Examining the Relationship Between College Advising and Student Outputs: A Content Analysis of the *NACADA Journal*

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In an effort to promote the advancement of the advising profession, this study examines trends related to current knowledge of academic advising and the relationships between various forms of postsecondary advising practices and student outputs. Using content analysis techniques, we analyzed research articles published in NACADA Journal between 2004 and 2018 to identify trends in the ways academic advising has been studied. Major findings include the small number of studies (n = 18) over a 15-year period that relate advising to outputs and the lack of research focusing on underrepresented student populations despite the continued significant growth of these diverse groups. Recommendations highlight characteristics of academic advising that may benefit from further scholarly inquiry.

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Beginning as early as the 1970s, there have been calls for increased scholarship about academic advising. In one of the earliest reviews of the profession, Grites (1979) recommended institutions "conduct more research on the advising process and its outcomes to generate new information … to determine more generalizable approaches, and to re-invent fewer wheels" (pp. 3-4). He further noted these research studies should be conducted in a way that helps establish the "relative worth and adaptability" of advising practices (Grites, 1979, p. 54). Since then, *NACADA Journal* has published numerous pieces calling for more research about advising and its co-editors have even outlined research suggestions in their letters from the co-editors (e.g., Kuhn & Padak, Fall 2005; Padak et al. 2005, as cited in Kuhn & Padak, Spring 2005). A decade ago, Habley (2009) also chronicled the history of calls across multiple publication outlets for more research demonstrating evidence of effectiveness, tying advising to student outputs[1] (e.g., McGillin, 2000; Pascarella & Terenzini, 1991). Despite tangible progress, there seems to be general agreement that the body of scholarship on advising remains small (Habley et al., 2012; Hatch & Garcia, 2017; Mu & Fosnacht, 2016). The relatively small body of advising scholarship is somewhat understandable; even though advising is critical to student success, advising resources are very limited (Thompson, 2016). Limited resources mean the roles of advisors and the demands placed on them continue to expand, which makes it difficult to determine which advising practices and approaches (Crookston, 1972/2009) are linked to specific outputs. Still, in order to truly heed the call to thoroughly document the worth and effectiveness of academic advising practices and approaches by building on what is already known, we must first determine what is currently known about advising and its relationship to student outputs, including the types of advising best suited for specific populations.

Approaches to Advising

The most significant challenge in examining advising and its impact on student outputs is the variation in advising practices, structures, and delivery of approaches (Crookston, 1972/2009; Lowenstein, 2005). There is a considerable amount of literature comparing different approaches of advising. The debate between developmental advising and prescriptive advising, for example, permeates the advising literature (Crookston, 1972/2009; Lowenstein, 2005). Other approaches, such as intrusive advising, have started to gain prominence as well. First discussed by Crookston (1972/2009), developmental advising is an interactional process between advisor and student that involves counseling the whole student, is two-

[1] For the purposes of this study we utilize the term *output* based on the taxonomy of college student outputs developed by Astin (1973, 1991; Astin & antonio, 2012), which includes affective and cognitive behaviors and psychological processes. While this term is more commonly referred to as an *outcome* in most postsecondary education research (Canaan et al., 2019; Mayhew et al., 2016; Pascarella & Terenzini, 2005), we wanted to distinguish between the published research findings reviewed here and the formal assessment of student learning outcomes in the academic advising literature.

directional with active student participation, and results in personal development and change for the student (Lowenstein, 2005). Prescriptive advising, on the other hand, is one-directional and authoritative in nature, with the advisor prescribing advice to a passive student (Crookston 1972/2009). Lowenstein (2005) more deeply explored both these approaches in terms of their relationships to the role of teaching in advising. Lowenstein (2005) developed "learning-centered advising," which combines elements of the different approaches while "coaching advisees into an understanding of the overall structure and logic of their [own] curriculum" (p. 72). Intrusive advising (also sometimes referred to as proactive advising) is comprised of advising interactions initiated by an advisor at critical points in a student's academic career, particularly when the student is at-risk academically (Mu & Fosnacht, 2016). Academic advisors typically take elements from each approach depending on their professional role on campus (e.g., faculty mentor or centralized academic advisor) and the specific outputs they are trying to achieve (e.g., improve a student's GPA).

