of maximizing students’ benefit and engagement with their own educational experience.

***Multicultural Feminist Mentoring Model.***

The Multicultural Feminist Mentoring Model (MFM) proposed by Benishek et al. (2004) is an adaptation of the Feminist Mentoring Model (FMM; cited by Benishek et al., 2004) that infuses multicultural identity across the model’s five dimensions. The MFM, like the FMM, emphasized relational mentoring that uses the power differential between mentor and mentee to empower the mentee. The model’s six dimensions include: (a) Rethinking of Power, (b) Emphasis on Relational Mentoring is Genuine, (c) Valuing Collaboration, (d) Integration of Dichotomies, (e) Incorporation of Political Analysis, and (f) Commitment to Diversity. Each dimension is related to specific benefits to mentor and mentee. For example, in the dimension Rethinking of Power, the mentor benefits by gaining a colleague and the mentee benefits by feeling increased

competence and learning to trust and respect the self. Each dimension is further broken down into behavioral goals. Although Benishek and colleagues do not add dimensions to Fassinger's model, they do add behavioral goals to three dimensions. They extended the Rethinking of Power dimension to include behaviors such as (a) examining privilege in the behavior and the environment, and (b) respecting differences between mentor and mentee. They added two behaviors to the second domain, Emphasis on Relational: (a) mentor is responsible for raising multicultural issues with mentee, and (b) mentees are encouraged to seek other mentors when appropriate. Additions to the third domain, Valuing Collaboration, include (a) recognizing that participation in mentorship is not a condition imposed by a majority culture, and (b) encouraging diverse perspectives.

***Mentoring relationships with LGBT students.***

Studies have suggested that mentors of members of oppressed groups serve both similar purposes of mentors of dominant groups as well as having additional mentorship roles (Evans & Cokely, 2008; Lark & Croteau, 1998). These roles include a range of professional activities including advocating for the student, encouraging and helping with research, being a role model, and encouraging professional development. Mentors of oppressed group members may also serve other functions by demonstrating ways in which an oppressed group member has become a successful professional, accepting and affirming the minority student's identity, and providing the student with overt discussion of cultural and political topics (Benishek et al., 2004; Gilbert & Rossman, 1992; Watts, 1987).

Lesbian, Gay, Bisexual, and Transgender (LGBT) students encounter barriers that may not be visible to heterosexual students. Heterosexism, racism, and transphobia may impact LGBT students of Color and White LGBT students differently. For these reasons, all LGBT students may benefit from mentorship that explicitly addresses intersections of sexual orientation, gender identity, and cultural identity (Lark & Croteau, 1998; Russell & Horne, 2009). Similar to the mentorship needs of racial and ethnic minority students, LGBT students may benefit from additional and explicit support from understanding mentors about their social and professional interactions that may be affected by social prejudices, heterosexism, and transphobia.

Lark and Croteau (1998) conducted a qualitative study of mentoring relationships with lesbian, gay, and bisexual (LGB) doctoral students in counseling psychology programs. Indeed, this study is one of the few that looks explicitly at the mentoring needs of LGB students. Using grounded theory methods, five LGB-specific themes emerged. These themes included students' perception of safety for LGB people in the training environment, students' level of outness/disclosure, formation of mentoring relationships, functions of mentoring relationships, and impact of mentoring relationships. Among these themes, several had different levels at which the theme was reflected.

The first emerging theme of this study reflected participants' views of safety within their training environments (Lark & Croteau, 1998). Notably, participants described their environments broadly. Not only did an environment reflect the departmental and university climate but perceptions of climate were also related to perception of LGB climate within the community, the counseling psychology

profession, the broader profession of psychology, and the national sociopolitical culture. Participants reported beginning to assess the LGB climate prior to accepting admission offers. This was done by finding overtly positive and negative statements and attitudes toward LGB people in departmental and university literature, through seeking faculty members who identified openly as LGB, and speaking with openly identifying LGB students. Lark and Croteau (1998) also found that students who identified themselves as LGB recently were more fearful of losing faculty and mentoring support than students who were out for longer periods of time.

The role of the mentor to the LGB student differed among students in the Lark and Croteau (1998) study. For example, some students sought mentorship that demonstrated specific ways in which an openly LGB-identified counseling psychologist conducted him or herself professionally in practice and in research. Other participants placed less value on their mentor's identification with their LGB identity than on their interpersonal skills and personal characteristics.

Participants described their mentoring relationship as having both personal and professional functions. For example, in addition to conducting professional responsibilities with their mentors such as teaching courses and conducting research, participants also highlighted their mentor's role in helping them to create an LGB professional network. Indeed some participants defined their mentoring relationship by its interpersonal characteristics as opposed to simply maintaining professional roles. When participants discussed the interpersonal functions of mentoring relationships, they noted that these functions were more difficult to negotiate than were the professional functions of relationships. Despite difficulties, Lark and Croteau (1998)

reported that LGB-identified students in counseling psychology programs viewed their mentorship relationships as central to their professional development. Mentors were described as people who supported participants throughout their tenure in programs and participants used positive adjectives to describe the nature of their relationships.

Replication of Lark and Croteau's (1998) study would help to understand the ways in which the mentorship needs of LGB identified counseling psychology students have changed in the years since Lark and Croteau's study. This could be done either by replicating the qualitative study that Lark and Croteau report or by developing a scale to measure the factors that emerged from the authors' analysis of data. Similar to Chan's (2008) results of a study of mentoring ethnic and racial minority students, the themes found by Lark and Croteau could be behaviorally defined and measured. A measure such as this would be a useful tool to demonstrate qualities of successful mentoring of LGB students.

### **Social cognitive theory.**

Social Cognitive Theory (SCT) is a theory of learning that posits that people, behaviors, and environments have a mutual influence on each other (Bandura, 1986). Social Cognitive Theory posits three major sources of learning: outcome expectations, self-efficacy beliefs, and personal goals. Each source of learning is influenced by both personal and environmental factors. The impact of SCT on psychology is evidenced by a PsycInfo search using the term "Social Cognitive Theory." The resulting 908 peer-reviewed journal articles, dating between 1973 and 2012, used SCT constructs as a basis for studies on topics as wide-ranging as physical activity, diet, athletic steroid use, academic achievement, career development, and suicidal ideation to name a few (Fu,

Chan & Yip, 2009; Zikic & Saks, 2009; Ramirez, Kulinna, & Cothran, 2012; Johnson, 2012; Bean, Miller, Mazzeo, & Fries, 2012).

Social Cognitive Theory has been widely applied and expanded by vocational and counseling psychologists to theoretically address career development. The resulting Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) uses SCT constructs to address career choices and increase vocational motivation. Further, SCCT has provided a framework for applied research on topics such as research self-efficacy and research outcome expectations. These constructs are useful for training graduate students in clinical and counseling psychology whose academic programs emphasize both science and practice (Bieschke, 2006).

#### **Outcome expectations.**

Outcome expectations are the beliefs that an individual holds about the outcomes that will likely happen as a result of doing a particular behavior. Outcome expectations, like self-efficacy beliefs, relate to specific outcomes of specific behaviors. For example, beliefs held by students about the personal, professional, and social outcomes of conducting research could be called Research Outcome Expectations (ROE). Several studies have provided compelling evidence that interest in research is strongly predicted by ROE. For example, in one study of doctoral students in counseling psychology, Bishop and Bieschke (1998) found that 41 % of the variance in research interest was accounted for by ROE. Similar results were found by Bieschke, Bishop, and Herbert (1995) in a sample of rehabilitation counseling students. Bard, Bieschke, Herbert, and Ebarz (2000) found that ROE accounted for a similar amount of variance in research interest in a sample of rehabilitation counseling faculty.

### **Self-efficacy.**

Within Social Cognitive Theory, self-efficacy is the belief in one's ability to complete tasks and arrive at specific outcomes. One of the central positions of SCT is that self-efficacy influences learning (Bandura, 1977). Four prominent sources of self-efficacy include past personal achievements; learning from others; environmental factors; and psychological and emotional factors (Bandura, 1997). Social Cognitive Career Theory (SCCT: Lent, Brown, & Hackett, 1994) suggests that interactions among beliefs about self-efficacy, outcome expectations, and individual and environmental differences interact and result in academic and career development (Bishop & Bieschke, 1998). Enhancing research self-efficacy has been considered as one potential approach to increasing trainees' interest in conducting research (Bieschke et al., 1998).

While research self-efficacy beliefs account for individual's beliefs in their own abilities to conduct specific research activities, Research Outcome Expectations apply the SCT construct of outcome expectation to conducting research by describing the beliefs about the personal and professional rewards and results that individuals believe they will achieve from conducting research. It is evident that both ROE and RSE are important factors in researcher development. Without beliefs in their abilities to conduct research-related tasks, and without beliefs that conducting research will have positive – and personally relevant – outcomes, it is unlikely that students will maintain an ongoing interest and commitment to incorporating research into their professional identities.

### *Developing research self-efficacy.*

Self-efficacy, or an individual's beliefs about one's future abilities to achieve specific outcomes in specific tasks, is a concept that is foundational to SCCT. Self-efficacy beliefs reflect an individual's specific assessment of one's ability or inability to complete a specific task or set of tasks. Self-efficacy beliefs are learned most strongly from past performance, but also through vicarious learning, social persuasion, and physical feelings and emotions (Lent & Brown, 2006). Research self-efficacy is the belief in one's ability to conduct and complete research-related tasks (Love, Bahner, Jones, & Nilsson, 2007).

Love and colleagues (2007) explored the effects of timing of exposure to research in graduate training, positive research experiences, and number of research experiences on levels of research self-efficacy. They posited that early research experience, positive research experience, and higher numbers of research experiences would be associated with increased research self-efficacy. In addition to a qualitative questionnaire, the authors used two qualitative measures, the Interest in Research Questionnaire (IRQ; Bishop & Bieschke, 1998) and the Research Self-Efficacy Scale (RSES; Bieschke, Bishop, & Garcia, 1996). The IRQ is a 16-item scale that measures interest in research-related activities on a 5-point Likert scale. Scores on the IRQ are strongly correlated with the Investigative scale on the Holland Vocational Preference Inventory. The RSES is a 51-item measure of perceived ability to conduct research-related tasks. The RSES contains four factors related to different stages of research: Conceptualization, Implementation, Early Tasks, and Presenting the Results. Items that load onto these four factors measure perceptions of ability to formulate research ideas,

conduct necessary tasks for a research project, generate ideas for a project, and present research.

Findings by Love et al. (2007) provided suggestions for research training. The authors found that research interest was a significant predictor of research self-efficacy and accounted for 31% of the variance. Beyond research interest, having research experience was correlated with research self-efficacy, although only experiences with research teams were correlated with research self-efficacy. Individual research experience was not found to be a significant predictor of research self-efficacy. Further, bivariate correlations between research experiences and research self-efficacy revealed a significant correlation ( $r^2 = .25, p < .05$ ).

To evaluate the effects of research experience on research self-efficacy, the number of research experiences of each participant was averaged. The range of research experiences was 0-14 with a mean of roughly 3 ( $SD = 2.01$ ). Inexperienced student researchers were defined as students who had participated in a number of research projects that was one standard deviation below the mean. Experienced student researchers were defined as students who had participated in a number of research projects that was two or more standard deviations above the mean. An analysis of covariance (ANCOVA) conducted with level of research self-efficacy as the dependent variable, research experience as the independent variable, and research interest as a covariate demonstrated that there was not a significant difference in research self-efficacy between experienced student researchers and inexperienced student researchers.

Love et al.'s (2007) findings suggest that assessing both individual and research team experiences with LGBT research might lead to increased understanding of LGBT research self-efficacy. However, the findings are surprising, given that greater research experience did not result in higher levels of research self-efficacy

***Using SCCT to create affirmative LGB research training environments.***

Bieschke, Eberz, Bard, and Croteau (1998) argued that a reflexive pattern of omission of LGBT issues from counseling psychology training programs and published research on LGBT issues has contributed to research training environments that are not supportive of students conducting LGBT research. Bieschke et al. (1998) used Social Cognitive Career Theory (SCCT) constructs to develop suggestions for creating RTEs that are LGB-affirming. The authors posited four content areas based on SCCT that are related to increasing LGB-affirming RTEs: (a) environmental influences, (b) individual variables, (c) research self-efficacy beliefs, and (d) research outcome expectations. Environmental influences comprise both distal (background) and proximal (in-the-moment) influences. The authors suggested that a process of environmental assessment may help to assess the level of environmental LGB-affirmation in which attention to departmental, university, and socio-political attitudes toward LGB people are explored. They recommend ongoing assessment to account for the fluctuant, varying, and rapidly changing nature of LGB climate. Following the suggestions of Buhrke and Douce (1991), Bieschke et al. asserted that making visible signs of overt and subtle affirmation of LGB interest in academic departments is necessary to create safety and comfort for students pursuing LGB research. Demonstration of such support is related to the recruitment and hiring of sexual minority and allied faculty, adding LGB material to

training content, displaying LGB affirming signs and symbols within the department, and adjusting a departmental mission statement to demonstrate support for LGB research.

Proximal influences on the development of LGB researchers may be comprised of critical incidents that encourage or discourage the student from pursuing LGB research and making specific career choices. Although numerous negative and positive proximal influences may exist in many forms, some might include overt and subtle messages of encouragement and discouragement from faculty; overt and covert display of affirming or heterosexist attitudes; highlighting negative career consequences for pursuing LGB research; and implicit or overt displays of heterosexism by the Institutional Review Board (IRB; Bieschke et al., 1998; Lent et al., 1994; Pilkington & Cantor, 1996).

Individual variables also impact the way a student may interact with the RTE. Bieschke et al. (1998) suggested that sexual orientation would affect the perceptions that students have of the RTE, specifically in terms of choice of research topic and decisions about professional identity disclosure. Students who identify as LGB may believe that choosing to work on LGB research will inadvertently disclose their sexual orientation. The authors further posited that beyond sexual orientation, stage of sexual identity development might also impact beliefs and feelings about the RTE. Students who identify as LGB or who are questioning their sexual orientation would likely seek an affirming research training environment that is openly supportive of LGBT students. For students who identify as heterosexual, institutional, departmental, and personal variables may also impact their development as researchers. When heterosexual

students conduct LGB research, others may assume that they identify as LGB. These students may be confronted for the first time with the personal impact of heterosexism. Therefore, the ways in which all students may be impacted by individual variables may influence researcher development.

Research self-efficacy beliefs are the third major SCCT construct that may interact with LGB-affirming RTEs. Research self-efficacy beliefs are the indicators of one's abilities to complete research-related tasks (Bieschke, et al. 1998; Bishop & Bieschke, 1998). In this section, reference to self-efficacy beliefs will refer to research self-efficacy with LGB populations. A more complete discussion of research self-efficacy is found above. Self-efficacy beliefs are posited to relate to past performance, vicarious learning, reinforcement, and emotional experience. Developing LGB research self-efficacy beliefs may be made more difficult by lack of prior experience and few opportunities for vicarious learning. As described above, proximal forces in the environment may impact emotional reactions to conducting LGB research and reinforcement. Bieschke et al. (1998) suggest that the opportunity to work with established LGB researchers is the most useful way of increasing research self-efficacy beliefs. Research self-efficacy beliefs can also be fostered by faculty who prominently display and discuss their own LGB research. In situations in which a department does not have a faculty member who conducts LGB research, faculty can help interested students find mentorship outside of their own department. Social cognitive theory posits that self-efficacy beliefs are fostered – in part – by emotional experiences (Bandura, 1986). It follows that research self-efficacy beliefs are also related to the emotional experiences of conducting research. Faculty and departments can bolster

self-efficacy beliefs by acknowledging and validating the emotional experiences of students who conduct LGB research.

A student's outcome expectations about conducting LGB research can also impact research self-efficacy beliefs. Bieschke et al. (1998) posited three types of outcome beliefs or expectations: professional outcome beliefs, social outcome beliefs, and self-evaluative outcomes. Professional outcome beliefs may influence students who believe that conducting LGB research will have a negative impact on their career. The authors suggested that by demonstrating high regard for LGB research and adopting a platform that values the professional impact of LGB research and psychology, students could develop a more critical understanding that while LGB research may be received negatively in some situations, in others it might be received positively. Further, training students in qualitative as well as quantitative methods could help to increase student awareness of the diversity of methodologies that are best used to observe and describe the lived experiences of LGB populations. This understanding could impact students' beliefs about their ability to complete research that reflects lived LGB experiences and to publish their work in a variety of journals (Bieschke et al. 1998).

Social outcome expectations refer to beliefs that students may hold about the social results of conducting LGB research. Bieschke et al. (1998) suggested that for some students, this might include the loss of assumed heterosexuality. This loss could potentially impact LGB and heterosexual students differently. LGB students may risk losing their ability to manage sexual identity disclosure whereas heterosexual students might be impacted by experiences in which people assume that they are not heterosexual.

Finally, self-evaluative outcome expectations may impact LGB research self-efficacy beliefs. Bieschke et al. (1998) stated that reasons for positive self-evaluation, such as pride in conducting valuable research, are much more numerous than negative self-evaluations. Negative self-appraisals may also impact outcome expectations as some may feel a conflict between internalized heterosexism and positive self-evaluation.

