

Academic-Oriented Services Provided by School Psychologists: Current Trends and Factors that Limit and Facilitate Service Delivery

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Abstract: Job demands of school psychologists influence content covered in school psychology training programs. Research investigating current trends in school psychological service delivery can shed light on key practice issues that trainers should attend to when preparing graduate students to provide comprehensive services. This study examined differences between school psychologists' reported delivery of academic and behavioral/social-emotional oriented services, as well as facilitators of and barriers to their provision of three types of academic-oriented services given federal legislation and service delivery models (e.g., Response to Intervention) that may be influencing school psychologists' practices. The participants included a national sample of 267 practicing school psychologists who were Regular and Early Career Members of the National Association of School Psychologists. The current study was a part of a larger investigation of school psychologists' engagement in comprehensive and integrated services. Data were collected through a web-survey and archival data analysis was employed to answer the research questions for the current study. Results revealed no significant differences between the participants' reported delivery of academic and behavioral/social-emotional oriented services. Most facilitators and some barriers (Personal Attributes, Stakeholder Involvement, Resources and Support, School-Specific Variables, Contextual Variables) predicted each of the academic-oriented services, with facilitators accounting for more unique variance in academic-oriented service delivery than did barriers. Implications for training pre-service school psychologists are discussed including recommendations for preparing school psychology trainees to a) provide a broad range of services and b) address factors that influence their delivery of academic-oriented services.

Keywords: school psychology; practice trends; academic-oriented services; facilitators; barriers.

One of the primary goals of the K-12 education system is to ensure that all students demonstrate academic proficiency, yet recent nationwide data show that elementary and secondary students continue to underperform in core subject areas (e.g., reading and math; National Assessment of Educational Progress [NAEP], 2015). Student academic performance is influenced by a number of variables, such as teachers' instructional support (Dean, Hubbell, Pitler, & Stone, 2012; Hattie, 2009; Powers, Hagan, & Busse, 2008), the provision of academic interventions (Coddling, Burns, & Lukito, 2011; Kroesbergen & Van Luit, 2003; Scammacca, Roberts, Vaughn, & Stuebing, 2015), and students' own behavioral, social, and emotional functioning (Lassen, Steele, & Sailor, 2006; Maurizi, Grogan-Kaylor, Granillo, & Delva, 2013; Ng, Huebner, & Hills, 2015). Consequently, the National Association of School Psychologists Model for Comprehensive and Integrated School Psychological Services (NASP, 2010a) posits that school psychologists should provide a wide range of services to address the multi-faceted learning and development needs of students. One defining aspect of the NASP Model (2010a) is its emphasis on comprehensive service

delivery and the inclusion of ten practice domains that should be integrated throughout all aspects of school psychological service. These practice domains specify the types of services that should be provided (e.g., consultation, family-collaboration, data-based decision making) and the areas of student development to which to attend (e.g., learning and academic intervention, mental health, behavior).

The expectation for comprehensive service delivery among school psychologists also is supported by the Every Student Succeeds Act (ESSA) of 2015. The ESSA, the reauthorization of the No Child Left Behind Act (NCLB) of 2002, includes provisions that allow states to focus on behavioral, social-emotional, climate, and attendance outcomes in addition to accountability for the academic performance of students. In fact, the ESSA identifies school psychologists as specialized instructional support personnel who should be involved in providing a broad range of services to comprehensively meet all students' needs. Although questions remain regarding how ESSA will be regulated at the federal level and what states will prioritize in their plans to implement ESSA policies, ESSA provides the legislative support to potentially expand the services provided by school psychologists.

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The range of services school psychologists can provide is shaped by the graduate training they receive. The Standards for Graduate Preparation of School Psychologists (NASP, 2010b) and School Psychology: A Blue Print for Training and Practice III (Ysseldyke et al., 2006) emphasize why school psychologists should be prepared to provide comprehensive services during pre-service training. Additionally, they provide guidelines regarding content that should be covered and how training should be delivered. Although training programs, especially those at the specialist level (Ysseldyke et al., 2006), likely will vary in the degree to which specific aspects of service delivery are emphasized across courses due to program philosophies, time constraints (Swerdlik & French, 2000), and other variables, programs should ensure that graduate students have basic, foundational knowledge in each of the core domains of comprehensive practice. Trainers also should consider current practice trends and factors that influence services of school psychologists. This information should help trainers attend to how graduate training is translating into practice in the field and to inform how they build graduate students' capacity to provide a broader range of services and meet the current needs of school-age youth.

Historical Practice Trends in School Psychology

Professional, legislative, and graduate training standards for comprehensive service delivery serve as a catalyst for school psychologists attending to students' academic, behavioral, and social-emotional needs. However, historical practice trends indicate that opportunities for school psychologists to address multiple facets of students' functioning in an integrated fashion may be limited (Bramlett, Murphy, Johnson, Wallingsford, & Hall, 2002; Castillo, Curtis, & Gelley, 2012; Hosp & Reschly, 2002; Lewis, Truscott, & Volker, 2008). Findings from national studies examining school psychologists' roles and responsibilities have consistently demonstrated that school psychologists tend to report spending a majority of their time engaging in special education related activities, especially assessing students to determine special education eligibility (Castillo

et al., 2012; Fagan, 2014; Lewis et al., 2008). For example, Castillo, Curtis, and Gelley (2012) indicated school psychologists spent approximately 60% of their work time conducting evaluations and reevaluations for special education services, and participating in team meetings focused on special education eligibility. Similarly, Bramlett, Murphy, Johnson, and Wallingsford (2002) found that school psychologists reported spending approximately 46% of their time engaging in assessment based activities, while only 16% and 13% of their time was spent engaging in consultation and direct intervention, respectively.

Whereas a great deal of research has been conducted to understand the extent to which practitioners report delivering specific aspects of psychoeducational services (e.g., consultation versus assessment), fewer studies have compared the degree to which school psychologists report providing various services specific to particular aspects of students' development (i.e., academic, behavioral, and social-emotional). Although limited, previous research indicated that school psychologists may not be engaging in academic-oriented services as much as social-emotional (e.g., mental health) and behavioral-oriented services. For example, Hosp and Reschly (2002) found that school psychologists reported spending more of their time administering behavioral assessments compared to achievement tests. Additionally, Bramlett et al. (2002) found that school psychologists reported providing behavioral and mental health consultation more than other types of consultation, such as consultation designed to specifically target students' academic needs. However, given the lack of contemporary empirical information on the content focus of school psychological services, research is needed to determine if differences between school psychologists' delivery of academic and non-academic-oriented services continue to exist.

