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Preparing for Graduate-Level Training in Professional Psychology: Comparisons Across Clinical PhD, Counseling PhD, and Clinical PsyD Programs

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Abstract

In the present study, faculty who teach in clinical and counseling doctor of philosophy (PhD) or doctor of psychology (PsyD) programs completed surveys regarding preferences for prospective student preparations to graduate programs. Faculty expectations of minimum and ideal undergraduate training were highest for scientific methods, though expectations systematically varied among clinical PhD, counseling PhD, and clinical PsyD programs. Faculty preferences for applicants' research and clinical "fit" within the program in which they are applying, as well as general interpersonal skills and intellect, also emerged as important admissions factors. These results describe the desirable undergraduate preparations and qualities of applicants for advanced study in clinical and counseling psychology. The findings have implications for prospective graduate students, faculty who train and mentor undergraduates, and faculty who serve on admissions committees.

Keywords

graduate admissions, advising, clinical, counseling, PhD, PsyD, undergraduate training

The histories of clinical doctor of philosophy (PhD), clinical doctor of psychology (PsyD), and counseling PhD training programs are intertwined and produced three similar, yet distinct professional psychology programs. Within clinical psychology, two separate conferences established graduate psychology training recommendations: The 1949 Boulder Conference established the Boulder model of training, which emphasizes training in research, clinical practice, and their integration (Kramer, Bernstein, & Phares, 2009). The 1973 Vail Conference established an alternative model for clinical psychology, the scholar-practitioner model, which emphasizes clinical skills with much less emphasis on research training (McFall, 2006; Norcross & Castle, 2002). Concurrently, counseling psychology evolved from a discipline that offered primarily vocational and educational guidance into a field that now diagnoses and treats mental disorders (Roger & Stone, n.d.).

Considering their unique histories, it is not surprising that today, training programs that lead to a clinical PhD, clinical PsyD, or counseling PhD differ in various respects. Clinical programs are more numerous and produce more graduates per year, compared to counseling programs (Norcross, Sayette, Mayne, Karg, & Turkson, 1998). Programs differ in theoretical orientation as well. In a survey of training directors of clinical and counseling programs, directors of clinical programs were more likely to report a cognitive-behavioral approach, while directors of counseling faculty were more likely to embrace a

humanistic approach (Norcross et al., 1998). Compared to clinical PhD programs, counseling programs have historically been more likely to offer more training in the importance of diversity within clinical contexts (Quintana & Bernal, 1995), are more likely to require multicultural coursework (Sherry, Whilde, & Patton, 2005), and produce graduates that report being more competent in multicultural counseling skills, awareness, and in having knowledge of current literature on diversity issues (Pope-Davis, Reynolds, Dings, & Nielson, 1995).

Despite these differences, clinical and counseling PhD programs are very similar: Trainees in both programs can be placed in the same internship positions, are eligible for the same psychology licensure, and are later employed in similar settings (Mayne, Norcross, & Sayette, 2000). The similarities across the fields are reflected in literature that reported comparable general admissions criteria for clinical and counseling PhD programs. Mean grade point average (GPA) and acceptance rates of students across the two programs are similar, but students admitted to clinical PhD programs had significantly

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higher GRE[®] scores compared to counseling students (Norcross et al., 1998).

Scholars have also explored comparisons between clinical PsyD and clinical PhD programs. Differences between the programs lie mainly in the “relative emphasis on research” due to fundamental differences in training philosophy between these models (Norcross & Castle, 2002). Whereas students in clinical PsyD programs are trained primarily to serve as clinicians, students in clinical PhD programs are trained as researchers and developers of psychology literature in addition to practitioners of professional psychology (Norcross & Castle, 2002; Prinstein, 2012). Clinical PhD programs have lower average acceptance rates and fewer incoming students per program compared to PsyD programs (Norcross & Castle, 2002).

Given the differences between these programs and the “goodness-of-fit” model utilized in admission processes, the development of empirical literature to guide students in the application process is important. According to the “goodness-of-fit” approach, graduate faculty expect qualifications beyond general admissions criteria, such as GPA or GRE scores, or prerequisite coursework. Prospective applicants are often evaluated according to the extent to which their previous training prepared them to learn efficiently in and make unique contributions to a specific graduate program or research laboratory (e.g., Appleby & Appleby, 2006; Buskist & Sherburne, 1996). These experiences, then, are evaluated with regard to how well they match the particular interests and training that occurs within a given institution or laboratory.

Thus, the challenge of the aspiring graduate student in clinical or counseling psychology is to prepare oneself for these highly competitive programs by developing specific competencies via various training experiences, which will involve experiences beyond coursework, such as in-depth research experiences and opportunities in applied practice settings (Prinstein, 2012). As Drotar (2012) argued, undergraduates applying to a graduate psychology program must actively seek out these unique experiences and develop competencies in undergraduate years to be considered for admission, despite the fact that “blueprints” for undergraduate education in psychology emphasize breadth of training (Halpern, 2010).