The study by Bieschke and colleagues (1998) study provides useful information for developing LGB affirming training models that aid in the development and growth of LGB researchers. Indeed the suggestions that are provided are useful, definable, and potentially measurable. The study, however, does not account for the experiences of transgender people, experiences of transgender or cisgender people conducting transgender research, or experiences of any students of Color conducting LGBT research. Although some of the experiences related to LGB research self-efficacy may be applied to all LGBT students, other dynamics related to gender identity and racial and ethnic identity may further impact the process of building LGB research self-efficacy.

### **Sexual identity.**

Although a full review of models of sexual identity development is beyond the scope of this review of literature, it is worthwhile to include a brief history. Models of sexual identity development date back to the late 1970s and early 1980s when Richard Troiden and Vivienne Cass published their models of sexual identity development (Cass, 1979; Cass, 1984; Troiden, 1979). In the following decades, numerous models described processes of sexual identity development. Models have tended to be identity-

specific and describe the development of a particular sexual orientation (Worthington, Navarro, & Savoy, 2008). While there are advantages to identity-specific models, they remain linked to one particular identity. Further, research has tended to focus primarily on the identity development of lesbians and gay men. More recently models of bisexual identity, transgender identity, and sexual identity in transgender people have been published (dickey, Burnes, & Singh, 2012; Morgan & Stevens, 2012; Weinberg, Williams, & Pryor, 1994). However, with only a few exceptions, the sexual identity development of heterosexual people has been virtually ignored (Worthington & Mohr, 2002; Worthington, Savoy, Dillon, & Vernaglia, 2002). By ignoring heterosexual identity development, researchers may unintentionally replicate social oppression by normalizing and privileging heterosexuality by suggesting that only LGB identities develop.

The Measure of Sexual Identity Exploration and Commitment (MoSIEC; Worthington, Navarro, & Savoy, 2008) differs from many sexual identity development models. It uses Marcia's (1966) framework of identity development to describe and measure sexual identity development experiences common to LGB people as well as to heterosexuals. The MoSIEC is a four-factor scale that measures sexual identity exploration, sexual identity commitment, sexual identity synthesis, and sexual identity exploration uncertainty. A full critique of the measure is found in Chapter II. However because two factors – Exploration and Commitment – inform Hypothesis 1, I will describe these two factors in this literature review.

The Exploration Factor is comprised of eight items. The factor assesses current, historical, and perceived future openness to exploring sexual expression, sexual needs,

and sexual values through items such as “I am actively trying new ways to express myself sexually,” “I went through a period in my life when I was trying different forms of sexual exploration,” and “My sexual values will always be open to exploration.” In a confirmatory factor analysis (CFA) Exploration items showed moderate to strong factor loadings ranging between .56 and .82. Worthington et al. (2008) reported internal consistency of the Exploration Factor ranging from  $\alpha = .85$  and .87 in two CFAs.

Six items make up the Commitment Factor. Three are positively scored and three are negatively scored. The factor assesses awareness of a stable understanding of one’s sexual expression, sexual needs, and sexual values. Examples of positively scored items include, “I have a firm sense of what my sexual needs are,” “I know what my preferences are for expressing myself sexually,” and “I have a clear sense of the types of sexual activities I prefer.” Examples of negatively scored items include, “I have never clearly identified what my sexual needs are,” “I have never clearly identified what my sexual values are,” and “I do not know how to express myself sexually.” In a CFA, items demonstrated moderate to strong factor loadings between -.44 and .79. In two CFAs, Worthington et al. (2008) reported internal consistency of the Commitment Factor ranging between  $\alpha = .80$  and .83.

Although developmental factors are not directly considered in social cognitive theory, they have the potential to influence self-efficacy beliefs. Because self-efficacy beliefs are influenced by affective and psychological factors, developmental experiences are potentially important as they provide context for psychological and affective experiences. Sexual identity development plays an important role in the lives of all people although heterosexuals, lesbians, bisexual men and women, and gay men

may experience sexual identity development differently. For clinical and counseling psychology students who choose to conduct research with LGBT people, it is likely that they consider their own sexual identity at some point during their training as psychologists (Bieschke, Eberz, Bard, & Croteau, 1998).

### **Multicultural Research in Counseling Psychology**

Conducting culturally competent research is a skill that is mandated by the American Psychological Association (APA) Committee on Accreditation (CoA, 2007). Further, calls for research that is culturally sensitive with strong external validity require researchers to be trained in multicultural counseling as well as multicultural research (APA: Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists, 2002; Liu, Sheu, & Williams, 2004).

Liu et al. (2004) discussed the current understanding of the interrelationships among students' experiences with research, their multicultural competency, and research self-efficacy. Their study was guided by several research questions. The first was to assess interactions between both individual factors, such as social desirability and multicultural competency, and environmental factors, such as departmental multicultural environment and research training environment, on multicultural research self-efficacy. The second guiding research question was to better understand if the perception of the research training environment predicts multicultural research self-efficacy. The third and final research question was whether or not perceptions of multicultural environment predict research self-efficacy.

The authors used several measures to understand the relationships between constructs of interest. These included the Research Instruction Outcome Tool -

Multicultural (RIOT-M; Liu et al., 2004), the Multicultural Counseling Inventory (MCI; Sadowsky, Taffe, Gutkin, & Wise, 1994), the Research Training Environment Scale (RTES-R; Gelso et al. 1996), the Multicultural Environment Inventory – Revised (MEI-R; Pope-Davis, Liu, Nevitt, & Toporek, 2000), and the Multicultural Social Desirability scale (MCSDS; Sadowsky, Kuo-Jackson, Richardson, & Corey, 1998). The RIOT-M was adapted from the original measure, the Research Instruction Outcome Tool (RIOT; Szymanski, Whitney-Thomas, Marshall, & Sayger, 1994). The three subscales of the RIOT have demonstrated good reliability and measure research anxiety ( $\alpha = .90$ ), perceived research utility ( $\alpha=.77$ ), and confidence in research ability ( $\alpha= .89$ ). Liu et al. adapted the measure so that each item read, “multicultural research” instead of “research.”

The MCI is a 40-item, four-factor self-report measure. Its subscales assess multicultural counseling skills, multicultural counseling awareness, multicultural counseling relationships, and multicultural counseling knowledge. The consistencies of the subscales have been shown to be,  $\alpha = .80, .78, .68,$  and  $.77$  respectively. The internal consistency of the MCI has been demonstrated to be  $.87$  (Constantine & Ladany, 2000).

The RTES-R measures nine dimensions of graduate research training. A full description of the measure, its subscales, and internal validity is found in an earlier section of this review of literature.

The MEI-R is a tool used to measure graduate psychology student’s perceptions of multicultural departmental climate. The instrument is constructed of four subscales with the following consistencies: curriculum and supervision ( $\alpha = .92$ ), climate and

comfort ( $\alpha = .92$ ), honesty in recruitment ( $\alpha = .82$ ), and multicultural research ( $\alpha = .82$ ). The internal consistency of the entire measure was found to be .94.

The MCSDS assesses the stability of claims of favorable attitudes toward minorities over times and situations with 26 true-false items. The average correlation of each item to the total MCSDS is .35 and the Cronbach's alpha-coefficient for the MSCDS is .80.

Results of Liu et al. (2004) were both correlational and cross-sectional. Analysis showed that there was no main effect for gender, student, status or race on the criterion variables, multicultural research anxiety, perceived multicultural research utility, and confidence in multicultural research ability. Significant positive relationships were found between research anxiety and multicultural awareness ( $r = .18, p < .05$ ) and research anxiety and multicultural relationships ( $r = .35, p < .01$ ). Significant negative relationships were found between research anxiety and multicultural knowledge ( $r = -.21, p < .01$ ) and between research anxiety and MCI total ( $r = -.32, p < .01$ ). The authors posited that the positive relationships found between research anxiety and multicultural awareness and between research anxiety and multicultural relationships may suggest that as students increasingly understand the complexities of multicultural realities, their anxiety about conducting multicultural research increases accordingly. Positive correlations between the research utility subscale of the RIOT-M and multicultural awareness ( $r = .20, p < .05$ ), multicultural knowledge ( $r = .29, p < .01$ ) and total MCI score ( $r = .23, p < .01$ ) suggested that perceptions held by students that research were indeed useful and correlated with having multicultural knowledge, awareness, and counseling competency.

Liu et al. (2004) arrived at important conclusions about the role of multicultural awareness in student researcher development. Several limitations in sample and methodology are noted by the authors including the reliance on web-based sampling techniques that may have led to oversampling of students in particular counseling psychology programs, the reliance on students with the technical proficiency to use a computer to complete the survey, and the cross-sectional and correlational nature of the data analysis, which lead to difficulty in making conclusions based on the data collected. A final limitation was the adaptation of the RIOT-M. Although, as the authors note, the internal consistency of the RIOT was stable, the adaptation of the scale to fit multicultural research instruction outcomes may have led to a less stable scale.

The authors did not note the following limitations to their study. Despite results that indicate directional correlations between measures, the authors fail to present directional hypotheses. As suggested by Wampold, Davis, and Good (2006), results are more strongly reportable in relationship to directional hypotheses. Further, the number of measures and subscale interactions in this study suggest complex results. Expanding the results to the level of theory building by testing the directions and relationships of measures through path analysis would lead to a more comprehensive understanding of the interactions between constructs.

### **Summary**

Since the inception of the Scientist-Practitioner model, training clinical and counseling psychology students in research has had measured success (Leong & Zachar, 1991; Zachar & Leong, 2000). Researchers have demonstrated that particular

factors such as the environment in which students are trained, research mentorship, and self-efficacy are all related to students' decisions to conduct research professionally, interest in research, and expectations about the outcomes of working on research (Bieschke, 2000; Bieschke, 2006; Bieschke, Bishop, & Garcia, 1996; Bieschke, Herbert, & Bard, 1998; Bishop & Bieschke, 1998; Gelso, Mallinckrodt, & Judge, 1986; Hollingsworth & Fassinger, 2002). Regardless, a majority of doctoral-level psychologists pursue careers in practice.

Integrating personal identity factors into an exploration of researcher development may provide insight into the needs of doctoral students as they develop. This study looks singularly at doctoral students with a common area of research interest: LGBT issues. I hypothesize that personal identity development factors will influence participants beliefs about the outcome of conducting research. My position is consistent with theorists and scientists who assume that academic work is influenced by personal identity features in addition to environmental factors (Bieschke, Eberz, Bard & Croteau, 1998; Gelso, 2006; Lark & Croteau, 1998; Schachter & Rich, 2011).

This review of literature has brought together numerous factors that impact the training of student-researchers in clinical and counseling psychology doctoral programs that focus their research on LGBT populations. It is evident that students' development as researchers is influenced by training models, accrediting bodies, mentoring, and research training. Additionally, scholars who have applied social cognitive theory to researcher development have provided a framework for conceptualizing relationships among research self-efficacy, research outcome expectations, and research productivity. Further, the literature presented in this review suggests that personal

identity factors, such as sexual orientation, may also influence how students interact with the environments where they are studying, in turn potentially influencing their development as researchers.

The literature contains significant gaps. While there is significant literature on training culturally competent practitioners, fewer scholars focus on cultural competence in research training. And although literature has started to explore how the cultural identities of students may impact their learning experiences, there is no literature that explores how individuals with specific cultural identities approach their populations of research interest. Specifically, there is no research that looks how sexual orientation or gender identity may influence the researcher development of students who conduct research with LGBT populations.

### **Purpose**

The purpose of this study was to investigate factors that predict researcher development and productivity in clinical and counseling psychology students who work primarily with lesbian, gay, bisexual, and transgender (LGBT) populations. While this study uses measures of social cognitive factors to assess research self-efficacy, research outcome expectations, research mentorship, and research training environment, it also incorporates identity development by utilizing a measure of sexual identity exploration and commitment.

### **Hypotheses**

#### **Hypothesis 1.**

Although studies have demonstrated that social cognitive factors likely influence researcher development (Bieschke, Eberz, Bard & Croteau, 1998;

Hollingsworth & Fassinger, 2002), I believe that developmental factors – namely sexual identity exploration and commitment – will account for some variance in research outcome expectations. Hypothesis 1 is that the Exploration and Commitment factors of the Measure of Sexual Identity Exploration and Commitment (MoSIEC) will account for a significant portion of Research Outcome Expectations Questionnaire (ROEQ) variance above and beyond social cognitive factors (Research Self-Efficacy, Research Mentorship, and Research Training Environment).

**Hypothesis 2.**

Bieschke, Eberz, Bard, and Croteau (1998) suggest that affirmative LGB training environments provide spaces for LGB people to talk openly about the influence of their sexual orientation on their professional development. Further, consistent with Schachter and Rich's (2011) positions on Identity Education, sexual identity is likely to contextualize training. LGB students who share a non-heterosexual identity with the populations with whom they do research may have greater research mentoring needs than heterosexual students working with the same LGB populations. Therefore, Hypothesis 2 posits that participants who identify as lesbian, gay, or bisexual will score higher than their heterosexual counterparts on the Psychosocial Factor of the Research Mentorship Experiences Scale.

## **Chapter II**

### **Methods**

#### **Introduction**

Despite recent discussions of the importance of LGBT research and more long-term discussions of how to encourage researcher development at the doctoral level of clinical and counseling psychology training, little attention has specifically addressed the factors that encourage clinical and counseling psychology students whose research interests include a primary affinity for lesbian, gay, bisexual, and transgender (LGBT) populations (Gelso, 2006; Smith, 2010). And while research has shown that salient factors within the training environment can impact researcher development, sufficient attention has not been paid to factors in the training environment that specifically affect doctoral students who plan to conduct research with LGBT populations (Gelso, 2006; Kahn & Gelso, 1997; Kahn & Miller, 2000). Indeed some research has demonstrated that LGBT students in counseling psychology programs look for specifically LGBT-affirming qualities in their departments, universities, and geographical locations (Lark & Croteau, 1998). However this research does not sufficiently attend to either the specific factors that encourage researcher development or to the needs of heterosexual students conducting research primarily with LGBT populations

This project explored variables that may have a social-cognitive or developmental influence on the researcher development of clinical and counseling

psychology students who conduct research with LGBT populations. Results add to the limited body of empirical descriptions of researcher development of multicultural researchers. The project used person predictor variables such as sexual orientation and sexual identity exploration and commitment; academic variables such as academic program type; and social cognitive variables such as research self-efficacy, research mentoring experiences, research training environment. Each variable was used to predict research outcome expectations. Primary and post-hoc analyses explored relationships among groups of participants based on sexual orientation, academic training model, completion of comprehensive exams, and research productivity.

### **Participants**

Participants were clinical or counseling doctoral students who have completed at least one year of graduate training and identify research with LGBT populations as their primary research interest. Of the 59 participants, 52 respondents included their age. The mean of respondents was 30.15 years ( $SD = 7.20$  years). Participants ranged from age 22 to 55 years. Participants were asked to identify their gender identities. The sample was 66.10 % female ( $n = 36$ ), 35.59 % male ( $n = 21$ ), 3.38 % female-to-male (FTM;  $n = 2$ ), 3.38 % genderqueer ( $n = 2$ ), 1.59 % identified as transgender ( $n = 1$ ) and 1.59 % identified as transsexual ( $n = 1$ ). Racial diversity within this sample was limited. One participant identified as American Indian/Alaska Native (1.7 %), 5.1 % identified as Asian ( $n = 3$ ), 5.1 % identified as Black or African-American ( $n = 3$ ), 1.7 % ( $n = 1$ ) identified as Native Hawaiian or Pacific Islander, and 89.8 % identified as White ( $n = 53$ ). A substantial majority of the sample (94.9 %) identified as being not Hispanic or Latino. This sample represented a diverse range of sexual orientations. Of

the 59 participants, 25.4 % identified as bisexual ( $n = 15$ ), 20.3 % identified as gay male ( $n = 12$ ), 15.3 % identified as lesbian ( $n = 9$ ), and 32.2 % identified as heterosexual ( $n = 19$ ). Additionally, 10.2 % of the sample identified as queer ( $n = 6$ ) and 3.4 % identified as pansexual ( $n = 2$ ). Sexual orientations and gender identities are summarized in Table 1. It is important to note that participants were able to identify as more than one sexual orientation or gender identity. For example, one participant identified as a queer, bisexual, and pansexual.

Table 1

*Sexual Orientations and Gender Identities of Participants*

	Female	Male	FTM
Lesbian	8 (13.5 %)		1 (1.6 %)
Gay	3 (5.1 %)	12 (20.3 %)	1 (1.6 %)
Bisexual	6 (10.2 %)	9 (15.3 %)	
Heterosexual	15 (25.4 %)	3 (5.1 %)	
Queer	5 (8.5 %)		1 (1.6 %)
Pansexual	2 (3.4 %)		

Participants were also asked to describe their state of sexual orientation disclosure by indicating if their sexual orientation was known to family, friends, other students, professors, or their dissertation committee. Results are summarized in Table 2.

Other demographic items were included to help create a picture of the educational backgrounds of the sample. In order to assess participants' progression through their academic program, they were asked if they had already completed comprehensive exams. Thirty-nine percent ( $n = 23$ ) of participants reported that they

had not yet passed their comprehensive exams and 47.5 % of participants reported having already passed comprehensive exams ( $n = 28$ ). Another 11.9 % ( $n = 7$ ) of participants stated that although they were Ph.D. students, the question asking about completion of comprehensive exams did not apply to them. Participants were asked to identify the training model of their academic program. Seventy-eight percent ( $n = 46$ ) reported being in a program that used a scientist-practitioner training model, 6.8 % ( $n = 4$ ) reported being in a program that followed a practitioner-scholar model, 1.7 % ( $n = 1$ ) reported being in a program that followed an engaged professional training model, and 1.7 % ( $n = 1$ ) reported not knowing the training model of their program. Another 6 participants identified other training models of their programs. Of those 6, 3 reported being in a program that used a scientist-practitioner-advocate training model, 2 reported being in a program that used a practitioner-scientist training model, and 1 reported having very recently completed the Ph.D. Twenty-four participants identified themselves as being in clinical psychology (40.7 %) and 33 participants (55.9 %) identified themselves as being in counseling psychology programs. Two respondents did not answer this item.