Solely aligning with any one advising approach can become complicated by the many roles an academic advisor may adopt. While most academic advising scholars and practitioners generally agree a developmental advising approach is most advantageous for students, most also admit the majority of their advising is more prescriptive (Bridgen, 2017). Furthermore, while students are more likely to perceive a developmental advising approach more favorably, students most appreciate when the advisor can provide a personalized and efficient advising experience (Gravel, 2012; Harris, 2018), which could align more with the prescriptive model. Students tend to value advising focused on providing accurate information regarding important institutional or degree requirements above all else, including developmental advising (Smith & Allen, 2006). Some students have also reported the advising approach employed by their advisor is less important than other variables, such as the depth of the advising relationship (Mottarella et al., 2004).

Lastly, when other variables, such as retention, are taken into account, intrusive advising proves to be one of the more effective advising approaches, as advisors can intervene at crucial points in a student's trajectory (Rodgers et al., 2014). It is difficult to parse exactly which approach any one advisor may use, as their approach may vary based on contextual circumstances and the needs of the student. More recent practical and theoretical literature focuses on the increased racial, ethnic, and cultural diversity of college students and calls for the use of strategies based on the needs of diverse populations such as adult learners, students of color, students with disabilities, and first-generation college students (Hunter et al., 2007). However, empirical research on the impact of these diverse advising approaches on student outputs is not keeping pace with the growth of diverse student populations.

The structure of advising (e.g., central office, departmental) and the role of the advisor (e.g., faculty advisor, primary-role advisor, mentor) are also important areas of scholarship in academic advising. Given the varied structures of postsecondary institutions, the location and type of delivery should be different across institution types. But even within institutions that follow a shared model in which advising is split between faculty and primary-role advisors (Miller, 2012), it is safe to assume that different individuals at the same institution may utilize different advising approaches given their diverse roles (Zarges et al., 2018). These varied roles, structures, and approaches make research on advising a challenging undertaking.

Studies Linking Advising to Outputs

The academic advising scholarship base covers a range of outputs linked to academic advising. One of the most commonly measured outputs is student perception of or satisfaction with the academic advising process (Burt et al., 2013; Cheung et al., 2017; Gravel, 2012; Harris, 2018; Paul & Fitzpatrick, 2015). Other outputs linked to academic advising relate to measurable student achievement, such as increases in grade point average (GPA) or student retention (McKenzie et al., 2017; Rodgers et al., 2014; Schwebel et al., 2012). Overlapping with these are outputs such as autonomy in academic decision-making (Leach & Patall, 2016), student self-efficacy (Erlich & Russ-Eft, 2013), and student motivation (Henning, 2009), which are often intertwined with or contributing factors to student achievement. A considerable amount of the scholarship on academic advising is centered on students and typically draws from four-year institutions, meaning few studies include academic advisors in the sample. Given that the literature on advisors and advising is not very robust, there continues to be a

compelling need to investigate advising beyond student satisfaction (Zarges et al., 2018) and to broaden the sample beyond students.

NACADA Journal and Advising Research

As noted throughout our review of the literature, because advisors employ diverse advising approaches, play a variety of roles in their institutions, and work toward different outputs based on the students they serve (Troxel, 2018), the empirical research and scholarship of advising is equally varied. Additionally, inconsistencies in institutions' and students' expectations for academic advisors, as well as the fact that some academic advisors are also faculty members with teaching responsibilities and consequently varied backgrounds, add to the difficulty of empirically examining advising (Troxel, 2018). Despite these challenges, several common methods of analyzing advising have emerged, including the "advising-as-teaching" (Crookston, 1972/2009; He & Hutson, 2016) approach (also referred to in the scholarship of teaching and learning [Troxel, 2018]), which involves using a student-centered learning lens when advising students. Additionally, new knowledge gained through explorations of best practices have been included in the advising scholarship (Hagen, 2010; Troxel, 2018). Building a richer body of research helps advising situate itself as a profession within higher education (Troxel, 2018). Accordingly, the academic advising organization NACADA: The Global Community for Academic Advising has adopted a research philosophy, and members of the association have focused on research on advising. NACADA has also prioritized scholarly inquiry, and much of the existing empirical research on advising can be found in the association's main publication, *NACADA Journal*.

Founded in 1981, *NACADA Journal* is a refereed journal sponsored by NACADA. Published in June and December of each year, *NACADA Journal* "exists to advance scholarly discourse about the research, theory and practice of academic advising in higher education. For more than 35 years the *NACADA Journal* has served as the preeminent authority on academic advising in higher education" (NACADA, n.d.). Therefore, *NACADA Journal* is the obvious choice to begin understanding the research and scholarship of advising.