Despite the questions in the literature about the specific services school psychologists provide, what is clear is that school psychologists are providing a more limited scope of services than practice standards indicate (NASP, 2010a). Although some have argued that the implementation of multi-tiered systems of support such as Positive Behavior

Intervention and Supports (PBIS) and Response to Intervention (RtI) in schools may be providing school psychologists with additional opportunities to expand their roles (Castillo et al., 2012; Fagan, 2014), school psychologists' services continue to be special education eligibility driven. A number of hypotheses exist for why school psychologists do not provide more comprehensive services (e.g., history of the field, competing paradigms for service delivery, graduate school training), but only recently have researchers begun to explore this issue empirically.

Facilitators and Barriers to School Psychological Services

Researchers have investigated both barriers and facilitators to a variety of school psychological services. Insufficient graduate school training, for example, has been identified as a barrier across multiple studies (e.g., Hicks, Shahidullah, Carlson, & Palejwala, 2014; Woody & Davenport, 1998). Studies also have identified other facilitators of and barriers to a variety of school psychological services (e.g. heavy caseload, administrative support; Marrs & Little, 2014; Suldo, Friedrich, & Michalowski, 2010). One recent study expanded the breadth of services investigated by examining facilitators of and barriers to comprehensive and integrated service delivery (Castillo, Arroyo-Plaza, Tan, Sabnis, & Mattison, 2017). The authors surveyed practicing school psychologists regarding the extent to which they engage in five domains of comprehensive and integrated service delivery (problem solving, cultural competence, collaboration and consultation, school-wide prevention and evaluation, and data-based decision making) and which factors facilitated or hindered the delivery of these services. Findings indicated that personal attributes (e.g., possessing positive beliefs, knowledge, and skills relative to a practice), resources and support (e.g., access to professional development, resources provided by the school district), stakeholder involvement (e.g., buy-in from teachers and administrators), contextual variables (e.g., policies that support a given practice), and school-specific variables (e.g., problem-solving occurring at a school as a supported way of work) predicted higher levels of comprehensive and

integrated service delivery. The opposite conditions of these facilitators (e.g., lack of knowledge and skills, lack of resources and support, lack of stakeholder involvement) sometimes predicted less engagement in comprehensive and integrated service delivery, but were not as powerful predictors as were the facilitators.

Although findings from Castillo, Arroyo-Plaza, Tan, Sabnis, and Mattison (2017) provide empirical support for a number of factors that facilitate or hinder school psychological service delivery, the researchers did not specifically investigate factors that may impact the academic-oriented services of school psychologists. Studies that investigated barriers to and facilitators of school psychologists' delivery of social-emotional and behavioral-oriented services (Atkinson, Squires, Bragg, Muscutt, & Wasilewski, 2014; Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010; Suldo et al., 2010) revealed factors that were specific to the nature of the services provided (e.g., personal desire to provide counseling and therapeutic services) as opposed to barriers that apply to the broader comprehensive and integrated service delivery model. Because few studies have specifically examined barriers and facilitators relative to school psychologists' provision of academic-oriented services, research addressing this gap is needed to determine facilitators and barriers that are unique to academic-oriented services.

Research investigating facilitators of and barriers to academic-oriented services can inform preparation of graduate students. Although many graduate programs survey recent alumni about the adequacy of their training, data derived from these surveys likely are insufficient for informing pre-service training. Students' knowledge, skills, and application opportunities certainly influence their capacity to deliver comprehensive services, but these types of surveys provide little insight into other variables (e.g., practitioner beliefs about practices, key stakeholder buy-in and support for practices) impacting service delivery that trainers could address through coursework, practica, internship, and other training activities. Empirical information on barriers and facilitators encountered by school psychologists may be useful to trainers

interested in incorporating information on how to leverage facilitators and overcome barriers to providing a range of services; however, information on academic-oriented services is needed to inform training specific to this content domain.

Purpose of the Current Study

Despite it being well-established that school psychologists have spent most of their time engaging in special education evaluation related activities, the extant research does not provide much current information regarding school psychologists' academic-oriented service delivery, nor facilitators of and barriers to those services. The current study sought to examine the extent to which a) school psychologists reported providing a range of academic-oriented services, b) school psychologists reported providing comprehensive academic-oriented services compared to social, emotional, and mental health oriented services, and c) facilitators and barriers reported by school psychologists predicted their delivery of academic-oriented services. Based on previous studies (Bramlett et al., 2002; Hosp & Reschly 2002), we hypothesized that school psychologists would report delivering significantly less comprehensive academic-oriented services compared to social, emotional, and mental health oriented services. Given the lack of empirical information on facilitators of and barriers to academic-oriented services, we did not have hypotheses regarding which facilitators of and barriers to academic-oriented services would be significant predictors. Specifically, the current study investigated the following research questions:

1. Do school psychologists report providing different levels of comprehensive academic-oriented services than social-emotional and behavioral-oriented services?
2. To what extent do facilitators and barriers reported by school psychologists predict specific types of academic-oriented services?

Method

We utilized an existing dataset that included information on the extent to which school psychologists practiced consistent with the *NASP Model* (2010a), and on facilitators of and barriers to engaging in comprehensive and integrated service

delivery. The current study focused only on items from the original study that measured academic-oriented services. See Castillo et al. (2017) for information on the larger study.

Participants

Two-hundred sixty-seven full-time school-based school psychologists completed at least a portion of the survey in the larger study. The sample included Early Career and Regular Members of NASP, a commonly used strategy for studies involving school psychologists (Curtis, Castillo, & Gelley, 2012). NASP represents the largest professional association dedicated solely to the field and allows researchers to obtain a comprehensive list of school psychologists. Early Career members of NASP “graduated from a school psychology graduate program” and were in their “first or second year of practice.” Regular Members were “trained in school psychology or certified by the National School Psychology Certification System (NSPCS), or credentialed by a state as a school psychologist, or working 50% or more as a faculty member in a school psychology graduate program” (see <https://www.nasponline.org/membership-and-community/rates-and-categories>).