Table 2

*Summary of Participants Disclosure of Sexual Orientation*

	None	A Few	Most	All
Family	5 (8.5 %)	6 (10.2 %)	13 (22 %)	34 (57.6 %)
Friends	1 (1.7 %)	6 (10.2 %)	8 (13.6 %)	43 (72.9 %)
Students	1 (1.7 %)	6 (10.2 %)	7 (11.9 %)	44 (74.6 %)
Professors	4 (6.8 %)	7 (11.9 %)	6 (10.2 %)	40 (67.8 %)
Committee	7 (11.9 %)	3 (5.1 %)	5 (8.5 %)	42 (71.2 %)

## **Procedures**

Sampling was conducted primarily through direct recruitment of participants via emails to training directors of clinical and counseling psychology programs. Training directors of APA-accredited clinical ( $n = 174$ ) and counseling psychology ( $n = 81$ ) departments were contacted and asked for help in finding participants. Training directors were sent an email with a summary of the project and asked to disseminate the description of the project and the survey link to their students. Additionally, postings were made to listservs that would likely reach clinical and counseling psychology students that have an academic interest in LGBT issues and research, including Society of Counseling Psychology Section on Lesbian, Bisexual, Gay, and Transgender Issues; and Society for the Psychological Study of Lesbian, Gay, Bisexual, and Transgender Issues.

Active recruitment of participants began in early September, 2011 and continued through October, 2011 through emailing training directors of APA-accredited counseling psychology and clinical psychology programs. Of the 100 participants who started the survey, 59 completed it. Participants dropped off at different points in completing the survey. Of the 41 who dropped off, 15 stopped completing items at some point between reading informed consent and the end of the demographic form, 7 participants stopped completing items during the Research Outcome Expectations Questionnaire, 5 participants stopped completing the survey during the Research Self-Efficacy Scale, and 6 participants stopped responding to items while completing the Measure of Sexual Identity Exploration and Commitment.

Finally, one participant dropped off while completing the Research Training Environment Scale.

## **Measures**

Participants were directed to a survey set up on an online survey site. They were asked to complete a demographics form in order to collect information about age, sexual orientation, gender identity, educational program (e.g., clinical or counseling; Ph.D. or Psy.D.), research productivity, and highest level of educational achievement (see Appendix B). Participants were then asked to complete the Transphobia scale (Nagoshi, 2009); the Research Training Environment Scale - Revised (RTES-R; Gelso, Mallinckrodt, & Judge, 1996); the Research Self-Efficacy Scale (RSES; Bieschke, Bishop, & Garcia, 1996); the Research Outcome Expectations Questionnaire (ROEQ; Bieschke and Bishop, 1994); the Research Mentorship Experiences Scale (RMES; Hollingsworth and Fassinger, 2002); and the Measure of Sexual Identity Exploration and Commitment (MoSIEC; Worthington, Navarro, Savoy, & Hampton, 2008). Critiques of the published instruments will follow in the sections below (See Appendices C-H for the instruments).

### **The Research Training Environment Scale – Revised.**

The Research Training Environment Scale – Revised (RTES-R; Gelso, Mallinckrodt & Judge, 1996) is a 54-item measure that investigates the nine theoretical domains of the Research Training Environment (RTE) as proposed by Gelso (1979; 1993) and Gelso, Mallinckrodt, and Royalty (1991). The RTES-R is a revision of the Research Training Environment Scale (RTES; Gelso et al., 1991). The RTES-R was constructed to increase the reliability of the RTES by (a) standardizing the number of

items on each subscale, (b) increasing internal consistency, and (c) demonstrating better test-retest reliability (Geslo, Mallinckrodt, & Judge, 1996).

Each theoretical domain of Gelso's RTE theory is correlated to one of nine subscales determined by factor analysis (Gelso, 1979; 1993). Subscales each contain six items comprised of one, two, or three negatively worded items and six, seven, or eight positively worded items. Subscales measure the following nine factors: (a) Faculty Modeling of Appropriate Scientific Behavior; (b) Positive Reinforcement of Scholarly Activities; (c) Early, Low Threat, Involvement in Research Activities; (d) Teaching, Relevant Statistics and the Logic of Design; (e) Teaching Students to Look Inward for Research Ideas; (f) Seeing Science as a Social Experience; (g) Teaching That All Experiments are Inevitably Flawed; (h) Focus on Varied Investigative Styles; and (i) Science is Wed to Clinical Service. Eight of the nine subscales report Cronbach's Alpha coefficients of between .73 and .90. The remaining subscale, Teaching That All Experiments are Inevitably Flawed, was reported to have a Cronbach's Alpha coefficient of .57. The Cronbach's Alpha coefficient for the full test was reported to be .90. Four-to-six week retest coefficients of all subscales range between .74 and .88 (Kahn & Gelso, 1997). The full-scale retest coefficient was reported to be .94 (Gelso et al., 1996).

### **The Transphobia Scale.**

The Transphobia Scale is a nine-item measure that explores prejudice against transgender individuals (Nagoshi et al., 2008). The nine items were adapted from Bornstein's (1998) discussion of Flexibility of Gender Aptitude. Because of the high correlation between transphobia and homophobia (Nagoshi et al., 2008), administering

the Transphobia Scale may help to better understand some of the attitudes of participants toward LGBT people. This was an important part of this project as the population of interest was students conducting LGBT-affirming research. The Transphobia scale was an efficient assessment of attitudes toward LGBT people with low scores assuring minimal anti-LGBT biases. The Transphobia Scale was tested on a sample of 310 students and demonstrated high internal consistency, with a Cronbach's alpha coefficient of .82. A sample of 27 undergraduate psychology students were administered the Transphobia Scale twice, with a four-week interval between administrations. Results demonstrated high test-retest consistency with a Pearson correlation of  $r = .88$ .

Convergent validity of the Transphobia Scale (Nagoshi et al., 2008) was assessed for men and women by measuring other correlations with constructs such as homophobia (Wright, Adams, & Bernat, 1999), right-wing authoritarianism (Altemeyer, 1981), religious fundamentalism (Altemeyer & Hunsberger, 1992), hostile and benevolent sexism (Glick & Fiske, 1996), attitudes that affirm sexual coercion and aggression (Burt, 1980), sexual permissiveness and promiscuity (Simson & Gangestad, 1991), and tendency toward aggressive behavior and hostility (Buss & Perry, 1992). Correlations between results of the transphobia scale and convergent constructs were reported both for males and females. Correlations were provided for transphobia before and after partialing out homophobia. Interestingly, for men, correlations for transphobia were primarily reduced after partialing out homophobia, suggesting that the stronger relationships between convergent measures and the transphobia measure were better accounted for by homophobia than by transphobia.

### **The Research Mentoring Experiences Scale.**

The Research Mentoring Experiences Scale (Hollingsworth & Fassinger, 2002) is a 28-item scale that asks participants to rate their research experiences with a faculty mentor. The measure was created for a study to explore the role of faculty mentoring in the research training of counseling psychology students. As items are related to research mentorship rather than a counseling psychologist identity, they do not exclude clinical psychology students. Outside of Cronbach's alpha coefficients, the psychometric properties of the scale have not been published. The scale measures two factors: Career Mentoring and Psychosocial Mentoring. Cronbach's alpha coefficients for the Career Mentoring subscale, the Psychosocial Mentoring subscale, and the full measure were reported to be .87, .88, and .74 respectively. Despite a preference for using measures with more publicly available psychometric properties, this scale is being used in the current study used because (a) it is unique in its intent to measure the role of faculty mentorship in research training, and (b) it is modeled on a feminist mentoring model that may be useful for students conducting research with LGBT participants.

### **The Measure of Sexual Identity Exploration and Commitment.**

The Measure of Sexual Identity Exploration and Commitment (MoSIEC; Worthington, Navarro, Savoy, & Hampton, 2008) is a 22-item scale measuring four factors related to sexual identity development. The MoSIEC scale measures exploration of and commitment to sexual identity regardless of the sexual and affective preferences of the participant. This differs from other measures or models of sexual identity development that were created to describe or measure heterosexuality, homosexuality,

or bisexuality (Cass, 1984; McCarn & Fassinger, 1996; Worthington et al., 2008; Worthington, Dillon, & Becker-Schutte, 2005). The measure is based on Marcia's (1966) model of identity development.

The MoSIEC is a four-factor model. Factors include Commitment, Exploration, Sexual Orientation Identity Uncertainty, and Sexual Orientation Synthesis/Integration. Each factor is measured by three to eight items. Two factors (Commitment and Sexual Orientation Identity Uncertainty) include reverse-scored items. Each MoSIEC factor is scored separately with no full-scale score.

The validity of the MoSIEC was demonstrated by conducting exploratory and confirmatory factor analyses. In the exploratory factor analysis, Exploration accounted for 22.25% of the variance. Commitment accounted for 18.64% of the variance. Sexual Orientation Identity Uncertainty accounted for 5.73% of the variance. Synthesis/Integration accounted for 3.48% of the variance. The four factors demonstrated strong internal consistency reliability with Cronbach's alpha coefficients for each factor reported at .83, .87, .87, and .76 for Commitment, Exploration, Sexual Orientation Identity Uncertainty, and Synthesis/Integration respectively. A multivariate analysis of variance (MANOVA) was conducted to explore interactions among gender, sexual orientation identity, and MoSIEC subscales. Gender was found to have no significant effect whereas sexual orientation identity was indeed found to have an effect. A univariate analysis of variance (ANOVA) found main effects of sexual orientation identity for the factors Exploration and Sexual Orientation Identity Uncertainty. Post-hoc comparisons showed that on the subscales Exploration and Sexual Orientation Identity Uncertainty, bisexual participants scored highest, followed

by gay male and lesbian participants, and heterosexual participants scored lowest (Worthington et al., 2008).

### **Research Outcome Expectations Questionnaire.**

The Research Outcome Expectations Questionnaire (ROEQ; Bieschke & Bishop, 1994) is a 20-item measure designed to assess individuals' expectations surrounding research activities. The construct of outcome expectations is central to social cognitive career theory (Bandura, 1986). Because outcome expectations help to shape a person's beliefs about the results of particular actions, the utility of the construct is its ability to explain portions of beliefs about why a person makes particular choices about pursuing particular tasks. Research outcome expectations are the held beliefs about the result of conducting research.

The ROEQ is a single factor scale with two reverse scored items. Responses are on a five-point Likert scale. The ROEQ has shown strong internal reliability with reported Cronbach's alpha coefficients ranging from .89 to .91 (Bishop & Bieschke, 1994; Bieschke, Bishop, & Herbert, 1995; Bishop & Bieschke, 1998; Bieschke, 2000).

Although the ROEQ has had limited publication, it has been previously used as a measure to predict interest in research. For example, in a study of the utility of achievement goal theory as a predictor of research interest, Deemer, Martens, and Podchaski (2007) used the ROEQ to demonstrate that research outcome expectations do indeed predict interest in research in counseling psychology students.

### **Research Self- Efficacy Scale.**

The Research Self-Efficacy Scale (RSES; Bieschke, Bishop, & Garcia, 1996) is a 51-item measure designed to assess beliefs about ability to accomplish specific tasks

related to completing a research project. Self-efficacy is a social cognitive construct related to individual beliefs about one's effectiveness at completing specific operations. Participants completing the RSES rate their confidence in their ability to complete specific research-related behaviors on a scale from 0-to-100.

Four factors (Early Tasks, Conceptualization, Implementation, and Presenting the Results) accounted for 57 % of the variance on the RSES. Across several studies, Cronbach's alpha coefficients for the full scale have ranged from .96 to .97 (Bieschke, Bishop & Garcia, 1996; Bieschke, Herbert, & Bard, 1998; Bishop & Bieschke, 1998). Bieschke, Herbert, and Bard (1998) found Cronbach's alpha coefficients for the subscales range from .64 to .94, while Bieschke, Bishop, and Garcia's results showed Cronbach's alpha coefficients for the subscales to range from .75 to .96.

The RSES has been used as a dependent variable to explore how timing and exposure to research impact research self-efficacy (Love, Bahner, Jones, & Nilsson, 2007) as well as a measure that described the research self-efficacy of a sample of doctoral students in counselor education (Lambie & Vaccaro, 2011).

### *Statistical analysis.*

In considering the statistical analysis of data for this project, it is helpful to remember that the particular statistical analysis used serve the purposes of (a) testing a model that posits that in considering research outcome expectations of clinical and counseling psychology students whose research focuses on LGBT populations, sexual identity exploration and commitment will account for variance beyond that accounted for by research self-efficacy, research training environment, and research mentorship; and (b) looking at differences between groups within this population. In order to

complete these two tasks, a multiple regression was run to test the hypothesis that the MoSIEC would account for variance beyond that accounted for by the RSES, RTES, and the RMES. To test for significant differences in research outcome expectations between heterosexual and LGB participants, between clinical and counseling psychology students, and between students who met criteria for being productive researchers, separate ANOVAs were conducted for each test.

### **Multiple regression.**

To test the first hypothesis, a hierarchical multiple regression analysis was conducted. Multiple regression analysis is useful for assessing the usefulness of a set of predictor variables in predicting a criterion variable (Licht, 1995). The multiple regression analysis results in an equation that can be used to predict the criterion variable by using regression coefficients derived from analysis of the sample data. In this study, predictor variables included the RSES, the RTES, the RMES, and the four MoSIEC factors: Exploration, Commitment, Synthesis, and Sexual Orientation Identity Exploration, to test the amount of variance accounted for by the RSES, the RTES, the RMES, and the MoSIEC. Each variable was entered into a multiple regression analysis using SPSS statistical package.

### **Independent Samples T-Tests and Non-Parametric Statistics**

To test the second hypothesis and two post-hoc analyses, Mann-Whitney u-tests were run. Other post-hoc analyses were conducted by running a series of independent samples t-tests. T-tests assess for significant differences between means of two evenly distributed distinct groups on specific measures and Mann-Whitney u-tests assess mean differences between groups with an abnormal distribution. For this study, participants

were grouped (a) by sexual orientation (groups included heterosexual and LGB), (b) by academic program (groups included clinical psychology students and counseling psychology students), (c) by progression through academic program (groups included students who had passed comprehensive exams and students who had yet to pass comprehensive exams), and (d) students who had demonstrated LGBT-research productivity through publication/presentation and students who had not demonstrated LGBT-research productivity through publication/presentation.

To test Hypothesis 2 – that mean scores of LGB students will be higher than mean scores of heterosexual students on the Psychosocial Factor of the Research Mentoring Experiences Scale (RMES), a Mann-Whitney u-test was run to test mean differences between these two groups on this factor. In post-hoc analyses, independent samples t-tests were run to assess for mean differences between (a) clinical and counseling psychology students and (b) students who had passed comprehensive exams, and Mann-Whitney u-tests were run to assess mean differences between (a) heterosexual and LGB students and (b) students who had demonstrated LGBT-research productivity, on the Research Outcome Expectations Questionnaire (ROEQ).

#### **Analysis of Variance (ANOVA).**

In order to test for significant differences on research outcome expectations between groups, four ANOVAs were conducted. As a statistical procedure, ANOVAs test the significance of the effect of a minimum of one independent variable on a minimum of two dependent variables (Weinfurt, 1995). The first ANOVA looked at differences between heterosexual students and lesbian, gay, and bisexual students on the ROEQ dependent variable. The second measured differences between clinical and

counseling psychology students. The third measured differences between students who had demonstrated a higher level of research productivity. The fourth ANOVA looked at differences between students who had or had not completed comprehensive exams. For each ANOVA run, participants were grouped into one of two groups: heterosexual or LGB, clinical psychology or counseling psychology students, and high or low level of research productivity. SPSS statistical package software was used to work through the ANOVAs in order to determine significant differences between groups.

## Chapter III

### Results

#### Descriptive Statistics

Descriptive statistics for all of the measures used were run to describe the sample. Means and standard deviations for each measure follow and are summarized in Table 3. For each measure, normality of distribution was assessed by looking at skew, kurtosis, and the Shapiro-Wilk Test. Those figures are summarized in Table 4.

Descriptive statistics, skewness, kurtosis, and Shapiro-Wilk Test figures are reported for each of the Measure of Sexual Identity Exploration and Commitment (MoSIEC) factors as there is no total score for the MoSIEC. Figures for both Research Self-Efficacy Scale (RSES) and Research Self-Efficacy Scale –Revised (RSES-R) are reported.

