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Reflections on Power From Feminist Counselor Educators



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The purpose of this phenomenological study was to explore how feminist-identified counselor educators understand and experience power in counselor education. Thirteen feminist women were interviewed. We utilized a loosely structured interview protocol to elicit participant experiences with the phenomenon of power in the context of counselor education. From these data, we identified an essential theme of analysis of power. Within this theme, we identified five categories: (a) definitions and descriptions of power, (b) higher education context and culture, (c) uses and misuses of power, (d) personal development around power, and (e) considerations of potential backlash. These categories and their subcategories are illustrated through narrative synthesis and participant quotations. Findings point to a pressing need for more rigorous self-reflection among counselor educators and counseling leadership, as well as greater accountability for using power ethically.

Keywords: counselor education, power, phenomenological, feminist, women

The American Counseling Association (ACA; 2014) defined counseling, in part, as “a professional relationship that empowers” (p. 20). Empowerment is a process that begins with awareness of power dynamics (McWhirter, 1994). Power is widely recognized in counseling’s professional standards, competencies, and best practices (ACA, 2014; Association for Counselor Education and Supervision [ACES], 2011; Council for the Accreditation of Counseling and Related Educational Programs [CACREP], 2015) as something about which counselors, supervisors, counselor educators, and researchers should be aware (Bernard & Goodyear, 2014). However, little is known about how power is perceived by counselor educators who, by necessity, operate in many different professional roles with their students (e.g., teacher, supervisor, mentor).

In public discourse, power may carry different meaning when associated with men or women. According to a Pew Research Center poll (K. Walker et al., 2018) of 4,573 Americans, people are much more likely to use the word “powerful” in a positive way to describe men (67% positive) than women (8% positive). It is possible that these associations are also present among counselors-in-training, professional counselors, and counselor educators.

Dickens and colleagues (2016) found that doctoral students in counselor education are aware of power dynamics and the role of power in their relationships with faculty. Marginalized counselor educators, too, experienced a lack of power in certain academic contexts and noted the salience of their intersecting identities as relevant to the experience of power (Thacker et al., 2021). Thus, faculty members in counselor education may have a large role to play in socializing new professional counselors in awareness of power and positive uses of power, and thus could benefit from openly exploring uses of power in their academic lives.

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Feminist Theory and Power in Counseling and Counselor Education

The concept of power is explored most consistently in feminist literature (Brown, 1994; Miller, 2008). Although power is understood differently in different feminist spaces and disciplinary contexts (Lloyd, 2013), it is prominent, particularly in intersectional feminist work (Davis, 2008). In addition to examining and challenging hegemonic power structures, feminist theory also centers egalitarianism in relationships, attends to privilege and oppression along multiple axes of identity and culture, and promotes engagement in activism for social justice (Evans et al., 2005).

Most research about power in the helping professions to date has been focused on its use in clinical supervision. Green and Dekkers (2010) found discrepancies between supervisors' and supervisees' perceptions of power and the degree to which supervisors attend to power in supervision. Similarly, Mangione and colleagues (2011) found another discrepancy in that power was discussed by all the supervisees they interviewed, but it was mentioned by only half of the supervisors. They noted that supervisors tended to minimize the significance of power or express discomfort with the existence of power in supervision.

Whereas most researchers of power and supervision have acknowledged the supervisor's power, Murphy and Wright (2005) found that both supervisors and supervisees have power in supervision and that when it is used appropriately and positively, power contributed to clinical growth and enhanced the supervisory relationship. Later, in an examination of self-identified feminist multicultural supervisors, Arczynski and Morrow (2017) found that anticipating and managing power was the core organizing category of their participants' practice. All other emergent categories in their study were different strategies by which supervisors anticipated and managed power, revealing the centrality of power in feminist supervision practice. Given the utility of these findings, it seems important to extend this line of research from clinical supervision to counselor education more broadly because counselor educators can serve as models to students regarding clinical and professional behavior. Thus, understanding the nuances of power could have implications for both pedagogy and clinical practice.

Purpose of the Present Study

Given the gendered nature of perceptions of power (Rudman & Glick, 2021; K. Walker et al., 2018), and the centrality of power in feminist scholarship (Brown, 1994; Lloyd, 2013; Miller, 2008), we decided to utilize a feminist framework in the design and execution of the present study. Because power appears to be a construct that is widely acknowledged in the helping professions but rarely discussed, we hope to shed light on the meaning and experience of power for counselor educators who identify as feminist. We utilized feminist self-identification as an eligibility criterion with the intention of producing a somewhat homogenous sample of counselor educators who were likely to have thought critically about the construct of power because it figures prominently in feminist theories and models of counseling and pedagogy (Brown, 1994; Lloyd, 2013; Miller, 2008).

Method

We used a descriptive phenomenological methodology to help generate an understanding of feminist faculty members' lived experiences of power in the context of counselor education (Moustakas, 1994; Padilla-Díaz, 2015). Phenomenological analysis examines the individual experiences of participants and derives from them, via phenomenological reduction, the most meaningful shared elements to paint a portrait of the phenomenon for a group of people (Moustakas, 1994; Starks & Trinidad, 2007). Thus, we share our findings by telling a cohesive narrative derived from the data via themes and subthemes identified by the researchers.

Sample

After receiving IRB approval, we recruited counselor educators via the CESNET listserv who were full-time faculty members (e.g., visiting, clinical, instructor, tenure-track, tenured) in a graduate-level counseling program. We asked for participants of any gender who self-reported that they integrated a feminist framework into their roles as counselor educators. Thirteen full-time counselor educators who self-identified as feminist agreed to be interviewed on the topic of power. All participants were women. Two feminist-identified men expressed initial interest in participating but did not respond to multiple requests to schedule an interview. The researchers did not systematically collect demographic data, relying instead on voluntary participant self-disclosure of relevant demographics during the interviews. All participants were tenured or tenure-track faculty members. Most were at the assistant professor rank ($n = 9$), a few were associate professors ($n = 3$), and one was a full professor who also held various administrative roles during her academic career (e.g., department chair, dean). During the interviews, several participants expressed concern over the high potential for their identification by readers due to their unique identities, locations, and experiences. Thus, participants will be described only in aggregate and only with the demographic identifiers volunteered by them during the interviews. The participants who disclosed their race all shared they were White. Nearly all participants disclosed holding at least one marginalized identity along the axes of age, disability, religion, sexual orientation, or geography.

Procedure

Once participants gave informed consent, phone interviews were scheduled. After consent to record was obtained, interviewers began the interviews, which lasted between 45–75 minutes. We utilized an unstructured interview format to avoid biasing the data collection to specific domains of counselor education while also aiming to generate the most personal and nuanced understandings of power directly from the participants' lived experiences (Englander, 2012). As experienced interviewers, we were confident in our ability to actively and meaningfully engage in discourse with participants via the following prompt: "We are interested in understanding power in counselor education. Specifically, please speak to your personal and/or professional development regarding how you think about and use power, and how you see power being used in counselor education." After the interviews, we all shared the task of transcribing the recordings verbatim, each transcribing several interviews. All potentially identifying information (e.g., names, institutional affiliations) was excluded from the interview transcripts.

Data Analysis

Data analysis began via horizontalization of two interview transcripts by each author (Moustakas, 1994; Starks & Trinidad, 2007). Next, we began clustering meaning units into potential categories (Moustakas, 1994). This initially revealed 21 potential categories, which we discussed in the first research team meeting. We kept research notes of our meetings, in which we summarized our ongoing data analysis processes (e.g., observations, wonderings, emerging themes). These notes helped us to revisit earlier thinking around thematic clustering and how categories interrelated. The notes did not themselves become raw data from which findings emerged. Through weekly discussions over the course of one year, the primary coders (Melissa Fickling and Matthew Graden) were able to refine the categories through dialoguing until consensus was reached, evidenced by verbal expression of mutual agreement. That is, the primary coders shared power in data analysis and sometimes tabled discussions when consensus was not reached so that each could reflect and rejoin the conversation later. As concepts were refined, early transcripts needed to be re-coded. Our attention was not on the quantification of participants or categories, but on understanding the essence of the experience of power (Englander, 2012; Moustakas, 1994). The themes and subthemes in the findings section below were a fit for all transcripts by the end of data analysis.

Researchers and Trustworthiness

Fickling and Jodi Tangen are White, cis-hetero women, and at the time of data analysis were pre-tenured counselor educators in their thirties who claimed a feminist approach in their work. Graden was a master's student and research assistant with scholarly interests in student experiences related to gender in counseling and education. We each possess privileged and marginalized identities, which facilitate certain perspectives and blind spots when it comes to recognizing power. Thus, regular meetings before, during, and after data collection and analysis were crucial to the epoche and phenomenological reduction processes (Moustakas, 1994) in which we shared our assumptions and potential biases. Fickling and Graden met weekly throughout data collection, transcription, and analysis. After the initial research design and data collection, Tangen served primarily as auditor to the coding process by comparing raw data to emergent themes at multiple time points, reviewing the research notes written by Fickling and Graden and contributing to consensus-building dialogues when needed.

Besides remaining cognizant of the strengths and limitations of our individual positionalities with the topic and data, we shared questions and concerns with each other as they arose during data analysis. Relevant to the topic of this study, Fickling served as an administrative supervisor to Graden. This required acknowledgement of power dynamics inherent in that relationship. Graden had been a doctoral student in another discipline prior to this study and thus had firsthand context for much of what was learned about power and its presence in academia. Fickling and Graden's relationship had not extended into the classroom or clinical supervision, providing a sort of boundary around potential complexities related to any dual relationships. To add additional trustworthiness to the findings below, we utilized thick descriptions to describe the phenomenon of interest while staying close to the data via quotations from participants. Finally, we discuss the impact and importance of the findings by highlighting implications for counselor educators.

Findings

Through the analysis process, we concluded that the essence (Moustakas, 1994)—or core theme—of the experience of power for the participants in this study is engagement in a near constant *analysis of power*—that of their colleagues, peers, students, as well as of their own power. Participants analyzed interactions of power within and between various contexts and roles. They shared many examples of uses of power—both observed and personally enacted—which influenced their development, as well as their teaching and supervision styles. Through the interviews, participants shared the following: (a) definitions and descriptions of power, (b) higher education context and culture, (c) uses and misuses of power, (d) personal development around power, and (e) considerations of potential backlash. These five categories comprised the overarching theme of analysis of power and are described below with corresponding subcategories where applicable, identified in italics.

Definitions and Descriptions of Power

Participants spent much of their time defining and describing just what they meant when they discussed power. For the feminist counselor educators in this study, power is about helping. One participant, when describing power, captured this sentiment well when she said, "I think of the ability to affect change and the ability to have a meaningful impact." Several participants shared this same idea by talking about power as the ability to have influence. Participants expressed a desire to use power to do good for others rather than to advance their personal aspirations or improve their positions. Use of power for self-promotion was referenced to a far lesser extent than using power to promote justice and equity, and any self-promotional use was generally in response to perceived personal injustice or exploitation. At times, participants described power by what it is not. One

participant said, “I don’t see power as a negative. I think it can be used negatively.” Several others shared this sentiment and described power as a responsibility.

In describing power, participants identified *feelings of empowerment/disempowerment* (Table 1). Disempowerment was described with feeling words that captured a sense of separation and helplessness. Empowerment, on the other hand, was described as feeling energetic and connected. Not only was the language markedly different, but the shifts in vocal expression were also notable (nonverbals were not visible) when participants discussed empowerment versus disempowerment. Disempowerment sounded like defeat (e.g., breathy, monotone, low energy) whereas empowerment sounded like liveliness (e.g., resonant, full intonation, energetic).

Table 1

Empowered and Disempowered Descriptors

| Descriptors | |
|-------------|--------------------|
| Empowered | Disempowered |
| Authentic | Isolated |
| Free | Disenfranchised |
| Good | Anxious |
| Heard | Separated Identity |
| Congruent | Not Accepted |
| Genuine | Disheartened |
| Selfless | Helpless |
| Hopeful | Small |
| Confident | Weak |
| Serene | Invisible |
| Connected | Wasting Energy |
| Grounded | Tired |
| Energized | Powered Down |

Participants identified various *types of power*, including personal, positional, and institutional power. Personal power was seen as the source of the aspirational kinds of power these participants desired for themselves and others. It can exist regardless of positional or institutional power. Positional power provides the ability to influence decisions, and it is earned over time. The last type of power, institutional, is explored more through the next theme labeled *higher education context and culture*.