Resources created by Prinstein (2012) and Mayne and colleagues (2000) provide undergraduates with admission criteria comparisons and overviews of the type of work done within these programs. In addition to these resources, a body of empirical literature is emerging that offers insights into specific skill sets and experiences that are desired by faculty who make admissions decisions. Lawson, Reisinger, and Jordan-Fleming (2012) evaluated undergraduate course preferences, as stated on graduate program websites, in a variety of programs, and differences between programs that offer the PhD versus PsyD emerged. Specifically, programs offering a PhD in clinical psychology were more likely to list research as a preferred course, whereas programs offering the PsyD were more likely to list preferences in content areas such as abnormal, developmental, and personality psychology. In another line of research, Karazsia and colleagues (Karazsia & McMurtry, 2012;

Karazsia, Stavnezer, & Reeves, 2013) are revealing that graduate faculty preferences for incoming students include a variety of experiences beyond coursework. For example, among faculty in pediatric psychology programs, the desired level of experience of incoming students in the domain of research methods was in between an independent research project (such as an honors thesis) and coauthor on a peer-reviewed conference presentation. Additional domains where faculty preferences were rated as higher than exposure in a course included knowledge of intervention strategies and assessment practices, understanding of diversity in clinical settings, and life span developmental psychopathology (in addition to other domains; Karazsia & McMurtry, 2012). Similarly, faculty in clinical neuropsychology programs also reported preferences for experiences beyond coursework (Karazsia et al., 2013).

Therefore, although course selection is one important decision for aspiring graduate students, individuals need to be aware that training experiences desired by graduate faculty involve experiential learning beyond specified courses. To date, there have been no comparisons of faculty preferences of such experiences across clinical PhD, clinical PsyD, and counseling PhD programs. The present study presents information regarding specific competencies, rather than courses, and the training levels desired for admission to these programs. The guiding questions of the current study were as follows: First, what levels of training do faculty members at clinical and counseling psychology programs desire in applicants to their programs? Second, do these expectations of training differ across program types? To answer these questions, current faculty members of APA-approved programs in clinical PhD, clinical PsyD, and counseling PhD programs were asked to provide minimum and ideal levels of competencies of applicants. They also rated various general criteria in terms of importance in the admissions and selections processes. As this study was the first to examine these questions empirically, it was exploratory in nature and no a priori hypotheses were made.

Method

Participants

Participants in the present study were recruited primarily through e-mail messages sent to faculty members in clinical and counseling psychology programs (PhD or PsyD). Using a published listing of all APA-accredited programs in clinical and counseling psychology (237 clinical, 69 counseling; American Psychological Association, 2013a), we compiled a database of contact information of all associated faculty members obtained via searches of public access websites. We contacted directly a random sample of 20% of clinical and counseling psychology faculty from the compiled list. We also encouraged all individuals receiving the e-mail to share study information with colleagues and students, and as such, a portion of participants was recruited through “word of mouth” or snowball sampling. To be eligible for the study, individuals had to report being a faculty member involved in accepting students into a

clinical or counseling psychology graduate program that is accredited by the APA.

A total of 76 eligible faculty members participated in the study. Response rate is unknown given the use of snowball sampling. Self-reported gender composition of the sample was as follows: 59.9% women, 40.8% men, and 1.3% transgender. This composition did not differ significantly from the gender composition of all doctoral programs in professional psychology, $\chi^2(2) = 2.61, p = .27$, as reported by the Commission on Accreditation (American Psychological Association, 2013b). Self-reports of ethnic composition were as follows: 81.6% non-Hispanic White, 5.3% Hispanic, 3.9% Asian, 2.6% African American, and 6.6% multiracial or other. As with gender, the ethnic composition did not differ significantly from the ethnic composition of all doctoral programs in professional psychology, $\chi^2(4) = 0.58, p = .97$. The mean age of participants was 47.19 years ($SD = 10.05$).

The vast majority of participants self-reported academic appointments as their primary position, with 38.2%, 25.0%, and 32.9% of the sample self-reporting rank as assistant, associate, or full professor, respectively. Additionally, 14 participants indicated that they were the clinical program director for their training programs, and 2 participants reported that they were the chair of their department.

Measures

The survey used for the present study was modeled after previous studies that measured similar concepts within the field of pediatric psychology (Karazsia & McMurtry, 2012) and clinical neuropsychology (Karazsia et al., 2013). As with the previous studies, a scale of levels of training was utilized, ranging from 1 (*no training*) to 7 (*substantial experience*). Operational definitions and examples of each metric on the scale were provided to participants and are presented in Table 1. We asked faculty members to use this 7-point scale to indicate the minimal and ideal qualifications for applicants across 15 domains (see Table 2 for an exhaustive listing of domains). Domains included in the survey were based on those reported in published literature (e.g., Dunn et al., 2010) and supplemented with additional domains that may be of interest to some graduate faculty. For example, given the calls for psychology to be categorized as a natural science (e.g., James, 1892; Weir, 2015), we included domains from other natural sciences. We also asked participating faculty members to report, using a 7-point Likert-type scale ranging from 1 (*not important*) to 7 (*critically important*), the importance of more general admissions criteria (such as undergraduate GPA, GRE scores; see Table 3 for an exhaustive list of all criteria on the survey). Finally, we asked participants to report any other ideal or minimum competencies in applicants in an open-ended response format.

