Preparing Counselor Education and Supervision Doctoral Students Through an HLT Lens: The Importance of Research and Scholarship

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Cian L. Brown, Anthony J. Vajda, David D. Christian

We examined the publication trends of faculty in 396 CACREP-accredited counselor education and supervision (CES) programs based on Carnegie classification by exploring 5,250 publications over the last decade in 21 American Counseling Association and American Counseling Association division journals. Using Bayesian statistics, this study expounded upon existing literature and differences that exist between institution classifications and total publications. The results of this study can be used to inform the training and preparation of doctoral students in CES programs through a Happenstance Learning Theory framework, specifically regarding their role as scholars and researchers. We present implications and argue for the importance of programs and faculty providing research experience for doctoral students in order to promote career success and satisfaction.

Keywords: **doctoral counselor education and supervision, Carnegie classification, Happenstance Learning Theory, publication trends, Bayesian statistics**

Pursuing a doctoral degree in counselor education and supervision (CES) can be a daunting task. Although there are some levels of certainty, there is also a great degree of uncertainty, especially with regard to recognizing the valuable experiences that will inevitably lead to career opportunities, satisfaction, and success (Baker & Moore, 2015; Del Rio & Mieling, 2012; Dollarhide et al., 2013; Dunn & Kniess, 2019; Hinkle et al., 2014; Zeligman et al., 2015). CES doctoral students enrolled in programs accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP) can expect to develop core areas of practice such as counseling, supervision, teaching, leadership and advocacy, and research and scholarship. Happenstance Learning Theory (HLT) provides a framework through which those planned and unplanned experiences—and the degrees of certainty and uncertainty—of doctoral students can be understood. For example, mentorship and career development throughout the course of the doctoral program impact students' experiences (Kuo et al., 2017; Perera-Diltz & Duba Sauerheber, 2017; Protivnak & Foss, 2009; Purgason et al., 2016; Sackett et al., 2015). Previous research indicates that research and scholarship are highly emphasized factors for impacting career opportunities and success for potential and current CES faculty (Barrio Minton et al., 2008; Newhart et al., 2020). However, the exact requirements for publications and scholarship in CES remain unclear and often vary by institution and program (Davis et al., 2006; Lambie et al., 2014; Ramsey et al., 2002; Shropshire et al., 2015; Wester et al., 2013). In order to better understand potential implications for faculty, programs, and doctoral students looking to enter academia, researchers must continue exploring CES publication and scholarship trends.

Research and Scholarship in CES

Research and scholarly activity are a responsibility and priority among faculty in higher education in order to further inform the profession and promote productivity. Thus, "developing doctoral

Cian L. Brown, MS, NCC, LPC, BCN, is a doctoral candidate at the University of Arkansas. Anthony J. Vajda, PhD, NCC, is an assistant professor at the University of Arkansas. David D. Christian, PhD, LPC, is an assistant professor at the University of Arkansas. Correspondence may be addressed to Cian Brown, University of Arkansas, 751 W. Maple St., GRAD 117, Fayetteville, AR 72701, clb061@uark.edu.

counselor education students' research and scholarship competencies needs to be supported and nurtured in preparation programs where the faculty and systemic climate may promote these professional skills, dispositions, and behaviors" (Lambie & Vaccaro, 2011, p. 254). Although additional research is warranted, researchers have conducted several studies to better understand the landscape of publication trends among counselor educators and CES programs. To date, all prior studies have primarily relied on self-report surveys and have not examined longitudinal trends (Lambie et al., 2014; Newhart et al., 2020; Ramsey et al., 2002).

Ramsey et al. (2002) conducted survey research regarding the scholarly productivity of counselor educators at CACREP-accredited programs at the various levels of Carnegie classification from 1992 to 1995. Of the 104 programs they contacted, only 113 faculty at 47 institutions responded. According to their research, faculty at research and doctorate-granting institutions (the Carnegie classifications at the time) reported spending more time publishing journal articles than faculty at comprehensive institutions, while all CES faculty, regardless of their institution's Carnegie classification, perceived journal articles as the most important form of scholarship for tenure/promotion decisions. Although Ramsey et al.'s research provides insight into the perceived role publications play for tenure/promotion, relying on self-reported publication patterns means it is impossible to know if their results are consistent with the actual publication trends for faculty of CES programs of various Carnegie classifications.

Lambie et al. (2014) accounted for this limitation by using online research platforms to identify publication trends of faculty at CACREP-accredited doctoral programs. Their research provided important information related to the publication process for counselor educators at doctoral-granting institutions but is limited in that their sample only consisted of 55 programs, whereas as of 2020, there were 85 CACREP-accredited doctoral programs. Lambie et al. (2014) emphasized the role of doctoral students and the necessity of mentorship in scholarly writing and publishing as outlined by CACREP standards. Through modeling and mentorship, counselor educators prepare doctoral students to transition into academic positions. The purpose of their study was to identify potential implications for supporting CES faculty and the career development of doctoral students (i.e., future counselor educators) by looking at the effects of faculty members' academic rank, gender, Carnegie classification of current institution, and year doctoral degree was conferred on their rate of scholarly productivity over a 6-year time period. Between 2004 and 2009, counselor educators published a mean of 4.43 articles (*Mdn* = 3.0, *SD* = 4.77, range = 0–29 published articles) across 321 identified peer-reviewed journals. Lambie et al. (2014) further pointed out the variance in publication among CES faculty. Specifically, 20% of CES faculty published an average of 11.6 articles over the 6-year period, while 62% published an average of 3.02, and 16.1% did not publish any articles during this span of time. Their results also revealed a significant difference between the publication rates based on an institution's Carnegie classification, where faculty at very high (R1) and high (R2) research activity institutions published significantly more than those at doctoral/professional universities. In addition, Lambie et al.'s (2014) finding that CES faculty who had more recently completed their doctoral degrees had the highest publication rates indicated programs are better preparing doctoral students to produce scholarly work. Their findings also implied that doctoral preparation programs can promote career readiness by implementing research competencies, such as scholarly writing and research mentorship, early in doctoral programs.