Higher Education Context and Culture

Because the focus of the study was power within counselor educators’ roles, it was impossible for participants not to discuss the context of their work environments. Thus, *higher education context and culture* became a salient subtheme in our findings. Higher education culture was described as “the way things are done in institutions of higher learning.” Participants referred to written/spoken and unwritten/silent rules, traditions, expectations, norms, and practices of the academic context as barriers to empowerment, though not insurmountable ones. Power was seen as intimately intertwined with

difficult departmental relationships as well as the roles of rank and seniority for nearly all participants. Most also acknowledged the influence of broader sociocultural norms (i.e., local, state, national) on higher education in general, noting that institutions themselves are impacted by power dynamics.

One participant who said that untenured professors have much more power than they realize also said that “power in academia comes with rank.” This contradiction highlights the tension inherent in power, at least among those who wish to use it for the “greater good” (as stated by multiple participants) rather than for personal gain, as these participants expressed.

More than one participant described power as a form of currency in higher education. This shared experience of power as currency, either through having it or not having it, demonstrated that to gain power to do good, as described above, one must be willing or able to be seen as acceptable within the system that assigns power. Boldness was seen by participants as something that can happen once power is gained. Among non-tenured participants, this quote captures the common sentiment: “Now, once I get tenure, that can be a different conversation. I think I would feel more emboldened, more safe, if you will, to confront a colleague in that way.” The discussion of context and boldness led to the emergence of a third theme, which we titled *uses and misuses of power*.

Uses and Misuses of Power

Participants provided many examples of their perceptions of uses and misuses of power and linked these behaviors to their sense of ethics. Because many of the examples of uses of power were personal, unique, and potentially identifiable, participants asked that they not be shared individually in this manuscript. Ethical uses of power were described as specific ways in which participants remembered power being used for good such as intervention in unfair policies on behalf of students. Ethical uses of power shared the characteristics of being collaborative and aligned with the descriptors of “feeling empowered” (Table 1).

In contrast, misuses of power were described in terms of being unethical. These behaviors existed on a spectrum that ranged from a simple lack of awareness to a full-blown abuse of power on the most harmful end of the continuum. Lack of awareness of power, for these participants, was observed quite frequently among their counselor education colleagues and they noted that people can negatively affect others without realizing it. In some cases, they reported seeing colleagues lack cultural awareness, competence, or an awareness of privilege. Although many colleagues cognitively know about privilege and speak about it, the lack of awareness referred to here is in terms of the behavioral use of privilege to the detriment of those with less privilege. One example would be to call oneself an LGBTQ+ ally without actively demonstrating ally behavior like confronting homophobic or cis-sexist language in class. Moving along the spectrum, misuses of power were described as unfairly advantaging oneself, possibly at the expense or disadvantage of another. Misuses of power may or may not be directly or immediately harmful but still function to concentrate power rather than share it. An example shared was when faculty members insist that students behave in ways that are culturally inconsistent for that student. At the other end of the spectrum, abuses of power are those behaviors that directly cause harm. Even though abuses of power can be unintentional, participants emphasized that intentions matter less than effects. One participant described abuses of power she had observed as “people using power to make others feel small.” For example, a professor or instructor minimizing students’ knowledge or experiences serves to silence students and leads to a decreased likelihood the student shares, causing classmates to lose out on that connection and knowledge.

One participant shared a culture of ongoing misuses of power by a colleague: “And then they’re [students] all coming to me crying, you know, surreptitiously coming to me in my office, like, ‘Can I talk to you?’ I’m like, ‘Yeah, shut the door. What’d he do now?’ I’m happy to be a safe person for them, it’s an honor, but this is ridiculous.” The irony of feeling powerless to stop another’s misuses of power was not lost on the participants. One participant expressed that she wished to see more colleagues ask questions about their use of power:

We have to ask the question, “What is the impact? What is happening, what are the patterns?” We have to ask questions about access and participation and equity. . . . And from my perspective, we have to assume that things are jacked up because we know that any system is a microcosm of the outer world, and the outer world is jacked up. So, we have to ask these questions and understand if there’s an adverse impact. And a lot of time there is on marginalized or minoritized populations. So, what are we going to do about it? It’s all well and good to see it, but what are we doing about it, you know? . . . How are you using your power for good?

Personal Development Around Power

Participants reflected deeply on their own development of their thinking about and use of power. All participants spoke early in the interviews about their training as counselors and counselor educators. Their early training was often where they first fully realized their feminist orientation and recognized a need for greater feminist multicultural dialogue and action in counseling. Participants were all cognizant of their inherent personal power but still not immune to real and perceived attempts to limit their expression of it. In general, participants felt that over time they became more able and willing to use their power in ethical ways. One participant shared the following about her change in understanding power over time:

I’ve never really been a power-focused person, and so I just don’t know that I saw it around me much before that. Which now I realize is a total construct of my privilege—that I’ve never had to see it. Then I started realizing that “Oh, there’s power all around me.” And people obsessed with power all around me. And then once I saw it, I kind of couldn’t un-see it. I think for a long time I went through a process of disillusionment, and I think I still lapse back into that sometimes where I’ll realize like, a lot of the people in positions of power around me are power-hungry or power-obsessed, and they’re using power in all the wrong ways. And maybe they don’t even have an awareness of it. You know, I don’t think everybody who’s obsessed with power knows that about themselves. It almost seems like a compulsion more than anything. And I think that’s super dangerous.

Nearly all participants reflected on their experiences of powerlessness as students and how they now attempt to empower students as a result of their experiences. Working to build a sense of safety in the classroom was a major behavior that they endorsed, often because of their own feelings of a lack of safety in learning contexts at both master’s and doctoral levels. Vulnerability and risk-taking on the part of the counselor educator were seen as evidence that efforts to create safety in the classroom were successful. Speaking about this, one participant said:

I think it’s actually very unethical and irresponsible as a counselor educator to throw students in a situation where you expect them to take all these risks and not have worked to create community and environments that are conducive to that.

Participant feelings toward power varied considerably. One said, “I think overall I feel fairly powerful. But I don’t want a lot of power. I don’t like it.” One participant shared, “I am not shy, I am not afraid to speak and so sometimes maybe I do take up too much space, and there are probably times for whatever reason I don’t take up as much space as I should,” showing both humility and a comfort with her own power. These quotes show the care with which the participants came to think about their own power as they gained it through education, position, and rank. No participants claimed to feel total ease in their relationship with their own power, though most acknowledged that with time, they had become more comfortable with acknowledging and using their power when necessary.

One participant said of her ideal expression of power: “Part of feeling powerful is being able to do what I do reasonably well, not perfect, just reasonably well. But also helping to foster the empowerment of other people is just excellent. That’s where it’s at.” This developmental place with her own power aligns with the aspirational definitions and descriptions of power shared above.

Along with their personal development around power, participants shared how their *awareness of privileged and marginalized statuses* raised their understanding of power. Gender and age were cited by nearly all participants as being relevant to their personal experiences with power. Namely, participants identified the intersection of their gender and young age as being used as grounds for having their contributions or critiques dismissed by their male colleagues. Older age seemed to afford some participants the confidence and power needed to speak up. One participant said:

We are talking about a profession that is three-quarters women, and we are not socialized to grab power, to take power. And so, I think all of that sometimes is something we need to be mindful of and kind of keep stretching ourselves to address.

Yet when younger participants recalled finding the courage to address power imbalances with their colleagues, the outcome was almost always denial and continued disempowerment. To this point, one participant asked, “How do we get power to matter to people who are already in the positions where they hold power and aren’t interested in doing any self-examination or critical thinking about the subject?”

Finally, power was described as permeating every part of being an educator. To practice her use of power responsibly, one participant said, “I mean every decision I make has to, at some point, consider what my power is with them [the students].” Related to the educator role, in general, participants shared their personal development with gatekeeping, such as:

I think one of the areas that I often feel in my power is around gatekeeping. And I think that is also an area where power can be grossly abused. But I think it’s just such an important part of what we do. And I think one of the ways that I feel in my power around gatekeeping is because it’s something I don’t do alone. I make a point to consult a lot because I don’t want to misuse power, and I think gatekeeping—and, really, like any use of power I think—is stronger when it’s done with others.

Again, this quote reflects the definition of power that emerged in this study as ideally being “done *with others*.” Gatekeeping is where participants seemed to be most aware of power and to initially have had the most anxiety around power, but also the area in which they held the most conviction about the intentional use of power. The potential cost of not responsibly using their power in gatekeeping was to

future clients, so participants pushed through their discomfort to ensure competent and ethical client care. However, in many cases, participants had to seriously weigh the pros and cons of asserting their personal or positional power, as described in the next and final category.

Considerations of Potential Backlash

Participants shared about the energy they spent in weighing the potential backlash to their expressions of power, or their calling out of unethical uses of power. Anticipated backlash often resulted in participants not doing or saying something for fear of “making waves” or being labeled a “troublemaker.” Participants described feeling a need to balance confrontations of perceived misuses of power with their desire not to be seen as combative. Those participants who felt most comfortable confronting problematic behaviors cited an open and respectful workplace and self-efficacy in their ability to influence change effectively. For those who did not describe their workplaces as safe and respectful, fear was a common emotion cited when considering whether to take action to challenge a student or colleague. Many described a lack of support from colleagues when they did speak up. Some described support behind the scenes but an unwillingness of peers to be more vocal and public in their opposition to a perceived wrong. Of this, one participant said, “And so getting those voices . . . to the table seems like an uphill battle. I feel like I’m stuck in middle management, in a way.”

Discussion

For the participants in this study, analysis of power is a process of productive tension and fluidity. Participants acknowledged that power exists and a power differential in student–teacher and supervisee–supervisor relationships will almost certainly always be present. Power seemed to be described as an organizing principle in nearly all contexts—professionally, institutionally, departmentally, in the classroom, in supervision, and in personal relationships. Participants found power to be ever present but rarely named (Miller, 2008). Engaging with these data from these participants, it seems that noticing and naming power and its effects is key to facilitating personal and professional development in ways that are truly grounded in equity, multiculturalism, and social justice. Participants affirmed what is stated in guiding frameworks of counseling (ACA, 2014) and counselor education (ACES, 2011; CACREP, 2015) and went beyond a surface acknowledgement of power to a deeper and ongoing process of analysis, like Bernard and Goodyear’s (2014) treatment of power in the supervisory context.

Contemplating, reflecting on, and working with power are worthwhile efforts according to the participants in this study, which is supported by scholarly literature on the topic (Bernard & Goodyear, 2014). Participants’ personal and professional growth seemed to be catalyzed by their awareness of gender and power dynamics. Participants expressed a desire for a greater recognition of the role of power and the ways in which it is distributed in our professional contexts. For example, although mentioned by only two participants, dissatisfaction in professional associations—national, regional, and state—was shared. Specifically, there was a desire to see counselor educators with positional power make deliberate and visible efforts to bring greater diversity into professional-level decisions and discussions in permanent, rather than tokenizing, ways.

The ongoing process of self-analysis that counselors and educators purport to practice seemed not to be enough to ensure that faculty will not misuse power. Though gender and age were highly salient aspects of perceptions of power for these women, neither were clear predictors of their colleagues’ ethical or unethical use of power. Women and/or self-identified feminist counselor educators can and do use power in problematic ways at times. In fact, most participants expressed

disappointment in women colleagues and leaders who were unwilling to question power or critically examine their role in status quo power relations. This is consistent with research that indicates that as individual power and status are gained, awareness of power can diminish (Keltner, 2016).

These feminist counselor educators described feelings of empowerment as those that enhance connection and collaboration rather than positionality. In fact, participants' reports of frustration with some uses of power seemed to be linked to people in leadership positions engaging in power-over moves (Miller, 2008). Participants reported spending a significant amount of energy in deciding whether and when to challenge perceived misuses of power. Confronting leaders seemed to be the riskiest possibility, but confronting peers was also a challenge for many participants. The acknowledgement of context emerged in these data, including a recognition that power works within and between multiple socioecological levels (e.g., microsystems, mesosystems, macrosystems; Bronfenbrenner, 1979). The culture of academia and higher education also contributed to unique considerations of power in the present study, which aligns with the findings of Thacker and colleagues (2021), who noted counselor educator experiences of entrenched power norms are resistant to change.

Contextualizing these findings in current literature is difficult given the lack of work on this topic in counselor education. However, our themes are similar to those found in the supervision literature (Arczynski & Morrow, 2017; Bernard & Goodyear, 2014). The participants in our study were acutely aware of power in their relationships; however, they appeared to feel it even more when in a power-down position. This finding is similar to research in the supervision context in which supervisees felt as though power was not being addressed by their supervisors (Green & Dekkers, 2010). Further, just as the supervisors researched in Mangione et al.'s (2011) study attended to power analysis, our participants strived to examine their power with students. The distinction between positive and negative uses of power was consistent with Murphy and Wright (2005). Participants conceptualized power on a continuum, attended to the power inherent in gatekeeping decisions, managed the tension between collaboration and direction, engaged in reflection around use and misuse of power, and sought transparency in discussions around power. More than anything, though, our participants seemed to continually wrestle with the inherent complexity of power, similarly to what Arczynski and Morrow (2017) found, and how to address, manage, and work with it in a respectful, ethical manner. As opposed to these studies, though, our research addresses a gap between the profession's acknowledgement of power as a phenomenon and actual lived experiences of power by counselor educators who claim a feminist lens in their work.