Procedure

We provided an electronic link in the recruitment e-mail that directed potential participants to the informed consent and

Table 1. Response Options for Level of Experience in the 15 Competency Domains.

Level of Experience	Definition
1. No training	
2. Minimal exposure	Introduction to the topical area as a component of a broader course
3. Substantial exposure	Advanced/upper-level coursework or observation in an applied or research setting
4. Minimal experience	Practice of the topical area or activity in a research project or applied setting
5. Substantial experience	Independent research project (e.g., honors thesis); postbaccalaureate experience in research or applied setting
6. Expertise	Coauthor of peer-reviewed conference presentation; substantial experience with interventions or assessment beyond shadow experiences (e.g., ABA therapist, psychometrician, supervised delivery of psychological interventions)
7. Substantial expertise	Coauthor of peer-reviewed publication; graduate-level training (e.g., master's in experimental/clinical psychology)

Note. Faculty were asked to rate both the minimum and ideal levels of training for incoming graduate students. Trainees were asked to indicate their level of experience for each of the areas of competency prior to entrance into graduate school.

Table 2. Means and Standard Deviations of Faculty Ideal and Minimum Experience Ratings, All Programs Combined.

Domain	Doctoral (n = 76)	
	Minimum	Ideal
1. Scientific methods	3.53 (1.06) ^a	5.39 (1.01)
2. Diversity	3.05 (1.29) ^{a,b}	4.76 (1.36) ^a
3. Psychopathology (abnormal)	2.91 (1.05) ^b	4.38 (1.28) ^{a,b}
4. Interventions	2.28 (1.12) ^{c,d}	3.99 (1.33) ^{b,c}
5. Assessment	2.25 (0.97) ^{c,d}	3.79 (1.34) ^{c,d}
6. Individual differences (personality)	2.55 (0.92) ^{b,c}	3.76 (1.15) ^{c,d,e}
7. Development	2.42 (0.84) ^{c,d}	3.64 (1.07) ^{c,d,e}
8. Cognition (cognitive psychology)	2.39 (0.93) ^{c,d}	3.64 (1.26) ^{c,d,e}
9. Professional, ethical, and legal issues	2.21 (1.00) ^{c,d}	3.59 (1.21) ^{c,d,e}
10. Learning (and behavior)	2.49 (0.89) ^{c,d}	3.57 (1.08) ^{c,d,e}
11. BioPsychology	2.20 (0.92) ^d	3.53 (1.34) ^{c,d,e}
12. Social psychology	2.25 (0.84) ^{c,d}	3.43 (1.12) ^{d,e}
13. Health applications	1.83 (0.81) ^e	3.26 (1.35) ^e
14. Content from life sciences (such as biology)	1.57 (0.72) ^{e,f}	2.61 (1.34) ^f
15. Content from chemical sciences	1.29 (0.54) ^f	2.18 (1.27) ^f
Within-subject ANOVA (within a given column)		
Degrees of freedom	14, 62	14, 62
F value	27.46, p < .001	26.79, p < .001

Note. Domains are presented in ordinal ranking of faculty ideal experience ratings. Competencies within a column that share a superscript do not differ significantly, whereas those that do not share a superscript do differ significantly (based on Bonferroni-corrected post-hoc analyses following a within-subjects ANOVA). Note that Faculty-Ideal, Faculty-Minimum, and Trainee-Experience ratings are rated on a 1-7 scale; see Table 1. ANOVA = analysis of variance.

Table 3. Faculty Ideal Preferences Across Three Program Types.