Aside from the MoSIEC Factor 4 – Sexual Orientation Identity Uncertainty (SOIU) factor, skewness fell into the normal range, from +1 to -1 (Hair, Anderson, Tatham, & Black, 1998) and kurtosis fell into the normally acceptable range of +/-7 suggested by Curran, West, and Finch (1996). Skewness and kurtosis levels of the MoSIEC SOIU factor (skewness = 1.421, kurtosis = 2.464) suggest a nearly normal distribution with leptokurtic scores falling just to the left of the mean. Non-significant results ( $p > .05$ ) on the Shapiro-Wilk Test (Shapiro & Wilk, 1965) suggest an abnormal distribution for three variables: RMES-P ( $p = .009$ ), RTES ( $p = .007$ ), MoSIEC Factor

2 – Commitment ( $p = .003$ ), and MoSIEC Factor 4 - SOIU ( $p < .001$ ). However, because skewness and kurtosis fell into the range of normal and because of the relatively normal shapes of histograms, no data transformations were conducted.

Table 3

*Descriptive Statistics of Scales*

Scale	Mean	Standard Deviation
RSES <sup>a</sup>	81.78	8.46
RSES-R <sup>b</sup>	81.46	8.62
ROEQ <sup>c</sup>	3.86	.619
RMES-P <sup>d</sup>	3.80	1.01
RTES <sup>e</sup>	3.73	.646
MoSIEC 1 <sup>f</sup>	3.91	1.09
MoSIEC 2 <sup>g</sup>	4.97	.691
MoSIEC 3 <sup>h</sup>	4.82	.792
MoSIEC 4 <sup>i</sup>	3.01	.551
TRANS <sup>j</sup>	1.93	.849

*Note.* <sup>a</sup>Research Self-Efficacy Scale (RSES), <sup>b</sup>Research Self-Efficacy Scale – Revised (RSES-R), <sup>c</sup>Research Outcome Expectations Questionnaire, <sup>d</sup>Research Mentorship Experiences Scale – Psychosocial Factor (RMES-P), <sup>e</sup>Research Training Environment Scale (RTES), <sup>f</sup>Measure of Sexual Identity Exploration and Commitment – Exploration Factor (MoSIEC 1), <sup>g</sup>Measure of Sexual Identity Exploration and Commitment – Commitment Factor (MoSIEC 2), <sup>h</sup>Measure of Sexual Identity Exploration and Commitment – Synthesis Factor (MoSIEC 3), <sup>i</sup>Measure of Sexual Identity Exploration and Commitment – Sexual Orientation Identity Uncertainty Factor (MoSIEC 4), <sup>j</sup>Transphobia Scale.

Scores on the Transphobia scale were low ( $M = 1.93$ ,  $SD = .840$ ) on a 7-point Likert scale. Given the high correlation between transphobia and homophobia (Nagoshi

et al., 2008), the Transphobia measure was included in the research design as a way to reduce the likelihood that participants were conducting LGBT-affirmative research rather than research that pathologizes LGBT people. The low mean on the measure and an absence of outliers suggests that indeed, participants hold relatively transgender-positive and LGB-positive attitudes.

Table 4

*Measures of Normality of Distribution*

Scale	Skewness	SE	Kurtosis	SE	Shapiro-Wilk Test
RSES	-.589	.311	-.050	.613	.062
RSES-R	-.578	.311	-.171	.613	.200
ROEQ	-.617	.311	.031	.613	.057
RMES-P	-.849	.316	-.116	.623	.009
RTES	-.596	.311	-.455	.613	.007
MoSIEC 1	-.617	.311	.300	.613	.200
MoSIEC 2	-.611	.311	.422	.613	.003
MoSIEC 3	-.468	.311	-.053	.613	.074
MoSIEC 4	1.421	.311	.2464	.613	.000
TRANS	.954	.311	.562	.613	.000

**Hypothesis 1.**

To address the first primary hypothesis, that the Exploration and Commitment factors of the Measures of Sexual Identity Exploration and Commitment (MoSIEC) would account for a significant amount of variance of Research Outcome Expectations

Questionnaire (ROEQ) beyond what was accounted for by social cognitive variables (Research Self-Efficacy, Research Mentorship – Psychosocial Factor, and Research Training Environment), two hierarchical multiple regressions were completed. Regressions were run by entering predictor variables into SPSS in the order theoretically hypothesized to result in the most variance accounted for by the first variable and increasingly less variance for each subsequent variable. In this study, Social Cognitive variables (Research Self-Efficacy, Research Mentorship, and Research Training) were entered first, followed by developmental variables (Sexual Identity Exploration and Commitment) because the criterion variable (Research Outcome Expectations) also measures a Social Cognitive construct.

Correlations between variables were obtained by looking at the correlation table output from a multiple regression analysis (see Table 5). The only significant correlations with ROEQ were MoSIEC Factor 1 - Exploration ( $r = .390, p = .001$ ) and MoSIEC Factor 2 -Commitment ( $r = .223, p = .048$ ). However, other moderate to strong correlations between variables were found. A strong correlation ( $r = .800, p < .000$ ) was found between the RTES and RMES – P. RSES had moderate correlations with RMES-P ( $r = .406, p < .001$ ), RTES ( $r = .450, p < .001$ ), MoSIEC Factor 2 - Commitment ( $r = .223, p = .040$ ) and, a slightly stronger negative correlation with MoSIEC Factor 4- SOIU ( $r = -.261, p = .025$ ). A moderate correlation was found between RMES-P and the MoSIEC Factor 2 - Commitment ( $r = .389, p = .001$ ) and a moderate negative correlation was found between RMES-P and MoSIEC Factor 4 – SOIU ( $r = -.295, p = .013$ ). Moderate positive correlations were found between RTES and the MoSIEC Factor 2 - Commitment ( $r = .365, p = .003$ ) and MoSIEC Factor 3 -

Synthesis ( $r = .230, p = .043$ ). Finally, a moderately strong correlation was found between MoSIEC Factor 2 - Commitment and MoSIEC Factor 3 -Synthesis ( $r = .546, p < .001$ ).

Table 5

*Means, Standard Deviations, and Correlations of Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
ROEQ	3.86	.62	.171	.059	.086	.390**	.223*	.189	-.035
Predictor Variable									
1. RSES	81.78	8.46	--	.406**	.450	-.202	.233*	.165	-.261*
2. RMES-P	3.80	1.01		--	.800**	-.184	.389**	.147	-.295*
3. RTES	3.73	0.65			--	-.175	.365*	.230*	-.137
4. MoSIEC 1	3.91	1.09				--	.084	.196	.061
5. MoSIEC 2	4.97	0.69					--	.546	-.191
6. MoSIEC 3	4.82	0.79						--	-.075
7. MoSIEC 4	3.01	0.55							--

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

Predictor variables in the multiple regression analysis were entered into SPSS in the following order: RSES; RMES – P; RTES; MoSIEC Factors 1, 2, and 3 (Exploration, Commitment, Synthesis); and MoSIEC– Factor 4 (Sexual Identity Exploration Uncertainty). MoSIEC factors were entered in this order because while the first three factors represent a process of exploration and positive development of sexual identity, the last factor more so measures identity foreclosure. In contrast to the first

three factors, MoSIEC -4 measures uncertainty about sexual identity, sexual values, and exploration. In steps 1, 2, 3, and 5, variables were added one at a time at each step of the multiple regression. In step 4, MoSIEC Factors 1, 2, and 3 were added in the same step.

Table 6

*Hierarchical Regression Table*

Variable	<i>B</i>	<i>SEB</i>	$\beta$	<i>Adj R</i> <sup>2</sup>
Step 1				.012
RSES	.013	.010	.171	
Step 2				-.007
RMES-P	-.008	.091	-.013	
Step 3				-.025
RTES	.047	.222	.049	
Step 4				.142*
MoSIEC 1	.251	.078	.424	
MoSIEC 2	.129	.145	.142	
MoSIEC 3	-.008	.119	-.011	
Step 5				.125
MoSIEC 4	.027	.155	.024	

Within the regression model, the fourth step was significant ( $F=2.543, p = .032$ ) and accounted for 14.2 % of the explained variance ( $R^2$  adjusted = .142; see Table 6).

Within this model only, the MoSIEC Factor 1 – Exploration ( $t = 3.218, p = .036$ ) significantly accounted for variance.

Table 7

*ANOVA: MoSIEC Factors 1, 2, and 3 Entered in a Single Step*

Step		Sum of Squares	<i>df</i>	Mean Square	F	Sig.
1	Regression	.643	1	.643	1.655	.204
	Residual	21.366	55	.388		
	Total	22.009	56			
2	Regression	.646	2	.323	.816	.447
	Residual	21.363	54	.396		
	Total	22.009	56			
3	Regression	.664	3	.221	.550	.651
	Residual	21.345	53	.403		
	Total	22.009	56			
4	Regression	5.146	6	.858	2.543	.032
	Residual	16.863	50	.337		
	Total	22.009	56			
5	Regression	5.157	7	.737	2.142	.056
	Residual	16.825	49	.334		
	Total	22.009	56			

To further test the first hypothesis, a second hierarchical multiple regression was run in which each of the four MoSIEC factors was entered separately into the model. Variables were entered in the following order: RSES, RMES-P, RTES, MoSIEC – Exploration, MoSIEC – Commitment, MoSIEC Synthesis, and finally MoSIEC Sexual Orientation Identity Uncertainty. Results are summarized in the regression table (Table 8) and the ANOVA table (Table 9).

Table 8

*Hierarchical Regression Table*

Variable	<i>B</i>	<i>SEB</i>	$\beta$	<i>Adj R</i> <sup>2</sup>
Step 1				.012
RSES	.013	.010	.171	
Step 2				-.007
RMES-P	-.008	.091	-.013	
Step 3				-.025
RTES	.047	.222	.049	
Step 4				.159*
MoSIEC 1	.264	.074	.446	
Step 5				.159*
MoSIEC 2	.124	.124	.137	
Step 6				.142*
MoSIEC 3	-.008	.119	-.011	
Step 7				.146*
MoSIEC 4	-.216	.192	-.165	

The ANOVA table (Table 9) shows that when entered separately, three significant models are found. Model 4 ( $F = 3.638, p = .011$ ) adds the MoSIEC Exploration factor, model 5 ( $F = 3.112, p = .016$ ) adds the MoSIEC Commitment factor, and model 6 ( $F = 2.543, p = .032$ ) includes the MoSIEC Synthesis factor. Models 4 and 5 account for 15.9 % of the variance (Adjusted  $R^2 = .159$ ) while model 6 accounts for 14.2 % of the variance (Adjusted  $R^2 = .142$ ). However, the coefficients

table shows that in each of these models, it is only the Exploration factor of the MoSIEC, added in model four, that accounts for a significant amount of variance (model 4:  $t = 3.542$ ,  $p = .001$ ; model 5:  $t = 3.293$ ,  $p = .002$ ; model 6:  $t = 3.218$ ,  $p = .002$ ).

Table 9

*ANOVA: MoSIEC Factors Entered in Separate Models*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.643	1	.643	1.655	.204
	Residual	21.366	55	.388		
	Total	22.009	56			
2	Regression	.646	2	.323	.816	.447
	Residual	21.363	54	.396		
	Total	22.009	56			
3	Regression	.664	3	.221	.550	.651
	Residual	21.345	53	.403		
	Total	22.009	56			
4	Regression	4.812	4	1.203	3.638	.011
	Residual	17.197	52	.331		
	Total	22.009	56			
5	Regression	5.145	5	1.029	3.112	.016
	Residual	16.864	51	.331		
	Total	22.009	56			
6	Regression	5.146	7	.858	2.543	.032
	Residual	16.863	50	.337		
	Total	22.009	56			
7	Regression	5.157	7	.737	2.142	.056
	Residual	16.852	49	.334		
	Total	22.009	56			

The results of these two multiple regressions partially support the first hypothesis. MoSIEC Factor 1 – Exploration made the most significant contribution to explaining the variance in the significant models. However, the commitment factor did not significantly contribute to a regression model and significance of the models decreased once other factors were added.

**RSES Revision.** In reviewing the Research Self-Efficacy Scale, a few items stood out as potentially confounding the results. Excluding three of the original items created a revised RSES (RSES-R). The three excluded items related to skills that are (a) assumed characteristics of doctoral students (ability to use a computer for word processing:  $M = 94.81$ ,  $SD = 8.694$ ), (b) outdated research skills (conducting a manual search for articles in a library:  $M = 83.02$ ,  $SD = 20.714$ ) or (c) research skills that would not be needed by graduate students (writing a computer program to analyze data:  $M = 26.78$ ,  $SD = 27.555$ ). Means for the first two items were very high, with possible ceiling effects, while the mean for the third item was very low.

Aside from RSES38, which had a very low mean, the mean response of the other two items is similar to the range of means of other RSES items (71.45 - 94.81). Despite similar mean responses to items, the relevance of each item justifies exclusion to create a revised RSES. Development of the RSES spanned from the late 1980s through the mid 1990s. The behaviors that comprise the research process have changed since that time due to increased computer knowledge and skill. Further, electronic distribution of journals has become increasingly common, resulting in decreased need for skills such as onsite, library-based research. Ironically, the item with the lowest mean (RSES38:  $M = 26.78$ ,  $SD = 27.555$ ) is likely so low due to the relatively wide

availability of computer programs for data analysis that decreases the need for students to create their own data analysis programs. With the three items removed, the reliability of the updated measure was no different from the original RSES. Cronbach's Alpha (.961) remained the same as in the original RSES as reported by Bieschke, Bishop, and Garcia (1996).

A second set of hierarchical multiple regressions were run. They were exactly the same as the first set except they each used the RSES-R instead of the RSES. In the first multiple regression, five predictor variables were entered into a multiple regression to predict ROEQ. Predictor variables were entered in the following order: RSES – modified; RMES – P; MoSIEC factors One, Two, and Three (Exploration, Commitment, Synthesis); and MoSIEC- Factor Four (Sexual Identity Orientation Uncertainty). Bivariate correlations of predictor and outcome variables are found in the Correlation Matrix table in Appendix I. Significant correlations were found between ROEQ and MoSIEC Factor 1 ( $r = .390$ ) and MoSIEC Factor 2 ( $r = .223$ ).

The changes in strength of correlations between variables and the RSES-R and RSES were minimal. Indeed, with one exception, the strength of correlations decreased. There were no differences in which correlations were significant.

The ANOVA table (see Appendix J) shows that only the fourth model ( $F=2.490$   $p = .035$ ) was significant. The coefficients table showed that in the fourth model, only MoSIEC Factor 1 (Exploration;  $t=3.191$ ,  $p = .002$ ) significantly contributed to the explained variance. This model accounted for 13.8 % of the variance (adjusted  $R^2 = .138$ ).

A final hierarchical multiple regression was run in which RSES-R was entered into the first model, RMES-psychosocial was added into the second model, RTES was added to the third model, MoSIEC Factor 1 - Exploration was added to the fourth model, MoSIEC Factor 2 - Commitment was added to the fifth model, MoSIEC Factor 3 - Synthesis was added to the sixth model, and MoSIEC Factor 4 - SOIU was added to the seventh and final model.

The ANOVA table (See Appendix K) shows that when entered separately, three significant models are found. Model 4 ( $F = 3.233, p = .013$ ) adds the MoSIEC Factor 1 - Exploration, model 5 ( $F = 2.834, p = .019$ ) adds the MoSIEC Factor 2 - Commitment, and model 6 ( $F = 2.386, p = .035$ ) includes the MoSIEC Factor 3 - Synthesis. In model 4, 16.6 % of the variance in ROEQ is accounted for (adjusted  $R^2 = .166$ ). In model 5, 16.4 % of the variance of ROEQ is accounted for (adjusted  $R^2 = .164$ ) and in model 6, 14.8 % of the variance of ROEQ is accounted for (adjusted  $R^2 = .148$ ). However, the coefficients table shows that in each of these models, it is only the MoSIEC Factor 1 - Exploration that accounts for a significant amount of variance (model 4:  $t = 3.736, p < .001$ ; model 5:  $t = 3.477, p < .001$ ; model 6:  $t = 3.409, p < .001$ ). Therefore, after removing three arguably obsolete items, the models including a revised RSES increased the variance in ROEQ from 15.9 % to 16.6 %.

### **Hypothesis 2.**

An independent samples t-test was run to address the second hypothesis: that participants who identify as lesbian, gay, or bisexual (LGB) would score higher than heterosexual participants on the psychosocial factor of the Research Mentorship Experiences scale. A dichotomous variable representing sexual orientation was used

with LGB ( $n = 40$ ) people coded as 1 and heterosexual people ( $n = 19$ ) coded as 2. Levene's Test for Equality of Variances was not significant ( $F = .030, p = .862$ ) meaning that the assumption of equal variances was met. The t-test for Equality of Means was not significant ( $t = .439, p = .662$ ), meaning that there were no significant differences between the means of the heterosexual and the non-heterosexual samples.

### **Post-hoc Analyses**

Post hoc analyses were conducted to explore the relationships among groupings within the same that were not hypothesized prior to data analysis.

### **Independent Samples T-tests and Non-Parametric Statistics**

Four dichotomous variables were coded to assess for differences in mean scores of ROEQ between groups. The four new variables represented specific categories: type of training program (clinical psychology and counseling psychology), sexual orientation (heterosexual and non-heterosexual), successful completion of comprehensive exams (those who had those who had not completed comprehensive exams), and research productivity (those who had demonstrated research productivity and those who had not). Each category was changed into a discrete, dichotomous variable and coded either "1" or "2" so that participants could be grouped into one category or the other. For evenly divided groups (clinical and counseling psychology students, comprehensive exams) independent samples t-tests were conducted to assess for significant differences on ROEQ. For groups with uneven distributions, Mann-Whitney u-tests were run to assess difference on ROEQ mean scores between heterosexual and non-heterosexual participants, and students who had actively produced research or students who had not produced research.