Newhart et al. (2020) similarly assessed publication rates among 257 counselor educators using a self-report survey across CACREP-accredited programs at various Carnegie classifications and academic ranks. Their stated purpose was to expand the current literature on CES publication rates using self-reported data to include non-tenured faculty and master's-level–only programs. Their survey yielded a 17% response rate after randomly selecting 1,500 faculty members to participate. Respondents

reported an average of 14.24 articles published or in press at the time of the survey, with an average of 1.69 publications per year. Carnegie classification appeared to be a significant predictor of publication rates across institutions, with faculty at more research-focused institutions publishing more often than faculty with lower research expectations. Similar to previous studies, results related to Carnegie classification appeared to underscore the emphasis certain programs place on publication standards, which can inform doctoral students' decisions regarding which environments might be more suitable and conducive to their aspirations upon entering into academia. Although timely, Newhart et al.'s study has several limitations. There was no apparent time frame, leaving one to assume the reported information reflected participants' total career publications, which could potentially skew the data. The 17% response rate for this study was another potential limitation, as it yielded responses from only 257 counselor educators with varying levels of experience. And as they highlighted, the use of self-report data may influence response bias and risk inflation of reported results based on desirability and bias.

Although previous researchers have asserted that doctoral-granting institutions are more likely to emphasize publishing (Barrio Minton et al., 2008; Lambie et al., 2014; Ramsey et al., 2002), research has yet to establish this as fact by comparing actual publication trends across a variety of institution types. Barrio Minton et al. (2008) began to address the differences when they called for future research to "examine publication trends and histories of counselor educators who are employed in programs in universities that are likely to place a high emphasis on publication" (p. 135) but failed to define, with certainty, the type of universities that emphasize publications. Despite the call for a revised definition of scholarship 17 years ago (Ramsey et al., 2002), scholarship is still heavily defined based on number of publications (Whitaker, 2018). These prior studies highlight the increased need for the use of observational data over a longitudinal period to verify self-reports and increase understanding of publication writing for the career development and mentorship of CES doctoral students.

Preparing CES Doctoral Students

Although the exact extent is unknown, research and scholarship are clearly important factors for employability as CES faculty as well as career satisfaction and success (Lambie et al., 2014; Sackett et al., 2015). Preparing CES doctoral students to be employable, happy, and successful in academia requires (a) understanding the extent to which research is required at various institutions and (b) ensuring they are exposed to the necessary curricula related to research (Lambie et al., 2008, 2014; Lambie & Vaccaro, 2011; Sackett et al., 2015). Although we aim to clarify research expectations, it is important to first establish a framework to guide CES programs and faculty. HLT is one such framework that emphasizes planned and unplanned experiences that influence career direction (Krumboltz, 2009). Using HLT, CES faculty and programs can provide better learning environments and mentorship experiences through leveraging planned and unplanned activities. From this lens, faculty encourage students to engage in planned experiences aligned with their career aspirations while also being open to potentially formative unplanned experiences, especially related to research and scholarship.

Happenstance Learning Theory (HLT)

According to HLT, career development is the result of numerous planned and unplanned experiences over the course of life in which people develop skills, interests, knowledge, beliefs, preferences, sensitivities, emotions, and behaviors guiding them toward a career (Krumboltz, 2009). The process of career development from an HLT perspective involves individuals "engaging in a variety of interesting and beneficial activities, ascertaining their reactions, remaining alert to alternative opportunities, and learning skills for succeeding in each new activity" (Krumboltz, 2009, p. 135). From an HLT stance, individuals must take five specific actions toward career development (Krumboltz, 2009). Initially, they must acknowledge anxiety toward career choice as normal and understand that the career development

process as a long-term endeavor influenced by both planned and unplanned experiences. Next, it is important to allow identified concerns to be a starting point for further exploration. Third, they need to explore how past experiences with unplanned events have influenced current career interests and behaviors. Fourth, they should reframe unplanned experiences as opportunities for growth and learn to recognize these opportunities in their everyday lives. Finally, it is important that individuals remove or overcome any and all blocks to career-related action.

In an endeavor to explain career development and choice, HLT points to various planned and unplanned experiences throughout the life span (Krumboltz, 2009). Planned experiences include events individuals initiate such as pursuing a doctoral degree, choosing a particular CES program, identifying a focus of study, selecting courses as part of a program of study, and approaching specific faculty for advising and mentorship in an effort to achieve career aspirations. Unplanned experiences include events that individuals have no control over that often lead to revised career aspirations such as influential course instructors; type and quality of advising and mentoring; and various opportunities to teach, present, and publish with program faculty. Even though "the interaction of planned and unplanned actions in response to self-initiated and circumstantial situations is so complex that the consequences are virtually unpredictable and can best be labeled as happenstance" (Krumboltz, 2009, p. 136), unplanned experiences are particularly important to HLT. In fact, it is important that individuals take advantage of these unplanned experiences as opportunities to grow—something they are less likely to do if their predetermined career aspirations are too rigid (Gysbers et al., 2014).