Purpose and Research Questions

In an effort to promote the advancement of the advising profession, the purpose of this study is to analyze the research articles published in *NACADA Journal* between 2004 and 2018 to explore trends related to current knowledge of advising and the relationships between various forms of postsecondary advising practices and student outputs. This study is guided by the following research questions:

RQ1. What methods have been used in *NACADA Journal* articles to empirically examine advising?

RQ2. What types of samples (e.g., size, student and advisor characteristics and demographics, institutional contexts) have been used in *NACADA Journal* articles to empirically examine advising? In particular, how prominent are study participants from racially minoritized, first-generation, or low-income backgrounds?

RQ3. What types of advising have been studied in *NACADA Journal* articles?

RQ4. What student outputs have been empirically examined in *NACADA Journal* articles? Of these outputs, which have been empirically linked with advising?

Methods

This study is based on a quantitative content analysis of original empirical studies published within *NACADA Journal* during the 15-year period from 2004 to 2018, or volumes 24 to 38. We chose to begin our analysis in 2004 following calls for more research at the 2003 and 2004 NACADA conferences (see Padak et al., 2005, as cited in Kuhn & Padak, Spring 2005). Quantitative content analysis involves the systematic assignment of content to categories and the analysis of those categories using statistical methods (Riffe et al., 2014).

Inclusion Criteria and Sample

Three collaborators (the authors and an experienced graduate assistant) developed a database that included all 258 journal entries during the 2004 to 2018 time period. Of these, 128 book reviews, theoretical papers, editorials, letters to or from the co-editors, and annotated bibliographies were excluded during the first round of coding because they were not empirical studies.

The remaining 130 original empirical studies were then examined for one criterion: whether advising itself was part of the study. The answer to this question was determined by reading the entire methods and results sections of each article.

For quantitative studies, advising must have been included as a variable in the analysis or the setting for the study. For qualitative studies, participants must have specifically discussed their experiences with advising. Following these inclusion criteria, another 45 articles were omitted from the analysis as they suggested implications for advising but did not focus on advising itself. The final sample was comprised of 85 articles (32.9% of all journal entries and 65.4% of empirical studies during the time period) that were original empirical studies about or including academic advising.

Data Analysis and Reliability

Data were categorized and coded through multiple cycles using Saldaña's (2009) analytic methods. Three coders participated in the coding process. First, preliminary coding categories were created a priori (Saldaña, 2009) to capture identifying characteristics of the article (e.g., title, author, year) and its research design, data collection methods, study samples, operationalizations of academic advising, types of analyses employed, and study outputs. To confirm our first round of codes was accurate, each coder independently reviewed the same four issues of the journal and then conferred regarding any topical, content, methodological, or results areas we may have missed in our first draft of codes. Following the preliminary coding phase, we then used an inductive coding, or focused coding, approach (Saldaña, 2009) to refine categories and codes as we reviewed the data (empirical articles). Each of the 85 articles were assigned to two different coders. In terms of reliability, during the initial review of the first four issues to develop the code book, the coders were at nearly 90% agreement based on a simple percentage agreement (Roaché, 2017). The high percentage of simple agreement was likely due to the straightforward types of categories and codes used in the study (e.g., "is advising in the study?"). The process of simple agreement was appropriate as a reliability technique due to the nominal measurement levels involved. Once the database was finalized, we used descriptive statistics to identify patterns and research trends over time.

Results

Of the 85 studies in the sample, almost all (92.9%) included the word *advising* or *advisor* in the title. An average of 5.6 empirical studies about advising appeared in *NACADA Journal* per year during the 15-year period covered. The most studies per year were featured in 2017 ($n = 10$), followed by 2006 and 2013 ($n = 7$ each). The fewest studies per year were featured in 2011 ($n = 1$), followed by 2005 and 2009 ($n = 4$ each). Overall, it seems there has been an increased interest in the empirical examination of academic advising in recent years.