Implications

The implications of our findings are relevant across multiple roles (e.g., faculty, administration, supervision) and levels (e.g., institution, department, program) in counselor education. Power analysis at each level and each role in which counselor educators find themselves could help to uncover issues of power and its uses, both ethical and problematic. The considerable effort that participants described in weighing whether to challenge perceived misuses of power indicates the level of work needed to make power something emotionally and professionally safe to address. Thus, those who find themselves in positions of power or having earned power through tenure and seniority are potentially better situated to invite discussions of power in relatively safe settings such as program meetings or in one-on-one conversations with colleagues. Further, at each hierarchical level, individuals can engage in critical self-reflection while groups can elicit external, independent feedback from people trained to observe and name unjust power structures. Counselor educators should not assume that because they identify as feminist, social justice-oriented, or egalitarian that their professional behavior is always reflective of their aspirations. It is not enough to claim an

identity; one must work to let one's actions and words demonstrate one's commitment to inclusion through sensitivity to and awareness of power.

Additionally, we encourage counselor educators to ask for feedback from people who will challenge them because self-identification of uses or misuses of power is likely not sufficient to create systemic or even individual change. It is important to acknowledge that power is differentially assigned but can be used well in a culture of collaboration and support. Just as we ask our students to be honest and compassionately critical of their own development, as individuals and as a profession, it seems we could be doing more to foster empowerment through support, collaboration, and honest feedback.

Limitations and Future Directions

Although not all participants disclosed all their demographic identifiers, one limitation to the current study is the relative homogeneity of the sample across racial and gender lines. The predominance of White women in the present study is of concern, and there are a few possible reasons for this. One is that White women are generally overrepresented in the counseling profession. Baggerly and colleagues (2017) found that women comprised 85% of the student body in CACREP-accredited programs but only 60% of the faculty. These numbers indicate both the high representation of women seeking counseling degrees, but also the degree to which men approach, but do not reach, parity with women in holding faculty positions. Further, in Baggerly et al.'s study, about 88% of faculty members in CACREP-accredited programs were White.

Another potential reason for the apparent racial homogeneity in the present sample is that people of color may not identify with a feminist orientation because of the racist history of feminist movements and so would not have volunteered to participate. Thus, findings must be considered in this context. Future researchers should be vocally inclusive of Black feminist thought (Collins, 1990) and Womanism (A. Walker, 1983) in their research design and recruitment processes to communicate to potential participants an awareness of the intersections of race and gender. Further, future research should explicitly invite those underrepresented here—namely, women of color and men faculty members—to share their experiences with and conceptualizations of power. This will be extremely important as counselor educators work to continue to diversify the profession of counseling in ways that are affirming and supportive for all.

Another limitation is that participants may have utilized socially desirable responses when discussing power and their own behavior. Indeed, the participants identified a lack of self-awareness as common among those who misused power. At the same time, however, the participants in this study readily shared their own missteps, lending credibility to their self-assessments. Future research that asks participants to track their interactions with power in real time via journals or repeated quantitative measures could be useful in eliciting more embodied experiences of power as they arise in vivo. Likewise, students' experiences of power in their interactions with counselor educators would be useful, particularly as they relate to teaching or gatekeeping, because some research already exists examining power in the context of clinical supervision (Arczynski & Morrow, 2017; Green & Dekkers, 2010; Mangione et al., 2011; Murphy & Wright, 2005).

We initially embarked upon this study with a simple inquiry, wondering about others' invisible experiences around what felt like a formidable topic. More than anything, our discussions with our participants seemed to indicate a critical need for further exploration of power across hierarchical levels and institutions. We are grateful for our participants' willingness to share their stories, and we hope that this is just the beginning of a greater dialogue.

Conflict of Interest and Funding Disclosure

The authors reported no conflict of interest or funding contributions for the development of this manuscript.

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Evaluating the Impact of Solution-Focused Brief Therapy on Hope and Clinical Symptoms With Latine Clients



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We implemented a single-case research design (SCRD) with a small sample ($N = 2$) to assess the effectiveness of solution-focused brief therapy (SFBT) for Latine clients experiencing mental health concerns. Analysis of participants' scores on the Dispositional Hope Scale (DHS) and Outcome Questionnaire (OQ-45.2) using split-middle line of progress visual trend analysis, statistical process control charting, percentage of non-overlapping data points procedure, percent improvement, and Tau- U yielded treatment effects indicating that SFBT may be effective for improving hope and mental health symptoms for Latine clients. Based on these findings, we discuss implications for counselor educators, counselors-in-training, and practitioners, which include integrating SFBT principles into the counselor education curriculum, teaching counselors-in-training how to use SCRDS to evaluate counseling effectiveness, and using the DHS and OQ-45.2 to measure hope and clinical symptoms.

Keywords: solution-focused brief therapy, single-case research design, hope, counselor education, clinical symptoms

Solution-focused brief therapy (SFBT) is a strength-based and evidence-based intervention that helps clients focus on personal strengths, identify exceptions to problems, and highlight small successes (Berg, 1994; Gonzalez Suitt et al., 2016; Schmit et al., 2016). Schmit et al. (2016) conducted a meta-analysis of SFBT for treating symptoms of internalizing disorders and identified that SFBT might be effective in creating short-term changes in clients' functioning. Other researchers (e.g., Gonzalez Suitt et al., 2016; Novella et al., 2020) also found that SFBT can be helpful with clients from various cultural backgrounds and with different presenting symptoms such as anxiety. Yet, there is scant research evaluating the efficacy of SFBT on subjective well-being with Latine (a gender-neutral term that is more consistent with Spanish language and grammar than Latinx) populations. Additionally, there is not a lot of research that investigates the effectiveness of counseling practices among counselors-in-training (CITs) at community counseling clinics with culturally diverse clients. Although the costs are relatively low, the type of supervision, training, and feedback given to CITs provides community clients with the potential for effective counseling services. However, only a few researchers (e.g., Schuermann et al., 2018) have explored the efficacy of counseling services within a community counseling training clinic. Therefore, empirical research is needed regarding the efficacy of SFBT with Latine populations in a counseling training clinic at a Hispanic Serving Institution.

The Latine population is a fast-growing group in the United States and makes up approximately 19% of the U.S. population (U.S. Census Bureau, 2020). Despite this growth, members of this culturally diverse population continue to face individual, interpersonal, and institutional challenges (Ponciano et al., 2020; Vela, Lu, et al., 2014). Because Latine individuals experience discrimination

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and negative environments (Cheng & Mallinckrodt, 2015; Ponciano et al., 2020; Ramos et al., 2021), perceive lack of support from counselors and teachers in K–12 school environments (A. G. Cavazos, 2009; Vela-Gude et al., 2009), and experience microaggressions (Sanchez, 2019), they are likely to experience greater mental health challenges. Researchers have identified numerous internalizing and externalizing symptoms that represent Latine individuals' mental health experiences, likely putting them at greater risk for mental health impairment and poor psychological functioning (Cheng et al., 2016). Researchers also detected that Latine youth had similar or higher prevalence rates of internalizing disorders (e.g., anxiety and depression) when compared with their White counterparts (Merikangas et al., 2010; Ramos et al., 2021). Given that Latine individuals might be at greater risk for psychopathology and their mental health needs are often unaddressed because they do not seek mental health services (Mendoza et al., 2015; Sáenz et al., 2013), further evaluation of the effectiveness of counseling practices for this population is necessary.

Fundamental Principles of Solution-Focused Brief Therapy

Developed from the clinical practice of Steven de Shazer and Insoo Kim Berg, SFBT is a future-focused and goal-directed approach that focuses on searching for solutions and is created on the belief that clients have knowledge and resources to resolve their problems (Kim, 2008). Counselors' therapeutic task is to help clients imagine how they would like things to be different and what it will take to facilitate small changes. Counselors take active roles by asking questions to help clients look at the situation from different perspectives and use techniques to identify where the solution occurs (de Shazer, 1991; Proudlock & Wellman, 2011).

In SFBT, counselors amplify positive constructs and solutions by using specific strategies and techniques to build on positive factors (Tambling, 2012). Common techniques include the miracle question, scaling questions, exceptions, experiments, and compliments, which are designed to help clients identify personal strengths and cultivate what works (de Shazer, 1991; Proudlock & Wellman, 2011). We agree with Vela, Lerma, et al. (2014) that counselors can use postmodern and strength-based theories (e.g., SFBT) to develop positive psychology constructs such as hope, positive emotions, and subjective well-being. SFBT might be useful to help Latine clients identify strengths, build on what works, and reconstruct a positive future outcome.

Several researchers have indicated the efficacy of SFBT for treating various issues with different populations (Bavelas et al., 2013; Kim, 2008). Schmit et al. (2016) conducted a meta-analysis with 26 studies examining the effectiveness of SFBT for treating symptoms of depression and anxiety. They found that SFBT resulted in moderately successful treatment; however, adults' treatment effects were 5 times larger when compared to those of youth and adolescents. One possible explanation was that SFBT may require clients' maturity to integrate and understand SFBT concepts and techniques. Researchers also concluded that the impact of SFBT may be effective in producing short-term changes that will lead to further gains in symptom relief as well as psychological functioning (Schmit et al., 2016).

Brogan et al. (2020) commented that "there are limited studies that demonstrate the effectiveness of this method with the Latine . . . population" (p. 3). However, we postulate that SFBT principles are compatible with Latine cultural and family characteristics (Lerma et al., 2015; Oliver et al., 2011). There are several reasons that make SFBT an appropriate fit for working with the Latine population. For instance, researchers suggest that understanding family dynamics or *familismo* when evaluating mental health and overall well-being with the Latine population is important (Ayón et al., 2010). *Familismo* is strong family ties to immediate and extended families in the Latine culture.

In a study investigating Latine families, Priest and Denton (2012) found that family cohesion and family discord were associated with anxiety. Calzada et al. (2013) also highlighted that although family support can positively impact mental health, family can also become a source of conflict and stress, which might result in poor mental health. By using SFBT principles, counselors can help Latine clients identify how *familismo* is a source of strength through sense of loyalty and cooperation among family members (Oliver et al., 2011).

Another emphasis with SFBT that aligns with the Latine culture is the focus on personal and family resiliency. Because Latine individuals must navigate individual, interpersonal, and institutional challenges (Vela et al., 2015), they have natural resilience and coping skills that align with an SFBT approach. Counselors can use exceptions, scaling questions, and compliments to help Latine individuals discover their inherent resilience and continue to persevere through personal adversity.

Constructs: Hope and Clinical Symptoms

Consistent with a dual-factor model of mental health (Suldo & Shaffer, 2008), we focused on two outcomes: hope and clinical symptoms. First, hope, which has been associated with subjective well-being among Latine populations (Vela, Lu, et al., 2014), refers to a pattern of thinking regarding goals (Snyder et al., 2002). Snyder et al. (1991) proposed Hope Theory with *pathways thinking* and *agency thinking*. Pathways thinking refers to individuals' plans to pursue desired objectives (Feldman & Dreher, 2012), while agency thinking refers to perceptions of ability to make progress toward goals (Snyder et al., 1999). Researchers found that hope was positively related to meaning in life, grit, and subjective happiness among Latine populations (e.g., Vela, Lerma, et al., 2014; Vela et al., 2015). Other researchers (e.g., Vela, Ikononopoulos, et al., 2016) have explored the impact of counseling interventions on hope among Latine adolescents and survivors of intimate partner violence. Given the association between hope and other positive developmental outcomes among Latine populations, examining this construct as an outcome in clinical mental health counseling services is important.

In addition to hope as an indicator of subjective well-being, we used the Outcome Questionnaire (OQ-45.2; Lambert et al., 1996) to measure clinical symptoms in the current study for several reasons, including its strong psychometric properties, its use in the counseling training clinic where this study took place, and its use in other studies that evaluate the efficacy of counseling or psychotherapy and show evidence based on relation to other variables such as depression and clinical symptoms (Ekroll & Rønnestad, 2017; Ikononopoulos et al., 2017; Soares et al., 2018). The OQ-45.2 measures three areas that are central to individual psychological functioning: Symptom Distress, Interpersonal Relations, and Social Role Performance.

Purpose of Study and Rationale

The purpose of this study was to evaluate the efficacy of SFBT for increasing hope and decreasing clinical symptoms among Latine clients. We implemented an SCRCD (Lenz et al., 2012) to identify and explore changes in hope and clinical symptoms as a result of participation in SFBT. We evaluated the following research question: To what extent is SFBT effective for increasing hope and decreasing clinical symptoms among Latine clients who receive services at a community counseling clinic?