Domain	Clinical PhD (<i>n</i> = 27)	Clinical PsyD (<i>n</i> = 18)	Counseling PhD (<i>n</i> = 31)	Between-Subject ANOVA (<i>F</i>)
Scientific methods	5.74 (0.98) ^a	4.78 (0.88) ^b	5.45 (0.96) ^{a,b}	5.63**
Diversity	4.59 (1.67)	4.61 (1.04)	5.00 (1.16)	0.82
Psychopathology (abnormal)	4.96 (1.40) ^a	4.33 (0.97) ^{a,b}	3.90 (1.14) ^b	5.62**
Interventions	4.19 (1.47)	3.61 (1.15)	4.03 (1.30)	1.04
Assessment	4.30 (1.46) ^a	3.56 (1.15) ^{a,b}	3.48 (1.24) ^b	3.19*
Individual differences (personality)	3.81 (1.42)	3.83 (0.86)	3.68 (1.08)	0.14
Development	3.67 (1.18)	3.83 (1.04)	3.52 (1.00)	0.51
Cognition (cognitive psychology)	4.00 (1.49)	3.67 (1.03)	3.32 (1.11)	2.15
Professional, ethical, and legal issues	3.63 (1.33)	3.44 (1.15)	3.65 (1.17)	0.17
Learning (and behavior)	3.81 (1.21)	3.67 (0.84)	3.29 (1.04)	1.86
BioPsychology	3.96 (1.63)	3.44 (1.20)	3.19 (1.05)	3.08
Social psychology	3.41 (1.22)	3.50 (1.04)	3.42 (1.12)	0.04
Health applications	3.48 (1.50)	3.39 (1.04)	3.00 (1.37)	1.02
Content from life sciences (such as Biology)	3.15 (1.63) ^a	2.44 (1.20) ^{a,b}	2.23 (0.96) ^b	3.88*
Content from chemical sciences	2.56 (1.45)	2.06 (1.26)	1.94 (1.07)	1.88

Note. Competencies within a row that share a superscript do not differ significantly, whereas those that do not share a superscript do differ significantly (based on Tukey post hoc analyses following a series of one-way ANOVAs). Tukey post hoc tests were used to examine differences among the three program types when the omnibus *F* was significant in all cases except the assessment domain. For this domain, differences between groups are based on the LSD post hoc because between-group differences were not statistically significant with Tukey post hoc tests ($p = .053$), despite the significant *F*-test. ANOVA = analysis of variance; PhD = doctor of philosophy; PsyD = doctor of psychology.

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

questions to determine eligibility for the study. At the completion of the survey, participants were given the option to enter a raffle for a chance to win a US\$10 Starbucks[®] gift card (odds in winning were approximately 1 in 15). Data were collected during August and September 2014 and an institutional review board at the authors' home institution approved all procedures.

Results

All scale variables were sufficiently normally distributed (Tabachnick & Fidell, 2007). The amount of missing data was very small (less than 1% of datapoints), and we imputed these missing datapoints with a hotdeck procedure that is known to yield more accurate point estimates and standard errors than other widely used approaches to missing data (e.g., listwise deletion; Myers, 2011). Table 2 presents all doctoral faculty ratings of ideal training across the 15 domains in ordinal rankings. These ordinal rankings indicate faculty-reported prioritization of criteria. A within-subject analysis of variance (ANOVA) revealed significant differences in the mean rating of ideal training across the 15 domains. Despite the small sample size, observed power was 1.00, reflecting the large effect size in this analysis (partial $\eta^2 = 0.44$, Cohen, 1992). This large effect size indicates that faculty participants had strong preferences for ideal training in certain domains, relative to others. As can be seen in Table 2, mean faculty ideal experience ratings were highest for scientific methods, and this rating was significantly higher than all other topic areas. The mean of 5.39 reflects a rating between substantial experience (independent research project or postbaccalaureate experience) and expertise (coauthor of conference presentation). Content from life sciences and content from chemical sciences received the

lowest rankings, reflecting a rating between minimal exposure and substantial exposure.

A parallel within-subject ANOVA was also significant for minimum ratings (observed power = 1.00, partial $\eta^2 = 0.40$), which are also displayed in Table 2. Once again, the mean rating for scientific methods received the highest ranking and was significantly higher than all but one domain: diversity. The mean rating for the minimally acceptable training in these domains reflected training between the levels of substantial exposure (advanced/upper-level coursework or observation in an applied or research setting) and minimal experience (introduction in a broader course). As with ratings for ideal training levels, content from life sciences and content from chemical sciences were ranked lowest, classified between no training and minimal exposure (introduction in a broader course).

Using a series of one-way ANOVAs, we compared ratings of faculty ratings across clinical PhD, clinical PsyD, and counseling PhD programs. First, we compared mean ideal faculty ratings across the three faculty groups (results presented in Table 3). This analysis indicated the extent to which the three program types differed in faculty reports of ideal levels of experience for applicants. In three domains, the programs differed significantly from each other: scientific methods, psychopathology, and content from life sciences. Faculty ratings of scientific methods differed across program types (partial $\eta^2 = 0.13$) such that clinical PhD program faculty ideal ratings were significantly higher than clinical PsyD program faculty. In the domain of psychopathology, clinical PhD faculty ideal ratings were significantly higher than counseling PhD faculty ratings (partial $\eta^2 = 0.13$). Similarly, for the content from life sciences domain, clinical PhD ratings were significantly higher than counseling PhD ratings (partial $\eta^2 = 0.10$). Finally, in the assessment

Table 4. Faculty Minimum Preferences Across Three Program Types.