Table 1. Data collection techniques employed in studies ($n = 85$)

Technique	*n*	% of Studies
Surveys (both forced-choice and open-ended questions)	50	58.8
Individual interviews	23	27.1
Collected existing data (e.g., websites, student records)	13	15.3
Focus groups	8	9.4
Observations	2	2.4
Story circles	1	1.2

RQ1: How Advising is Studied

The majority of the studies in the sample used a cross-sectional design (85.9%). Roughly half (49.4%) applied quantitative methods, while 40% used qualitative methods and 10.6% employed mixed methods. Table 1 shows that surveys were the most popular data collection technique. Several studies utilized existing instruments, particularly the Academic Advising Inventory (Winston & Sandor, 2002), which includes a 14-item measure for type of advising received (prescriptive or developmental) and a 5-item measure for satisfaction with advising. Others developed new instruments to gather information from study participants, including qualitative studies that utilized open-ended survey questions. Multiple studies relied on various forms of data collection, which is why the totals in Table 1 amount to more than the sample size.

In a content analysis of methods used in higher education journals, Hutchinson and Lovell (2004) categorized statistical procedures as basic, intermediate, or advanced based on the number of courses that would typically be required for proper understanding. Coding for those same categories, as well as for specific statistical analyses, we found that basic analyses were the most frequently used in the *NACADA Journal* sample (see Table 2). However, multiple

Table 2. Types of statistical analyses used in quantitative studies ($n = 51$)

Statistical Analysis	*n*	% of Studies
Basic		
Descriptive (mean, S.D., frequencies)	25	49.0
Correlation	8	15.7
Independent or paired samples T-tests	8	15.7
ANOVA	6	11.8
Chi-square	5	9.8
Intermediate		
Multiple regression	13	25.5
Posthoc tests	3	5.9
Path analysis	1	2.0
ANCOVA	1	2.0
Advanced		
Exploratory or confirmatory factor analysis	7	13.7
Logistic regression	5	9.8
Structural equation modeling	1	2.0
MANOVA	1	2.0
Propensity score matching	1	2.0

regression, an intermediate level analysis, was used in 25.5% of the 51 studies that used either quantitative methods exclusively or had a mixed-methods design. The most frequently used advanced analyses among quantitative studies were factor analysis (13.7%) and logistic regression (9.8%).

RQ2: Samples and Research Contexts

Eighty-one of the analyzed studies reported the size of the sample used in the research study. Of those, just over one-third (35.8%) had fewer than 50 participants, whereas almost two-thirds (60.5%) had fewer than 200 participants and 13.6% had more than 1,000 participants. Of the 85 studies, the majority utilized students as the research subject (62.4%), while 27.1% focused on advisors. Another 8.2% included both students and advisors in the sample, resulting in 30 total studies using advisors in some capacity. It should be noted that two studies relied entirely on existing content and did not include study participants—those studies examined expectations for doctoral advising and structures of undergraduate advising using websites and university documents available online. Table 3 shows the methods used to study each population. When students were studied on their own, researchers relied mostly on quantitative methods (66%), but when students were studied alongside advisors, quantitative methods were only used as part of one mixed-methods study. Qualitative methods were most popular when advisors were part of the study sample, as 43.5% of studies exclusively using advisors applied such methods.

In terms of demographic characteristics, we were particularly interested in determining whether study participants were from racially minoritized groups, first-generation backgrounds, or low-income backgrounds, as research shows these populations continue to be underserved in most college environments (Carter Andrews & Tuitt, 2013; Griffin & Museus, 2015; Harper, 2012; Hurtado & Ruiz, 2012) and can benefit from institutional agents such as academic advisors. Table 4 shows that fewer than half of the articles reported the racial background of their sample population. Our analysis revealed that of those that did report the sample's race ($n = 39$), only six did not have majority white samples. Four of those six studies were focused on a particular non-white population, two of which were international studies conducted in Liberia and Hong Kong (Cheung et al., 2017; Sy, 2017). As a result, only four of the 85 total studies examined majority non-white samples in the United States. Table 4 demonstrates that even fewer studies reported information about the generation in college and/or income background of study participants. Of the eight articles that reported generation status, three focused entirely on first-generation students. The limited demographic information provided in these studies is

Table 3. How different populations have been studied in *NACADA Journal*, 2004–2018

	% Quantitative	% Qualitative	% Mixed Methods
Studies with student samples ($n = 53$)	66.0	30.2	3.8
Studies with advisor samples ($n = 23$)	30.4	43.5	26.1
Studies with both student and advisor samples ($n = 7$)	0.0	85.7	14.3

Table 4. Characteristics of study population reported in studies ($n = 85$)

Characteristic	*n*	% of Studies
Sample race	39	45.9
Sample first-generation status	8	9.4
Sample income/SES	4	4.7
Advisor type (faculty or primary-role)	55	64.7
Advising location or type	46	54.1

almost entirely about the student samples, as only four of the 30 studies that included advisors reported racial background and none reported either generation status or income background.