Methodology

We implemented a small-series ($N = 2$) AB SCRCD with Latine clients admitted into treatment at an outpatient community counseling clinic to evaluate the treatment effect associated with SFBT for increasing hope and reducing clinical symptoms. The rationale for using an SCRCD was to explore the

impact of an intervention that might help Latine clients at a community counseling training clinic. We used criterion sampling to recruit participants who (a) sought counseling services at a community counseling clinic, (b) had internalizing symptoms related to anxiety and depression, and (c) worked with a CIT who was supervised by faculty in a clinical mental health counseling program.

Participants

Participants in this study were two adults admitted into treatment at an outpatient community counseling clinic in the Southern region of the United States. Both participants identified as Hispanic; one identified as a female and the other identified as a male. During informed consent, we explained to participants that they would be assigned pseudonyms to protect their identity. The participants consented to both treatment and inclusion in the research study.

The two participants for this study were selected to participate in this study because of their presenting internalizing symptoms (e.g., depression, anxiety) and fit for SFBT principles. Because we wanted to increase hope among these Latine clients, we felt that SFBT was an appropriate approach. The fundamental principles of SFBT align with attempting to facilitate hope among clients with various symptoms because it helps clients view mental health challenges as opportunities to cultivate strengths, explore solutions, and identify new skills (Bannik, 2008; Joubert & Guse, 2021). SFBT practitioners also posit that clients can recreate their future, cultivate resilience, and construct solutions, which aligns well with tenets of the Latine culture (J. Cavazos et al., 2010). In the first session prior to treatment, both clients indicated that they believed they were in control of their future mental health and that they could construct solutions. We also informed them that SFBT focuses on future solutions as opposed to focusing on problems and the past. Because these clients indicated a willingness to explore their future through co-constructing solutions, they were a good fit for SFBT principles in counseling.

Participant 1

“Mary” was a 31-year-old Latine female with a history of receiving student mental health services at a university counseling clinic. Mary sought individual counseling services because of a recent separation with the father of her three children who was emotionally abusive. Anxiety associated with this separation was compounded by traumatic experiences from 5 years prior. Mary stated that her Latine culture generated greater symptoms of anxiety while recognizing her new role as a single mother. Mary’s therapeutic goals and focus of treatment were to reduce clinical symptoms of anxiety as well as improve self-identity and self-esteem.

Participant 2

“Joel” was a 20-year-old Latine male with a history of receiving mental health services for symptoms of depression. Joel’s therapeutic goals and focus of treatment were to reduce clinical symptoms of anxiety and associated anger as well as improve self-esteem. Joel reported being a victim of domestic violence and child abuse. Additionally, Joel expressed distress with revealing his sexual identity because of patriarchal roles in the Latine culture that may result in rejection.

Measurements

Outcome Questionnaire (OQ-45.2)

The OQ-45.2 is a 45-item self-report outcome questionnaire (Lambert et al., 1996) for adults 18 years of age and older. Each item is associated with a 5-point Likert scale with responses ranging from *never* (1) to *almost always* (5). We used the total score for the OQ-45, which was calculated by summing the three subscale scores with a possible total score ranging from 0–180. Higher scores are

reflective of more severe distress and impairment. Sample response items include “I feel worthless” and “I have trouble getting along with friends and close acquaintances.” This assessment was designed to include items relevant to three domains central to mental health: Symptom Distress, Interpersonal Relations, and Social Role Performance (Lambert et al., 1996).

Researchers have examined structural validity and reliability. Coco et al. (2008) used a confirmatory factor analysis to test various models of the factorial structure. They found support for the four-factor, bi-level model, which means that each survey item relates to a subscale as well as an overall maladjustment score. Amble et al. (2014) also examined psychometric properties using confirmatory factor analysis, concluding that “the total score of the OQ-45 is a reliable and valid measure for assessing therapy progress” (p. 511). Their findings are like Boswell et al.’s (2013) findings that found support for the validity of the total OQ-45 score. There is also evidence based on relation to other clinical outcomes measured by the General Severity Index from the Symptom Checklist 90-Revised, the Beck Depression Inventory, and Social Adjustment Scale (Lambert et al., 1996). Additionally, previous psychometric evaluations have revealed evidence of reliability through reliability indices such as Cronbach’s alpha (Ikonomopoulos et al., 2017; Kadera et al., 1996; Umphress et al., 1997). Internal consistency estimates through Cronbach’s alpha range from .71 to .92 (Ikonomopoulos et al., 2017; Lambert et al., 1996).

Hope

The Dispositional Hope Scale (DHS; Snyder et al., 1991) is a self-report inventory to measure participants’ attitudes toward goals and objectives. Participants responded to eight statements evaluated on an 8-point Likert scale ranging from *definitely false* (1) to *definitely true* (8). We used the total Hope score, which was obtained by summing scores for both Agency and Pathways subscales. Total scores range from 8–64, with higher scores indicating greater levels of hope. Sample response items include “I can think of many ways to get the things in life that are important to me” and “I can think of many ways to get out of a jam.”

Researchers have examined structural validity and reliability. Galiana et al. (2015) used confirmatory factor analysis to identify that a one-factor structure was the best fit. There is also evidence of validity with other theoretically relevant constructs such as meaning in life (Vela et al., 2017) as well as evidence of concurrent and discriminant validity with other measures related to self-esteem, state hope, and state positive and negative affect (Snyder et al., 1996). There is also evidence of factorial invariance (Nel & Boshoff, 2014), suggesting that factor structure is similar across gender and racial ethnic groups. Additionally, there is evidence of reliability (e.g., internal consistency) as indicated through Cronbach’s alpha coefficients ranging from .85 to .86 (Snyder et al., 2002; Vela et al., 2015).

Study Setting

During the present study, each participant was involved in individual counseling at a community counseling clinic. The facility, located in the Southern region of the United States, provides free counseling services to community members. Individual and group sessions are free and last approximately 45 to 50 minutes. The community counseling clinic offers preventive and early treatment for developmental, emotional, and interpersonal difficulties for community members. CITs at the community counseling clinic are graduate counseling students enrolled in practicum or internship.

Interventionists

Krystle Himmelberger, who was the CIT in the current study, adapted strength-based interventions designed to facilitate positive feelings by helping clients set goals, focus on the future, and find solutions rather than problems. She was a CIT in a clinical mental health counseling program. Prior to

the study, she selected and designed interventions and activities according to specific guidelines from SFBT manuals and sources (Buchholz Holland, 2013; de Shazer et al., 2007; Trepper et al., 2010).

James Ikonomopoulos and Javier Cavazos Vela were faculty counseling supervisors who monitored sessions and provided weekly supervision to maintain fidelity of SFBT interventions. Bavelas et al. (2013) suggested that live supervision may provide a second set of clinical eyes to help CITs. Himmelberger received weekly supervision to ensure procedural and treatment adherence (Liu et al., 2020). Furthermore, videotaped supervision and transcriptions provided her with the ability to communicate between sessions. These measures were used to enhance treatment fidelity by focusing on quality and competency.

SFBT Principles and Intervention

Participants received six to nine sessions of individual SFBT using the description of techniques and activities in the following resources: *More Than Miracles: The State of the Art of Solution-Focused Brief Therapy* (de Shazer et al., 2007), *Solution-Focused Therapy Treatment Manual for Working With Individuals* (Trepper et al., 2010), and “The Lifeline Activity With a ‘Solution-Focused Twist’” (Buchholz Holland, 2013). We used the following SFBT principles to guide the intervention: focus on specific topics, a positive and co-constructed therapeutic relationship, and questioning techniques (Trepper et al., 2010). First, Himmelberger focused on specific topics such as preferred future, strengths, confidence in finding solutions, and exceptions. She used future-specific and solution-focused language in each session to help clients focus on their preferred futures. Second, she developed a positive therapeutic relationship with clients through shared trust and co-construction of counseling experiences. She was positive and helpful, and she helped instill optimism and hope in her clients. A positive therapeutic relationship was evidenced based on her report as well as live supervision and reviews of session recordings. Finally, Himmelberger used questioning techniques that focused on clients’ strengths, exceptions, and coping skills. She used questioning techniques that helped clients focus on progress toward their preferred future and future-oriented solutions.

The techniques she used included looking for previous solutions, exceptions, the miracle question, scaling questions, compliments, future-oriented questions, and “so what is better” questions. Himmelberger used looking for previous solutions to help clients identify their previous coping strategies to cope with the problem. Based on Himmelberger’s report in supervision sessions, both clients commented that they were surprised that they had been successful in the past when the problem did not exist. She also used exceptions to help clients identify what was different when the problem did not exist. Additionally, she used present- and future-oriented questions to help clients focus on future solutions. This was an important technique as clients were not used to ignoring the problem. When clients provided updates on their progress toward their goals, Himmelberger used compliments to validate what clients were doing well. Using compliments helped cultivate a positive therapeutic relationship with these clients.

Finally, with the miracle question, she asked clients to provide details about their preferred future and what that would look like. She followed up with a question about constructing solutions regarding what work it would take to make that preferred future happen. Then in each session, she conducted progress checks toward that preferred future by asking scaling questions (On a scale from 1–10, where are you now with progress toward your preferred future?) and questions about “what is better” (What is better now when compared to last week?). She complimented clients’ progress toward that preferred future.

Procedures

We used AB SCRCD to determine the effectiveness of an SFBT treatment program (Lundervold & Belwood, 2000; Sharpley, 2007) using scores on the DHS and OQ-45.2 total scale as outcome measures (Lambert et al., 1996). The two participants who were assigned to Himmelberger did not begin counseling until they consented to treatment and the research study. In other words, they did not receive counseling services prior to participation in this study. After 4 weeks of data collection, the baseline phase of data collection was completed. Participants did not receive counseling services during the baseline period.

The treatment phase began after the fourth baseline measure. At the conclusion of each individual session, participants completed the DHS and OQ-45.2. Himmelberger collected and stored the measures in each participant's folder in a locked cabinet in the clinic. After the 12th week of data collection, the treatment phase of data collection was completed, at which point the SFBT intervention was withdrawn.

A percentage of non-overlapping data (PND) procedure was used to analyze quantitative data (Scruggs et al., 1987). A visual representation of change over time is graphically represented with a split-middle line of progress visual trend analysis showing data points from each phase (Lenz, 2015). Statistical process control charting was used to determine whether the characteristics of treatment phase data were beyond the realm of random occurrence with 99% confidence (Lenz, 2015). An interpretation of effect size was estimated using Tau-*U* to complement PND analysis (Lenz, 2015; Sharpley, 2007).

Data Collection and Analysis

We implemented the PND (Scruggs et al., 1987) to analyze scores on the Hope and OQ-45.2 scales across phases of treatment. The PND procedure yields a proportion of data in the treatment phase that overlaps with the most conservative data point in the baseline phase. PND calculations are expressed in a decimal format that ranges between 0 and 1, with higher scores representing greater treatment effects (Lenz, 2013).

Upon considering the percentage of data exceeding the median procedure (Ma, 2006), we selected the PND because it is considered a robust method of calculating treatment effectiveness (Lenz, 2013). This metric is conceptualized as the percentage of treatment phase data that exceeds a single noteworthy point within the baseline phase. Because we aimed for an increase in DHS scores, the highest data point in the baseline phase was used. Finally, given that we aimed for a decrease in OQ-45.2 total scale scores, the lowest data point in the baseline was used (Lenz, 2013). To calculate the PND statistic, data points in the treatment phase on the therapeutic side of the baseline are counted and then divided by the total number of points in the treatment phase (Ikonomopoulos et al., 2016).

Estimates of Effect Size and Clinical Significance

PND values are typically interpreted using the estimation of treatment effect provided by Scruggs and Mastropieri (1998) wherein values of .90 and greater are indicative of very effective treatments, those ranging from .70 to .89 represent moderate effectiveness, those between .50 to .69 are debatably effective, and scores less than .50 are regarded as not effective (Ikonomopoulos et al., 2015, 2016). Tau-*U* values are typically interpreted using the estimation of treatment effect provided by Vannest and Ninci (2015) wherein Tau-*U* magnitudes can be interpreted as small ($\leq .20$), moderate (.20–.60), large (.60–.80), and very large ($\geq .80$). These procedures were completed for each participant's scores on the Hope and OQ-45.2 scales.