For CES doctoral students, HLT is particularly pertinent in that although many enter programs with clear career aspirations, these career goals often remain fluid, changing and developing through planned and unplanned experiences throughout the training process. Although this drive to reach predetermined goals can serve as motivation, individuals who have made firm career decisions tend to focus on experiences that affirm their choices and overlook or fail to engage in unplanned experiences not related to their career goals (Gysbers et al., 2014). Thus, it is important that CES faculty not only encourage doctoral students to be open minded about potential career outcomes, but also provide opportunities for doctoral students to engage in formative unplanned experiences.

Although CACREP provides specific mandatory standards that must be accounted for, they allow programs to exercise flexibility and creativity in how they address them (CACREP, 2015; Goodrich et al., 2011). Students can expect a specific knowledge base but also have opportunities for paving their own career path because of the uniqueness of each CES program and other factors such as pre-enrollment career aspirations, unplanned life events, challenges or successes in courses, program emphasis, and mentorship. Both planned and unplanned experiences involve facing challenges, leading to developmental and transformational tasks that influence the integration of multiple identities, self-efficacy, and acceptance of responsibility as a leader in the counseling profession (Dollarhide et al., 2013). From an HLT framework, these transformational tasks are particularly significant, as they can be the catalyst for revised career aspirations or the reinforcement of previously determined career goals. This highlights the importance of advising and mentoring, and the need for ample opportunities for students to engage in diverse experiences so that these transformations can occur.

Planned Experiences

Doctoral students in CACREP-accredited CES programs can expect planned experiences relating to coursework that integrates theories relevant to counseling, the skills and modalities of clinical supervision, pedagogy and teaching methods related to educating counselors, research designs and professional writing, and leadership skills. Although CES programs are designed to provide planned

experiences related to all of the roles of a counselor educator (CACREP, 2015), the emphasis placed on each varies depending on the program and institution. CES faculty prepare doctoral students for a future in teaching, research, and service, often through experiences co-instructing counselors-in-training, scholarly work, and leadership roles advocating for the profession (Protivnak & Foss, 2009; Sears & Davis, 2003).

CACREP (2015) standards require that doctoral students learn research design, data analysis, program evaluation, and instrument design; however, there are not strict requirements or guidelines indicating what scholarly activities must be experienced before students graduate. Research experience is considered important because future CES faculty will likely be expected to engage in scholarship of some form, including writing journal articles, presenting at conferences, conducting program evaluations, and preparing other scholarly works such as grants and training manuals. However, after finding that less than a third of CES doctoral students had published a scholarly article, Lambie and Vaccaro (2011) concluded that CES programs must provide more planned experiences for student research engagement. Finally, because doctoral students inevitably learn valuable lessons in research and scholarship through the planned experience of completing a dissertation, CES programs must provide adequate training for students to successfully complete this milestone (Lambie et al., 2008).

Unplanned Experiences

CES doctoral students also have various opportunities for unplanned learning experiences with research and scholarship through coursework and collaboration with peers and faculty. Unplanned experiences that appear to be particularly important for CES doctoral students often occur through mentoring (Kuo et al., 2017; Perera-Diltz & Duba Sauerheber, 2017; Protivnak & Foss, 2009; Purgason et al., 2016; Sackett et al., 2015). Mentorship experiences include relationships with advisors and dissertation chairs, work beyond the classroom setting with faculty mentors, and relationships with counselor educators from other universities or institutions. Kahn (2001) posited that research-specific mentoring and collaborative research projects can create an environment conducive for CES doctoral students to develop research skills by observing faculty.

Several studies have highlighted the importance of mentorship in the career development of CES students (Casto et al., 2005; Cusworth, 2001; Hoskins & Goldberg, 2005; Nelson et al., 2006; Protivnak & Foss, 2009). Protivnak and Foss (2009) interviewed 141 current CES doctoral students who stressed the helpfulness of mentorship while navigating their doctoral program but also discussed the consequences of a lack of mentorship and support. Participants who received mentorship stated that it helped with balance and guidance in the program, while participants without adequate mentorship shared feelings of frustration and being on their own. Further, Love et al. (2007) found that research mentoring was a predictor of whether or not CES doctoral students became involved in research projects.

CES Program Characteristics Influencing Engagement in Research Experiences

All of these research experiences, both planned and unplanned, will vary across programs and depend on a multitude of factors, one of which might be the Carnegie classification of the institution where the program is housed. Carnegie classification divides colleges and universities that house CES programs into several categories, including the following: doctoral universities, master's colleges and universities, baccalaureate colleges, and special focus institutions. Doctoral universities are further classified based on a measure of research activity into one of three levels: R1, for very high research activity; R2, for high research activity; and D/PU (doctoral/professional universities), for moderate research activity. If previous literature indicating that doctoral-granting institutions are more likely to emphasize publishing and produce more publications (Barrio Minton et al., 2008; Lambie et al., 2014;

Ramsey et al., 2002) is accurate, then this might impact doctoral students' career aspirations as well as exposure to and engagement in research-related experiences.