Most of the studies (80%) reported the number of institutions represented by study participants, with studies focused on single institutions comprising the largest share of the sample (63.5%). Table 5 shows that, on the higher end, two studies used a national sample coming from more than 100 campuses. Another 14.1% of studies included participants who worked at or attended somewhere between two and 55 institutions. Some articles did not report the exact number of colleges and universities participating in the research but still reported institution type, resulting in 85.9% reporting whether the study took place in the context of a two- or four-year institution. A majority (67.1%) of studies used samples from four-year institutions, whereas 12.9% sampled from both two- and four-year institutions and only 5.9% were set at community colleges, including two studies that used advisors as the sample population. Institutional control was similarly skewed, with 51.8% of advising studies being conducted at public institutions and only 7.1% exclusively at a private.

Table 5. Characteristics of institutions included in samples ($n = 85$)

Characteristic	*n*	% of Studies
Number of Institutions		
1	54	63.5
2 to 10	9	10.6
11 to 50	2	2.4
51 to 100	1	1.2
More than 100	2	2.4
Not reported	17	20.0
Institution Type		
Two-year	5	5.9
Four-year	57	67.1
Both two- and four-year	11	12.9
Not reported	12	14.1
Institution Control		
Public	44	51.8
Private	6	7.1
Both public and private	13	15.3
Not reported	22	25.9

RQ3: Types of Advising

Almost two-thirds of the studies reviewed indicated whether the advising discussed in the study was provided by a primary-role or faculty advisor. Of the 55 articles reporting advisor status, 49.1% focused on primary-role advisors, 20% on faculty advisors, and 30.9% on both. As far as the type and location of advising, 45.9% of studies did not specify that information. 11.7% of the total studies specified that the advising in question occurred in the context of a central advising office for pre-major or undecided students in a split model, followed by graduate or doctoral advising (8.2%) and departmental or major specific advising (7.1%). Other types of advising examined by least one study included athletic advising, advising within the residential experience, honors programs advising, online advising, intrusive advising programs, faculty mentor programs, and transfer advising. Another 12.9% of the total articles explained that the advising in their studies occurred in various locations, and most listed the different units included. Several of the articles that did not specifically describe the advising context implied the study sample included different types of advisors across campus. A few other articles surveyed NACADA members but did not report the type of advising they practiced.

RQ4: Advising and Student Outputs

Despite continuous calls for evidence of impact, only 18 studies tied advising to student outputs—that is, merely 21.2% of the empirical studies about advising, 13.8% of all empirical studies, and 7% of the total journal entries in the 15-year period covered in this analysis measured student outputs of advising. Of those 18 studies, the earliest appeared in 2005, the most ($n = 4$) were published in 2013, and half ($n = 9$) were published in the most recent five-year period from 2014 to 2018 (see Figure 1). Of the 18 studies linking academic advising to student outputs, the majority (77.8%) used quantitative methods,