Clinical significance was determined in accordance with Lenz's (2020a, 2020b) calculations of percent improvement (PI) values. Percent improvement values greater than 50% were interpreted as

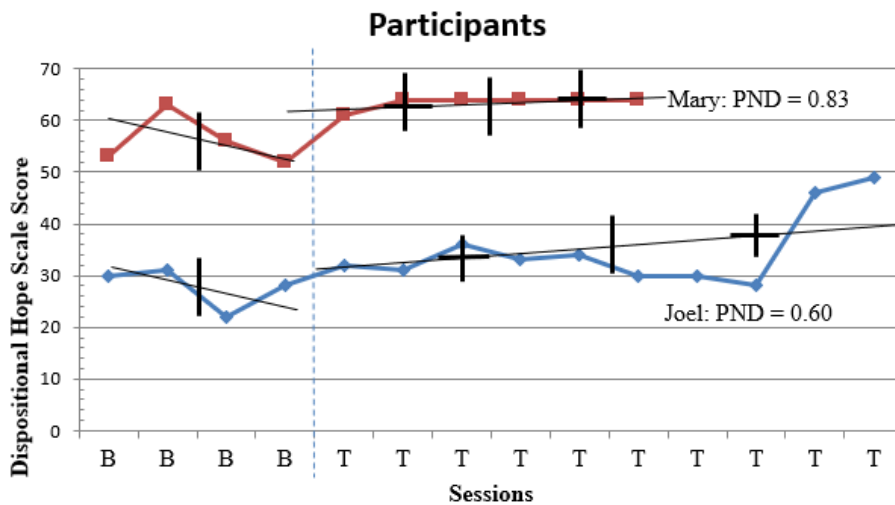
representing clinically significant improvement with large effect sizes, 25% to 49% were interpreted as slightly improved without clinical significance, and less than 25% represented no clinical significance. Lenz (2021) also recommended for researchers to provide sufficient context and visual representation when interpreting and reporting clinical significance. As one example, without context and visual representation, researchers could interpret a PI value of 49% as not having clinical significance.

Results

A detailed description of participants' experiences is provided below. Figure 1 depicts estimates of treatment effect on the DHS; Figure 2 depicts estimates of treatment effect on the OQ-45.2 total scale.

Figure 1

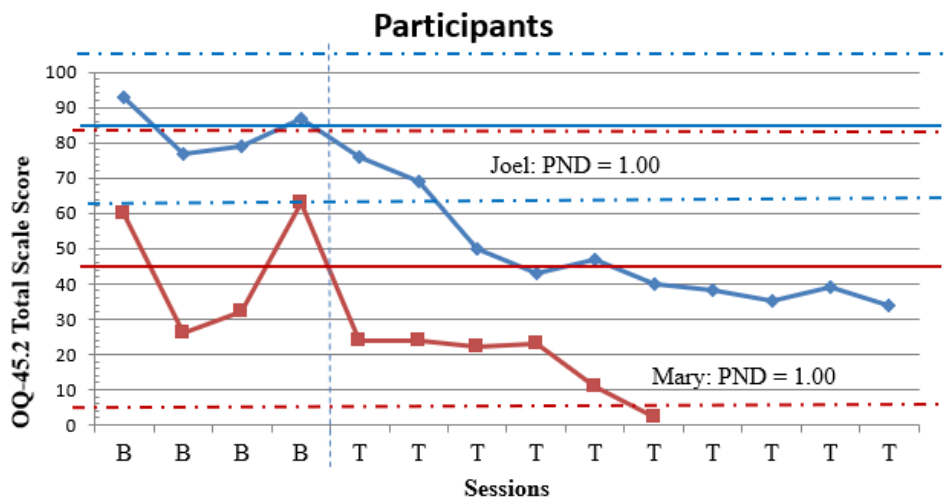
Ratings for Hope by Participants With Split-Middle Line of Progress



Note. PND = Percentage of Non-overlapping Data.

Figure 2

Ratings for Mental Health Symptoms on OQ-45.2 by Participants with Statistical Process Control Charting



Note. PND = Percentage of Non-overlapping Data.

Participant 1

Data for Mary is represented in Figures 1 and 2 as well as Tables 1 and 2. A comparison of level of Hope across baseline ($M = 56.00$) and intervention phases ($M = 63.50$) indicated notable changes in participant scores evidenced by an increase in mean DHS scores over time. Variation between scores in baseline ($SD = 3.50$) and intervention ($SD = 0.83$) indicated differential range in scores before and after the intervention. Data in the baseline phase trended downward toward a contra-therapeutic effect over time. Dissimilarly, data in the intervention phase trended upward toward a therapeutic effect over time. Comparison of baseline level and trend data with the first three observations in the intervention phase did suggest immediacy of treatment response for the participant. Data in the intervention phase moved into the desired range of effect for scores representing Hope. Overall, visual inspection of Mary's ratings on the DHS (see Figure 1) indicates that most of her scores in the treatment phase were higher than her scores in the baseline phase.

Mary's ratings on the DHS illustrate that the treatment effect of SFBT was moderately effective for improving her DHS score. Evaluation of the PND statistic for the DHS score measure (0.83) indicated that five out of six scores were on the therapeutic side above the baseline (DHS score of 63). Mary successfully improved Hope during treatment as evidenced by improved scores on items such as "I can think of many ways to get out of a jam," "I can think of ways to get the things in life that are important to me," and "I meet the goals that I set for myself." Scores above the PND line were within a 1-point range. Trend analysis depicted a consistent level of improvement following the first treatment measure. This finding is corroborated by the associated Tau- U value ($\tau_U = 0.92$), which suggested a very large degree of change in which the null hypothesis about intervention efficacy for Mary could be rejected ($p = .02$). Also, interpretation of the clinical significance estimate of PI is that 13.39% improvement is not clinically significant (Lenz, 2020a, 2020b). See Table 1 for information regarding PND, Tau- U , and PI. Although the PI value is considered not clinically significant, it is important to contextualize this finding within visual inspection of Mary's Hope scores in Figure 1. Because Mary had moderately high levels of Hope in the baseline phase, her room for improvement based on the ceiling effect as related to Hope was not high. In other words, in the context of Mary's treatment and visual inspection of her scores, the SFBT intervention helped Mary move from good to better. In the context of Mary's treatment and a visual representation of her scores on the DHS (see Figure 1), the SFBT intervention had some level of convincingness, which means that some amount of change in Hope occurred for Mary (Kendall et al., 1999; Lenz, 2021).

Table 1

Ratings for Hope by Participants

| | Age | Ethnicity | Gender | Baseline Data | | Intervention Data | | PND | $\tau_U (p)$ | PI |
|------|-----|-----------|--------|---------------|-----------|-------------------|-----------|-----|--------------|--------|
| | | | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | | |
| Mary | 31 | Latina | Female | 56.00 | 3.50 | 63.50 | 0.83 | 83% | 0.92 (.02) | 13.39% |
| Joel | 20 | Latino | Male | 27.75 | 2.87 | 34.90 | 5.26 | 60% | 0.70 (.05) | 25.75% |

Note. PND = Percentage of Non-overlapping Data.

Table 2*Ratings for OQ-45.2 Total Scale Score by Participants*

| | Age | Ethnicity | Gender | Baseline Data | | Intervention Data | | PND | $\tau_U(p)$ | PI |
|------|-----|-----------|--------|---------------|-------|-------------------|-------|------|--------------|--------|
| | | | | M | SD | M | SD | | | |
| Mary | 31 | Latina | Female | 45.25 | 16.25 | 17.67 | 7.44 | 100% | -1.00 (.01) | 60.95% |
| Joel | 20 | Latino | Male | 84.00 | 6.00 | 47.10 | 10.74 | 100% | -1.00 (.004) | 43.93% |

Note. PND = Percentage of Non-overlapping Data.

Before treatment began, one of Mary's baseline measurements was above the cut-score guideline on the OQ-45.2 of a total scale score of 63, which indicates symptoms of clinical significance. Comparison of level of clinical symptoms across baseline ($M = 45.25$) and intervention phases ($M = 17.67$) indicated notable changes in participant scores evidenced by a decrease in mental health symptom scale scores over time. Variation between scores in baseline ($SD = 16.25$) and intervention ($SD = 7.44$) indicated differential range in scores before and after the intervention. Data in the baseline phase trended upward toward a contra-therapeutic effect over time. Dissimilarly, data in the intervention phase trended downward toward a therapeutic effect over time. Comparison of baseline level and trend data with the first three observations in the intervention phase did suggest immediacy of treatment response for the participant. Data in the intervention phase moved into the desired range of effect for scores representing mental health symptoms.

Mary's ratings on the OQ-45.2 illustrate that the treatment effect of SFBT was very effective for decreasing her total scale score measuring mental health symptoms. Evaluation of the PND statistic for the OQ-45.2 total scale score measure (1.00) indicated that all six scores were on the therapeutic side below the baseline (total scale score of 26). Mary successfully reduced clinical symptoms during treatment as evidenced by improved scores on items such as "I am a happy person," "I feel loved and wanted," and "I find my work/school satisfying." This contention became most apparent after the first treatment session when Mary continuously scored lower on a majority of symptom dimensions such as Symptom Distress, Interpersonal Relations, and Social Role Performance. Scores below the PND line were within a 24-point range. Trend analysis depicted a consistent level of improvement following the first treatment measure. This finding is corroborated by the associated Tau- U value ($\tau_U = -1.0$), which suggested a very large degree of change in which the null hypothesis about intervention efficacy for Mary could be rejected ($p = .01$). An analysis of statistical process control charting revealed that one data point in the treatment phase was beyond the realm of random occurrence with 99% confidence. This finding also corresponds with interpretation of the clinical significance estimate of PI that 60.95% improvement is clinically significant (Lenz, 2020a, 2020b). See Table 2 for information regarding PND, Tau- U , and PI. In the context of Mary's treatment and a visual representation of Mary's scores on the OQ-45.2 (see Figure 2), the SFBT intervention had a high level of convincingness, which means that a considerable amount of change in clinical symptoms occurred for Mary (Kendall et al., 1999; Lenz, 2021).

Participant 2

Data for Joel is represented in Figures 1 and 2 as well as Tables 1 and 2. Comparison of level of Hope across baseline ($M = 27.75$) and intervention phases ($M = 34.90$) indicated notable changes in participant scores evidenced by an increase in mean DHS scores over time. Variation between scores in baseline ($SD = 2.87$) and intervention ($SD = 5.26$) indicated differential range in scores before and after the intervention. Data in the baseline phase trended downward toward a contra-therapeutic effect over time. Dissimilarly, data in the intervention phase trended upward toward a therapeutic effect over time. Comparison of baseline level and trend data with the first three observations in the intervention phase did suggest immediacy of treatment response for the participant. Data in the intervention phase moved into the desired range of effect for scores representing Hope.

Joel's ratings on the DHS illustrate that the treatment effect of SFBT was debatably effective for improving his DHS score. Evaluation of the PND statistic for the DHS score measure (0.60) revealed that six out of ten scores were on the therapeutic side above the baseline (DHS score of 31). Joel successfully improved his Hope during treatment as evidenced by improved scores on items such as "I can think of many ways to get out of a jam," "I can think of ways to get the things in life that are important to me," and "I meet the goals that I set for myself." Scores above the PND line were within an 18-point range. Trend analysis depicted a steady level of scores following the first treatment measure, with scores vacillating around the baseline score until the eighth treatment measure. This finding is corroborated by the associated Tau-U value ($\tau_U = 0.70$), which suggested a large degree of change in which the null hypothesis about intervention efficacy for Joel could be rejected ($p = .047$). This finding also corresponds with interpretation of the clinical significance estimate of PI that 25.75% is slightly improved but not clinically significant (Lenz, 2020a, 2020b). One explanation for the lack of clinical significance and moderate effect size is the limited nature of the intervention. Based on results from visual depiction of Joel's levels of Hope across treatment (see Figure 1), we suspect that this trend would have continued if he had received additional sessions of an SFBT intervention. His treatment was trending in a positive trajectory. In the context of Joel's treatment and a visual representation of his scores on the DHS (see Figure 1), the SFBT intervention had a moderate level of convincingness, which means that a considerable amount of change in Hope occurred for Joel (Kendall et al., 1999; Lenz, 2021).

Before treatment began, all four of Joel's baseline measurements were above the cut-score guideline on the OQ-45.2 of a total scale score of 63, which indicates symptoms of clinical significance. Comparison of level of clinical symptoms across baseline ($M = 84.00$) and intervention phases ($M = 47.10$) indicated notable changes in participant scores evidenced by a decrease in mental health symptom scale scores over time. Variation between scores in baseline ($SD = 6.00$) and intervention ($SD = 10.74$) indicated differential range in scores before and after intervention. Data in the baseline phase trended upward toward a contra-therapeutic effect over time. Dissimilarly, data in the intervention phase trended downward toward a therapeutic effect over time. Comparison of baseline level and trend data with the first three observations in the intervention phase did suggest immediacy of treatment response for the participant. Data in the intervention phase moved into the desired range of effect for scores representing mental health symptoms.