Domain	Clinical PhD (n = 27)	Clinical PsyD (n = 18)	Counseling PhD (n = 31)	Between-Subject ANOVA (F)
Scientific methods	3.74 (0.90)	3.00 (1.14)	3.65 (1.08)	3.11 [†]
Diversity	2.48 (1.19) ^a	3.22 (1.06) ^{a,b}	3.45 (1.34) ^b	4.75*
Psychopathology (abnormal)	3.11 (1.09)	3.06 (1.21)	2.65 (0.88)	1.69
Interventions	2.22 (1.09)	2.00 (1.09)	2.48 (1.15)	1.13
Assessment	2.26 (1.02)	2.33 (1.14)	2.19 (0.83)	0.12
Individual differences (personality)	2.44 (0.89)	2.50 (0.79)	2.68 (1.01)	0.50
Development	2.30 (0.78)	2.67 (0.84)	2.39 (0.88)	1.10
Cognition (cognitive psychology)	2.44 (0.89)	2.22 (0.94)	2.45 (0.96)	0.40
Professional, ethical, and legal issues	1.93 (0.62)	2.39 (1.20)	2.35 (1.11)	1.75
Learning (and behavior)	2.44 (0.80)	2.50 (0.99)	2.52 (0.93)	0.05
BioPsychology	2.33 (1.07)	2.06 (0.94)	2.16 (0.78)	0.52
Social psychology	2.07 (0.73)	2.22 (0.88)	2.42 (0.89)	1.26
Health applications	1.85 (0.77)	1.83 (0.92)	1.81 (0.79)	0.02
Content from life sciences (such as biology)	1.74 (0.94)	1.39 (0.50)	1.52 (0.57)	1.44
Content from chemical sciences	1.33 (0.56)	1.17 (0.38)	1.32 (0.60)	0.61

Note. Competencies within a row that share a superscript do not differ significantly, whereas those that do not share a superscript do differ significantly. Tukey post hoc tests were used to examine differences among the three program types when the omnibus *F* was significant in all cases except the scientific methods domain. For this domain, differences between groups are based on the LSD post hoc because between-group differences were not statistically significant with Tukey post hoc tests (*p* = .055), despite the statistical trend for the overall *F*-test (*p* = .051). ANOVA = analysis of variance; PhD = doctor of philosophy; PsyD = doctor of psychology.
[†]*p* < .05. ***p* < .01.

domain, clinical PhD faculty ideal ratings were significantly higher than counseling PhD faculty (partial $\eta^2 = 0.08$).

Second, mean faculty minimum ratings were compared across the three faculty groups (see Table 4). This analysis indicated the extent to which the three program types differed in minimum experience levels for each domain. The groups significantly differed in one domain, diversity (partial $\eta^2 = 0.12$), and showed a trend toward significance in the scientific methods domain. Minimum ratings of diversity differed across program type such that counseling PhD program faculty rated minimum levels of experience in diversity higher than clinical PhD program faculty, but neither group differed significantly from minimum ratings of clinical PsyD faculty.

A within-subject ANOVA was also conducted to determine whether rankings of importance of general admissions criteria were the same across all doctoral faculty (see Table 5). General interpersonal skills differed significantly from all but two domains: research fit with faculty interests and perception of applicant intellect, which were the three highest-rated criteria, on average. However, criteria regarding goodness of fit did not differ significantly from other broad-spectrum criteria such as GPA and letters of recommendation. All goodness-of-fit criteria were ranked in the top seven of ordinal ranks. A final series of between-subject ANOVAs were conducted to compare these general admissions criteria across the three program types (see Table 6). The results revealed that for several domains consistent with more research training (e.g., research fit, presentation experience), the PhD programs rated them as significantly more important than PsyD programs.

Table 5. Importance of General Criteria In Admissions: Mean Faculty Ratings.

Criteria	Importance
1. General interpersonal skills	5.84 (1.02) ^f
2. Research fit with faculty interests	5.46 (1.84) ^{a,f}
3. Perception of applicant intellect	5.34 (1.13) ^{a,f}
4. GPA	5.13 (1.20) ^a
5. Letters of recommendation	5.12 (1.42) ^{a,g}
6. Research fit with general program	4.93 (1.17) ^{a,g}
7. Clinical fit with general program	4.71 (1.48) ^{a,b}
8. GRE verbal	4.61 (1.39) ^{a,b,h}
9. GRE quantitative	4.41 (1.40) ^{b,g}
10. Completion of independent research project	3.93 (1.38) ^{b,c}
11. Coauthor on professional presentation	3.93 (1.38) ^{b,c,d}
12. Psychology major	3.82 (1.31) ^{c,d,e}
13. Coauthor on publication	3.79 (1.52) ^{c,d,e,h}
14. GRE analytic	3.78 (1.55) ^{c,d,e}
15. Prestige of letter writers	3.43 (1.27) ^{d,e}
16. Prestige of undergraduate institution	3.24 (1.08) ^{d,e}
17. Personal networks	2.30 (1.13)
Within-subject ANOVA (within a given column)	
Degrees of freedom	16, 60
<i>F</i> value	40.09, <i>p</i> < .001

Note. Domains within a column that share a superscript do not differ significantly, whereas those that do not share a superscript do differ significantly. Domains are presented in ordinal ranking of admissions criteria importance. Criteria within a column that share a superscript do not differ significantly, whereas those that do not share a superscript do differ significantly (based on Bonferroni-corrected post hoc analyses following a within-subjects ANOVA). Note that admissions criteria are rated on a 1–6 scale. ANOVA = analysis of variance; GPA = grade point average.