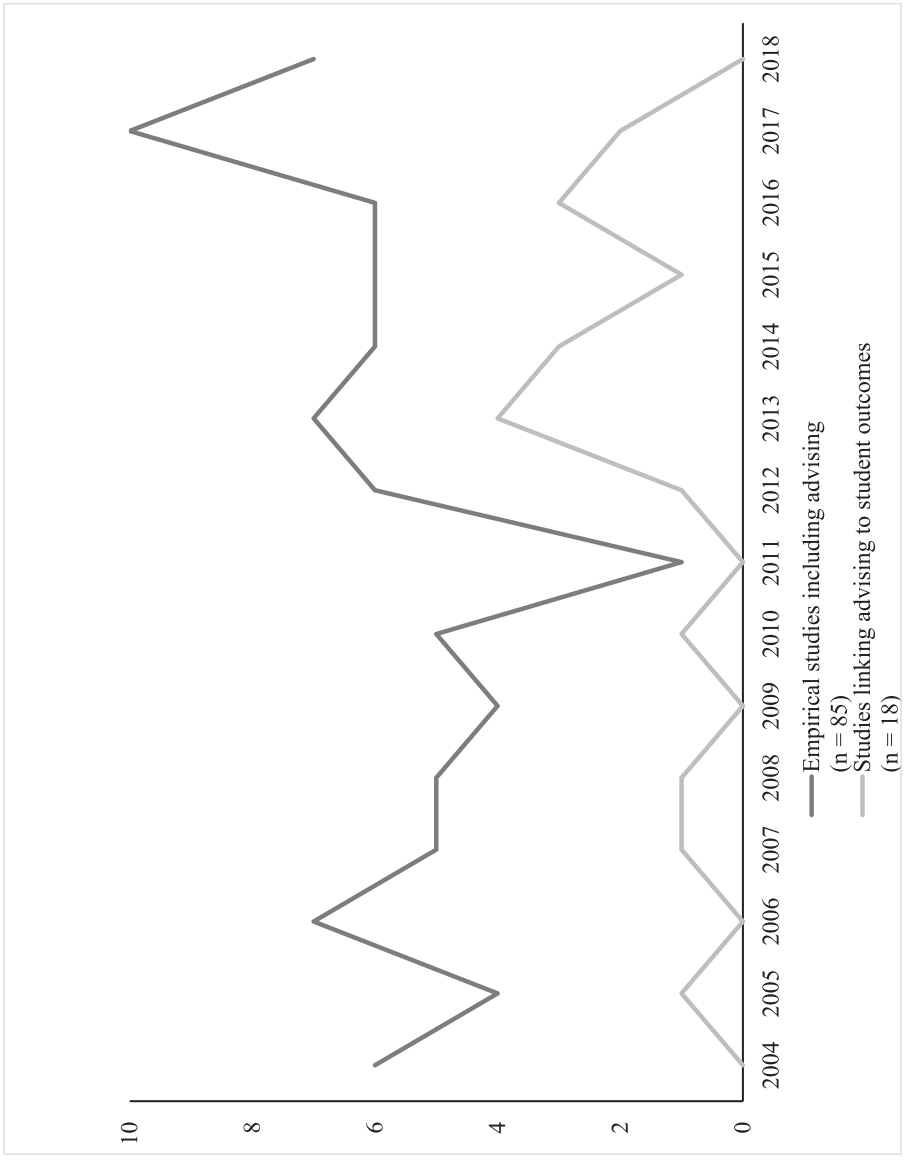

Figure 1. Number of empirical studies in *NACADA Journal* about advising and its link to student outcomes, 15-year trend

Table 6. Student outputs linked to academic advising in empirical studies published in *NACADA Journal*, 2004–2018 (n = 18)

Output	*n*
*Quantitative (*n = *15; 14 quantitative and 1 mixed-methods study)*	
Academic progress (number of major changes)	1
Academic self-efficacy	2
Burnout with major	1
Career decision-making	2
Career self-efficacy	2
Engagement with enriching educational experiences	2
Four-year graduation	2
Grade point average (program and semester)	3
Knowledge of academic requirements	1
Knowledge of resources	1
Loyalty to university	1
Development in graduate studies	1
Possession of educational plan	1
Retention	3
Satisfaction of basic psychological needs	1
Self-regulated learning	1
Understanding of connections	1
Understanding of how things work	1
*Qualitative (*n = *3)*	
How advisors support or inhibit transfer progress	1
How intrusive advising program contributes to student success	1
Persistence	1

16.7% used qualitative, and 5.6% used mixed methods. Just above one-quarter (27.8%) of the studies followed students longitudinally, while the rest relied on cross-sectional data.

The student outputs examined in *NACADA Journal* are listed in Table 6. Of the 15 studies that examined outputs quantitatively, all but five included multiple dependent variables, resulting in a total of 21 outputs reviewed across all studies. Seven of the quantitative outputs appeared in more than one article, with retention and GPA appearing the most at three times each. Student records were used to operationalize the variables in each of those cases. The other outputs that were repeated included academic self-efficacy, career decision-making, career self-efficacy, engagement with enriching educational experiences, and four-year graduation, all of which were measured using student survey data, except for four-year graduation, which was captured through student records. Ten of the empirical studies that quantitatively examined student outputs took place at a single institution, four others included fewer than 10 campuses, and a single study on burnout within the music major included students at 55 campuses (Teasley & Buchanan, 2016). The student outputs linked to advising in qualitative studies were transfer progress for community college students, student success for students in an intrusive advising program, and persistence for minority students. Data for each of those outputs were collected through individual interviews (Donaldson et al., 2016; Museus & Ravello, 2010; Packard & Jeffers, 2013).