For the current study, between 200 and 220 respondents completed the specific items analyzed. Participants' demographics and employment conditions for these participants approximated previous national studies of school psychologists (Curtis et al., 2012). Of the 198 participants who provided demographic information, the sample averaged 41.97 ($SD = 11.54$) years old and 12.18 ($SD = 9.56$) years of experience working in a school setting. In terms of race and gender, participants mostly were White ($n = 163$, 90%) and female ($n = 176$, 82%). The highest degree earned of participants varied with the majority earning a Specialist degree ($n = 126$, 64%) followed by a Master's ($n = 41$, 21%), and then a Doctorate ($n = 29$, 15%). The grade levels served by participating school psychologists also varied with 89 (45%), 151 (76%), 115 (58%), and 108 (55%) serving pre-, elementary, middle, and high schools, respectively. In terms of urbanicity, the majority served suburban ($n = 99$, 51%) schools followed by urban ($n = 58$, 30%) and rural ($n = 54$, 28%) schools. Finally, the

average student-to-school psychologist ratio in the districts participants served was 1,252:1 ($SD=988$).

Instrumentation

The researchers designed the instrument for the original study. The tool measured the extent to which school psychologists delivered comprehensive and integrated services consistent with the NASP Model (2010a). The instrument also measured facilitators of and barriers to each of the practices. The survey contained 15 practice items; however, we focused on three items that measured academic-oriented services for the current study. The three items were “To what extent do you use a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective academic services?”, “To what extent do you use data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills?”, and “To what extent do you promote the use of evidence-based strategies that support effective school-wide instructional and learning practices?”. Participants rated the extent to which they delivered each service using a 5-point scale (1 = *Never* to 5 = *Always*). For each service, participants selected their top three facilitators and top three barriers from a list of 17 facilitators (e.g., “My positive belief that the practice can be implemented and can be effective”, “I have adequate time in my schedule to engage in the practice”) and 22 barriers (e.g., “I do not believe the practice would be effective if implemented”, “I do not have enough time in my schedule to engage in the practice”, “Lack of support from colleagues and other school psychologists to engage in the practice”). See *Appendix* for the complete list of facilitator and barrier items.

Castillo et al. (2017) created the survey using DeVellis' (2012) guidelines for survey development. Items were drafted from reviews of the literature on school psychological services and on systems change, as well as from the results of a qualitative study designed to inform instrument development. A panel of nine content experts comprised of university faculty and practicing school psychologists who conducted research on school psychological services and/or who had experience developing or promoting school psychological service delivery models from leadership positions in professional

associations reviewed the draft items and provided feedback. Panel members provided feedback on the extent to which the items were relevant, and clear and concise using a structured process. Panel members also could suggest additional items. See Castillo et al. (2017) for more information on the panel review process and for information on changes made to the original set of draft items.

Procedures

After receiving approval from the Institutional Review Board (IRB), the survey was sent to a random sample of 1,000 Early Career and Regular Members of the NASP using a web-based software program. Procedures were consistent with research on increasing return rates for online surveys (Castillo, Curtis, Brundage, March, & Stockslager, 2014). Specifically, the researchers sent an email to all potential participants explaining the purpose of the study, that it was being conducted on behalf of the NASP, how data would be used, and that participants would be eligible for a drawing for a free NASP membership. The email also included the link to the survey. Researchers sent a similar email two days later to all potential respondents. Finally, follow-up emails were sent two and four weeks after the original email to all potential participants who had not yet responded. The researchers tracked who responded using a unique identification number included in the emails they received. Once they completed the survey, participants entered their identification number in a separate database which the researchers used to remove the participants from future communications about the survey. Two-hundred sixty-seven participants completed at least a portion of the survey while 198 completed all items. Return rates were 32.16% and 23.98%, respectively. It should be noted that the return rate estimates were based on adjustments to the number of potential school-based practitioners because the NASP does not systematically collect information on work settings from its members and therefore could not provide a list of only school-based practitioners. Therefore, existing data from national studies indicating that 83% of school psychologists practice in school settings were used to estimate the number of potential respondents.

Analyses

To address the first research question (differences between the participants' provision of each academic-oriented service and the corresponding social-emotional and behavioral-oriented service), we compared each of the three academic-oriented survey items to a corresponding social-emotional and behavioral-oriented survey item using a paired sample t-test. Specifically, we compared the extent to which the participants reported using a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective academic services (item 4) with their use of consultative/collaborative problem-solving for mental health services (item 5). We also compared the extent to which the participants reported using data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills (item 6) with their use of data to inform strategies for social, emotional, behavioral, and life skills (item 7). Finally, we compared the extent to which the participants reported promoting the use of evidence-based strategies that support effective schoolwide instructional and learning practices (item 8) with their promotion of schoolwide social, emotional, and behavioral practices (item 9). We used a Bonferroni adjustment to control for Type 1 error, which resulted in an alpha of .02.

We used multiple regression to answer research question two (the extent to which facilitators and barriers predicted academic-oriented service delivery). First, we created five composite variables for facilitators as well as for barriers consistent with the approach of Castillo et al. (2017). After an extensive literature review of scholarship pertaining to systems change and school psychology service delivery, the researchers developed these five domains by grouping conceptually related items. The composite variables for facilitators and barriers reflected a range of factors that were hypothesized to increase or decrease the probability of school psychologists delivering various services, respectively. Facilitator and barrier composite variables had the same label, but reflected opposite conditions. The five composite variables included Personal Attributes (e.g., knowledge and skills), Resources and Support (e.g., professional

development, mentoring), Stakeholder Involvement (e.g., buy-in and support from parents and teachers), Contextual Variables (e.g., policies and procedures related to the practice), and School-Specific Variables (e.g., problem-solving use at a school; see *Appendix* for the items that comprise each composite variable). Next, we calculated facilitator and barrier composite scores for each of the three academic-oriented services by summing how many times participants selected a facilitator or barrier for the service delivery item. Finally, each of the five facilitator and five barrier composite variables were entered in a block as main effects. We examined a total of three models (one for each academic-oriented service) and used a Bonferroni adjustment to control for Type 1 error, which resulted in an alpha of .02. We also calculated squared semipartial correlations (sr^2) to determine how much unique variance in school psychologists' reported delivery of each academic-oriented service was accounted for by a given facilitator or barrier.