Table 6. General Admission Criteria Across Three Program Types.

Criteria	Clinical PhD (<i>n</i> = 27)	Clinical PsyD (<i>n</i> = 18)	Counseling PhD (<i>n</i> = 31)	Between-Subject ANOVA (<i>F</i>)
1. General interpersonal skills	5.52 (1.09)	5.94 (0.80)	6.06 (1.03)	2.26
2. Research fit with faculty interests	6.37 (0.97) ^a	3.00 (1.72) ^b	6.10 (1.08) ^a	48.18***
3. Perception of applicant intellect	5.78 (1.09) ^a	5.17 (0.99) ^{a,b}	5.06 (1.15) ^b	3.38*
4. GPA	5.33 (1.21)	4.94 (1.35)	5.06 (1.12)	0.64
5. Letters of recommendation	5.52 (1.37)	4.83 (1.30)	4.94 (1.50)	1.72
6. Research fit with general program	5.41 (1.45) ^a	3.39 (1.42) ^b	5.42 (1.41) ^a	13.86***
7. Clinical fit with general program	4.78 (1.37)	4.83 (1.54)	4.58 (1.57)	0.21
8. GRE verbal	5.15 (1.13) ^a	4.28 (1.53) ^b	4.32 (1.40) ^b	3.43*
9. GRE quantitative	5.11 (1.25) ^a	3.89 (1.32) ^b	4.10 (1.35) ^b	6.18**
10. Completion of independent research project	4.81 (1.39) ^a	3.11 (1.08) ^b	4.19 (1.52) ^a	15.71**
11. Coauthor on professional presentation	4.67 (1.24) ^a	2.78 (1.00) ^b	3.97 (1.25) ^a	13.53***
12. Psychology major	3.48 (1.37)	4.28 (1.32)	3.84 (1.21)	2.05
13. Coauthor on publication	4.56 (1.40) ^a	2.67 (1.14) ^b	3.77 (1.43) ^a	10.49***
14. GRE analytic	3.78 (1.58)	3.89 (1.57)	3.71 (1.58)	0.07
15. Prestige of letter writers	3.48 (1.28)	3.33 (1.03)	3.45 (1.41)	0.08
16. Prestige of undergraduate institution	3.56 (1.22) ^a	3.44 (0.86) ^{a,b}	2.84 (0.97) ^b	3.88*
17. Personal networks	2.30 (1.35)	2.39 (0.78)	2.26 (1.13)	0.08

Note. Domains are presented in ordinal ranking of mean admissions criteria importance across all programs types, as in Table 5. Tukey post hoc tests were used to examine differences among the three program types when the omnibus *F* was significant in all cases except the GRE-verbal domain. For this domain, differences between groups are based on the LSD post hoc because between-group differences were not statistically significant with Tukey post hoc tests ($p = .057$), despite the statistically significant overall *F*-test ($p = .038$). ANOVA = analysis of variance; PhD = doctor of philosophy; PsyD = doctor of psychology.

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

Discussion

The present study adds to the anecdotal (e.g., Prinstein, 2012) and increasingly empirical (Karazsia & McMurty, 2012; Karazsia et al., 2013; Lawson et al., 2012) literature regarding undergraduate preparation for admission to graduate programs in professional psychology. As in previous studies (Karazsia & McMurty, 2012; Karazsia et al., 2013), doctoral faculty in the present study reported strong preferences for advanced training in scientific methods, diversity, and psychopathology, and they reported high levels of importance of research fit, GPA, and letters of recommendation. In some regards, the results are consistent with findings by Lawson et al. (2012). Specifically, Lawson and colleagues reported that PhD program websites frequently list statistics as the most preferred undergraduate course. This finding is echoed in the present study, in that scientific methods was consistently rated as the most preferred domain of competency in PhD programs. The present results also expand on those reported by Lawson and colleagues by focusing on domains of competency, instead of specific courses. By doing so, we revealed that in many domains of competency, faculty desire students who gain experiences that expand greatly on their coursework. For example, the average ideal rating for scientific methods, across all programs types, revealed that faculty desire students who have not only developed skills but also demonstrated their competency via applied research experiences.