There were no significant differences ( $p = .868$ ) in mean ROEQ scores between heterosexual ( $n = 19$ ) and non-heterosexual participants ( $n = 40$ ). The non-parametric Mann-Whitney u-test was used to

Clinical psychology ( $n = 24$ ) and counseling psychology ( $n = 33$ ) students were grouped into categories and a dichotomous variable was created in order to test differences in means on ROEQ scores between these two groups. Again, no significance was found in Levene's Test for Equality of Variances ( $F = 1.786, p = .187$ ), meaning that the assumption of equality of variances had been met. The t-test for Equality of Means was also not significant ( $t = .855, p = .397$ ) meaning that there were no significant mean differences between clinical and counseling psychology students on ROEQ scores.

A dichotomous variable was used to test differences in means on ROEQ for participants who had passed comprehensive exams ( $n = 28$ ) and students who had not passed comprehensive exams ( $n = 23$ ). Eight participants were excluded from analysis due to not reporting their status on comprehensive exams. Again, no significance was found in Levene's Test for Equality of Variances ( $F = 3.306, p = .75$ ), meaning that the assumption of equality of variances had been met. The t-test for Equality of Means was significant ( $t = -2.368, p = .022$ ) meaning that the mean ROEQ scores differed significantly between participants who had passed comprehensive exams and those who had not. Surprisingly, students who had not yet passed comprehensive exams obtained higher ROEQ mean scores ( $M = 3.73, SD = .644$ ) than students who had passed comprehensive exams ( $M = 4.09, SD = .408$ ).

Participants were divided into two groups based on LGBT-research productivity. Productivity scores were computed for each participant. Participants were asked to indicate the number of publications and presentations related to LGBT issues that they had authored. They were asked the number of first, second, or third (and beyond) authorships that they hold for national conference presentations, regional conference presentations, peer-reviewed journal articles, book chapters, manuscript reviewers, and newsletter articles. Research productivity scores were calculated for each participant using the formula documented in the University of North Dakota Department of Counseling Psychology and Community Services Annual Merit Point Documentation chart. Although this system is used for faculty, it was applied in this study due to being unable to find a similar rubric for doctoral students in clinical and counseling psychology. In this merit system, each demonstrated scholarly activity received points based on the professional impact of the publication or presentation as well as based on the authorship credit. For example, poster presentations at national conferences were awarded 4 points and poster presentations at regional conferences were awarded 3 points. First authors received 100 % of authorship points, second authors received 50 % of authorship points, and third authors received 33 % of authorship points. A total score was calculated for each participant. Productivity scores ranged from 0 to 340 ( $M = 39.82$ ,  $SD = 64.25$ ). Sixteen participants reported not having any research productivity. Fifty percent of participants scored 18.65 or below and 75 % scored 44.82 or below. The upper 25 % of participants scored between 52 and 340.

Students were placed into one group if they had published research or presented research at a national or local conference ( $n = 43$ ). Students who had not either

published or presented research were placed into a second group ( $n = 16$ ). The non-parametric Mann-Whitney u-test showed no significant differences between median scores ( $p = .710$ )

### **Analysis of Variance**

To further assess group differences, analyses of variance (ANOVA) were run for each of the following groups: (a) clinical and counseling psychology students, (b) heterosexual and LGB participants, (c) participants who had passed comprehensive exams and those who had not, and (d) participants who had demonstrated research productivity and those who had not, on Research Self-Efficacy Scale, Research Outcome Expectations Questionnaire, Research Mentoring Experiences – Psychosocial Factor, Research Training Environment Scale, MoSIEC Factor 1 – Exploration, MoSIEC Factor 2 – Commitment, MoSIEC Factor 3 – Synthesis, and MoSIEC Factor 4 – SOIU.

Between groups of students who had demonstrated research productivity and those who had not, an ANOVA indicated that there are significant differences between students who had demonstrated research productivity on MoSIEC 2 (Commitment) ( $F = 4.944, p = .030$ ), MoSIEC 3 (Synthesis) ( $F = 4.655, p = .035$ ), and MoSIEC 4 (Sexual Identity Orientation Uncertainty) ( $F = 4.208, p = .045$ ). Students who demonstrated LGBT-research productivity scored significantly lower on MoSIEC Factors 2, 3, and 4 than did students who demonstrated LGBT-research productivity. Significant differences were also found for RTES ( $F = 8.783, p = .004$ ) with who had not demonstrated LGBT-research productivity scoring higher than students who did not.

Between groups of heterosexual ( $n = 19$ ) and LGB participants ( $n = 40$ ) as well as between clinical psychology ( $n = 24$ ) and counseling psychology ( $n = 33$ ) students, an ANOVA indicated that there are no significant differences between heterosexual and LGB participants on the dependent variables.

### **Narrative Responses**

At the end of the survey participants were asked “If applicable, please discuss other formative experiences related to your research training and your own development as a researcher.” Responses from the 10 participants who provided them were analyzed by listing general themes of each response. Themes included, positive and negative experiences of mentorship, managing sexual identity in advising relationships, research interests, and secondary sources of mentoring. A more thorough discussion of responses will follow in the next chapter.

## **Chapter IV**

### **Discussion**

The purpose of this study was to examine factors that were hypothesized to influence student researcher development among clinical and counseling psychology students whose research focuses on lesbian, gay, bisexual, and transgender (LGBT) populations. Secondly, this project aimed to fill a gap by looking specifically at researcher development in students who focus their empirical work on one specific multicultural population. Further, attention to LGBT issues in psychology journals has increased over the past decade (Smith, 2010). Published research on LGBT populations in the top counseling psychology journals increased between the years 1990-2000 and has further increased in the following decade (Smith, 2010). Although the increase is small, the growth in publication of articles dedicated to LGBT issues suggests similar growth in inclusion of LGBT issues in clinical and counseling psychology curricula in doctoral training programs. However, because little is known about the specific needs of students conducting LGBT research, it is possible to unintentionally ignore specific training and mentorship needs related to personal identity and professional development. This knowledge gap is relevant because the fields of clinical psychology and counseling psychology (a) emphasize some balance of research and practice within training and professional identity, and (b) because multiculturalism is a competency

that is infused within all applied psychology training (Fouad et al., 2009; Overholser, 2012).

This study contributes to the literature looking at researcher development through conjoint lenses of sexual identity development and social cognitive theory. A regression model is tested in which a developmental variable, the Measure of Sexual Identity Exploration and Commitment (MoSIEC), significantly accounts for variance on the social cognitive measure, the Research Outcome Expectations Questionnaire (ROEQ). Further, this study builds upon theories of researcher development (e.g., Research Training Environment) by positing that researchers who study specific populations may have unique developmental needs. Finally, this work asks the multicultural question: do students conducting research with LGBT populations have unique training needs? Broadly, this work pursues a line of research into the development of students who chose to focus their research on particular cultural identity groups, an area of study that is vastly under-researched.

While social cognitive constructs such as research outcome expectations (ROE) and research self-efficacy (RSE) have been applied to explore researcher development (Bishop & Bieschke, 2008) other factors have also been shown to impact researcher development. For example, research training environment (RTE: Gelso, Mallinckrodt, & Judge, 1996) and research mentorship experiences (RME: Hollingsworth & Fassinger, 2002) may contribute to research outcome expectations. Further, for students whose research focuses intentionally on sexual and gender minority populations, the sexual and gender identities of the student researchers may play a role in their developing professional identities (Bieschke, Eberz, Bard, & Croteau, 1998; Lark &

Croteau, 1998). Indeed, personal identity may influence the roles of factors such as research mentorship and research training as students may be managing the impact of their own identities on their research work and may benefit from mentorship and training that recognizes the psychosocial impact of personal identity on professional training (Bieschke, Eberz, Bard, & Croteau, 1997; Lark & Croteau, 1998). In fields that emphasize research values such as empiricism and experimental observation, developing student-researchers may need different types of mentorship than students whose research focuses on populations with whom they have less of a personal connection. Another unique contribution of this project is the use of the Measure of Sexual Identity Exploration and Commitment (MoSIEC) to understand the ways in which levels of sexual exploration contribute to the ROE of this sample. The MoSIEC is a useful measure because it examines the sexual identity exploration and commitment of a sample regardless of particular sexual orientation. It makes the assumption that sexual identity exploration and commitment are useful constructs to explore among LGB as well as heterosexual populations. Indeed, one contribution of this study is to report comparisons between heterosexual and LGB student researchers whose research area is with LGBT populations.

Two major hypotheses were made prior to data analysis. The first was that in a regression model comprised of social cognitive variables such as Research Self-Efficacy, Research Training Environment, and Research Mentoring Experiences, the Exploration and Commitment Factors of the Measure of Sexual Identity Exploration and Commitment would contribute significantly to variance on Research Outcome Expectations. The second hypothesis was that participants who identified as lesbian,

gay, or bisexual (LGB) would have higher mean scores than heterosexual participants on the Psychosocial Factor of the Research Mentoring Experiences Scale.

### **Correlations**

The correlation table (Chapter 3, Table 5) sheds light on interpreting results. In this section I will discuss some of the most notable correlations and patterns.

Prominently, the highest correlation with Research Outcome Expectations Questionnaire (ROEQ) is the Exploration Factor of the Measure of Sexual Identity Exploration and Commitment (MoSIEC). This correlation may be explained by the fact that items that make up these two variables share a future orientation. While the content that they measure is quite dissimilar, both measures emphasize a movement toward something. . Although it is beyond the scope of this study, one way to test this hypothesis would be to administer a NEO-PI-3 (Costa & McCrae, 1992) to participants and to look at their scores on the Openness domain. Indeed, openness about self and about social identity is required to honestly explore sexual identity. The ROEQ emphasizes the benefits of doing research while the MoSIEC emphasizes a positive attitude toward exploring sexuality.

Although correlations between ROEQ and other social cognitive measures were negligible to weak, stronger correlations were found among other social cognitive measures. In this section I will comment on both the correlations that I found as well as correlations that I would have expected to find but did not. Most notable correlation results were indeed the absence of stronger or significant correlations between ROEQ and other social cognitive variables. Among the social cognitive variables, ROEQ was most strongly correlated with RSES and this correlation ( $r = .171, p = .102$ ) can best be

described as weak. While self-efficacy and outcome expectations are distinct constructs, it is also expected that positive beliefs about one's self-efficacy in research-related tasks would result in increased beliefs about the outcomes of conducting research (Bieschke, 2000; 2006). However, with this sample, that was not the case. Four possible explanations come up. The first two are related to the sample, the third is related to the measures, and the fourth is related to the interaction between the sample and the measures. The sample-related explanations would be that (a) there is something about being a clinical or counseling psychology student conducting research with LGBT populations that would decrease an expected correlation between RSES and ROEQ, or (b) the small sample size limits the correlation. The measure-related explanation is that while items on both ROEQ and RSES measure their respective constructs accurately, despite the shared theoretical background and having the same author, the measures lack convergent validity. The final explanation is that while these measures both have strong content validity, items lack specificity related to research self-efficacy for working with LGBT populations and ROEQ for working with LGBT populations.

A very strong, positive correlation ( $r = .800$ ) between RMES-P and RTES is not surprising as mentoring is an important part of researcher training. Although they are not named as an independently functioning factor, it is arguable that 13 of the 54 items that make up the RTES are related to mentorship, explaining why these two constructs are so highly correlated. The potential for multicollinearity may be a limitation of the study as with such potential overlap, each measure may account for common variance in ROEQ.

Correlations between Research Self-Efficacy and other variables provide unique results. The moderate (.406), significant correlation between RSES and RMES-P is not surprising. It is a logical conclusion that mentoring would increase self-efficacy. This result highlights the importance of mentoring in building research self-efficacy. However, the correlation between RSES and MoSIEC - Exploration is surprising. RSES has a small, negative correlation with MoSIEC – Exploration. Exploration may suggest a degree of openness and uncertainty in identity that negatively correlates with the self-knowledge and certainty in research skills that are measured by RSES.

The MoSIEC – Exploration factor explains the most variance in research outcome expectations in the multiple regressions that were run. Interestingly, although it has a moderate, significant (.390) correlation with ROEQ, correlations with other social cognitive variables are negative. In other words, items related to exploration of sexual identity are negatively correlated with items related to research self-efficacy (-.202), research training (-.157), and research mentoring (-.184). While the correlations are not significant, their negative direction is noteworthy, especially in comparison to the positive, significant correlation with the social cognitive outcome variable, ROEQ (.390). These correlations provide a partial explanation of the comparison between the roles of social cognitive variables and MoSIEC – Exploration in accounting for ROEQ variance in the multiple regression.

A possible explanation for the negative correlations between MoSIEC Factor 1– Exploration and RTES and RMES-P is the self-focus of the MoSIEC-1 and the relational focus of RTES and RMES-P. So whereas the MoSIEC Factor 1 – Exploration factor looks solely at personal exploration of sexual needs and values, RTES and

RMES-P assess the relationships between individuals and mentors, or between individuals and their training environments. Indeed, if this difference did account for the negative correlations, it would similarly explain the positive correlation with ROEQ – another scale that focuses on the characteristics of the self.

The Commitment Factor of the MoSIEC is unique in that it is significantly correlated with all of the social cognitive variables. Items that make up this factor of MoSIEC all express a confidence in one's self-knowledge surrounding sexual knowledge, sexual values, and sexual needs. Higher scores on this factor suggest that participants have thought about their sexual identities and taken their own values and needs into consideration. It could be argued that this MoSIEC factor could be renamed "Sexual Identity Self-Efficacy" as items that comprise this factor (e.g., "I have a firm sense of what my sexual needs are," and "I have a clear sense of the types of sexual activities I prefer") all relate to a positive sense of one's ability to or history of considering sexual identity. A high score on this factor requires that participants have gone through the process of exploration. Indeed, social cognitive theory posits that self-efficacy is created, in part, through past experiences.

The low correlations between ROEQ and other social cognitive variables lead to questioning the use of ROEQ as an outcome variable. Indeed, as Betz (2000) notes, social cognitive variables such as self-efficacy are linked by definition to specific behaviors. Therefore, given that the population of interest in this study is psychology students with LGBT research interests, a measure of research outcome expectations specifically for research with LGBT populations might result in a more accurate description of research outcome expectations for individuals conducting such research.

The same could be said for research self-efficacy – a construct that is most accurately measured when behaviorally defined. While there is no reason to believe that RSES lacks external validity, or that it would not measure research self-efficacy for this sample, a scale that measures research self-efficacy for students working with LGBT populations might lead to different or more accurate results. Further critique of the ROEQ is found below.

### **Hypothesis 1**

A hierarchical multiple regression was used to test the first hypothesis: that the MoSIEC Factor 1 – Exploration and MoSIEC Factor 2 – Commitment would account for more ROEQ variance than social cognitive variables including research training environment, research self-efficacy, and the Psychosocial Factor of the Research Mentoring Experiences Scale. The partial support for this hypothesis brings up several salient questions. The significance of MoSIEC Factor 1 – Exploration in accounting for variance in all regression models that include this factor suggests, on the surface, that MoSIEC Factor 1– Exploration better predicts ROEQ than (a) social cognitive variables, or (b) other MoSIEC factors. Certainly using this sample, both of those statements are true. Further discussion of the appropriateness of ROEQ as the major outcome measure will be addressed in the limitations section of this chapter.

Regardless of limitations, the fact that MoSIEC Factor 1 – Exploration accounts for variance significantly beyond that accounted for by social cognitive variables is noteworthy. Indeed the noteworthiness is that in this particular sample of clinical and counseling psychology students studying LGBT populations, a factor related to exploration of sexual identity better predicts Research Outcome Expectations than do

social cognitive variables. The unanswered question about this relationship is whether it is the content of MoSIEC Factor 1– Exploration that accounts for ROEQ variance or if both of these variables predict another personality trait (e.g., openness).

Indeed MoSIEC Factor 1 – Exploration is thematically linked to self-discovery. Higher scores on this factor suggest a stage of sexual identity development marked by inquisitiveness. People with this attitude towards self-exploration may also be curious about other forms of discovery and leading an increased interest in research and higher scores on ROES. Given that interest in research fluctuates during graduate training, it may be important to assess and capitalize on times when students are most interested in discovery and research. Consistent with Schachter and Rich’s (2011) model of Identity Education, such assessment and encouragement may include discussions and about identity and mentoring around how identity impacts training as a researcher.

Hypothesis 1 was only partially supported as it was predicted that MoSIEC Factor 2 – Commitment would also significantly account for variance in ROEQ. The structure of the MoSIEC Factor 2 – Commitment and ROEQ are different. Items on the ROEQ all relate to participants beliefs about future outcomes of conducting research. In contrast, items that comprise the MoSIEC – Commitment Factor all reflect established self-knowledge. This explanation follows the previous suggestion that a personal characteristic such as openness is common to research outcome expectations and sexual identity exploration, but not to sexual identity commitment.

## **Hypothesis 2**

The second hypothesis was that LGB participants would score higher than heterosexual participants on the RMES-P scale. The idea that informed the hypothesis

was that students of an oppressed sexual identity who did research with populations who held the same identity would likely need more mentoring as they developed as researchers. Further, authors have posited unique training needs for LGBT students (Lark & Croteau, 1998). However, without a significant difference in mean RMES-P scores, I failed to reject the null hypothesis. This issue might be better addressed in several steps. First, a qualitative exploration of the research mentorship needs of LGBT students could provide useful data about the types of mentorship that would benefit LGBT students. A separate follow-up study could assess the research mentorship needs of heterosexual students doing LGBT-research. Following that step, quantitative analyses could be used to measure differences between how LGBT and heterosexual students utilized mentorship that meets the needs of students focusing on LGBT research.