Results

Research Question 1: Differences Between Service Delivery

Descriptive analyses. Table 1 presents the means and standard deviations for all service delivery items. The participants reported providing a variety of academic, and social-emotional and behavioral-oriented services. For academic-oriented services, the mean level of services reported ranged from 3.00 ($SD = 1.12$) for promoting the use of evidence-based strategies that support effective schoolwide instructional and learning practices to 3.47 ($SD = 1.03$) for using data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills. Thus, on average, participants reported that they *Sometimes* to *Almost Always* delivered academic-oriented services. For social-emotional and behavioral-oriented services, the mean level of services reported ranged from 3.10 ($SD = 1.05$) for using evidence-based strategies that support effective school-wide social, emotional, and behavioral practice to 3.32 ($SD = .90$) for using data to design, implement, and evaluate evidence-based strategies for social, emotional, behavioral, and life skills. Consistent with academic-oriented services, the participants reported that they *Sometimes* to

Almost Always engaged in social-emotional and behavioral practices.

Paired sample t-test. All statistical assumptions (i.e., continuous dependent variable, independent observations, normal distribution, and no outliers) for paired sample t-tests were met. Table 1 presents the results of the paired sample t-tests. The mean differences between the extent to which participants reported using a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective academic services and for planning, implementing, and evaluating effective mental health services, $M_{diff} = -.04$, $SD = 1.12$, $t(216) = -.48$, $p = .62$; between the extent to which participants reported using data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills and for social, emotional, behavioral, and life skills, $M_{diff} = .13$, $SD = .95$, $t(204) = 1.98$, $p = .04$; and between the extent to which the participants reported promoting the use of evidence-based strategies that support effective schoolwide instructional and learning practices and promoting the use of effective schoolwide social, emotional, and behavioral practices, $M_{diff} = -.09$, $SD = .87$, $t(199) = -.14$, $p = .17$, were not significant. These results indicated that no significant differences between the participants' reported delivery of academic, and social-emotional and behavioral-oriented services existed.

Table 1
School Psychologists' Reported Practice by Service Domain and t-test Results

Service Type	Service Domain								
	Academic Oriented Services			Social-Emotional and Behavioral Oriented Services			95% CI for Mean Difference	t-test	
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
CCPS	3.15	1.00	220	3.18	1.07	217	[-.19, .11]	-.48	216
DDIEES	3.47	1.03	209	3.32	.90	205	[.00, .26]	1.98	204
PEBSP	3.00	1.12	203	3.10	1.05	200	[-.21, .04]	-1.39	199

Note. Scale ranged from 1 = *Never* to 5 = *Always*. CCPS = Consultative and Collaborative Problem Solving; DDIEES = Use of Data to Design, Implement, and Evaluate Effective Services; PEBSP = Promoting Evidence-Based Schoolwide Practices; CI = confidence interval.

* $p < .02$

Research Question 2: Facilitators and Barriers Prediction of Academic-Oriented Services

Descriptive analyses. Table 2 presents the

means and standard deviations for the facilitators and barriers for each academic-oriented service. Regarding the participants' reported use of a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective academic services, Personal Attributes was the most frequently reported facilitator ($M = 1.02$, $SD = .93$), followed by Stakeholder Involvement ($M = .59$, $SD = .73$), Resources and Support ($M = .40$, $SD = .59$), School Specific Variables ($M = .23$, $SD = .49$), and Contextual Variables ($M = .05$, $SD = .22$). In contrast, Resources and Support ($M = .94$, $SD = .83$) was the most frequently reported barrier, followed by School Specific Variables ($M = .49$, $SD = .66$), Contextual Variables ($M = .36$, $SD = .56$), Stakeholder Involvement ($M = .23$, $SD = .49$), and Personal Variables ($M = .05$, $SD = .25$).

With respect to the participants' use of data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills, Personal Attributes ($M = 1.12$, $SD = .83$) was the most frequently reported facilitator, followed by Resources and Support ($M = .59$, $SD = .71$), Stakeholder Involvement ($M = .40$, $SD = .66$), School Specific Variables ($M = .11$, $SD = .35$), and Contextual Variables ($M = .08$, $SD = .27$). Resources and Support ($M = .95$, $SD = .80$) was the most frequently reported barrier, followed by School Specific Variables ($M = .39$, $SD = .61$), Contextual Variables ($M = .29$, $SD = .51$), Stakeholder Involvement ($M = .18$, $SD = .45$), and Personal Attributes ($M = .05$, $SD = .26$).

A similar pattern emerged for promoting the use of evidence-based strategies that support effective school-wide instructional and learning practice. Specifically, Personal Attributes ($M = .94$, $SD = .91$) was the most frequently reported facilitator, followed by Stakeholder Involvement ($M = .50$, $SD = .74$), Resources and Support ($M = .38$, $SD = .57$), School Specific Variables ($M = .09$, $SD = .34$), and Contextual Variables ($M = .06$, $SD = .25$). Resources and Support ($M = 1.00$, $SD = .81$) was the most frequently reported barrier, followed by Contextual Variables ($M = .41$, $SD = .60$), School Specific Variables ($M = .32$, $SD = .58$), Stakeholder Involvement

($M = .23$, $SD = .50$), and Personal Attributes ($M = .05$, $SD = .25$).

Table 2
Means and Standard Deviations of Facilitators of and Barriers to Academic-Oriented Services

	CCPS		DDIEES		PEBSP	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Facilitators						
Personal Attributes	1.02	.93	1.12	.83	.94	.91
Resources and Support	.40	.59	.59	.71	.38	.57
Stakeholder Involvement	.60	.74	.40	.66	.50	.74
Contextual Variables	.05	.22	.08	.27	.06	.25
School-Specific Variables	.24	.49	.11	.35	.09	.34
Barriers						
Personal Attributes	.05	.25	.05	.26	.05	.25
Resources and Support	.94	.83	.95	.80	1.00	.81
Stakeholder Involvement	.24	.49	.18	.45	.23	.50
Contextual Variables	.36	.56	.29	.52	.41	.60
School-Specific Variables	.49	.69	.39	.61	.32	.58

Note. CCPS = Consultative and Collaborative Problem Solving; DDIEES = Use of Data to Design, Implement, and Evaluate Effective Services; PEBSP = Promoting Evidence-Based School-wide Practices.