According to HLT, CES doctoral students' career aspirations can influence *how* they engage in certain planned experiences and *if* they choose to engage in certain unplanned experiences (Krumboltz, 2009). For example, a student focused on a career at an institution with less emphasis on research (e.g., master's university) may put forth minimal effort in research courses and opt out of any unplanned experiences related to scholarly activity, such as accepting an invitation to join a research team. Also, it is possible that CES doctoral students at R1, R2, and D/PU institutions might have varying exposure to opportunities to engage in unplanned experiences related to research and scholarship if faculty at those institutions are spending less time in the role of researcher. For instance, Goodrich et al. (2011) found that in a survey of 16 CACREP-accredited counseling programs, only six programs had established research teams and only four programs required students to submit scholarly work to a professional journal before they could graduate.

Purpose

This study was designed to explore the current trends in publication rates of faculty in CES programs over a 10-year time period. Using a Bayesian analysis, we examined the following questions:

- Research Question 1: What are the differences among CES programs' faculty publication rates based on all Carnegie classifications?
    - Research Question 1.a: Are there differences among master's-level programs based on Carnegie classifications in terms of faculty publication rates?
- Research Question 2: Does observable data support prior literature findings regarding publication trends among CES programs at institutions with different levels of Carnegie classification?

Bayesian analysis is appropriate when "one can incorporate (un)certainty about a parameter and update his knowledge through the prior distribution" of probabilities (Depaoli & van de Schoot, 2017, p. 4). The inferences made by Newhart et al. (2020) were used as prior information to inform the collected observational data for this study. Newhart et al. used self-reported survey data to run a Poisson regression with the same variables proposed for this study. However, their data focused primarily on the differences among research institutions and combined non–research-designated institutions (i.e., master's universities) into a single category. Newhart et al.'s output helped inform the limitations of the observational data collection procedures, such as error in using database search engines. Additionally, this is the first known study to examine observational data of publication trends for CES programs, which might provide an under- or overestimation when compared to self-reported data. Alternatively, the use of self-reported data has often been stated as a limitation because of participant bias, which might inflate the outcomes. Therefore, it would be helpful to compare inferences from both sets of data. An initial comparison of parameter estimates between both studies will inform the trends of publications between Carnegie classifications.

For this study, and similar to Newhart et al. (2020), Carnegie classification operated as the predictor variable and number of publications as the outcome variable. The results of the comparison and Bayesian hypothesis testing of data will provide a means to verify self-reported data trends between Carnegie classification using parameter estimates and further information regarding the scholarly productivity

over a 10-year period and insight toward publication trends among non–PhD-level institutions using the posterior distributions.

Method

In order to answer the research questions, a list of all CACREP-accredited counseling programs in the United States was compiled by the principal investigator using the CACREP website directory. Next, a list of peer-reviewed journals affiliated with the American Counseling Association (ACA) was created. All journals were included, regardless of whether they published during the entire 10-year time period. Database search engines (e.g., EBSCO Academic Search Complete) and publisher websites were used as the primary tools to locate all articles published in every identified journal during the specific time period. After articles were secured, a database was created where authors' associated institutions at the time of publication were indexed. At least one author for each publication was associated with a CACREP-accredited counseling program, an inclusion criterion for this study. Thus, if an article was authored by two faculty at two different CACREP-accredited programs, both institutions received credit for that publication. Finally, each institution's most recent Carnegie classification was identified. A total of 5,250 publications authored by faculty at 396 institutions with CACREP-accredited programs were included in the analysis. The total number of publications accounts for articles with multiple authors from different institutions, with potentially different Carnegie classifications, being counted more than once. For example, an article authored by two faculty, one from an R1 institution and one from an M1, was counted as two publications. The rationale for this was that each institution listed on any given article would receive credit for this publication. R1 programs accounted for 37.68% ($M = 33.53$) and R2 accounted for 31.37% ($M = 25.34$) of publications in ACA-affiliated journals (see Table 1 for a detailed breakdown of institution and publications in ACA-affiliated journals).

Table 1

Breakdown of Observed Data of Total Publications by Carnegie Classification

Carnegie Classification	# of Programs	%	# of Pubs	%	Total Publications		
					Mean	*SD*	Var
R1—Very High Research Activity	59	14.86	1,978	37.68	33.53	30.53	932.05
R2—High Research Activity	65	16.37	1,647	31.37	25.34	28.29	800.45
D/PU—Doctoral/Professional Universities	71	17.88	652	12.42	9.18	13.36	178.52
M1—Larger Master's Program	116	29.47	802	15.28	6.91	9.71	93.90
M2—Medium Master's Program	43	10.83	105	2.00	2.44	3.14	9.87
M3—Smaller Master's Program	13	3.27	20	0.38	1.54	2.30	5.27
Bacc.—Baccalaureate Colleges	9	2.27	9	0.17	1.00	1.32	1.75
SF—Special Focus Institutions	20	5.04	37	0.70	1.85	2.56	6.56
Total	396		5250		13.26	21.32	

Note. This table provides the descriptive statistics for programs and publications by Carnegie classification. Only CACREP-accredited programs were included.

Data Analysis

Following the data collection, the observed data was entered into and analyzed using SAS statistical software system to run the Markov chain Monte Carlo procedure with the Metropolis–Hastings algorithm to generate the estimated models. A Bayesian theoretical approach was taken to use prior information elicited from Newhart et al.'s (2020) publication, "Factors Influencing Publication Rates Among Counselor Educators." It was determined that a Poisson regression analysis was appropriate for determining the relationship between a predictor variable and an outcome variable characterized in the form of a frequency count. One assumption of Poisson models is that the mean and the variance are equal (homogeneity of conditional means). If this assumption is violated, a negative binomial model can account for a large difference between the variance and mean by estimating a dispersion parameter (Agresti, 2007). The test for the assumption of equal conditional mean and variance was violated, indicating overdispersion. Overdispersion occurs when the data has greater variability. The following negative binomial model was used to run a negative binomial regression (where D is the dispersion parameter): $E(Y) = \mu$, $Var(Y) = \mu+D\mu^2$.