It is also worthwhile to highlight that while I hypothesized a positive relationship between LGB students conducting research with LGB populations and higher RMES-P scores, my intention is not to minimize the mentoring needs of heterosexual students working with LGB populations. Indeed the amount of mentoring needed by LGB and heterosexual students conducting LGB research may be quite similar although the content of that mentoring may be difference. For example, while both heterosexual LGB students may need mentoring around identity management, that mentorship may look very different for LGB and heterosexual students. For example, LGB students might need to process research experiences such as coming out to research participants and exploring feelings related to other professionals making assumptions about their sexual orientation. Heterosexual students might need

mentoring on how to manage the loss of assumed heterosexuality and negotiating their privileged sexual identity while working with oppressed social groups.

Just as LGB and heterosexual students may have different mentoring needs, the sexual orientations of mentors may impact the mentoring relationship. Because sexual identity develops over time, it is possible that a gay male student has done more work on exploring and developing sexual identity than a gay male professor. Indeed it cannot be assumed that a mentor that identifies as LGB has negotiated all of the challenges of being an LGB researcher producing LGB-research. In a field that is just beginning to recognize the needs of transgender people, both transgender and cisgender students are likely to need mentoring around managing gender identity in professional spheres.

When considering the content of mentoring students with different sexual identities, it is important to consider proximal influences. As Bieschke et al. (1998) suggested, critical moments (proximal influences) provide unique mentoring opportunities in which a mentor can affirm an LGB identity. This would contrast with a moment in which a mentor is dismissive of the impact of how a student experiences their sexual orientation in a professional setting. For example, a student considering doing research with a group of LGBT people who is told that their work might have limited potential for publication might perceive an undercurrent of heterosexism in the suggestion that LGBT work has limited avenue for dissemination, and decide against continuing to do research.

### **Post-hoc Analyses**

Interestingly, although I found significant mean differences on ROEQ between students who had passed their comprehensive exams and those who had not, mean

ROEQ scores were significantly *higher* for those students who had not yet passed comps. This is a surprising finding as one would expect increased that students with more education would have higher research outcome expectations.

Since its inception, critics of the scientist-practitioner model of training point to the fact that the interests of a majority of doctoral psychology students are more interested in clinical practice than in research. In fact, Leong and Zachar (1993) found that interest in science and interest in practice are distinct and measurable characteristics. My own finding suggests that as students near completion of their academic programs, they are less likely to view the outcomes of doing research as positive or rewarding. In contrast, students who have not yet completed comprehensive exams may (a) be more excited about the potential for completing research, or (b) be more likely to identify the positive aspects of completing research as they have no choice but to work on research for however many years they are students.

Another post-hoc analysis showed no significant differences in ROEQ for students who had demonstrated LGBT-related research productivity. This somewhat surprising finding could have several explanations. The first relates to the ROEQ. A full critique of ROEQ is found below. Another possible explanation is that the items which assessed research productivity asked specifically about publication and presentation of LGBT-related research. For students whose research lines are specifically related to LGBT issues, it is possible that they have demonstrated research productivity in other topic areas beyond LGBT issues, as it is common for graduate students to be involved in a range of research projects. This would help to explain why whereas in this sample, participants produced an average of 3.6 presentations, .25 book

chapters, and 1.3 manuscripts, Cassin, Singer, Dobson, and Altmaier (2007) found that clinical and counseling psychology Ph.D. students in their first through sixth years of doctoral training ( $N = 498$ ) were more prolific, producing an average of 7.4 presentations, .5 book chapters, and 1.7 manuscripts.

It is also worthwhile to note that scholars have noted similar surprise to find that higher levels of research productivity do not predict higher research self-efficacy (Love, Bahner, Jones, & Nilsson, 2007). They demonstrate precedent that that an outcome such as productivity does not necessarily predict expected results on social cognitive measures.

The lack of significant differences between clinical and counseling psychology students on ROES is also noteworthy. Although differences between these two fields are often alluded to, in this study, there were no differences found in ROES. This suggests that clinical and counseling psychology students may share similar beliefs about the impact of conducting research. Indeed this implies that clinical and counseling psychology departments have equal opportunities to mentor their students as developing researchers.

### **Narrative Responses**

At the end of the survey, respondents were asked “If applicable, please discuss other formative experiences related to your research training and your own development as a researcher.” A total of 10 respondents wrote narrative responses about their training as researchers. Respondents commented on the following topics: (a) positive and negative mentoring experiences had influenced researcher development, (b) the role of coming out to advisors, (c) research instruction and methodologies, (d)

finding mentorship outside of an academic department, (e) flexibility in choosing research line, and (f) differences in emphasis on research within training programs.

These brief qualitative responses – neither rigorously collected, nor rigorously analyzed – provide some insight into different student experiences surrounding researcher development. They are valuable because participants all share interest in conducting research with LGBT populations and also because they provide suggestions for further research. Further, they demonstrated that when about formative experiences in their training as researchers, 10 students who conduct research with LGBT populations wrote about training, mentoring, and personal sexual identity.

One participant noted that an out, lesbian advisor provided space to discuss the participant's sexual orientation and personal life. However, another participant noted that despite their advisor's active lesbian, gay, bisexual, transgender, queer, and ally (LGBTQA) research line, and despite their active role in LGBTQA life on campus, the participant never felt like they had the space to come out to this advisor. The participant noted that result has been that they have not had the mentoring relationship that they expected.

A participant noted that despite attending a program that uses a Scientist-Practitioner training model, their program focused primarily on practice. This participant noted that they needed to find an academic advisor who was equally interested in research in order to have strong research mentorship. Indeed, several respondents noted difficulties associated with research training. For example, one respondent wrote, "I have not had positive experiences related to my research training nor do I feel I have had much assistance in my development as a researcher," while

another noted that a short, summer-session research methods class “was not helpful and actually ended up adding to my resentment towards research in general, particularly when I began my dissertation process and felt as though I was taught nothing about how to manage the dissertation from start to finish.” Finally, another participant noted that while they feel confident as a qualitative researcher, their training in quantitative methods leaves them feeling “little/no” confidence.

While brief responses to a single item, analyzed without rigor hardly provide concrete information about research training, it is notable that some self-selected participants who state an interest in research may feel unprepared to conduct research. It is equally notable that participants note both personal identity characteristics as well as research mentoring experiences as having an influence on their professional development as researchers.

Results of this study, have broad implications about training doctoral students in clinical and counseling psychology programs. Clinical and counseling psychology students tend to pursue careers in practice, rather than in research (Leong & Zachar, 1991). Therefore, proponents of a scientist-practitioner training model need to consider ways to maintain student interest in research. Findings in this study, such as the significant amount of ROES variance accounted for beyond social cognitive factors by that MoSIEC Factor 1 – Exploration social, along with previously published work, suggest that sexual identity and sexual identity development likely influence researcher development. Commonly considered social cognitive variables, such as research self-efficacy and research outcome expectations as well as how students perceive the research training environment may also be influenced by identity development

(Bieschke, Eberz, Bard & Croteau, 1998). Therefore, in efforts for training programs and mentors to maintain students orientation towards research, personal identity factors should be considered.

Further, these same results suggest that while social cognitive constructs may provide a strong foundation for researcher development, they may not be sufficient. Indeed, researcher's personal identities may be just as important to consider when mentoring and training clinical and counseling psychology students in research.

### **Limitations**

Unexpectedly, the correlation between research outcome expectations and research self-efficacy was not significant ( $r = .171$ ). Both of these constructs have been shown to be strongly correlated to a particular outcome. In this case, the outcome would be research productivity. Based on theoretical social cognitive constructs it would also be expected that outcome expectations and self-efficacy would also be correlated (Bandura, 1977; Lent, Brown, & Hackett, 1994). However, in this study they were not. Not finding a significant correlation suggests several possibilities, including (a) the sample was too small or (b) the sample had characteristics unlike the general population or (c) that the measures do not address the construct with enough specificity. Arguments can be made for all cases. The sample ( $N = 59$ ) is indeed too small to expect that correlations would resemble those found in a normal population. Moreover, because the sample is comprised uniquely of clinical and counseling psychology students conducting research with LGBT populations, there is some potential that the sample would have other qualities that do not resemble the general population. For example, people who have chosen to conduct research with LGBT populations may

have personal links to LGBT communities or may have a strong commitment to social justice values. Although within social cognitive theory, self-efficacy and outcome expectations are expected to be correlated (Lent, Brown, & Hackett, 1994), it is also possible that the measures of research self-efficacy and research outcome expectations apply these social cognitive constructs in subtly different ways. As a result, the lack of significant results could suggest that the measures themselves should not be used conjointly.

Finally, it may be the case that although measures that were used specifically address outcome expectations and self-efficacy related to research, a measure of research with LGBT populations outcome expectations or research with LGBT populations self-efficacy would better assess the construct of interest. However, no such measure exists. Using such a measure would respond to an underlying assumption of this study – that interest in a specific line of research may be related to characteristics and outcome expectations outside of research productivity and other academic values. For students conducting research with underserved or oppressed populations, researcher development may be based more on values and emotional experiences than self-efficacy and outcome expectations. For doctoral students, who may be highly idealistic, academic appeal to values might increase research productivity.

A major limitation of this study is the small population size and the correspondingly small sample. A total of 256 Training Directors of APA-accredited clinical and counseling psychology programs were contacted, soliciting their help in distributing this survey to their students. While it is impossible to accurately guess the

population size, it is unlikely that more than one or two faculty members in any given program specialize in LGBT issues. If each faculty member supervises one or two doctoral students working with LGBT issues, the population of students working on LGBT research would range in size from 256 to 1,024 students. I would estimate that the population size is closer to 256 than 1,024. Therefore, given that 100 participants started to complete this survey, it is likely that a sizable portion of the clinical and counseling psychology students doing research with LGBT populations did begin to respond to items. This suggests that this population is motivated and invested in providing information and was motivated enough to access the survey and complete at least one part of it.

The sample size was further limited by the number of participants who did not complete the survey. A total of 100 participants started to complete the measures. Participants dropped off at an even pace throughout. Of the 100 who started the survey, 22 stopped after completing the demographic information and another 19 stopped responding to items before completing the measures. Had they completed the survey, the inclusion of those 41 participants would allow for more confident interpretation of results. However, without complete data, interpretation of results would have been faulty.

It may be useful to note that while the extensive information taken from the demographic form provided a useful and in-depth description of the sample, it required that participants work through a thorough set of questions before responding to the measures themselves. The demographics form was used to collect not only typically gathered demographic information (e.g., age, race, sexual orientation), but also

information about progress through their academic program, a number of questions used to assess research productivity, and – for LGB participants – a number of questions about their outness. The demographics form was constructed as it was in order to best describe the sample in terms of personal characteristics, educational achievement, and research accomplishment. The resulting length of the demographics form did allow for a thorough description of my sample but may have also led to participant fatigue and attrition. Although placing the demographics form after the other measures may have increased the total number of participants in the study, without the demographic information, it would have made it impossible to conduct analysis for the second hypothesis or conduct post-hoc analyses. While no participants noted frustration with the length of the survey in the qualitative space available at the end, those who may have felt bothered by the length would likely have stopped completing the measure earlier. Another piece of information, years spent in a doctoral program, was not assessed through the demographics form. This information would also have been useful for drawing stronger conclusions from the data.

Without knowing how many participants responded to the survey while on internship is another limitation. Because the capstone internship year is primarily spent doing clinical practice, it is likely to not be a time when students pursue significant amounts of research. With most of their attention spent on clinical work, internship year may be a time when students lose interest in research. This may have resulted in lower ROEQ scores for participants in this sample.

Further, the survey included an additional measure, a brief, nine-item measure of transphobia. This was included to assess that participants had positive attitudes

toward LGBT people and were likely to be conducting LGBT-affirming research. The length of the survey may have resulted in a drop off rate that limited the descriptive power of the results of this study.

Another important limitation to note is the imbalance between students in Ph.D. (82.8 %) programs and students in Psy.D. (8.6 %) programs. Despite soliciting Psy.D. students in the same way that Ph.D. students were solicited, their response rate was much lower. While conducting original research is significantly less emphasized in the vast majority of Psy.D. programs than it is in Ph.D. programs, APA accreditation requires some emphasis on scholarship in all psychology doctoral programs. Given the large number of Psy.D. students hooded annually (Norcross, 2004), their voices would be a welcome addition to this study. Further, within different types of training programs, a range of research methodologies may be taught which could distinguish between Ph.D. and Psy.D. programs. Within Psy.D. programs themselves there are numerous differences among training models (e.g., Practitioner-Scholar, Practitioner, etc: Norcross, 2004).

A measure of research productivity was created for this study. It slightly modified the research productivity scoring template used by the University of North Dakota Department of Counseling Psychology and Community Services used for faculty merit raises. Research productivity data were collected from respondents by assessing the quantity and authorship order of presentations, journal manuscripts, book chapters, newsletter articles, and book reviews related to LGBT issues completed in graduate school. While this formula does provide a structure for assessing research productivity surrounding LGBT issues, it unfortunately does not assess research

productivity per se. Given the numerous types of research activities that doctoral students engage in, their total research output may be higher than the output of research related to their primary population of interest. Therefore, this measure may confound the results related to research productivity.

A major limitation of this study was the process of choosing the research design. First proposed as a scale development project, during the proposal meeting the committee and I decided that the research questions would be best answered using Path Analysis. However, given the small sample size and the number of variables, the methodology was changed during data collection. In consultation with several committee members I chose to use multiple regressions, Independent Samples T-Tests, and ANOVA to address hypotheses and respond to the research question. While all efforts were made to preserve the rigor of the scientific process, the measures used were not chosen to address specific theoretical and statistical hypotheses.

A final limitation of this project is the measures that were used. Scales use latent variables to uncover manifest content (DeVellis, 2003). Each of the measures that used in this project contributes to a model in which each variable plays a role. However, critique of measures may be useful in considering how the population in question may respond to items. For example, the functionality of the Measure of Sexual Identity Exploration and Commitment (MoSIEC) is that it does not measure identity exploration and commitment of any particular sexual orientation. Its focus is on sexual behavior, values, and expression. However, when administered in a society that privileges (and often assumes) heterosexuality, the experience of developing and understanding a non-heterosexual identity is likely to contribute to personal

development. Therefore, a person who identifies oneself as gay, lesbian, or bisexual may experience the same processes of sexual exploration and commitment differently than someone who identifies as heterosexual because the acts being explored may have different social values. For example, a gay person from a fundamentalist Christian background who is exploring sexual needs is likely to feel differently about that exploration process than is a heterosexual person from the same background who is exploring sexual needs. Therefore, although MoSIEC quite eloquently addresses Exploration, Commitment, Synthesis, and Sexual Identity Exploration Uncertainty regardless of sexual orientation, sexual orientation contextualizes all of the processes that are addressed within the MoSIEC. Without attending to the context, some of the psychosocial experience of sexual identity development is lost.

While the ROEQ is a very useful measure of personal beliefs about the results of conducting research, such beliefs are very much related to personal advancement in career, scientific achievement, and collegiality. However, it is likely that students who chose to do research with oppressed populations have a social justice agenda. Students are also likely to be enthusiastic about the potential for research to lead to social and systemic change. In that light, it makes sense that the mean ROEQ score for this population on a scale of one to five was a moderate 3.86 ( $SD = .62$ ) as responding to items with a “3” indicates that a participant agrees with an item. However, as a response of “5” indicates strong agreement, a mean response that falls short of “4” suggests only a moderate expectations about the outcomes of conducting research, as behaviorally defined by ROEQ. It is likely that a scale that looked at research outcome expectations related to advocacy, social justice, and values would result in higher

scores for this population. It would therefore be a further contribution to create a scale that measures ROE for students doing research with multicultural groups. Higher scores on such a measure could help academic programs tailor their research training to be more consistent with student values in order to promote ongoing student interest in pursuing careers that include research. Doing so would further advance Vera and Speight's (2004) claim that counseling psychology should focus more efforts on promoting social justice. Indeed this idea further supports research such as this study because it suggests that even constructs with strong empirical support (e.g., outcome expectations, self-efficacy) may be influenced by personal identity factors. In order to provide training to researchers whose identities may influence their choice of research lines, increased emphasis on the social justice outcomes of conducting research would likely result in maintaining interest in research throughout doctoral training. Such an approach would be consistent with Whitcomb and Loewy's (2006) call for increasing LGB social justice work in counseling psychology.

### **Recommendations for Future Research**

This study clearly identifies several important topics of future research. It suggests that personal identity factors may well influence the development of researchers. Future research that identifies those pathways and explores how personal identity interacts with research interests would provide insight into how to best train multicultural researchers. Further, it suggests that for students working with LGBT populations, sexual identity development may influence research outcome expectations even more than social cognitive constructs. This finding creates an opportunity for

researchers to develop social cognitive measures that account for multicultural research interests or personal identity factors.

While scholars in the late 1990s such as Bieschke et al. (1998) and Lark and Croteau (1998) began empirical explorations of the research training needs of LGB students, no substantive body of work in this realm has been done since. However, this current study suggests that students working with LGB populations need training and mentoring. It suggests that doctoral students in clinical and counseling psychology programs whose research focuses on members of specific cultural groups may have unique training and mentoring needs.