Multiple regression analyses. We checked assumptions for multiple regression prior to conducting the analyses. We did not find violations of linearity, normality, multicollinearity, and homoscedasticity (contact the first author for data relative to assumptions). See Table 3 for the results from the multiple regression models.

Consultative and collaborative problem solving. With respect to facilitators, Personal Attributes ($B = .50$, $SE = .07$, $\beta = .47$, $p < .02$, $sr^2 = .15$), Resources and Support ($B = .43$, $SE = .10$, $\beta = .26$, $p < .02$, $sr^2 = .05$), Stakeholder Involvement ($B = .78$, $SE = .08$, $\beta = .57$, $p < .02$, $sr^2 = .26$), and School-Specific Variables ($B = .71$, $SE = .11$, $\beta = .34$, $p < .02$, $sr^2 = .11$) significantly predicted the participants' reported use of a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective academic services. Each of these facilitators positively related to this academic-oriented service. In terms of barriers, Resources and Support ($B = -.21$, $SE = .07$, $\beta = -.18$, $p < .02$, $sr^2 = .02$) significantly and negatively predicted the participants' reported use of a consultative/collaborative problem-solving process for academic-oriented services.

Use of data to design, implement, and evaluate effective services. For facilitators, Personal Attributes ($B = .54$, $SE = .08$, $\beta = .44$, $p < .02$, $sr^2 =$

.14), Resources and Support ($B = .63$, $SE = .09$, $\beta = .43$, $p < .02$, $sr^2 = .15$), Stakeholder Involvement ($B = .44$, $SE = .10$, $\beta = .28$, $p < .02$, $sr^2 = .06$), Contextual Variables ($B = .76$, $SE = .22$, $\beta = .19$, $p < .02$, $sr^2 = .03$), and School-Specific Variables ($B = .56$, $SE = .16$, $\beta = .19$, $p < .02$, $sr^2 = .03$) significantly predicted the participants' reported use of data to design, implement, and evaluate evidence-based strategies for cognitive and academic skills. All facilitators were positively related to this academic-oriented service. Regarding barriers, Resources and Support ($B = -.36$, $SE = .07$, $\beta = -.28$, $p < .02$, $sr^2 = .07$), Contextual Variables ($B = -.51$, $SE = .11$, $\beta = -.25$, $p < .02$, $sr^2 = .06$), and School-Specific Variables ($B = -.25$, $SE = .10$, $\beta = -.15$, $p < .02$, $sr^2 = .02$) were significant predictors. All significant barriers negatively related to this academic-oriented service.

Promoting evidence-based schoolwide practices. With respect to facilitators, Personal Attributes ($B = .48$, $SE = .08$, $\beta = .40$, $p < .02$, $sr^2 = .14$), Resources and Support ($B = .47$, $SE = .12$, $\beta = .24$, $p < .02$, $sr^2 = .05$), Stakeholder Involvement ($B = .55$, $SE = .10$, $\beta = .36$, $p < .02$, $sr^2 = .11$), and Contextual Variables ($B = .98$, $SE = .28$, $\beta = .21$, $p < .02$, $sr^2 = .04$) significantly predicted the participants' reported promotion of the use of evidence-based strategies that support effective schoolwide instructional and learning practices. All significant facilitators were positively related to this academic-oriented services. Regarding barriers, Resources and Support ($B = -.30$, $SE = .09$, $\beta = -.22$, $p < .02$, $sr^2 = .04$) was a significant, negative predictor.

Variance accounted for by facilitators and barriers. Adjusted R^2 values ranges from .36 to .42 for the three regression models. These estimates indicate that the facilitators and barriers explained 36% to 42% of the variance in the participants' delivery of academic-oriented services. Across the three models, squared semipartial correlations generally were larger for facilitators than for barriers (see Table 3). This difference was primarily observed for Personal Attributes (sr^2 ranged from .14 to .15 for facilitators and from $<.01$ to .02 for barriers), Resources and Support (sr^2 ranged from .05 to .15 for facilitators and from .02 to .07 for

barriers), Stakeholder Involvement (sr^2 ranged from .06 to .26 for facilitators and was $<.01$ for barriers), and School-Specific Variables (sr^2 ranged from $<.01$ to .10 for facilitators and from $<.01$ to .02 for barriers). In contrast, the sr^2 values for facilitators and barriers were more comparable for Contextual Variables (sr^2 ranged from .01 to .04 for facilitators and from .01 to .06 for barriers). Thus, facilitators associated with Personal Attributes, Resources and Support, Stakeholder Involvement, and School-Specific Variables accounted for more unique variance after controlling for the other predictors than did the barriers.

Table 3

Facilitators of and Barriers to Academic-Oriented Service: Multiple Regression Results

Predictors	Facilitators				Barriers			
	B	SE	β	sr^2	B	SE	β	sr^2
CCPS								
Personal Attributes	.50**	.07	.47	.15	.00	.23	.00	$<.01$
Resources and Support	.43**	.10	.26	.05	-.21*	.07	-.18	.02
Stakeholder Involvement	.78**	.08	.57	.26	-.13	.12	-.06	.00
Contextual Variables	.52	.26	.11	.01	-.20	.10	-.11	.01
School-Specific Variables	.72**	.12	.35	.11	-.04	.09	-.03	.00
DDIEES								
Personal Attributes	.54**	.08	.44	.14	-.51	.22	-.13	.02
Resources and Support	.63**	.09	.43	.15	-.36**	.07	-.28	.07
Stakeholder Involvement	.44**	.10	.28	.06	-.07	.13	-.03	.00
Contextual Variables	.76**	.22	.19	.03	-.51**	.11	-.25	.06
School-Specific Variables	.56**	.16	.19	.03	-.25*	.10	-.15	.02
PEBSP								
Personal Attributes	.50**	.08	.40	.14	-.31	.28	-.07	.00
Resources and Support	.47**	.12	.24	.05	-.30**	.09	-.22	.04
Stakeholder Involvement	.55**	.10	.36	.11	-.05	.14	-.02	.00
Contextual Variables	.98**	.28	.21	.04	-.24	.12	-.13	.01
School-Specific Variables	.33	.21	.09	.01	.01	.12	.01	.00