Joel's ratings on the OQ-45.2 illustrate that the treatment effect of SFBT was very effective for decreasing his total scale score measuring clinical symptoms. Evaluation of the PND statistic for the total scale score measure (1.00) indicated that all 10 scores were on the therapeutic side below the baseline (total scale score of 77). Joel successfully reduced clinical symptoms during treatment as evidenced by improved scores on items such as "I am a happy person," "I feel loved and wanted,"

and “I find my work/school satisfying.” This contention became most apparent after the first treatment session when Joel continuously scored lower on a majority of symptom dimensions such as Symptom Distress, Interpersonal Relations, and Social Role Performance. Scores below the PND line were within a 41-point range. Trend analysis depicted a consistent level of improvement following the first treatment measure. This finding is corroborated by the associated Tau- U value ($\tau_U = -1.0$), which suggested a very large degree of change in which the null hypothesis about intervention efficacy for Joel can be rejected ($p = .004$). An analysis of statistical process control charting revealed that eight data points in the treatment phase were beyond the realm of random occurrence with 99% confidence. This finding also corresponds with interpretation of the clinical significance estimate that 43.93% of improvement is slightly improved but not clinically significant (Lenz, 2020a, 2020b). Considering contextual evidence from the intervention as well as data visualization of Figure 2, it was clear that Joel experienced a downward trajectory in clinical symptoms. If he had received additional SFBT sessions, we suspect that he would have continued to experience a reduction in clinical symptoms. In the context of Joel’s treatment and a visual representation of his scores on the OQ-45.2 (see Figure 2), the SFBT intervention had a high level of convincingness, which means that a considerable amount of change in Hope occurred for Joel (Kendall et al., 1999; Lenz, 2021).

Discussion

The purpose of this exploratory study was to examine the impact of SFBT on clinical symptoms and hope among Latine clients. The results yield promising findings and preliminary evidence about the efficacy of SFBT as an intervention for promoting positive change across two Latine clients’ clinical symptoms and hope. The scores varied for each outcome variable, and this is likely related to the length and duration of the intervention as well as each participant’s personal characteristics (Callender et al., 2021) and relationship to their counselor (Liu et al., 2020). Findings from the current study also lend further support regarding the efficacy among CITs who aim to impact clients’ psychological functioning at a community counseling training clinic.

The findings for clinical symptoms showed a trend toward reduction in clinical symptoms across 8 weeks of SFBT. Both participants reported statistically significant improvements ($p < .05$) in reductions of clinical symptoms on the OQ-45.2. In both cases, the SFBT intervention was within the range of very large treatment effectiveness and clinical significance for improving symptoms of psychopathology. Results from the PND and PI confirmed that these participants experienced reduced clinical symptoms. It appears that there was a steady progression of improvement for these participants after their second treatment session. During this phase of treatment, Himmelberger used techniques such as exceptions to the problem and scaling questions to help participants recognize inner resources and personal strengths, analyze current levels of functioning, and visualize their preferred future (de Shazer, 1991).

In review of counseling session recordings and in supervision, Himmelberger commented that both Joel and Mary provided feedback throughout SFBT that they appreciated the opportunity to focus on small successes, personal strengths, and exceptions to their problems, and the use of scaling questions to assess and track their progress. They also commented that they appreciated how they were able to conceptualize family as a source of strength and element of resiliency (J. Cavazos et al., 2010; Oliver et al., 2011). Researchers have found that using SFBT techniques such as miracle and exceptions questions can help clients reduce negative affect (Brogan et al., 2020; Neipp et al., 2021). Our findings also are like those of Schmit et al. (2016), who found that SFBT may be effective for treating symptoms of internalizing disorders, and Oliver et al. (2011), who commented that SFBT can help Mexican Americans cultivate *familismo*.

The findings for Hope showed a visual trend toward increased levels of Hope across 8 weeks of SFBT. Both participants reported statistically significant improvements ($p < .05$) in Hope on the DHS. In both cases, the SFBT intervention was within the range of debatable effectiveness and slight improvement without clinical significance for improving symptoms of Hope. Mary's rating on the DHS indicates the treatment was moderately effective and PI was not clinically significant. When visualizing Mary's rating on the DHS, we see that Mary had high levels of Hope in the baseline phase, which means that she did not have much room to improve in the treatment phase. Contextualizing Mary's treatment and using a visual representation of her scores on the DHS (see Figure 1), we infer that the SFBT intervention had some level of convincingness, which means that some amount of change in Hope occurred for Mary (Kendall, 1999; Lenz, 2021). Additionally, Joel's rating on the DHS indicate that the treatment effect was debatably effective with a PI that is slightly improved but not clinically significant. When looking closely at Joel's scores, we see that Joel experienced trends in a positive trajectory. In the context of his treatment and a visual representation of his scores on the DHS (see Figure 1), the SFBT intervention had a moderate level of convincingness, which means that a considerable amount of change in Hope occurred (Kendall, 1999; Lenz, 2021).

Suldo and Shaffer (2008) argued that using a dual-factor model of mental health with indicators of subjective well-being (e.g., hope) and illness (e.g., clinical symptoms) allows researchers and practitioners to measure and understand complete mental health. Although a client's psychopathology might decrease, subjective well-being might not improve with the same effect. Findings from SFBT treatment with Joel and Mary support a dual-factor model that suggests indicators of personal wellness and psychopathology are different parts of mental health and are important to consider in treatment (Vela, Lu, et al., 2016). For Joel and Mary, SFBT appeared to be efficacious for slightly increasing and maintaining scores on the DHS. Our findings support Joubert and Guse (2021), who recommended SFBT to facilitate hope and subjective well-being among clients. When clients can think about solutions, identify exceptions to their problems, and think about their preferred future, they might be more likely to develop hope for their future as well as improve subjective well-being (Joubert & Guse, 2021).

The findings from this study lend further support regarding the effectiveness of counseling services at a community counseling training clinic. Our findings are like Schuermann et al.'s (2018) findings that lend support for the efficacy of counseling services in a Hispanic-serving counselor training clinic and Dorais et al.'s (2020) findings of counseling students' motivational interviewing techniques at a university addiction training clinic. Faculty supervision, group supervision, and live supervision have all been associated with increases in counseling interns' self-efficacy to provide quality counseling services. Himmelberger received weekly supervision and consultation on SFBT principles as well as SCRD principles. It is possible that these forms of supervision helped her provide effective counseling services. Our findings also support the need to continue to design research studies to evaluate the impact of counseling services at community counseling training clinics with clients of different cultural backgrounds and different presenting symptoms.

Implications for Counselor Educators and Counselors-in-Training

Based on our findings, we propose a few recommendations for counselor educators, CITs, and practitioners. First, our study provides evidence that CITs at community counseling centers can provide effective treatments with culturally diverse clients with moderate internalized symptoms such as depression and anxiety. As a result, SFBT can be taught and infused into counselor education curricula and can be delivered by future licensed professional counselors, school counselors, or counseling interns.

Community agencies working with this client population should also consider providing counselors with professional development and training related to SFBT. It is important to mention that when two of us were in graduate programs, we did not receive formal SFBT instruction. This might be due to greater emphasis on humanistic and cognitive behavioral therapies in counseling curricula or among some counselor education faculty. As a result, counselor educators must make a cogent effort to promote and discuss postmodern theories such as SFBT. This is important because SFBT can be effective at improving internalizing disorders among clients (Schmit et al., 2016) and Latine populations (Gonzalez & Franklin, 2016).

Another implication for counselor educators is to consider teaching CITs how to use SCRDS to monitor and assess treatment effectiveness. All counseling interns who work in a community counseling clinic need to demonstrate the effectiveness of their services with clients. Therefore, CITs can learn how to use SCRDS or a single-group pretest/posttest with clinical significance (Ikonomopoulos et al., 2021; Lenz, 2020b) to determine the impact of counseling on client outcomes. Finally, community counseling clinics can consider using the DHS and OQ-45.2 to measure indicators of subjective well-being and clinical symptoms. CITs can use these instruments, which have evidence of reliability and validity with culturally diverse populations, to document the impact of their counseling services on clients' hope and clinical symptoms.

Implications for Practitioners

There also are implications for practitioners. First, counselors can use SFBT principles and techniques to work with Latine clients. By using a positive and future-oriented framework, counselors can build a positive therapeutic relationship and help Latine clients construct a positive future. Counselors can use SFBT to help Latine clients identify how *familismo* is a source of strength (Oliver et al., 2011) and draw on their inner resiliency (Vela et al., 2015) to create their preferred future outcome. Practitioners can use SFBT techniques, including looking for previous solutions, exceptions, the miracle question, scaling questions, compliments, and future-oriented questions. SFBT principles and techniques can be used to facilitate hope by helping Latine clients view mental health challenges as opportunities to cultivate strengths and explore solutions (Bannik, 2008; Joubert & Guse, 2021).

Practitioners also can use SCRDS to evaluate the impact of their work with clients. Although most practitioners collect pre- and post-counseling intervention data, they typically use a single data point at pre-counseling and a single data point at post-counseling. Using an SCRDS in which a baseline phase and weekly treatment points are collected can help analyze trends over time and identify clinical significance. Lenz (2015) described how practitioners can use SCRDS to make inferences—self as control, flexibility and responsiveness, small sample size, ease of data analysis, and type of data yielded from analyses. In other words, counseling practitioners can analyze data over time with a client and use the data collection and analysis methods in this study to evaluate the impact of their counseling services on client outcomes.

Implications and Limitations

There are several implications for future research. First, researchers can evaluate the impact of SFBT on other indicators related to subjective well-being and clinical symptoms among culturally diverse populations, including subjective happiness, resilience, grit, meaning in life, anxiety, and depression (Karaman et al., 2019). More research needs to explore how SFBT might enhance indicators of subjective well-being and decrease clinical symptoms as well as the intersection between recovery and psychopathology. Although researchers have explored the impact of SFBT on internalizing symptoms (Schmit et al., 2016), more research needs to examine the impact on subjective well-being, particularly among Latine populations and Latine adolescents at a community counseling clinic.

Researchers also should consider using qualitative methods to discover which SFBT techniques are most effective. In-depth interviews and focus groups with SFBT participants would provide insight and perspectives with the miracle question, scaling questions, and other SFBT techniques. Counselors could also collect clients' journal entries to capture the impact of specific techniques on psychopathology or subjective well-being.

Additionally, using between-group designs to compare SFBT interventions with other evidence-based approaches such as cognitive behavior therapy could provide fruitful investigations. It is also possible to explore the impact of SFBT coupled with another approach such as positive psychology or cognitive behavior therapy with Latine populations. Finally, researchers can continue to explore the impact of CITs who work with clients in a community counseling clinic. Counseling interns can use SCRDS or single-group pretest/posttest designs to measure the impact of their counseling services.

The current study was exploratory in nature. Although both participants demonstrated improvement in measures related to subjective well-being and psychopathology, generalization to a larger Latine population is not appropriate. Because of the exploratory nature of this study, we cannot generate causal inferences regarding the relationship between SFBT and Hope as well as clinical symptoms. Second, we did not include withdrawal measures following completion of the treatment phase (Ikonomopoulos et al., 2016, 2017). Although some researchers use AB and ABA SCRDS to measure counseling effectiveness (Callender et al., 2021), we did not use an ABA design that would have provided stronger internal validity to evaluate changes of SFBT (Lenz et al., 2012). Because Himmelberger completed the academic semester and graduated from the clinical mental health counseling program, collecting withdrawal measures was not possible. Therefore, an AB SCRDS was a more feasible approach.

Conclusion

To the best of our knowledge, this is one of the first exploratory studies to examine the impact of the effectiveness of SFBT with Latine clients at a community counseling training clinic. This exploratory SCRDS serves as a foundation for future data collection and evaluation of CITs who work with culturally diverse clients at community counseling training clinics. Results support the potential of SFBT as an intervention for promoting positive change for Latine clients' hope and clinical symptoms.

Conflict of Interest and Funding Disclosure

The authors reported no conflict of interest or funding contributions for the development of this manuscript.

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Guidelines and Recommendations for Writing a Rigorous Quantitative Methods Section in Counseling and Related Fields



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Conducting and publishing rigorous empirical research based on original data is essential for advancing and sustaining high-quality counseling practice. The purpose of this article is to provide a one-stop-shop for writing a rigorous quantitative Methods section in counseling and related fields. The importance of judiciously planning, implementing, and writing quantitative research methods cannot be understated, as methodological flaws can completely undermine the integrity of the results. This article includes an overview, considerations, guidelines, best practices, and recommendations for conducting and writing quantitative research designs. The author concludes with an exemplar Methods section to provide a sample of one way to apply the guidelines for writing or evaluating quantitative research methods that are detailed in this manuscript.