More specifically, it would be very useful to identify outcome expectations for students conducting LGBT research and to create a research outcome expectations measure that accounts for the outcome beliefs of students committed to LGBT research. Doing so would pave the way for other useful measures. For example, it would increase the viability of creating a research self-efficacy scale based on outcome expectations for conducting LGBT research. This measure could then inform training programs about gaps in how students are being trained to conduct LGBT research. By extension, similar measures could be created to explore research outcome expectations and research self-efficacy for other diverse populations.

The gaps in research on transgender issues are formidable as is familiarity with transgender issues within academic departments (Smith, 2010). If there is utility in creating space for LGB people who conduct research with LGB populations to discuss the relationship between their sexual identities and their research areas, then there is likely a need for transgender people to also discuss any relationship between personal

gender identity and research area. Therefore, it would be beneficial to explore the training needs of clinical and counseling psychology students who identify as transgender. Some of this work could be achieved through explorations of departmental climate for transgender people, supporting recruitment and retention of transgender faculty members, and working to increase mentorship of transgender students.

### **Conclusion**

This study presents several important questions regarding the training of researchers in clinical and counseling psychology programs. It challenges educators to consider the identities of students and the populations that they study as a part of their training as researchers. Results bring up questions about the about social cognitive assessments used to explore researcher development and whether or not they have sufficient external validity to be applied to researchers doing research with LGBT people. Further, due to the increase in research with LGBT populations – and increased evidence that heterosexism and discriminatory social policy negatively impact the mental health of LGBT people (Szymanski, Kashubeck-West, & Meyer, 2008) – it is evident that empirical evidence that documents the lived experiences of LGBT people could inform both future research as well as social policy. Yet, historical trends suggest that there is an imbalance of psychologists completing training programs who continue to produce research. How then can an orientation towards research be maintained if some of the training needs of students are unintentionally overlooked, especially in contrast to the lure of a career in practice? If students are to be trained as productive researchers who produce social justice-based research, it is vital that doctoral faculty address these issues.

The qualitative responses discussed earlier in this chapter provide insight into student needs. Participants noted that factors that influence their decisions to conduct research are similar to those hypothesized to be influential in this study: research training environment, research self-efficacy, research mentoring experiences, and personal sexual orientation identity. Therefore, despite the numerous limitations stemming from a small sample size and changes in methods, the factors that were hypothesized to influence researcher development, appear to be present enough to merit future investigation.

Despite the mix of significant and non-significant findings, this study legitimizes further study in the area of training researchers with multicultural research interests, specifically LGBT-researchers. Doing so will broadly support the training efforts of programs that consider social justice and multiculturalism as important values in the training of their students. Further, considering the researcher development needs of clinical and counseling psychology students who work with LGBT populations is likely to help to continue to build a community of psychologists who are equally committed to science and practice. It will also benefit the LGBT communities who will gain the benefit of researchers with strong senses of self-awareness. Finally, through attending to the process of researcher development for doctoral students interested in working with LGBT populations, the fields of clinical and counseling psychology will be able to address gaps in theory and training unique to this small but important population.

## Appendices

## **Appendix A Consent Form**

### **Informed Consent**

**TITLE:** *Factors Impacting Clinical and Counseling Psychology Graduate Students Conducting Research with LGBT Populations*

**PROJECT DIRECTOR:** *Daniel Walinsky, MA*

**PHONE #** *215-520-1685*

**DEPARTMENT:** *Counseling Psychology & Community Services*

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate.

You are invited to be in a research study about factors that impact clinical and counseling psychology student conducting research with LGBT populations. You have been identified as participant because you are over 18 years of age, are enrolled in a doctoral level clinical or counseling psychology program and conduct research with LGBT people.

The purpose of this research study is to expand on established relationships between research mentorship, research self-efficacy, and research outcome expectations. It is expected that results will contribute to a more comprehensive theory about researcher development in doctoral level clinical and counseling psychology programs specific to students conducting research with LGBT populations.

Approximately 200 people will take part in this study which originates at the University of North Dakota and your participation in the study will last approximately 30 minutes. After consenting to participate in this study, you will be automatically linked to another website where you will be asked a set of questions. Your responses will be stored and analyzed along with responses collected from other participants. You are free to skip any questions that you would prefer not to answer.

Although the likelihood of experiencing emotional discomfort while participating in this study is minimal, if you find that you are experiencing distress, please consider seeking services at your university counseling center.

Results of this study will further understanding of researcher development in students who conduct research with LGBT populations. You will not incur any costs for participating in this research study.

You will not be paid for being in this research study. At the end of this study you will have the option of entering a drawing to win either an iPod touch or have a contribution made in your name to the charity of your choice. The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, and the University of North Dakota Institutional Review Board.

Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of keeping data on secure computer files and in locked filing cabinets. Further, consent forms and survey data will be stored separately. Data will be saved for a period of seven years at which point all data will be destroyed.

If we write a report or article about this study, we will describe the study results in a summarized manner so that you cannot be identified.

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

The researchers conducting this study are Daniel Walinsky, MA and David Whitcomb, Ph.D. If you have any questions, concerns, or complaints about the research please contact Daniel Walinsky at 215-520-1685 during the day or after hours. You may also contact David Whitcomb at 701-777-3738.

If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Checking your choice to participate or not represents your electronic signature.

I agree to participate

I do not agree to participate

**Appendix B  
Demographics Form**

1) Age

---

2) Please check your gender identity. You will also have the option of including a qualitative description of your gender identity in the next question.

- |   |                                       |   |
|---|---------------------------------------|---|
| <input type="checkbox"/> Female         | <input type="checkbox"/> Male         | <input type="checkbox"/> Female to Male   |
| <input type="checkbox"/> Male to Female | <input type="checkbox"/> Male to Male | <input type="checkbox"/> Female to Female |
| <input type="checkbox"/> Genderqueer    | <input type="checkbox"/> Transgender  | <input type="checkbox"/> Transsexual      |

3) What is your gender identity?

---

4) Number of years that I have identified with my current gender identity:

---

5) Previously I have identified with another Gender Identity

- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

6) Please check any of the following categories that describe your racial identity. If you identify with another racial group, please indicate how you identify in the following question.

- |   |  |
|---|--|
| <input type="checkbox"/> American Indian or Alaska Native | <input type="checkbox"/> Asian                                     |
| <input type="checkbox"/> Black or African American        | <input type="checkbox"/> Native Hawaiian or Other Pacific Islander |
| <input type="checkbox"/> White                            |  |

7) My racial identity is most accurately described as:

---

8) Please check one of the following categories to describe your ethnic identity. You will have the opportunity in the next question to qualitatively describe your ethnic identity.

- |   |   |
|---|---|
| <input type="checkbox"/> Hispanic or Latino | <input type="checkbox"/> Not Hispanic or Latino |
|---|---|

9) I prefer to describe my ethnicity using the term:

---

Previous Gender Identity

10) I previously identified my gender identity as:

---

11) Which of the following best describes how you identify your sexual orientation? In the next question you will have the opportunity to provide a qualitative description of your sexual orientation.

- Bisexual                       Gay                       Lesbian  
 Heterosexual                 Queer                     Asexual  
 Pansexual

12) What is your sexual orientation?

---

13) Number of years that I have identified with my current sexual orientation.

---

14) In reference to my sexual orientation, I am out to:

---

	None	A Few	Most	All
--	------	-------	------	-----

---

Family members

Friends

Students in my program

Professors

My thesis/dissertation committee

15) I am out to my academic adviser

- Yes                       No

16) Previously I have identified with another Sexual Orientation

- Yes                       No

17) I previously identified as:

---

18) Highest level of education obtained

- Bachelor's Degree                       Master's Degree  
 Doctoral Degree

19) Please check educational tasks that you have completed so far. If your program does not require a task, please check NA

	Yes	No	NA
--	-----	----	----

Completed Master's Degree  
 Passed Comprehensive Exams  
 Proposed Dissertation/Scholarly Project  
 Defended Dissertation/Scholarly Project

20) Type of degree being pursued  
 Ph.D.             Psy.D.             Ed.D.  
 MA                 MS                 Other

21) What is the training model used by your department?  
 Scientist-Practitioner             Practitioner-Scholar  
 Engaged Professional             Scholar-Practitioner  
 Practitioner                         I don't know  
 Other

22) What is the professional identity of your academic program?  
 Clinical Psychology             Counseling Psychology

23) Please check off any professional organizations that you belong to:  
 Division 44 (Society for the Study of LGBT Issues)  
 Division 12 (Clinical Psychology)  
 Division 17 Section on Lesbian Gay Bisexual and Transgender Issues  
 SSSS (Society of the Scientific Study of Sexuality)  
 AASECT (American Association of Sexuality Educators, Counselors, and Therapists)  
 APAGS (American Psychological Association of Graduate Students)  
 APA (American Psychological Association)  
 APS (Association for Psychological Science)

24) Please describe your scholarly productivity by indicating the number of completed or in press projects related to LGBT issues on which you have been a FIRST author:

	1	2	3	4	5	6	7	8	9	10	10+
--	---	---	---	---	---	---	---	---	---	----	-----

National conference presentations  
 Regional conference presentations  
 Journal manuscripts submitted  
 Book chapters submitted  
 Reviews of books or journal articles  
 Newsletter articles

25) Please describe your scholarly productivity by indicating the number of completed or in press projects related to LGBT issues on which you have been a SECOND author:

---

	1	2	3	4	5	6	7	8	9	10	10+
National conference presentations											
Regional conference presentations											
Journal manuscripts submitted											
Book chapters submitted											
Reviews of books or journal articles											
Newsletter articles											

---

26) Please describe your scholarly productivity by indicating the number of completed or in press projects related to LGBT issues on which you hold THIRD authorship or beyond.

---

	1	2	3	4	5	6	7	8	9	10	10+
National conference presentations											
Regional conference presentations											
Journal manuscripts submitted											
Book chapters submitted											
Reviews of books or journal articles											
Newsletter articles											

---

27) When I finish training, I plan to conduct research in an academic setting.

- Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Agree

28) When I finish training, I plan to conduct research in a clinical setting.

- Disagree
- Somewhat Disagree
- Neutral
- Somewhat Agree
- Agree

29) If applicable, please discuss other formative experiences related to your research training and your own development as a researcher.

## Appendix C

### Research Outcome Expectations Questionnaire

**Directions: Using the 5-point scale provided, please indicate the degree to which you agree with each statement.**

- |     | 1                        | 2 | 3            | 4 | 5                     |
|-----|--------------------------|---|--------------|---|-----------------------|
|     | <u>Strongly Disagree</u> |   | <u>Agree</u> |   | <u>Strongly Agree</u> |
| 1.  |                          |   |              |   |                       |
| 2.  |                          |   |              |   |                       |
| 3.  |                          |   |              |   |                       |
| 4.  |                          |   |              |   |                       |
| 5.  |                          |   |              |   |                       |
| 6.  |                          |   |              |   |                       |
| 7.  |                          |   |              |   |                       |
| 8.  |                          |   |              |   |                       |
| 9.  |                          |   |              |   |                       |
| 10. |                          |   |              |   |                       |
| 11. |                          |   |              |   |                       |
| 12. |                          |   |              |   |                       |
| 13. |                          |   |              |   |                       |
| 14. |                          |   |              |   |                       |
| 15. |                          |   |              |   |                       |
| 16. |                          |   |              |   |                       |
| 17. |                          |   |              |   |                       |
| 18. |                          |   |              |   |                       |
| 19. |                          |   |              |   |                       |
| 20. |                          |   |              |   |                       |

\*Items marked with an asterisk are reverse-scored.

## Appendix D Research Self-Efficacy Scale

Think about your level of confidence in your ability to perform each behavior listed and place a **number in the blank to the right** of the item indicating the degree of confidence in your ability to successfully perform that behavior. Use the following scale to make your ratings.

0      10      20      30      40      50      60      70      80      90      100

No Confidence

Moderate Confidence  
Confidence

Complete

1. How confident are you in your overall ability to complete a significant project?
2. Follow ethical principles of research.
3. Brainstorm areas in the literature to read about.
4. Conduct a computer search of the literature in a particular area.
5. Locate references by manual search.
6. Find needed articles which are not available in your library.
7. Evaluate journal articles in terms of the theoretical approach, experimental design and data analysis techniques.
8. Participate in generating collaborative research ideas.
9. Work interdependently in a research group.
10. Discuss research ideas with peers.
11. Consult senior researchers for ideas.
12. Decide when to quit searching for related research/writing.
13. Decide when to quit generating ideas based on your literature review.
14. Synthesize current literature.
15. Identify areas of needed research, based on reading the literature.
16. Develop a logical rationale for your particular research idea.
17. Generate researchable questions.
18. Organize your proposed research ideas in writing.
19. Effectively edit your writing to make it logical and succinct.
20. Present your research idea orally or in written form to an advisor or group.
21. Utilize criticism from reviews of your idea.
22. Choose an appropriate research design.
23. Choose methods of data collection.
24. Be flexible in developing alternative research strategies.

25. Choose measures of dependent and independent variables.
26. Choose appropriate data analysis techniques.
27. Choose appropriate data analysis techniques.
28. Obtain approval to pursue research (e.g., approval from Human Subject's Committee, Animal Subject's Committee, special approval for fieldwork, etc.).
29. Obtain appropriate subjects/general supplies/equipment.
30. Train assistants to collect data.
31. Perform experimental procedures.
32. Ensure data collection is reliable across trial, raters, and equipment.
33. Supervise assistants.
34. Attend to all relevant details of data collection.
35. Organize collected data for analysis.
36. Use computer software to prepare texts (word processing).
37. Use computer software to generate graphics.
38. Use a computer for data analysis.
39. Develop computer programs to analyze data.
40. Use an existing computer package to analyze data.
41. Interpret and understand statistical printouts.
42. Organize manuscript according to appropriate professional format and standards.
43. Report results in both narrative and graphic form.
44. Synthesize results with regard to current literature.
45. Identify and report limitations of study.
46. Identify implications for future research.
47. Design visual presentations (posters, slides, graphs, pictures).
48. Orally present results to your research group or department.
49. Orally present results at a regional/national meeting.
50. Defend results to a critical audience.
51. Write a manuscript for publication.
52. Please rate how confident you are in your overall ability to complete a significant research projects.

## Appendix E

### Research Training Environment Scale

Below is a series of statements concerning research training.

Please note: We define research broadly. “Research” when used in this survey includes the following types of activities: designing and executing research projects, preparing manuscripts of a theoretical nature or a critical review of literature, conducting program evaluations or needs assessments, making presentations at professional conferences, participating as a member or a research team engaged in any of the above activities, and advising the research projects of others.

Please respond to the following statements in terms of the doctoral program in which you are currently receiving your training. (Note: If you are currently on internship, please rate the graduate program in which you were previously trained.) Consider each statement using the following scale:

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>disagree</b>	<b>somewhat disagree</b>	<b>neutral</b>	<b>somewhat agree</b>	<b>agree</b>

- | <u>Rating</u> | <u>Item</u>  |
|---------------|--|
| 1.            | _____ In general, my relationship with my advisor is both intellectually stimulating and interpersonally rewarding. (If your advisor has been newly assigned or chosen, respond in terms of what you expect the relationship to be.) |
| 2.            | _____ My graduate program rarely acknowledges the scholarly achievements of the students.  |
| 3.            | _____ Many of our faculty do not seem to be very interested in doing research.   |
| 4.            | _____ The faculty does what it can do to make research requirements such as the thesis and dissertation as rewarding as possible.  |
| 5.            | _____ The faculty here only seem to notice a few selected students in terms of reinforcing scholarly achievements.   |

6. \_\_\_\_\_ My graduate program provides concrete support for graduate student research (e.g., access to computers, travel money for making presentations, research supplies, or free postage for mailing surveys).
7. \_\_\_\_\_ I feel that my advisor expects too much from my research projects
8. \_\_\_\_\_ There is informal sharing of research ideas and feelings about research ideas in my program.
9. \_\_\_\_\_ My advisor understands and accepts that any piece of research will have its methodological problems.
10. \_\_\_\_\_ Faculty members often invite graduate students to be responsible collaborators in the faculty members' own research projects.
11. \_\_\_\_\_ I was encouraged to get involved in some aspects of research early in my graduate training.
12. \_\_\_\_\_ Because of the diversity of research approaches among faculty members in my program, I would be able to find help learning about virtually any major research approach, e.g. field, laboratory, experimental, qualitative.
13. \_\_\_\_\_ In my graduate training program there are opportunities to be a part of research teams.
14. \_\_\_\_\_ I have felt encouraged during my training to find and follow my own scholarly interests.
15. \_\_\_\_\_ My training program faculty tends to produce research that is not clinically relevant.
16. \_\_\_\_\_ The research climate here is one in which students can get in touch with their own curiosity and with the research questions they themselves want to ask.
17. \_\_\_\_\_ Many different research styles (e.g., field vs. laboratory) are acceptable in my graduate program.
18. \_\_\_\_\_ The faculty members of my graduate program enjoy discussing ideas.
19. \_\_\_\_\_ Much of the research in which we become involved prior to the thesis is organized in a way that is highly anxiety provoking to students.
20. \_\_\_\_\_ Students in my program receive sound training in how to design and logically analyze research studies.
21. \_\_\_\_\_ I have gotten the impression in my graduate training that my research work has to be of great value in the field to be worth anything.