Next, the self-reported data collected from Newhart et al. (2020) was used to determine prior information to distinguish the differences between Carnegie classification and publication rates using R1 institutions as a baseline (see Table 2). The logarithm of the ratio was used for the prior mean of the distribution.

Table 2

Newhart et al. (2020) Self-Reported Total Publications by Carnegie Classification

	Total Publications		
Carnegie Classification	*M*	*SD*	Ratio
R1: Doctoral Universities – Very High	25.78	26.15	-
R2: Doctoral Universities – High	19.74	18.53	0.766
D/PU: Doctoral/Professional Universities – Moderate	13.31	14.78	0.516
Master's Universities	7.98	7.46	0.309

Note. Ratio reflects multiplicative factor in relation to baseline R1.

Results

A negative binomial regression was used to (a) determine what the posterior probability publishing rates of non-R1 programs were compared to programs at R1 institutions and (b) examine if Newhart et al.'s (2020) self-reported data was plausible given the observed data. An initial model contained 10,000 burn-ins with a total of 100,000 iterations; however, this model lacked efficient information as determined by the effective sample size and efficiency. Next, Gibbs sampling with the Jeffreys prior was used and produced similar posterior parameter estimates and increased efficiency, indicating robustness; however, the effective sample size did not increase. Therefore, a sum-to-zero constraint was used to re-parametrize the model by centering the parameters. This resulted in coefficients representing group deviations from the grand mean, where in prior models the coefficients represented group deviations from the reference group. The following results are reported using the WAMBS checklist procedure for reporting Bayesian

statistical results (Depaoli & van de Schoot, 2017). The WAMBS checklist consists of four stages and 10 points to appropriately understand, interpret, and provide results of Bayesian statistics. The following paragraph outlines these 10 steps as applied to the current data.

First, normally distributed, non-informative priors were used (see Table 3). Second, model convergence was inspected by visually inspecting trace plots and using Geweke's statistic. A visual inspection of the posterior parameter trace plots provided evidence of chain convergence in which each chain centers around a value and has few fluctuations displaying a "fuzzy" pattern. Geweke's statistic compares the differences in means across chains to test convergence by comparing the first 10% of the chain to the last 50%. According to the Geweke's statistics results, all values are within the range of +/- 1.96 and retain the null hypothesis with $p > .05$ (nonsignificant), indicating convergence. Convergence remained after doubling the number of iterations. Third, the chains did not appear to shift and converge at another location after doubling the iterations, with parameters centering around the previous estimates. Fourth, each parameter histogram was reviewed and determined to have adequate representation of the posterior distribution. Fifth, after determining the model had converged, the chains were inspected for dependency as evidenced by the autocorrelations. The model appeared to have low autocorrelations, with each chain approaching and reaching zero between 10 and 20 lags, indicating low chain dependency. In addition to low autocorrelations, the effective sample size indicated the model was robust with information as evidenced by (ESS > 10,000) and positive efficiency. Prior to interpreting the output, we compared the model using the informative prior information, which slightly pulled the posterior mean estimates closer to that of the prior information; however, the results were effectively the same. Sixth, the posterior distribution appeared to make substantive sense as evidenced by smooth posterior density plots with reasonable standard deviations within the scale of the original parameters. Steps 7 through 9 were skipped in cases where only non-informative priors were used. Lastly, Step 10, the Bayesian way of interpreting and reporting results, was followed.

To answer the first research question, the post-summary means that are group deviations from the grand mean (intercept) were taken to determine the differences of Carnegie classification in comparison to R1, yielding the parameter estimate *B* (see Table 3).