Note. CCPS = Consultative and Collaborative Problem Solving; DDIEES = Use of Data to Design, Implement, and Evaluate Effective Services; PEBSP = Promoting Evidence-Based Schoolwide Practices. * $p < .02$, ** $p < .001$

Discussion

This study compared school psychologists' provision of academic-, and social-emotional and behavioral-oriented services, as well as investigated

facilitators and barriers that predicted academic-oriented services. Results indicated no significant differences between school psychologists' reported delivery of academic-oriented services and social-emotional and behavioral-oriented services. However, the study found significant relations between most facilitators and academic-oriented services, and between some barriers and academic-oriented services. Moreover, facilitators tended to account for more unique variance in academic-oriented service delivery than did barriers.

Our finding that school psychologists did not report significantly different levels of academic-oriented and social-emotional and behavioral-oriented service provision differs from prior research indicating that school psychologists may be spending more of their time providing social-emotional and behavioral-oriented services (Bramlett, et al., 2002; Hosp & Reschly, 2002). Thus, our results indicate that school psychologists may be providing more integrated services focused on multiple aspects of students' development. Another hypothesis is that they simply are providing higher levels of academic-oriented services. Regardless of whether school psychologists are providing more comprehensive and integrated services or more academically-oriented services, it is plausible that increasing adoption of RtI in school districts contributed to the findings from the current study (Castillo et al., 2012; Fagan, 2014; Sullivan & Long, 2010). Although we did not examine whether school psychologists practiced in districts and states that adopted RtI models, Sullivan and Long (2010) found that school psychologists reported spending more time contributing to and leading academic interventions in school sites that implemented RtI compared to school psychologists who worked in sites that did not implement RtI.

In terms of our findings relative to facilitators of and barriers to school psychologists' delivery of academic-oriented services, Personal Attributes, Resources and Support, and Stakeholder Involvement facilitators significantly and positively predicted all academic-oriented practices. Facilitators associated with Contextual Variables predicted all services except school psychologists' reported use of a consultative/collaborative problem-solving

process for planning, implementing, and evaluating academic services; and facilitators associated with School-Specific Variables predicted all services except school psychologists' reported promotion of the use of evidence-based strategies that support effective schoolwide instructional and learning practices. The pattern of findings and the fact that facilitators tended to account for more variance in academic-oriented practices than did barriers largely were consistent with previous research on more comprehensive and integrated services (Castillo et al., 2017).

Castillo et al. (2017) suggested that facilitators may account for more variance than barriers because they could provide opportunities for school psychologists to overcome barriers to comprehensive and integrated service delivery. Research on systems change and implementation of evidence-based practices indicates that change agents are effective problem-solvers, involve others throughout the change process, work to build capacity for implementers and the system to deliver evidence-based services, and understand the unique context for implementation for each site, among other factors (Castillo & Curtis, 2014; Forman et al., 2013; Hall & Hord, 2015; Louis, Leithwood, Wahlstrom, & Anderson, 2010). Thus, school psychologists may be applying general strategies for systems change to a broad range of services they are trying to provide. One hypothesis for the pattern of facilitators more consistently predicting academic-oriented services specifically is that school psychologists may be leveraging increasing opportunities to provide academic-oriented services where they exist. For instance, within the context of being more involved with academic services as a result of RtI, Sullivan and Long (2010) found that approximately one-third of the participants reported their school sites were using specific academic programs, increased instructional time, or tutoring approaches to address students' academic difficulties. School psychologists may be taking advantage of more opportunities to facilitate or to provide academic-oriented services in schools that have mechanisms in place to address identified academic needs. Alternatively, school psychologists may be collaborating with administrators and other

key stakeholders to facilitate the types of changes required to implement academic-oriented services when sufficient support from these key stakeholders is present (i.e., they may be collaborating to create processes and structures for academic-oriented service delivery as opposed to taking advantage of already existing academic-oriented service opportunities). Future research should explore how school psychologists identify and leverage opportunities to deliver academic-oriented services within sites implementing RtI.

Despite the potential that school psychologists leveraged opportunities to provide academic-oriented services where facilitators were present, some barriers accounted for significant variance in these services as well. Resources and Support was the only barrier that significantly predicted all three academic-oriented services. The finding related to resources and support being a barrier to service delivery is not unique to this study, as previous studies have demonstrated that limited time and money, and a lack of support from school administrators is a significant barrier to the implementation of educational practices in general and school psychological service delivery in particular (Lachat & Smith, 2005; Marrs & Little, 2014; Pinkelman, McIntosh, Rasplica, Berg, & Strickland-Cohen, 2015). However, fewer studies have explored other critical resource issues that may preclude school psychologists from providing a broader range of services. Professional development, mentoring and supervision at the local level were additional barriers to school psychologists' provision of academic-oriented services included in the Resources and Support barrier composite. Future research should explore the extent to which specific resource issues inhibit school psychologists from providing more academic-oriented services.

We also found that Contextual Variables and School-Specific Variables were significant barriers to school psychologists' use of data-based decision making pertaining to students' cognitive and academic skills, as well as to collaborating and consulting around academic issues. Despite the increased adoption of RtI models, our findings indicate that school psychologists may not always be in environments that fully support their

engagement in data-based decision making or collaborative, academic-oriented service delivery. Academic-oriented practices might be difficult to engage in when the school personnel that school psychologists collaborate with do not have adequate knowledge and skills, and when schools/districts do not have policies, cultures, or climates that support the practices (Lachat & Smith, 2005; Marrs & Little, 2014; NASP, 2010a). It also is plausible that school psychologists may specifically experience difficulties engaging in data-based decision making or collaborative academic-oriented service delivery due to having limited input in their schools and districts regarding the services they can provide. Although professional organizations such as NASP provide resources to support school psychologists' efforts to advocate for comprehensive school psychological service delivery (e.g., NASP, 2017a), it is unclear how frequently school psychologists effectively advocate to decision-makers for increased responsibilities to deliver academically-oriented services in their schools and districts. Nonetheless, the fact that many of the significant facilitators and barriers were more systemic in nature supports previous calls to prepare school psychology trainees to provide services at the individual and system levels (Castillo & Curtis, 2014; Forman et al., 2013; Kratochwill, Volpiansky, Clements, & Ball, 2007; Sheridan & Gutkin, 2000; Ysseldyke et al., 2006).