In the 18 studies where advising was linked to student outputs, advising served as either an independent variable (in quantitative studies) examined in relation to a non-advising-related dependent variable, or it came up as an important contributor in qualitative studies about a non-advising topic. The 67 articles in our sample that did not link advising to another student output instead used an aspect of the advising process itself as the dependent variable or topic of interest in the study. For instance, six quantitative studies using student samples utilized satisfaction with advising as the dependent variable, making it the most popular output appearing in *NACADA Journal* across the 15 years reviewed. Frequency of meetings with an advisor and preference for developmental or prescriptive advising each served as the output measures for three different studies. Other advising outputs that were the subject of articles included advisor knowledge of support services, preference for technology use in advising, perceptions of advisor communication, and timing of advising appointments.

The dependent variable appearing most frequently in studies using advisors in the sample was job satisfaction (n = 3), followed by awareness of university vision statements (n = 2). Among qualitative studies using student samples, two topics—effectiveness of advising in the first year of college and attributes of good doctoral advisors—were each the subject of two different articles. Among qualitative studies with advisor samples, advising international students was the only repeated topic. There were, however, a series of related qualitative studies focusing on how advisors define academic advising, view the

advising occupation, understand its professionalization, and believe it has changed over time.

Discussion

Academic advising is a crucial function of postsecondary education. However, despite advising's connections to certain student outputs (Arms et al., 2008; Braun & Zolfagharian, 2016; Center for Community College Student Engagement, 2018; Hatch & Garcia, 2017; Kirk-Kuwaye & Nishida, 2001; Rodgers et al., 2014; Schwebel et al., 2012; Smith & Allen, 2014; Suvedi et al., 2015; Swecker et al., 2013; Young-Jones et al., 2013), the empirical evidence showing these links are limited. The results of the content analysis highlight characteristics of academic advising that will benefit from further inquiry. One such area includes research that expands the sample and unit of analysis beyond students and provides more detail about the sample's characteristics and demographics. Regardless of who is included in the sample, future studies need to provide descriptive detail regarding samples and attempt to increase the diversity of samples included in scholarship to mirror the expanding diversity of students, faculty members, and other professionals in postsecondary education. Additionally, the studies reviewed in this content analysis largely neglected to tie advising to student outputs. This highlights an area of opportunity for not just researchers but also practitioners who may consider converting their assessment work on advising processes into action research articles (Troxel, 2018; Zarges et al., 2018).

Conduct More Research Using Advisors

Results show that most studies utilize student samples to measure advising. It is certainly important to understand students' perspectives on their experiences with academic advisors, but our study also identified the need for additional research on advising using advisors as the sample. In particular, the field could benefit from additional quantitative studies utilizing intermediate or advanced statistical analyses that allow inferences to be made about the role of advising on student outputs, as most of the studies utilizing advisor samples employed basic statistics, were qualitative, or did not link the information provided by the advisors to desired outputs for students.

In one of the few studies that included a sample of advisors outside of *NACADA Journal*, Allen and Smith (2008) examined the importance placed on and satisfaction with 12 advising functions across five domains by both students and faculty advisors, as well as the level of responsibility assumed for those functions by faculty advisors. Their analysis revealed a disconnect between the functions for which faculty advisors assumed responsibility and the functions students deemed most important, between what students and faculty advisors each rated as most important, and between the level of satisfaction experienced by both groups. These disconnects highlight the importance of including advisors in studies about academic advising, as limiting research to student perceptions might mean missing important details about the quality and nature of advising interactions. Ideally, future research would use data from both students and advisors combined with longitudinal student records (e.g., GPA, term units attempted and completed, major changes, time-to-degree) to better understand the role of advising and what effective advising looks like for different student populations.