Table 3

Posterior Summaries

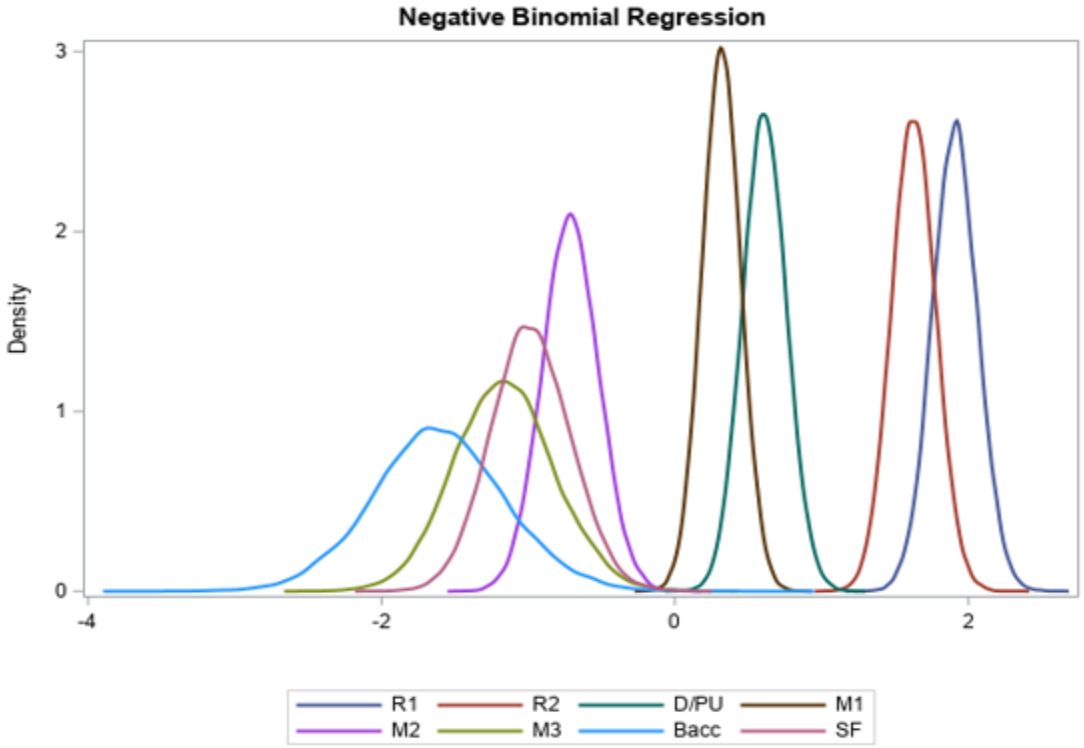
Parameter	Priors	*M*	HPD Interval		*B*	*exp(B)*	*1/exp(B)*
Intercept	N (0, 10)	1.612	1.4251	1.8018	3.521	-	-
R1	N (0, 10)	1.909	1.6013	2.2142	-	-	-
R2	N (-0.27, 10)	1.628	1.3315	1.9199	-0.28	0.756	1.323
D/PU	N (-.66, 10)	0.612	0.3142	0.9038	-1.295	0.274	3.650
M1	N (-1.17, 10)	0.317	0.0617	0.5824	-1.587	0.206	4.854
M2	N (-1.17, 10)	-0.712	-1.0935	-0.3411	-2.619	0.073	13.699
M3	N (-1.17, 10)	-1.164	-1.8311	-0.4917	-3.082	0.046	21.740
Bacc	N (2, 10)	-1.609	-2.4932	-0.7119	-3.512	0.029	34.483
SF	N (2, 10)	-0.982	-1.5083	-0.4479	-2.897	0.055	18.182
Dispersion	N (1, 1)	0.885	0.7506	1.0275	1.118	-	-

Note: exp(B) reflects the times fewer publications in relation to R1; 1/*exp(B)* reflects R1 x more publications in relation to parameter.

The results of the negative binomial regression indicated faculty at R1 programs published at a rate of 1.32 times that of faculty at R2 programs. Faculty at R1 programs published 3.65 times more than faculty at D/PU programs and 4.85 times more than faculty at M1 programs. Figure 1 provides a visual density plot of the posterior summaries of the group deviations from the intercept. An interpretation of the visual analysis indicated publication rates among faculty arranged into three groupings based on the observed data in the estimated model: R1 and R2 programs, D/PU and M1 programs, and the remainder of the program types.

Figure 1

Posterior Density Plot



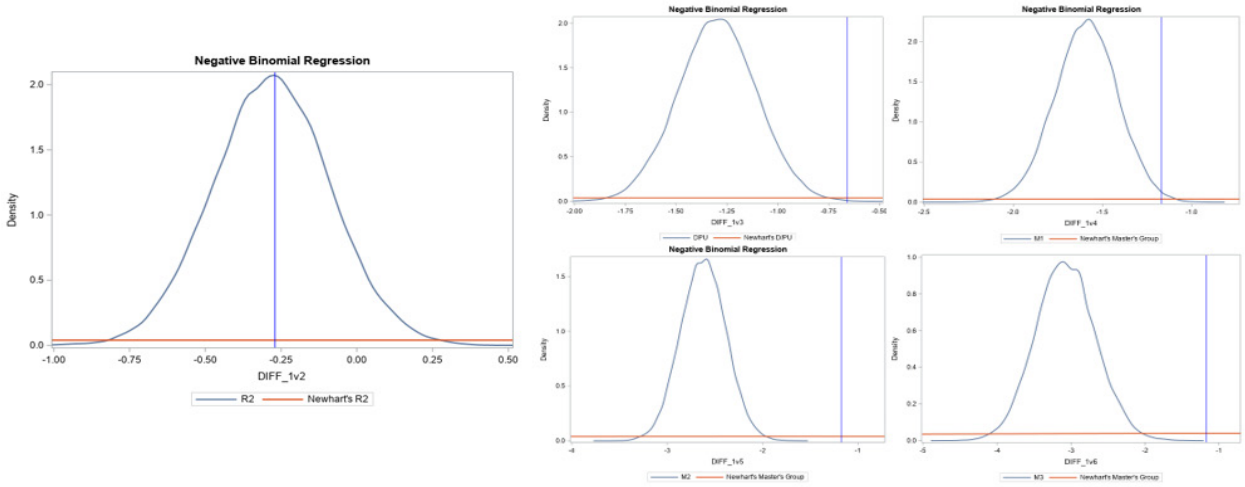
Note. Posterior density plot for differences from the grand mean.