Keywords: empirical, quantitative, methods, counseling, writing

The findings of rigorous empirical research based on original data is crucial for promoting and maintaining high-quality counseling practice (American Counseling Association [ACA], 2014; Giordano et al., 2021; Lutz & Hill, 2009; Wester et al., 2013). Peer-reviewed publication outlets play a crucial role in ensuring the rigor of counseling research and distributing the findings to counseling practitioners. The four major sections of an original empirical study usually include: (a) Introduction/Literature Review, (b) Methods, (c) Results, and (d) Discussion (American Psychological Association [APA], 2020; Heppner et al., 2016). Although every section of a research study must be carefully planned, executed, and reported (Giordano et al., 2021), scholars have engaged in commentary about the importance of a rigorous and clearly written Methods section for decades (Korn & Bram, 1988; Lutz & Hill, 2009). The Methods section is the “conceptual epicenter of a manuscript” (Smagorinsky, 2008, p. 390) and should include clear and specific details about how the study was conducted (Heppner et al., 2016). It is essential that producers and consumers of research are aware of key methodological standards, as the quality of quantitative methods in published research can vary notably, which has serious implications for the merit of research findings (Lutz & Hill, 2009; Wester et al., 2013).

Careful planning prior to launching data collection is especially important for conducting and writing a rigorous quantitative Methods section, as it is rarely appropriate to alter quantitative methods after data collection is complete for both practical and ethical reasons (ACA, 2014; Creswell & Creswell, 2018). A well-written Methods section is also crucial for publishing research in a peer-reviewed journal; any serious methodological flaws tend to automatically trigger a decision of rejection without revisions. Accordingly, the purpose of this article is to provide both producers and consumers of quantitative research with guidelines and recommendations for writing or evaluating the rigor of a Methods section in counseling and related fields. Specifically, this manuscript includes a general overview of major quantitative methodological subsections as well as an exemplar Methods section. The recommended subsections and guidelines for writing a rigorous Methods section in this manuscript (see Appendix) are based on a synthesis of (a) the extant literature (e.g., Creswell & Creswell, 2018; Flinn & Kalkbrenner,

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2021; Giordano et al., 2021); (b) the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA] et al., 2014), (c) the *ACA Code of Ethics* (ACA, 2014), and (d) the Journal Article Reporting Standards (JARS) in the APA 7 (2020) manual.

Quantitative Methods: An Overview of the Major Sections

The Methods section is typically the second major section in a research manuscript and can begin with an overview of the theoretical framework and research paradigm that ground the study (Creswell & Creswell, 2018; Leedy & Ormrod, 2019). Research paradigms and theoretical frameworks are more commonly reported in qualitative, conceptual, and dissertation studies than in quantitative studies. However, research paradigms and theoretical frameworks can be very applicable to quantitative research designs (see the exemplar Methods section below). Readers are encouraged to consult Creswell and Creswell (2018) for a clear and concise overview about the utility of a theoretical framework and a research paradigm in quantitative research.

Research Design

The research design should be clearly specified at the beginning of the Methods section. Commonly employed quantitative research designs in counseling include but are not limited to group comparisons (e.g., experimental, quasi-experimental, ex-post-facto), correlational/predictive, meta-analysis, descriptive, and single-subject designs (Creswell & Creswell, 2018; Flinn & Kalkbrenner, 2021; Leedy & Ormrod, 2019). A well-written literature review and strong research question(s) will dictate the most appropriate research design. Readers can refer to Flinn and Kalkbrenner (2021) for free (open access) commentary on and examples of conducting a literature review, formulating research questions, and selecting the most appropriate corresponding research design.

Researcher Bias and Reflexivity

Counseling researchers have an ethical responsibility to minimize their personal biases throughout the research process (ACA, 2014). A researcher's personal beliefs, values, expectations, and attitudes create a lens or framework for how data will be collected and interpreted. Researcher reflexivity or positionality statements are well-established methodological standards in qualitative research (Hays & Singh, 2012; Heppner et al., 2016; Rovai et al., 2013). Researcher bias is rarely reported in quantitative research; however, researcher bias can be just as inherently present in quantitative as it is in qualitative studies. Being reflexive and transparent about one's biases strengthens the rigor of the research design (Creswell & Creswell, 2018; Onwuegbuzie & Leech, 2005). Accordingly, quantitative researchers should consider reflecting on their biases in similar ways as qualitative researchers (Onwuegbuzie & Leech, 2005). For example, a researcher's topical and methodological choices are, at least in part, based on their personal interests and experiences. To this end, quantitative researchers are encouraged to reflect on and consider reporting their beliefs, assumptions, and expectations throughout the research process.

Participants and Procedures

The major aim in the Participants and Procedures subsection of the Methods section is to provide a clear description of the study's participants and procedures in enough detail for replication (ACA, 2014; APA, 2020; Giordano et al., 2021; Heppner et al., 2016). When working with human subjects, authors should briefly discuss research ethics including but not limited to receiving institutional review board (IRB) approval (Giordano et al., 2021; Korn & Bram, 1988). Additional considerations for the Participants and Procedures section include details about the authors' sampling procedure, inclusion and/or exclusion criteria for participation, sample size, participant background information, location/site, and protocol for interventions (APA, 2020).

Sampling Procedure and Sample Size

Sampling procedures should be clearly stated in the Methods section. At a minimum, the description of the sampling procedure should include researcher access to prospective participants, recruitment procedures, data collection modality (e.g., online survey), and sample size considerations. Quantitative sampling approaches tend to be clustered into either probability or non-probability techniques (Creswell & Creswell, 2018; Leedy & Ormrod, 2019). The key distinguishing feature of probability sampling is random selection, in which all prospective participants in the population have an equal chance of being randomly selected to participate in the study (Leedy & Ormrod, 2019). Examples of probability sampling techniques include simple random sampling, systematic random sampling, stratified random sampling, or cluster sampling (Leedy & Ormrod, 2019).

Non-probability sampling techniques lack random selection and there is no way of determining if every member of the population had a chance of being selected to participate in the study (Leedy & Ormrod, 2019). Examples of non-probability sampling procedures include volunteer sampling, convenience sampling, purposive sampling, quota sampling, snowball sampling, and matched sampling. In quantitative research, probability sampling procedures are more rigorous in terms of generalizability (i.e., the extent to which research findings based on sample data extend or generalize to the larger population from which the sample was drawn). However, probability sampling is not always possible and non-probability sampling procedures are rigorous in their own right. Readers are encouraged to review Leedy and Ormrod's (2019) commentary on probability and non-probability sampling procedures. Ultimately, the selection of a sampling technique should be made based on the population parameters, available resources, and the purpose and goals of the study.

A Priori Statistical Power Analysis. It is essential that quantitative researchers determine the minimum necessary sample size for computing statistical analyses before launching data collection (Balkin & Sheperis, 2011; Sink & Mvududu, 2010). An insufficient sample size substantially increases the probability of committing a Type II error, which occurs when the results of statistical testing reveal non-statistically significant findings when in reality (of which the researcher is unaware), significant findings do exist. Computing an a priori (computed before starting data collection) statistical power analysis reduces the chances of a Type II error by determining the smallest sample size that is necessary for finding statistical significance, if statistical significance exists (Balkin & Sheperis, 2011). Readers can consult Balkin and Sheperis (2011) as well as Sink and Mvududu (2010) for an overview of statistical significance, effect size, and statistical power. A number of statistical power analysis programs are available to researchers. For example, G*Power (Faul et al., 2009) is a free software program for computing a priori statistical power analyses.

Sampling Frame and Location

Counselors should report their sampling frame (total number of potential participants), response rate, raw sample (total number of participants that engaged with the study at any level, including missing and incomplete data), and the size of the final useable sample. It is also important to report the breakdown of the sample by demographic and other important participant background characteristics, for example, "XX.X% ($n = XXX$) of participants were first-generation college students, XX.X% ($n = XXX$) were second-generation . . ." The selection of demographic variables as well as inclusion and exclusion criteria should be justified in the literature review. Readers are encouraged to consult Creswell and Creswell (2018) for commentary on writing a strong literature review.

The timeframe, setting, and location during which data were collected are important methodological considerations (APA, 2020). Specific names of institutions and agencies should be masked to protect

their privacy and confidentiality; however, authors can give descriptions of the setting and location (e.g., “Data were collected between April 2021 to February 2022 from clients seeking treatment for addictive disorders at an outpatient, integrated behavioral health care clinic located in the Northeastern United States.”). Authors should also report details about any interventions, curriculum, qualifications and background information for research assistants, experimental design protocol(s), and any other procedural design issues that would be necessary for replication. In instances in which describing a treatment or conditions becomes exorbitant (e.g., step-by-step manualized therapy, programs, or interventions), researchers can include footnotes, appendices, and/or references to refer the reader to more information about the intervention protocol.

Missing Data

Procedures for handling missing values (incomplete survey responses) are important considerations in quantitative data analysis. Perhaps the most straightforward option for handling missing data is to simply delete missing responses. However, depending on the percentage of data that are missing and how the data are missing (e.g., missing completely at random, missing at random, or not missing at random), data imputation techniques can be employed to recover missing values (Cook, 2021; Myers, 2011). Quantitative researchers should provide a clear rationale behind their decisions around the deletion of missing values or when using a data imputation method. Readers are encouraged to review Cook’s (2021) commentary on procedures for handling missing data in quantitative research.

Measures

Counseling and other social science researchers oftentimes use instruments and screening tools to appraise latent traits, which can be defined as variables that are inferred rather than observed (AERA et al., 2014). The purpose of the Measures (aka Instrumentation) section is to operationalize the construct(s) of measurement (Heppner et al., 2016). Specifically, the Measures subsection of the Methods in a quantitative manuscript tends to include a presentation of (a) the instrument and construct(s) of measurement, (b) reliability and validity evidence of test scores, and (c) cross-cultural fairness and norming. The Measures section might also include a Materials subsection for studies that employed data-gathering techniques or equipment besides or in addition to instruments (Heppner et al., 2016); for instance, if a research study involved the use of a biofeedback device to collect data on changes in participants’ body functions.

Instrument and Construct of Measurement

Begin the Measures section by introducing the questionnaire or screening tool, its construct(s) of measurement, number of test items, example test items, and scale points. If applicable, the Measures section can also include information on scoring procedures and cutoff criterion; for example, total score benchmarks for low, medium, and high levels of the trait. Authors might also include commentary about how test scores will be operationalized to constitute the variables in the upcoming Data Analysis section.

Reliability and Validity Evidence of Test Scores

Reliability evidence involves the degree to which test scores are stable or consistent and validity evidence refers to the extent to which scores on a test succeed in measuring what the test was designed to measure (AERA et al., 2014; Bardhoshi & Erford, 2017). Researchers should report both reliability and validity evidence of scores for each instrument they use (Wester et al., 2013). A number of forms of reliability evidence exist (e.g., internal consistency, test-retest, interrater, and alternate/parallel/equivalent forms) and the AERA standards (2014) outline five forms of validity evidence. For the purposes of this article, I will focus on internal consistency reliability, as it is the most popular and most

commonly misused reliability estimate in social sciences research (Kalkbrenner, 2021a; McNeish, 2018), as well as construct validity. The psychometric properties of a test (including reliability and validity evidence) are contingent upon the scores from which they were derived. As such, no test is inherently valid or reliable; test scores are only reliable and valid for a certain purpose, at a particular time, for use with a specific sample. Accordingly, authors should discuss reliability and validity evidence in terms of scores, for example, “Stamm (2010) found reliability and validity evidence of scores on the Professional Quality of Life (ProQOL 5) with a sample of . . .”

Internal Consistency Reliability Evidence. Internal consistency estimates are derived from associations between the test items based on one administration (Kalkbrenner, 2021a). Cronbach’s coefficient alpha (α) is indisputably the most popular internal consistency reliability estimate in counseling and throughout social sciences research in general (Kalkbrenner, 2021a; McNeish, 2018). The appropriate use of coefficient alpha is reliant on the data meeting the following statistical assumptions: (a) essential tau equivalence, (b) continuous level scale of measurement, (c) normally distributed data, (d) uncorrelated error, (e) unidimensional scale, and (f) unit-weighted scaling (Kalkbrenner, 2021a). For decades, coefficient alpha has been passed down in the instructional practice of counselor training programs. Coefficient alpha has appeared as the dominant reliability index in national counseling and psychology journals without most authors computing and reporting the necessary statistical assumption checking (Kalkbrenner, 2021a; McNeish, 2018). The psychometrically daunting practice of using alpha without assumption checking poses a threat to the veracity of counseling research, as the accuracy of coefficient alpha is threatened if the data violate one or more of the required assumptions.