As noted previously, this study is the first to our knowledge to compare degree of competency across clinical PhD, clinical PsyD, and counseling PhD programs. Given that all programs were of the clinical and counseling nature, some similarity was to

be expected. The most obvious similarity across all three program models is that graduate faculty desire applicants with an undergraduate education that is grounded in psychology as a science. That said, preferred and minimum training levels for some domains differed across program type. In rating ideal levels of training, clinical PhD faculty preferred significantly higher levels of training in scientific methods than PsyD faculty. This difference is consistent with the aforementioned differences in overall approaches to training across these programs. Correspondingly, faculty from PhD programs (clinical and counseling) reported significantly greater importance on general domains that are consistent with research interests and experience (such as presentation experience and research fit with faculty).

Somewhat surprisingly, there were no differences between clinical PhD and PsyD programs in preferences for specific content areas, such as psychopathology or personality. Lawson and colleagues (2012) reported that websites of PsyD programs list specific content areas as preferred coursework for applicants significantly more frequently than PhD program websites. Further, according to Lawson et al., PsyD program websites listed some specific courses, such as abnormal psychology, more frequently than research methodology courses. However, in the present study, mean faculty ratings of minimum preferences within PsyD programs were comparable for scientific methods and psychopathology. The lack of differences in these domains in the present study, relative to that of Lawson and colleagues, is likely due to the manner of assessment. Lawson and colleagues examined coursework preferences as listed on program websites, whereas in the present study, we gathered faculty preferences on a scale that extended

beyond coursework. Thus, the context of assessment was quite different across the two studies. Importantly, the differences between the studies have little practical utility. Across both studies, it is apparent that, regardless of specific degree or program type, coursework in a breadth of classes can be important. That said, it is also apparent from the present study that completion of coursework will not be sufficient to appeal to most faculty in graduate programs. Ratings of ideal levels of competency indicate that applied research or clinical experiences are highly desirable.

These findings underscore the importance for applicants to select intentionally the programs to which they apply, as the skills that may be desired in one type of program will not translate directly to another program. Correspondingly, and to the extent that students are aware of their aspirations for graduate school early in undergraduate training, students should actively seek applied and experiential opportunities that go above and beyond coursework. A key message across all main results from this study is that coursework alone, and even doing well in coursework alone (i.e., high GPA), will not satisfy the expectations and preferences of graduate faculty members. Students need to develop competencies that are consistent with their aspirations in environments outside of the classroom, such as through independent research experiences, or participating in research that occurs in clinical or applied settings.

These experiences will not only satisfy faculty expectations in these domains, but they will also make it much easier for applicants to demonstrate competency in other domains that were universally rated high on the importance scale by faculty from all program types—interpersonal skills, intellect, and letters of recommendation. The latter of these three domains will likely be best achieved when letter writers know students through multiple types of interactions (such as in class and in a research project). Additionally, students may benefit from letter writers who know them well and can comment meaningfully about them from multiple institutions (such as their home institution and an applied or clinical setting where they work on a research team). In both of these circumstances, letters can be deeper, more meaningful, and reflect on important criteria when students engage in learning experiences beyond classroom learning.

Other differences in ideal training levels emerged between clinical PhD and counseling PhD program faculty. Clinical PhD program faculty preferred significantly more training in psychopathology, assessment, and content from life sciences than counseling PhD faculty, findings that may be reflective of different theoretical foundations (e.g., Norcross et al., 1998). Also consistent with evidence to suggest differential emphasis across these programs, counseling PhD faculty reported higher minimum expectations for diversity training than clinical PhD faculty, a finding that further supports the suggestion of diversity emphasis in counseling programs and adds to the current literature regarding diversity in counseling programs (Pope-Davis et al., 1995; Sherry et al., 2005).

The relative importance of general admissions criteria in the present study paralleled that of previously conducted studies in the areas of clinical neuropsychology and pediatric psychology

(Karazsia & McMurtry, 2012; Karazsia et al., 2013). Faculty reported general interpersonal skills, research fit with faculty interests, and perception of applicant intellect as most important. However, all criteria pertaining to “fit” (e.g., research fit with faculty interests, research fit with general program, clinical fit with general program) were not significantly different from each other or other broad-spectrum criteria such as GPA, letters of recommendation, or GRE verbal scores. This suggests applicants are selected based on the “goodness-of-fit” model as well as on other broad criteria.

The present study provides important information to three groups of individuals: undergraduate students, faculty who teach or mentor undergraduates, and graduate-level faculty who select applicants into clinical and counseling psychology programs. Similar to suggestions made for potential applicants of clinical neuropsychology programs (Karazsia et al., 2013), these findings suggest that prospective PhD students in clinical and counseling psychology should tailor their undergraduate experiences to the research area they wish to pursue. Whereas these experiences may serve as chances for learning what one finds personally interesting or worthy of pursuing, ultimately, the results of the present study conclude that “fit” with a given program and faculty interests plays an important role in the admissions process. However, it is worth noting that these findings also suggest that research experiences should not come at the expense of broad-spectrum admission criteria such as GPA, GRE scores, and letters of recommendation. Indeed, research experiences may be one way to enhance an applicant’s letters of recommendation, even for PsyD programs.