To answer the second research question, a series of Bayesian hypothesis testing was conducted. Hypotheses tests were only conducted for doctoral- and master's-level programs because Newhart et al. (2020) only provided information regarding doctoral- and master's-level programs. The observed data collected yielded higher mean and standard deviations for each Carnegie classification compared to Newhart et al. Therefore, instead of comparing the differences among means, it appeared more appropriate to assess the differences between self-reported and observed data ratios regarding program Carnegie classification publication productivity. Newhart et al.'s self-reported data indicated that in relation to R1 programs, faculty at R2 programs published .77 times fewer articles, faculty at D/PU programs published .52 times fewer articles, and faculty at master's-level programs published .31 times fewer articles (see Table 2). These ratios were converted using the logarithmic form to be used as the prior means. After determining the differences of the observed data from the previous question, the prior means were used to compare the plausibility of Newhart et al.'s data with the observed data.

Surprisingly, the self-reported ratio between R1 and R2 programs was similar to the observed; therefore, the hypothesis test yielded a 52.35% probability of Newhart et al.'s (2020) self-reported finding of the ratio between R2 and R1 programs falling below the posterior estimate and 47.65% probability of it falling above (see Figure 2). However, the remainder of self-reported data fell above the posterior estimates with 99%–100% probability. Therefore, the plausibility of Newhart et al.'s findings regarding the ratio between R1 and R2 programs was 100%; however, the plausibility of all other programs was 0%–1%. It appears Newhart's self-reported data was potentially underestimating differences in publication ratios between programs beyond R2 programs in relation to R1 when compared to the observed data.

Figure 2

Plausibility of Newhart et al. (2020) Data



Note. R2, D/PU, M1, M2, and M3 program estimations are displayed in relation to R1 programs.

Discussion

In this study, we examined the actual publication trends of CES faculty by reviewing all articles published in ACA-affiliated, peer-reviewed journals from 2008 to 2018. The results of this study support the perceived relationship between higher Carnegie classification and increased scholarly productivity (Barrio Minton et al., 2008) and confirm previous self-reported research findings (Ramsey et al., 2002) that faculty at higher-ranked institutions spend more time publishing. A review of the results and previous literature indicates several unique findings relevant to faculty, programs, and doctoral students. The differences between Carnegie classifications show that although CES faculty at R1 universities publish at higher rates, as anticipated, CES faculty at R2 and R1 universities are publishing at similar rates in ACA journals. CES faculty in programs at R1 and R2 institutions produce the highest number of publications, accounting for 69.1% of publications from 2008 to 2018, suggesting these programs will have the highest demands for research activity. Interestingly, although they are publishing less frequently than R1 and R2 programs, publication rates appear to be similar for CES faculty in programs at D/PU and M1 institutions. Together they account for 27.7% of publications over the past decade, a considerable amount of research in the counseling profession. Counseling programs at M2, M3, Baccalaureate, and Special Focus institutions have the lowest

publication outcomes, accounting for 3.3% of publications over the past decade, a finding consistent with previous literature (Barrio Minton et al., 2008; Ramsey et al., 2002) and the method by which Carnegie classifications are attained.

The fact that CES faculty at M1 institutions, which supposedly do not place high emphasis on research, are publishing at a rate similar to faculty at D/PU institutions is interesting. It is possible that CES faculty at M1 institutions are spending more time engaged in scholarly activity because of the perceived importance of publishing for tenure/promotion (Barrio Minton at al., 2008; Ramsey et al., 2002; Ray et al., 2011; Whitaker, 2018). Applicants for tenure-track positions, as well as tenure-track CES faculty already at these programs, might expect to experience pressure to publish at a higher level similar to that of D/PUs for a variety of reasons. Faculty at M1 institutions might feel motivated to increase their publications as their institution attempts to change classification, which could result in increased external funding, attained interest of high-quality faculty, and gained recognition (Olson, 2018). Alternatively, CES faculty working at M1 or D/PU institutions who plan to apply to programs at institutions with high or very high research activity might feel pressure to publish more frequently in order to advance their careers as desired (Lambie et al., 2014). Salary may also influence CES faculty considering institutional moves, with annual salaries at R1 institutions averaging $17,000 more than R2, and annual salaries at R2 averaging $9,000 more than D/PU and $7,500 more than M1 institutions (Chronicle of Higher Education, 2018).

Another unique finding is that it appears the observed differences between R1 and R2 CES faculty publication rates match Newhart et al.'s (2020), providing further evidence CES faculty at R1 classified institutions as a whole are publishing at a rate 1.32 times higher than CES faculty at R2 institutions in ACA-affiliated journals. It also appears Newhart et al.'s findings underestimate program differences and do not account for the differences among master's-level programs as evidenced by the higher rate of publication by CES faculty at M1 programs.

The results of the current study highlight the importance of an emphasis on research and scholarship in CES doctoral programs in order to prepare future CES faculty to be successful in their roles. As doctoral students begin their job search, students seeking faculty positions face the uncertainty of not knowing where positions will be available and at what types of institutions. Although some doctoral students may have a clear idea of the type of institution where they wish to work, it is not guaranteed they will secure their desired position. In a profession that is growing quickly and becoming increasingly competitive, it is essential that CES programs support doctoral students in honing their research skills for career success and to promote job satisfaction. In programs where CES faculty are expected to publish at higher rates, doctoral students with inadequate preparation are at risk of becoming unsatisfied in their positions, which can result in decreased productivity and retention (Wong & Heng, 2009). Therefore, a focus on research and scholarship in CES programs not only helps in the career development of doctoral students but promotes retention of faculty in the long term (Sangganjanavanich & Balkin, 2013).