Limitations and Future Directions

Findings from the current study should be interpreted with some caution given a few limitations. First, although the 32% overall return rate was typical for survey research in education (Lodico, Spaulding, & Voegtler, 2010), the relatively lower return rate may indicate sampling bias. Furthermore, the relatively lower return rate raises questions about power. It is plausible that significant differences between the participants' reported delivery of academic-oriented services compared to social-emotional and behavioral-oriented services would have been detected with a greater number of participants (i.e., Agresti & Finlay, 2009). Another potential issue related to sampling bias is that Lewis, Truscott, and Volker (2008) reported that NASP members may not be representative of

the population of school psychologists despite the fact that using NASP members is a common way to access the field. Other limitations relate to the self-report methodology used. It is possible that school psychologists were upwardly biased in their reporting of the level of services provided, a concern when using surveys to measure practices (Agresti & Finlay, 2009). However, it is likely that any bias would have been distributed across practice categories. Additionally, although the survey was developed using DeVellis' (2012) guidelines for item development, it is possible that participants had different conceptualizations of what the items measuring academic-oriented services meant given the variability in assessment (e.g., norm-referenced cognitive processing and achievement tests, curriculum-based measures) and intervention processes in the field.

Another potential limitation involves the fact that the survey did not gather information about the context in which participants practiced. For instance, data on the extent to which districts and states in which school psychologists resided adopted RtI, PBIS, or other multi-tiered systems of support were not collected. This information could serve to further contextualize the participants' levels of service delivery and the facilitators and barriers reported. Many of our hypotheses for the findings involved whether school psychologists were practicing in environments that embraced RtI approaches to service delivery, which we were not able to explore further given the scope of the current study.

Other methods for studying school psychologists' academic-oriented services should be considered given concerns regarding self-report bias and a lack of information about the context in which school psychologists practice. Interviewing school psychologists, reviewing products that reflect the services they provide (e.g., reports, data meeting presentations), and observing school psychologists delivering services would provide more in-depth information regarding how school psychologists conceptualize academic-oriented services and the extent to which RtI or other service delivery models influence those services. Researchers also could further explore facilitators and barriers identified

in the current study in terms of what specifically comprises these factors, and how practitioners negotiate their service delivery given the factors that help or hinder their practices. Research in this area could provide rich information that describes the ways in which school psychologists think about and act on their roles and responsibilities to provide academic-oriented services. Relatedly, questions regarding how school psychologists advocate for opportunities to provide academic-oriented services given federal legislation (e.g., ESSA, Individuals with Disabilities Education Improvement Act [IDEIA]), evidence-based models of service delivery such as RtI, and calls for more comprehensive services would provide information that can inform individual approaches as well as systemic support for advocacy (e.g., professional association advocacy resources).

Future research also should explore pre-service or graduate training of school psychologists. Systematic investigations of how graduate programs are training students to conceptualize and deliver academic-oriented services and of how programs train students to navigate the systems in which the services are delivered would provide valuable information to inform graduate preparation. Differences in the theoretical approach to meeting the academic needs of students has been well documented (i.e., traditional, medical model based approaches to identifying individual characteristics and designing services to address their deficits versus ecological, problem-solving based approaches to addressing the interaction between students and the environment; Fagan, 2014; Gutkin, 2012). However, although emphasized in the school psychology literature (e.g., Strein, Hoagwood, & Cohn, 2003; Kratochwill et al., 2007), it is unclear the extent to which programs train students to understand systems change or implementation science so that they can successfully collaborate with key stakeholders to engage in services that improve the academic and other outcomes of students.

Implications for Training

Given the amount of unique variance associated with the category Personal Attributes, pre-service training should ensure that students are well-prepared to collaborate with colleagues and

provide academic-oriented services consistent with the NASP Model (2010a). Trainers of school psychologists should teach graduate students how to collect multiple sources of data to inform the design, implementation, and evaluation of academic interventions. For example, school psychology trainees can learn how to make data-based decisions relevant to students' academic needs within a structured problem-solving process (see Bastche, Castillo, Dixon & Forde, 2008) and to apply those concepts to systems-level academic programming and evaluation (Tilly, 2008). It also is important for school psychology trainees to learn how to utilize consultation models that are more academic focused, considering that preservice school psychology graduate programs tend to focus on behavioral models of consultation to a greater extent (Anton-LaHart & Rosenfield, 2004). Guidelines outlined in Rosenfield (2008) can be reviewed in consultation courses and practiced through case studies acquired through practica experiences. More exposure to and experience with data-based problem solving for academic issues and with instructional consultation models may increase the capacity of graduates to provide academic-oriented services when working in schools.

Students also need to be trained to successfully navigate systems elements and systems change (e.g., Castillo & Curtis, 2014; Forman et al., 2013; Kratochwill et al., 2007; Sheridan & Gutkin, 2000). Many of the facilitators and barriers that impacted the participants' provision of academic-oriented services included a range of systems level factors. In particular, stakeholder involvement and resources and support were significant facilitators of participants' delivery of academic-oriented services. As such, school psychology students may benefit from learning how to build stakeholders' capacity to engage in or support various practices that promote students' academic success given that systems-level initiatives are most effective when key stakeholders have the knowledge, skills, and willingness to participate in targeted practices or initiatives (Adelman & Taylor, 2007; Fullan, 2007). Although professional development and in-service training is one important way to build stakeholders' capacity to initiate, maintain, and support systems-

level efforts (Adelman & Taylor, 2007), Castillo et al. (2012) found that school psychologists reported spending limited time delivering professional development. Thus, school psychology trainers should consider teaching graduate students how to initiate, develop, and facilitate relevant professional development. For example, trainers could teach graduate students about evidence-based professional development (e.g., Roy, 2011) and require graduate students to prepare and deliver professional development alongside their field-based supervisors during practicum or internship.