Although in most cases GPA and GRE scores were not significantly lower than other general criteria, it may be somewhat surprising that GPA and GRE scores were ranked ordinarily much lower than other general criteria. This ordering of importance is likely due to the nature of the application screening and evaluation process, in which faculty members typically review applications only after initial screening that selects only the applications with relatively higher GPA and GRE scores. We believe that the pattern of results in this study and previous research by Karazsia and colleagues (Karazsia & McMurtry, 2012; Karazsia et al., 2013) reveals that while GPA and GRE are important, they are not sufficient in the absence of other important applicant characteristics, including interpersonal skills, general intellect, and fit with the program and specific faculty members. Evidence for these factors will most likely become apparent to faculty members after the initial screen based on GPA and GRE, via read letters of recommendation, personal statements, and during the interview process.

Additionally, the present study provides evidence to suggest what only nonempirical literature currently advises: that prospective clinical and counseling psychology graduate students tailor their undergraduate experiences to the type of program (e.g., clinical PhD, clinical PsyD, counseling PhD) to which they anticipate applying. Similar to suggestions made by Prinstein (2012), empirical evidence from the present study suggests undergraduates that anticipate applying to clinical PhD or counseling PhD programs obtain higher levels of experience with

scientific methods (e.g., coauthor of peer-reviewed conference presentation), compared to those applying to clinical PsyD programs (e.g., completion of an independent research project). These experiences may serve not only as important elements of one's graduate application, but to aid prospective graduate students of psychology in choosing a doctoral program who may be choosing among these programs. Furthermore, prospective clinical PhD students must emphasize training in psychopathology, assessment, and content from life sciences, relative to other the other doctoral programs. These results not only provide information for potential applicants that have designated a program they wish to apply to but also to applicants that may be considering a combination of these programs as well. That is, prospective graduate students may use results from this study to tailor applications to different types of programs.

The present study also offers insight that can aid faculty who teach and mentor undergraduate students. Given the importance of scientific methods, diversity, psychopathology, interventions, and assessment, faculty may advise students to select courses in these domains if they have an interest in clinical or counseling programs. In addition, mentors may help students design a project or take part in a research experience that provides "substantial experience" or "expertise" within a particular area of research so as to better tailor their undergraduate experiences to those that prepare them for a graduate program. Aside from directly advising undergraduate experiences, faculty mentors may better assist students in writing strong cover letters and write stronger letters of recommendation that highlight those significant experiences as well as detail specifically why the program is a logical step for the student. Finally, these results offer empirical findings of graduate admission to clinical and counseling psychology programs that is of importance to graduate-level faculty who assess applicants of these programs. By providing a list of perceived importance of training domains and admissions criteria, faculty in these programs are better equipped to evaluate future applicants.

Of course, the present findings had limitations. Although our initial sample selection was based on a random sample of the full population of graduate faculty at APA-approved training programs, the final sample may not be fully representative of this population due to nonresponse and snowball sample. In addition, many *post hoc* analyses were conducted, increasing the possibility of a Type II error. The list of competencies and qualifications were developed on previous research (Karazsia & McMurtry, 2012; Karazsia et al., 2013), instead of using a Delphic poll methodology, and that may have resulted in omission of important response criteria. Additionally, all findings are based on faculty self-reports. Although the assessment measures for these self-reports were based on previous research, no data are available at present regarding the validity of reports using this scale. That is, it is unknown at the present time if faculty reports of their preferences correlate significantly and strongly with factors that influence real-world admissions decisions.

Despite these limitations, the results of the present study extend previous research in other specialties of psychology (Karazsia & McMurtry, 2012; Karazsia et al., 2013). The results

of the present study imply that undergraduates must tailor their individual training experiences so as to provide evidence of a goodness of fit with the type of graduate program and potential graduate-level mentors. They also highlight the need for an applicant to express personal qualities such as interpersonal skills and intellect in the admission process, all while achieving high scores on other broad spectrum criteria (e.g., GPA and GRE scores). Although these results do not suggest that undergraduates must follow a prescribed "track" for prospective clinical and counseling psychology graduate students, they do provide guidelines for undergraduate courses and experiences, as suggested by other scholars (e.g., Prinstein, 2012).

Future research is warranted in this area to extend these findings beyond the programs investigated thus far. Empirical investigations must be done in order to avoid generalizing these findings to other programs for which they may not be applicable. In addition, research may be conducted to investigate the specific opportunities or experiences valued by faculty members so as to better inform potential applicants and mentors of specific experiences to be seeking. In order to better inform applicants and mentors for the highly competitive admissions process of clinical and counseling psychology programs, more empirical investigations must be conducted.

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