22. \_\_\_\_\_ The faculty in my graduate training program is involved in the conduct and publication of high-quality research (or theory).
23. \_\_\_\_\_ Statistics courses here are taught in a way that is insensitive to students' level of development as researchers.
24. \_\_\_\_\_ We do not receive sound training in my program on applied, practical, and less traditional approaches to research.
25. \_\_\_\_\_ The statistics courses we take do a good job, in general, of showing students how statistics are actually used in psychological research.
26. \_\_\_\_\_ There is a sense around here that being on a research team can be fun, as well as intellectually stimulating.
27. \_\_\_\_\_ Students here are encouraged to at least begin thinking about one or more topics upon which they would like to conduct programmatic research (i.e., a series of studies in which one builds upon another).
28. \_\_\_\_\_ My graduate training program has enabled me to see the relevance of research to clinical service.
29. \_\_\_\_\_ The faculty members of my graduate program encourage me to pursue the research questions in which I am interested.
30. \_\_\_\_\_ My advisor offers much encouragement to me for my research activities and accomplishments.
31. \_\_\_\_\_ Faculty members in my program use an extremely narrow range of research methodologies.
32. \_\_\_\_\_ In my research training, the focus has been on understanding the logic of research design and not just statistics.
33. \_\_\_\_\_ Some of the faculty teach students that during a phase of the research process, it is important for the researchers to "look inward" for interesting research ideas.
34. \_\_\_\_\_ Generally, students in my training program do not seem to have intellectually stimulating and interpersonally rewarding relationships with their research advisors.
35. \_\_\_\_\_ It is unusual for first-year students in this program to collaborate with advanced students or faculty on research projects.
36. \_\_\_\_\_ There seems to be a general attitude here that there is one best way to do research.

37. \_\_\_\_\_ I have the feeling, based on my training, that my thesis (or dissertation) needs to be completely original and revolutionary for it to be acceptable to the faculty.
38. \_\_\_\_\_ The faculty does not seem to value clinical experience as a source of ideas for research.
39. \_\_\_\_\_ We get high-quality training here in the use of statistics in applied research, e.g., counseling research.
40. \_\_\_\_\_ I get the impression from my training that, although a single study does not revolutionize thinking in the scientific community, such a study can contribute a useful piece to an unfolding body of knowledge.
41. \_\_\_\_\_ This training environment promotes the idea that, although parts of research must be done alone, other parts may involve working closely with other colleagues.
42. \_\_\_\_\_ Our statistics instructors are generally sensitive to students' anxieties and feelings about statistics.
43. \_\_\_\_\_ Our faculty seems interested in understanding and teaching how research can be related to counseling practice.
44. \_\_\_\_\_ Most faculty do not seem to really care if students are genuinely interested in research.
45. \_\_\_\_\_ During our coursework, graduate students are taught a wide range of research methodologies, e.g., field, laboratory, survey approaches.
46. \_\_\_\_\_ During their first year in the program, students take a research course aimed at developing research skills, interests, and confidence.
47. \_\_\_\_\_ I feel that I need to choose a research topic of interest to my advisor at the expense of my own interests.
48. \_\_\_\_\_ There is a prevalent viewpoint in my training program that research findings can be used to improve clinical practice.
49. \_\_\_\_\_ Students in our program feel that their personal research ideas are squashed during the process of collaborating with faculty members, so that the finished project no longer resembles the student's original idea.
50. \_\_\_\_\_ Students here seem to get involved in thinking about research from the moment they enter the program.
51. \_\_\_\_\_ Students in this program are rarely taught to use research findings to inform their work with clients.

52. \_\_\_\_\_ The faculty members are quite open in sharing their research with their students.
53. \_\_\_\_\_ The faculty members of my graduate program show excitement about research and scholarly activities.
54. \_\_\_\_\_ Much of the research in which we become involved prior to the thesis is intellectually challenging and stimulating.

**Appendix F**  
**Research Mentorship Experiences Scale**

Research Task Functions	IN YOUR RESEARCH RELATIONSHIP WITH A SPECIFIC FACULTY MEMBER, TO WHAT EXTENT DOES HE OR SHE PAY ATTENTION TO THE FOLLOWING:					
	A Great Deal		Some		Very Little	Not Applicable
1. discussing your research-related goals?	5	4	3	2	1	N/A
2. helping you develop research ideas?	5	4	3	2	1	N/A
3. involving you in one or more specific research projects?	5	4	3	2	1	N/A
4. exposing you to different research methods?	5	4	3	2	1	N/A
5. reminding you that flaws in research projects are inevitable?	5	4	3	2	1	N/A
6. suggesting additional resources, such as people or literature, you can consult to improve your research?	5	4	3	2	1	N/A
7. helping you organize a review of the literature?	5	4	3	2	1	N/A
8. helping you to identify weaknesses in a research project?	5	4	3	2	1	N/A
9. helping you develop a realistic timetable for research projects?	5	4	3	2	1	N/A
10. encouraging you to apply for research-related grants?	5	4	3	2	1	N/A

11. encouraging you to attend important professional conferences?	5	4	3	2	1	N/A
12. introducing you to her/his professional colleagues who have similar research interests?	5	4	3	2	1	N/A
13. encouraging you with presentations of research at professional conferences?	5	4	3	2	1	N/A
14. collaborating with you on joint research projects?	5	4	3	2	1	N/A
15. encouraging you to express your ideas in research meetings?	5	4	3	2	1	N/A
16. using his/her power to motivate you to complete research tasks?	5	4	3	2	1	N/A
17. offering positive feedback about your research work?	5	4	3	2	1	N/A
18. constructively criticizing your research work?	5	4	3	2	1	N/A
19. encouraging you to talk openly about anxieties or fears that interfere with research?	5	4	3	2	1	N/A
20. providing advice about how to manage feelings of frustration with research?	5	4	3	2	1	N/A
21. communicating interest in your ideas when you talk about research?	5	4	3	2	1	N/A
22. communicating respect regarding cultural differences in your relationship?	5	4	3	2	1	N/A
23. expressing appreciation for your contributions to research?	5	4	3	2	1	N/A
24. modeling competence in research-related skills?	5	4	3	2	1	N/A
25. observing connections between research and practice?	5	4	3	2	1	N/A

26. describing research as rewarding?	5	4	3	2	1	N/A
26. discussing his/her research dilemmas with you?	5	4	3	2	1	N/A
27. expressing enthusiasm for research?	5	4	3	2	1	N/A

---

**Appendix G**  
**Measure of Sexual Identity Exploration and Commitment**

1	2	3	4	5	6
very uncharacteristic of me					very characteristic of me

1. My sexual orientation is clear to me.

1	2	3	4	5	6
---	---	---	---	---	---

2. I went through a period in my life when I was trying to determine my sexual needs.

1	2	3	4	5	6
---	---	---	---	---	---

3. I am actively trying to learn more about my own sexual needs.

1	2	3	4	5	6
---	---	---	---	---	---

4. My sexual values are consistent with all of the other aspects of my sexuality.

1	2	3	4	5	6
---	---	---	---	---	---

5. I am open to experiment with new types of sexual activities in the future.

1	2	3	4	5	6
---	---	---	---	---	---

6. I am actively trying new ways to express myself sexually.

1	2	3	4	5	6
---	---	---	---	---	---

7. My understanding of my sexual needs coincides with my overall sense of sexual self.

1	2	3	4	5	6
---	---	---	---	---	---

8. I went through a period in my life when I was trying different forms of sexual expression.

1	2	3	4	5	6
---	---	---	---	---	---

9. My sexual values will always be open to exploration.

1	2	3	4	5	6
---	---	---	---	---	---

10. I know what my preferences are for expressing myself sexually.

1	2	3	4	5	6
---	---	---	---	---	---

11. I have a clear sense of the types of sexual activities I prefer.

1	2	3	4	5	6
---	---	---	---	---	---

12. I am actively experimenting with sexual activities that are new to me.

1	2	3	4	5	6
---	---	---	---	---	---

13. The ways I express myself sexually are consistent with all of the other aspects of my sexuality.

1	2	3	4	5	6
---	---	---	---	---	---

14. I sometimes feel uncertain about my sexual orientation.

1	2	3	4	5	6
---	---	---	---	---	---

15. I do not know how to express myself sexually.

1	2	3	4	5	6
---	---	---	---	---	---

16. I have never clearly identified what my sexual values are.

1	2	3	4	5	6
---	---	---	---	---	---

17. The sexual activities I prefer are compatible with all of the other aspects of my sexuality.

1	2	3	4	5	6
---	---	---	---	---	---

18. I have never clearly identified what my sexual needs are.

1	2	3	4	5	6
---	---	---	---	---	---

19. I can see myself trying new ways of expressing myself sexually in the future.

1	2	3	4	5	6
---	---	---	---	---	---

20. I have a firm sense of what my sexual needs are.

1	2	3	4	5	6
---	---	---	---	---	---

21. My sexual orientation is not clear to me.

1	2	3	4	5	6
---	---	---	---	---	---

22. My sexual orientation is compatible all of the other aspects of my sexuality.

1	2	3	4	5	6
---	---	---	---	---	---

## Appendix H Transphobia Scale

For each of the following items, please indicate your degree of agreement or disagreement using the following scale:

- |                                |                      |
|--------------------------------|----------------------|
| 1 = strongly disagree          | 5 = slightly agree   |
| 2 = moderately disagree        | 6 = moderately agree |
| 3 = slightly disagree          | 7 = strongly agree   |
| 4 = neither agree nor disagree |                      |

- |   | RATING |
|---|--------|
| 1. I don't like it when someone is flirting with me, and I can't tell if they are a man or a woman.   | _____  |
| 2. I think there is something wrong with a person who says that they are neither a man nor a woman.   | _____  |
| 3. I would be upset, if someone I'd known a long time revealed to me that they used to be another gender.                                       | _____  |
| 4. I avoid people on the street whose gender is unclear to me.  | _____  |
| 5. When I meet someone, it is important for me to be able to identify them as a man or a woman.   | _____  |
| 6. I believe that the male/female dichotomy is natural.   | _____  |
| 7. I am uncomfortable around people who don't conform to traditional gender roles, e.g., aggressive women or emotional men.                     | _____  |
| 8. I believe that a person can never change their gender.   | _____  |
| 9. A person's genitalia define what gender they are, e.g., a penis defines a person as being a man, a vagina defines a person as being a woman. | _____  |

**Appendix I**  
**Correlation Table Using RSES-R**

	ROEQ	RSES-R	RMES-P	RTES	MoSIEC1	MoSIEC2	MoSIEC3	MoSIEC4
ROEQ	1.000	-	-	-	-	-	-	-
RSES	.163	1.000	-	-	-	-	-	-
RMES-P	.059	.398*	1.000	-	-	-	-	-
RTES	.086	.450*	.800*	1.000	-	-	-	-
MoSIEC1	.390*	-.197	-.184	-.157	1.000	-	-	-
MoSIEC2	.223*	.222*	.398*	.365*	.084	1.000	-	-
MoSIEC3	.189	.167	.147	.230*	.196	.546*	1.000	-
MoSIEC4	-.035	.241*	-.295*	-.137	.061	-.191	-.075	1.000

**Appendix J**  
**Anova Table: 5-Step Regression Using RSES-R**

Model		Sum of Squares	<i>df</i>	Mean Square	F	Sig.
1	Regression	.586	1	.586	1.505	.225
	Residual	21.423	55	.390		
	Total	22.009	56			
2	Regression	.587	2	.294	.740	.482
	Residual	21.422	54	.397		
	Total	22.009	56			
3	Regression	.606	3	.202	.500	.684
	Residual	21.403	53	.404		
	Total	22.009	56			
4	Regression	5.063	6	.844	2.490	.035
	Residual	16.946	50	.339		
	Total	22.009	56			
5	Regression	5.069	7	.724	2.095	.062
	Residual	16.940	49	.346		
	Total	22.009	56			

**Appendix K**  
**Anova Table: 7-Step Regression with RSES-R**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.586	1	.586	1.505	.225
	Residual	21.423	55	.390		
	Total	22.009	56			
2	Regression	.587	2	.294	.740	.482
	Residual	21.422	54	.397		
	Total	22.009	56			
3	Regression	.715	3	.238	.593	.622
	Residual	17.299	52	.333		
	Total	22.009	56			
4	Regression	5.297	5	1.059	3.233	.013
	Residual	16.712	51	.328		
	Total	22.009	56			
5	Regression	5.585	6	.931	2.834	.019
	Residual	16.424	50	.328		
	Total	22.009	56			
6	Regression	5.594	7	.799	2.386	.035
	Residual	16.415	49	.335		
	Total	22.009	56			
7	Regression	5.598	8	.700	2.047	.060
	Residual	16.411	48	.342		
	Total	22.009	56			

## **Appendix L**

### **Narrative Responses to Survey**

Having a great mentor was key for me

Delay in getting feedback from my supervisor has become a major barrier to completing my degree. I waited 2 years to get feedback on my proposal, and regularly wait 2-6 months for feedback on the dissertation writing itself, yet her approval is necessary before I can progress. Would have changed supervisors if anybody else did the same kind of research. Would have changed supervisors if I had known her slowness would result not in 1 or 2 years wait, but 4.

The item about "provides constructive criticism" was difficult. my advisor has been overly active in reviewing and editing my documents (e.g. takes months to return edits, edits are circular in he ends up editing things back to what he initially changed them from, etc) so whether to give that a high mark or low mark was difficult- criticizes? yes. constructively? no. also, my program in general is a heavily dedicated health research program; clinical work is an afterthought

I came from an undergraduate institution where all of the faculty were involved in large, federally funded, grant projects. These experiences shaped my identity early on and helped me to see that I wanted to become a psychological scientist. My graduate program, though a Ph.D. Sci-Prac. program tends to lean towards the Practice side of the continuum. My advisor is awesome and is one of the most productive members of our department (many of the other faculty have not published in over 5 years). Though the program was the lowest on my list for a graduate program (due to funding and the lack of research training) my advisor was the person I wanted to work with the most. These combinations have shaped my development and views of myself as a researcher. They also made it difficult to answer the questions about my research related programatic experiences because there is such a difference between my experience and the experiences of others in my program and such a difference between my faculty mentor and the other faculty members in the department.

My advisor allowed me to do both my thesis and dissertation on FTMs. No faculty members in the entire department of psychology do ANY research related to LGBT issues at all, so although I didn't have any intellectual support on my specific area of focus, my advisor did support me in pursuing my research independently. However, that also meant that I felt pretty alone in the whole process. Thank goodness for Div 44 and mentoring!

I was fortunate to have come from a masters program (at another university) that was quite rigorous in terms of research and scholarship. My doctoral program is not as rigorous (unless you search the rigor out for yourself). Having this exposure and background prior to my experiences with the doctoral program helped encourage me to seek out additional research experiences that went beyond what is typically done at my doctoral institution. Also, many of

my doctoral course incorporate a great deal of scholarly and research articles and these readings have influenced my drive and push to become a competent scholar.

I am a qualitative researcher only, so I although I have confidence in my abilities to conduct qualitative research, I have very little/no confidence in my quantitative abilities. 2. My advisor is lesbian, which has helped a great deal in our relationship in terms of openness about my own sexual orientation, my personal life, etc., and she is the primary reason I chose to attend this program.

My thesis advisor was completely detached and roped me into a program of research that had nothing to do with my interests. Things are improved with my dissertation advisor, but due to her large caseload and tight schedule we do not have the mentorship relationship that she has with many of her previous students and other current students. This is disappointing to me in many ways, not the least of which is that although this person is very involved in the LGBTQA community on campus and in LGBTQA research, I have never felt there was a space for me to come out to her, therefore I'm not out to anyone in my program aside from a few peers.

Our research design course was taught in a five week mini-mester in the summer and was packed into a full course load at the same time. It was not helpful and actually ended up adding to my resentment towards research in general, particularly when I began my dissertation process and felt as though I was taught nothing about how to manage the dissertation from start to finish.

As you can see from my responses, I have not had positive experiences related to my research training nor do I feel I have had much assistance in my development as a researcher.

**Appendix M**  
**Email Soliciting Participants**

Greetings!

I am a doctoral student in counseling psychology at the University of North Dakota and am collecting data for my dissertation. This is a study exploring some of the researcher development experiences of doctoral students in clinical and counseling psychology programs who have conducted research with lesbian, gay, bisexual, transgender, and/or queer (LGBTQ) populations. If you have spent time conducting research with LGBTQ folks, please consider participating. You will have the opportunity to be entered into a raffle for an iPod Touch or a contribution of similar value to the charity of your choice. <https://edu.surveymzmo.com/s3/412173/Researcher-Development-Experiences>. Please forward widely! This study has been approved by the Institutional Review Board of the University of North Dakota. Questions may be addressed to the Primary Investigator, Daniel Walinsky (daniel.walinsky@gmail.com) or his adviser, David Whitcomb (david.whitcomb@und.edu). Thank you for your time and participation.

Daniel Walinsky

**Appendix N**  
**Student Membership in Professional Organizations**

---

Organization	<i>n</i>
Division 44 – Society for the Study of LGBT Issues	31
Division 12 – Clinical Psychology	5
Division 17 Section on Lesbian Gay Bisexual Transgender Issues	22
Society for the Scientific Study of Sexuality	3
American Association of Sexuality Educators, Counselors, and Therapists	2
American Psychological Association of Graduate Students	34
Association for Psychological Science	6

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