Describe Samples and Increase Diversity

One of this study's major findings is that study samples and research contexts tend to be very minimally described. Replication of empirical studies is considered one of the "basic building blocks of science" (Makel & Plucker, 2014, p. 305), but studies cannot be replicated unless sufficient details are provided about the study's design, sample, and methods. The Multicontextual Model for Diverse Learning Environments (MMDLE; Hurtado et al., 2012) underscores the importance of considering identities and contexts in understanding experiences and outputs. The MMDLE is a framework that places student identity at the very center, explicitly acknowledging that identity shapes how students experience college. Smith and Allen's (2006) study on the importance students place on advising functions further stressed this point, as they found both ethnicity and financial need, among other characteristics, to be associated with the students' perceptions of advising. Moreover, the MMDLE also emphasizes that the curricular and co-curricular spheres in which staff and faculty members' identify play an important role in how interactions are experienced by all participants. In other words, the identities of students and advisors both matter and can influence studies' results. As such, scholars should attempt to report

more information about their samples' characteristics and demographics beyond gender whenever possible.

Whether a study links advising to student outputs or some element of advising itself is the subject of the research, it is equally important to identify the context in which advising takes place and the type of advising practiced. Context matters, but only half of the studies we analyzed specified the advising units or types of advisors included in the research sample. What works for a primary-role advisor at an advising center for undeclared majors may not produce the same results for a faculty advisor working with undergraduates in an honors program, for example. When advising is not clearly defined, findings from different publications cannot be meaningfully compared, nor should they be universally applied.

In addition to more thoroughly describing samples and contexts, future studies should consider examining different types of participants and environments. Between 2010 and 2017, white student enrollment in higher education decreased by 19% and is expected to continue decreasing (Snyder et al., 2019). As colleges and universities continue to become more diverse, it is important to learn more about how academic advising can best serve different types of students. Furthermore, research on private colleges and two-year institutions was limited in our sample, despite the existence of nearly 2,500 of these institutions throughout the United States (Snyder et al., 2019). These types of campuses tend to have different advising structures from four-year public institutions and could benefit from further exploration.

Link Advising to Student Outputs

Only 7% of all articles appearing in *NACADA Journal* over a 15-year period empirically linked academic advising to student outputs. Although finding a relationship between advising and student success can be complicated by many confounding factors, this seems like a figure that can reasonably be increased over the next 15 years. In calling for more research, we are not discounting non-empirical articles, as theories of advising remain critical to the continued professionalization of the field (Shaffer et al., 2010). Our suggestion is merely that non-empirical articles be balanced with more empirical studies that examine how advising may or may not be associated with student outputs, which will benefit both practitioners on the ground and the larger field in an accountability and outputs-driven era.

Given how much advising varies based on many factors (e.g., professional development, demographics, advising approach, and theoretical perspectives of advisors; the location and value placed on advising on a given campus; the characteristics of the students served), creating a body of evidence is a hefty task that cannot be accomplished unless it is consistently addressed. Future research on advising should consider expanding the types of cognitive and affective outputs examined to include, among other things, increased use of other university services, decision-making capacity, sense of purpose and belonging, time-to-degree, co-curricular participation, graduate school attendance, and course-taking patterns. More research documenting the link between advising and retention or even system-wide persistence in higher education is also important, as it is unclear how these outputs are influenced by advising.

Utilizing more nuanced operationalizations of advising is also critical. Frequency of meetings, for instance, appeared as an output in several studies and as a factor influencing outputs in others. However, simply capturing how many advising appointments take place excludes important elements about the nature of the appointment, including how much time is allotted and the reason for the meeting. Similarly, though satisfaction with advising tends to be the subject of the most advising-related research both in *NACADA Journal* and in other outlets (e.g., Allen & Smith, 2008; Braun & Zolfagharian, 2016; Coll & Draves, 2009; DeLaRosby, 2017; Hale et al., 2009; Lowe & Toney, 2000), it seems there is opportunity to expand.

Conclusion

Having published 30 original empirical studies about advising over a 15-year period, *NACADA Journal* should be applauded for giving a platform to the voices of academic advisors. NACADA has the potential to elevate advisors' voices and their worth even further by expanding its scholarship to include more diverse samples, forms of advising, and student outputs that can make evident the value of the profession, but the journal cannot do this work without contributions from scholars. Forty years after the initial calls for research on academic advising, such work is still needed. Recently, more

scholars have addressed the relationship between advising and student outputs in other outlets (e.g., Hatch & Garcia, 2017; Kot, 2014; Mu & Fosnacht, 2016; Smith & Allen, 2006), but it remains important for NACADA to continue contributing to the conversation as the preeminent authority on academic advising.

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