Although providing systems-level training is recommended, we recognize that providing systems change training in specialists-level programs can be challenging due to the limited space for additional coursework (Reschly & Wilson, 1997; NASP, 2017b). It may be more feasible, however, to embed systems training throughout existing coursework and practica experiences. Many school psychology programs have formal coursework in assessment, direct intervention, and consultation and trainers can broaden course content in these areas to include implications for systems change and practice. In terms of practicum and internship training, school psychology trainees also may benefit from assisting with the development and implementation of school-level initiatives aimed at supporting all students' academic needs at the school or district level.

Finally, it is important to teach school psychology students to be resilient and effective problem-solvers at a systems-level in order to create opportunities to improve systems. Although findings from previous studies indicate that school psychologists are generally satisfied with their jobs, some consistently reported areas of job dissatisfaction include school system policies and practices (Brown, Holcombe, Bolen, & Thomson, 2006; Dickinson, Prater, Heath, & Young, 2009; Worrell, Skaggs, & Brown, 2006). Thus, students may become disenchanting with the field as trainees and early career practitioners when they observe significant gaps between research and school policy and practice. To encourage school psychology trainees to persevere in the midst of advocating for systems-level change, school psychology trainers can be intentional about the

messages communicated to students and to model how to problem-solve barriers to effective service delivery. As discussed by Fullan (2007), faculty and field supervisors can teach students how to “cope” with the challenges of systems-change by informing students that conflict and disagreements are inevitable and fundamental to successful change, effective change takes time, and not all people in a system will change. Fullan (2007) also emphasized the importance of acknowledging and responding to the many reasons why educational practices may not be in place. Examples of models for problem-solving to address barriers to implementation are evident in the school psychology literature (Curtis & Castillo, 2014; Forman et al., 2013). Of course, part of addressing barriers to delivering effective services involves advocacy. Students can also be prepared to champion for more comprehensive service delivery by being encouraged to participate in advocacy training at the local, state, and national levels (NASP, 2017a). For example, NASP offers a federal Public Policy Institute program each year to help practitioners and students build public policy and advocacy skills. Likewise, NASP (see NASP, 2017c) and other professional associations (e.g., National Association for the Education of Young Children [NAEYC], n.d.) offer other trainings on and resources to support advocacy efforts.

Conclusions

The current study provides contemporary information related to school psychological practice in the area of academic-oriented services. Although no significant differences existed between academic-oriented and behavioral and social-emotional services, it is important to continue to foster school psychology trainees' capacity to address PK-12th grade students academic needs through the provision of academic-oriented services. The current study found that personal variables, systemic support and capacity to implement facilitate school psychologists' provision of academic-oriented services. Conversely, a lack of systemic support and capacity hindered school psychologists' provision of academic-oriented services. Thus, our findings shed light on the value of equipping school psychologists with skills to build upon and overcome systemic factors when supporting students' academic

success. As groups of students in the United States continue to underperform across various academic areas (NAEP, 2015), this study along with previous scholarship indicate that systems-level training relevant to PK-12th grade students' learning and achievement is essential to help future school psychologists position themselves to be meaningful contributors to positive academic outcomes.

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Appendix

Description of Practice, Facilitator, and Barrier Domains

PRACTICES

Domain	Description of Domain Items
Academic-Oriented Services	• Use data to design, implement, and evaluation evidence-based strategies for cognitive and academic skills • Use a consultative/collaborative problem-solving process for planning, implementing and evaluating effective academic services • Promote the use of evidence-based strategies that support effective school-wide instructional and learning practices
Social-Emotional and Behavioral-Oriented Services	• Use data to design, implement and evaluate evidence-based strategies for social, emotional, behavioral, and life skills • Use a consultative/collaborative problem-solving process for planning, implementing, and evaluating effective mental health services • Promote the use of evidence-based strategies that support effective school-wide social, emotional, and behavioral practices

FACILITATORS

Domain	Description of Domain Items
Personal Attributes	• Have knowledge and skills needed to engage in practice • Have a positive belief that the practice can be effective and implemented • Received training and experiences in the respective practice area during graduate school
Resources and Support	• Receive professional development, supervision, resources, and mentoring through the school district • Receive professional development and resources through a professional association • Have adequate time in my work schedule to engage in the practice • Supplies and administrative assistance are available to facilitate scheduling, reporting, requirements, and other support tasks • Have access to technology • Have access to assessment and intervention material
Stakeholder Involvement	• Have support and buy-in for the practice from school administrators and district supervisors • Have support and buy-in for the practice from parents, families, teachers, and support staff • Have positive working relationships and networks with administrators and district supervisors • Have positive working relationships with parents, families, teachers, support staff, community partners, and agencies • Have support from colleagues and other school psychologists to engage in the practice
Contextual Variables	• Existing policies and procedures support engagement in the practice
School-Specific Variables	• Problem-solving is widely used within my school

BARRIERS

Domain	Description of Domain Items
Personal Attributes	• Have limited knowledge and skills to engage in the practice • Do not believe the practice would be effective if it was implemented • Did not receive training and experience relative to the respective practice while in graduate school

Resources and Support	• There is not enough time to engage in the practice • Have a heavy caseload of students being evaluated for special education and related tasks • The practice is not included as part of my assigned roles and duties • Administrative assistance and supplies are not available to facilitate scheduling, reporting requirements, and other support tasks • Have a lack of access to technology • Have a lack of intervention and assessment materials • Receive limited professional development, mentoring, resources, and supervision through the school district
Stakeholder Involvement	• Have a lack of support and buy-in from school administrators and district supervisors • Lack of buy-in and support for the practice from teachers, support staff, and parents/families • Have a lack of support from colleagues and other school psychologists to engage in the practice
Contextual Variables	• Current special education regulation and federal legislation • Existing procedures and policies do not support engagement in the practice • Not included in decisions regarding the types and range of services provided to students • There is a lack of funding to engage in the practice • The school district does not make the practice a priority
School-Specific Variables	• The schools are understaffed and/or have a high staff turnover • The climate at the schools is not conducive to the practice • The teachers and other staff do not have adequate knowledge and skills to engage in the practice • There is not an organized and effective school-based team

Note. This table was adapted from Castillo et al.'s (2017) description of the items within each domain.