Limitations

Limitations of this study include issues regarding sample and journal selection. Regarding journals selected, because previous research indicates that counselor educators most often publish in counseling-related journals (Barrio Minton et al., 2008), we chose to limit our study to ACA division journals. However, many counselor educators publish in non-ACA journals, such as *Professional School Counseling* and the *International Journal of Play Therapy*. Our sample included only programs that were listed as CACREP accredited in August of 2018, which will have included programs that were either merging or losing accreditation, as well as not including programs that have since become accredited.

Additionally, not all programs may have been accredited during the entire 10-year time frame, and an institution's Carnegie classification possibly could have changed during that span as well. Specifically, during the 10-year time frame used for this article, Carnegie classifications were reviewed every 5 years. Currently, review and reclassification occurs every 3 years. Future research could account for this by organizing publications in 3-year clumps and including reclassification as a variable for data analysis. Future research also might consider additional counseling journals not affiliated with ACA, the quality and type of manuscripts published (e.g., conceptual, qualitative, quantitative), and the presence of doctoral student authorship in the published manuscript. Further, exploring publications by specific years will reveal particular trends over the 10-year time period.

Implications

Viewing the results of this study through an HLT lens, planned experiences are structured by the program in order to ensure that CACREP standards are met and that students become competent and knowledgeable CES faculty. However, faculty members are positioned to provide opportunities for doctoral students to have unplanned experiences and to support doctoral students navigating unplanned experiences beyond their control. In terms of research, the authors of this article argue for the necessity of increased opportunities for CES doctoral students to engage in unplanned experiences such as formal research teams, supervised research projects, and research collaborations through conducting studies, writing journal articles, and presenting scholarly work. Research and scholarly activity are an integral part of being a CES faculty member (CACREP, 2015).

Balancing the expectations of various CES roles, such as teaching, student mentorship, research, and leadership, creates a natural pressure for faculty members contributing to challenges such as difficulties with time management and role confusion (Smith & Leppma, 2017). For faculty members expected to produce several articles per year, tenure and promotion requirements may increase this perceived pressure, as one's job security often depends on one's rate of publication. Tenure and promotion requirements promote the need for quality scholarship published in peer-reviewed journals; however, the expectations of CES roles are not consistent across CES universities and programs, resulting in differences on the impact on scholarly productivity and perceived pressures to engage in efforts to publish (Ray et al., 2011). These expectations for faculty may also influence the level of engagement CES faculty have with students regarding their research projects and endeavors. According to Section C of the *ACA Code of Ethics*, counselors have an ethical obligation to "engage in counseling practices that are based on rigorous research methodologies" (ACA, 2014, p. 8), and an entire section (Section G) is dedicated to research and publication. The ACA code not only offers guidance for ensuring research is conducted ethically to protect participants' rights, but it also calls for research to be used as a means for promoting a healthier and more just society. CES faculty are charged to produce research and to engage doctoral students in developing and participating in research publication (Lambie et al., 2014; Wester et al., 2013). Future research exploring annual publication expectations and the number of publications at important tenure/promotion milestones for CES faculty could provide clarity regarding program and university workloads.

The authors suggest programs and faculty create ample opportunities for doctoral students to engage in research through the use of research teams and establishing expectations to publish during their doctoral tenure. Programs largely vary in their research training; although some programs provide clear and established research teams, a majority do not. Further, fewer programs require students to submit a publication to a professional journal prior to candidacy (Goodrich et al., 2011). By providing doctoral students with research mentorship and opportunities to collaborate on scholarly work, faculty

members increase the likelihood that doctoral students will engage in research activities. Doctoral students who not only engage in research-related activities but publish while in their doctoral program are more likely to have increased interest, engagement, and competence in research-related tasks (Lambie & Vaccaro, 2011). Doctoral program faculty should not only design courses that teach research methods but should infuse research and scholarly writing into every course. Although it might seem more difficult to do this in certain types of courses, such as those with a clinical focus, CES faculty could use those opportunities to teach and practice action research (Whiston, 1996), qualitative research (Hays & Wood, 2011), or single-case research designs (Ray, 2015), giving students the tools necessary to efficiently produce quality research, especially if they obtain faculty positions in CES programs.

Additionally, students can approach faculty advisors for assistance identifying their interests and strengths and seek out mentorship opportunities that align with their career ambitions during the initial year of their doctoral program. Further, as mentors and advisors, faculty members can help doctoral students identify their interests and strengths, set career goals, and align those goals with appropriate types of institutions. For instance, it appears that programs at D/PU institutions with moderate emphasis on scholarship and research may want to develop or continue to develop research mentorship for doctoral students to improve their job placement opportunities. Further, although M1 institutions are not involved in the training of doctoral students, this group comprises a majority of programs, indicating that a good portion of doctoral students will be working at master's-level institutions, and if placed at an M1, they may still have an intrinsic or extrinsic responsibility to conduct and publish research.

Conclusion

The authors sought to further understand the publication trends of faculty in 396 CACREP-accredited CES programs based on Carnegie classification by exploring 5,250 publications over the last decade in 21 ACA and ACA division journals and how these results can be used to inform CES training and preparation of doctoral students through an HLT framework. Although findings indicate that programs at R1 and R2 institutions account for nearly 70% of research, a majority of the remainder of CES literature (nearly 28%) is produced by D/PUs and larger master's programs (M1s), indicating a greater emphasis on research than previously perceived at non-doctoral institutions. Programs and faculty can provide enriched experiences through advising and mentorship to better prepare future counselor educators in the areas of research and scholarship.

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