Internal Consistency Reliability Indices and Their Appropriate Use. Composite reliability (CR) internal consistency estimates are derived in similar ways as coefficient alpha; however, the proper computation of CRs is not reliant on the data meeting many of alpha’s statistical assumptions (Kalkbrenner, 2021a; McNeish, 2018). For example, McDonald’s coefficient omega (ω or ω_i) is a CR estimate that is not dependent on the data meeting most of alpha’s assumptions (Kalkbrenner, 2021a). In addition, omega hierarchical (ω_h) and coefficient H are CR estimates that can be more advantageous than alpha. Despite the utility of CRs, their underuse in research practice is historically, in part, because of the complex nature of computation. However, recent versions of SPSS include a breakthrough point-and-click feature for computing coefficient omega as easily as coefficient alpha. Readers can refer to the SPSS user guide for steps to compute omega.

Guidelines for Reporting Internal Consistency Reliability. In the Measures subsection of the Methods section, researchers should report existing reliability evidence of scores for their instruments. This can be done briefly by reporting the results of multiple studies in the same sentence, as in: “A number of past investigators found internal consistency reliability evidence for scores on the [name of test] with a number of different samples, including college students ($\alpha = .XX$, $\omega = .XX$; Authors et al., 20XX), clients living with chronic back pain ($\alpha = .XX$, $\omega = .XX$; Authors et al., 20XX), and adults in the United States ($\alpha = .XX$, $\omega = .XX$; Authors et al., 20XX) . . .”

Researchers should also compute and report reliability estimates of test scores with their data set in the Measures section. If a researcher is using coefficient alpha, they have a duty to complete and report assumption checking to demonstrate that the properties of their sample data were suitable for alpha (Kalkbrenner, 2021a; McNeish, 2018). Another option is to compute a CR (e.g., ω or H) instead of alpha. However, Kalkbrenner (2021a) recommended that researchers report both coefficient alpha (because of its popularity) and coefficient omega (because of the robustness of the estimate). The proper interpretation of reliability estimates of test scores is done on a case-by-case basis, as the

meaning of reliability coefficients is contingent upon the construct of measurement and the stakes or consequences of the results for test takers (Kalkbrenner, 2021a). The following tentative interpretative guidelines for adults' scores on attitudinal measures were offered by Kalkbrenner (2021b) for coefficient alpha: $\alpha < .70$ = poor, $\alpha > .70$ to $.84$ = acceptable, $\alpha > .85$ = strong; and for coefficient omega: $\omega < .65$ = poor, $\omega > .65$ to $.80$ = acceptable, $\omega > .80$ = strong. It is important to note that these thresholds are for adults' scores on attitudinal measures; acceptable internal consistency reliability estimates of scores should be much stronger for high-stakes testing.

Construct Validity Evidence of Test Scores. Construct validity involves the test's ability to accurately capture a theoretical or latent construct (AERA et al., 2014). Construct validity considerations are particularly important for counseling researchers who tend to investigate latent traits as outcome variables. At a minimum, counseling researchers should report construct validity evidence for both internal structure and relations with theoretically relevant constructs. Internal structure (aka factorial validity) is a source of construct validity that represents the degree to which "the relationships among test items and test components conform to the construct on which the proposed test score interpretations are based" (AERA et al., 2014, p. 16). Readers can refer to Kalkbrenner (2021b) for a free (open access publishing) overview of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) that is written in layperson's terms. Relations with theoretically relevant constructs (e.g., convergent and divergent validity) are another source of construct validity evidence that involves comparing scores on the test in question with scores on other reputable tests (AERA et al., 2014; Strauss & Smith, 2009).

Guidelines for Reporting Validity Evidence. Counseling researchers should report existing evidence of at least internal structure and relations with theoretically relevant constructs (e.g., convergent or divergent validity) for each instrument they use. EFA results alone are inadequate for demonstrating internal structure validity evidence of scores, as EFA is a much less rigorous test of internal structure than CFA (Kalkbrenner, 2021b). In addition, EFA results can reveal multiple retainable factor solutions, which need to be tested/confirmed via CFA before even initial internal structure validity evidence of scores can be established. Thus, both EFA and CFA are necessary for reporting/demonstrating initial evidence of internal structure of test scores. In an extension of internal structure, counselors should also report existing convergent and/or divergent validity of scores. High correlations ($r > .50$) demonstrate evidence of convergent validity and moderate-to-low correlations ($r < .30$, preferably $r < .10$) support divergent validity evidence of scores (Sink & Stroh, 2006; Swank & Mullen, 2017).

In an ideal situation, a researcher will have the resources to test and report the internal structure (e.g., compute CFA firsthand) of scores on the instrumentation with their sample. However, CFA requires large sample sizes (Kalkbrenner, 2021b), which oftentimes is not feasible. It might be more practical for researchers to test and report relations with theoretically relevant constructs, though adding one or more questionnaire(s) to data collection efforts can come with the cost of increasing respondent fatigue. In these instances, researchers might consider reporting other forms of validity evidence (e.g., evidence based on test content, criterion validity, or response processes; AERA et al., 2014). In instances when computing firsthand validity evidence of scores is not logistically viable, researchers should be transparent about this limitation and pay especially careful attention to presenting evidence for cross-cultural fairness and norming.

Cross-Cultural Fairness and Norming

In a psychometric context, fairness (sometimes referred to as cross-cultural fairness) is a fundamental validity issue and a complex construct to define (AERA et al., 2014; Kane, 2010; Neukrug & Fawcett, 2015). I offer the following composite definition of cross-cultural fairness for the purposes of a

quantitative Measures section: the degree to which test construction, administration procedures, interpretations, and uses of results are equitable and represent an accurate depiction of a diverse group of test takers' abilities, achievement, attitudes, perceptions, values, and/or experiences (AERA et al., 2014; Educational Testing Service [ETS], 2016; Kane, 2010; Kane & Bridgeman, 2017). Counseling researchers should consider the following central fairness issues when selecting or developing instrumentation: measurement bias, accessibility, universal design, equivalent meaning (invariance), test content, opportunity to learn, test adaptations, and comparability (AERA et al., 2014; Kane & Bridgeman, 2017). Providing a comprehensive overview of fairness is beyond the scope of this article; however, readers are encouraged to read Chapter 3 in the AERA standards (2014) on Fairness in Testing.

In the Measures section, counseling researchers should include commentary on how and in what ways cross-cultural fairness guided their selection, administration, and interpretation of procedures and test results (AERA et al., 2014; Kalkbrenner, 2021b). Cross-cultural fairness and construct validity are related constructs (AERA et al., 2014). Accordingly, citing construct validity of test scores (see the previous section) with normative samples similar to the researcher's target population is one way to provide evidence of cross-cultural fairness. However, construct validity evidence alone might not be a sufficient indication of cross-cultural fairness, as the latent meaning of test scores are a function of test takers' cultural context (Kalkbrenner, 2021b). To this end, when selecting instrumentation, researchers should review original psychometric studies and consider the normative sample(s) from which test scores were derived.

Commentary on the Danger of Using Self-Developed and Untested Scales

Counseling researchers have an ethical duty to "carefully consider the validity, reliability, psychometric limitations, and appropriateness of instruments when selecting assessments" (ACA, 2014, p. 11). Quantitative researchers might encounter instances in which a scale is not available to measure their desired construct of measurement (latent/inferred variable). In these cases, the first step in the line of research is oftentimes to conduct an instrument development and score validation study (AERA et al., 2014; Kalkbrenner, 2021b). Detailing the protocol for conducting psychometric research is outside the scope of this article; however, readers can refer to the MEASURE Approach to Instrument Development (Kalkbrenner, 2021c) for a free (open access publishing) overview of the steps in an instrument development and score validation study. Adapting an existing scale can be option in lieu of instrument development; however, according to the AERA standards (2014), "an index that is constructed by manipulating and combining test scores should be subjected to the same validity, reliability, and fairness investigations that are expected for the test scores that underlie the index" (p. 210). Although it is not necessary that all quantitative researchers become psychometricians and conduct full-fledged psychometric studies to validate scores on instrumentation, researchers do have a responsibility to report evidence of the reliability, validity, and cross-cultural fairness of test scores for each instrument they used. Without at least initial construct validity testing of scores (calibration), researchers cannot determine what, if anything at all, an untested instrument actually measures.

Data Analysis

Counseling researchers should report and explain the selection of their data analytic procedures (e.g., statistical analyses) in a Data Analysis (or Statistical Analysis) subsection of the Methods or Results section (Giordano et al., 2021; Leedy & Ormrod, 2019). The placement of the Data Analysis section in either the Methods or Results section can vary between publication outlets; however, this section tends to include commentary on variables, statistical models and analyses, and statistical assumption checking procedures.

Operationalizing Variables and Corresponding Statistical Analyses

Clearly outlining each variable is an important first step in selecting the most appropriate statistical analysis for answering each research question (Creswell & Creswell, 2018). Researchers should specify the independent variable(s) and corresponding levels as well as the dependent variable(s); for example, “The first independent variable, time, was composed of the three following levels: pre, middle, and post. The dependent variables were participants’ scores on the burnout and compassion satisfaction subscales of the ProQOL 5.” After articulating the variables, counseling researchers are tasked with identifying each variable’s scale of measurement (Creswell & Creswell, 2018; Field, 2018; Flinn & Kalkbrenner, 2021). Researchers can select the most appropriate statistical test(s) for answering their research question(s) based on the scale of measurement for each variable and referring to Table 8.3 on page 159 in Creswell and Creswell (2018), Figure 1 in Flinn and Kalkbrenner (2021), or the chart on page 1072 in Field (2018).

Assumption Checking

Statistical analyses used in quantitative research are derived based on a set of underlying assumptions (Field, 2018; Giordano et al., 2021). Accordingly, it is essential that quantitative researchers outline their protocol for testing their sample data for the appropriate statistical assumptions. Assumptions of common statistical tests in counseling research include normality, absence of outliers (multivariate and/or univariate), homogeneity of covariance, homogeneity of regression slopes, homoscedasticity, independence, linearity, and absence of multicollinearity (Flinn & Kalkbrenner, 2021; Giordano et al., 2021). Readers can refer to Figure 2 in Flinn and Kalkbrenner (2021) for an overview of statistical assumptions for the major statistical analyses in counseling research.

Exemplar Quantitative Methods Section

The following section includes an exemplar quantitative methods section based on a hypothetical example and a practice data set. Producers and consumers of quantitative research can refer to the following section as an example for writing their own Methods section or for evaluating the rigor of an existing Methods section. As stated previously, a well-written literature review and research question(s) are essential for grounding the study and Methods section (Flinn & Kalkbrenner, 2021). The final piece of a literature review section is typically the research question(s). Accordingly, the following research question guided the following exemplar Methods section: To what extent are there differences in anxiety severity between college students who participate in deep breathing exercises with progressive muscle relaxation, group exercise program, or both group exercise and deep breathing with progressive muscle relaxation?

Exemplar

Methods

A quantitative group comparison research design was employed based on a post-positivist philosophy of science (Creswell & Creswell, 2018). Specifically, I implemented a quasi-experimental, control group pretest/posttest design to answer the research question (Leedy & Ormrod, 2019). Consistent with a post-positivist philosophy of science, I reflected on pursuing a probabilistic objective answer that is situated within the context of imperfect and fallible evidence. The rationale for the present study was grounded in Dr. David Servan-Schreiber’s (2009) theory of lifestyle practices for integrated mental and physical health. According to Servan-Schreiber, simultaneously focusing on improving one’s mental and physical health is more effective than focusing on either physical health or mental wellness in isolation. Consistent with Servan-Schreiber’s theory, the aim of the present study was to compare the utility of three different

approaches for anxiety reduction: a behavioral approach alone, a physiological approach alone, and a combined behavioral approach and physiological approach.

I am in my late 30s and identify as a White man. I have a PhD in counselor education as well as an MS in clinical mental health counseling. I have a deep belief in and an active line of research on the utility of total wellness (combined mental and physical health). My research and clinical experience have informed my passion and interest in studying the utility of integrated physical and psychological health services. More specifically, my personal beliefs, values, and interest in total wellness influenced my decision to conduct the present study. I carefully followed the procedures outlined below to reduce the chances that my personal values biased the research design.

Participants and Procedures

Data collection began following approval from the IRB. Data were collected during the fall 2022 semester from undergraduate students who were at least 18 years or older and enrolled in at least one class at a land grant, research-intensive university located in the Southwestern United States. An a priori statistical power analysis was computed using G*Power (Faul et al., 2009). Results revealed that a sample size of at least 42 would provide an 80% power estimate, $\alpha = .05$, with a moderate effect size, $f = 0.25$.

I obtained an email list from the registrar's office of all students enrolled in a section of a Career Excellence course, which was selected to recruit students in a variety of academic majors because all undergraduate students in the College of Education are required to take this course. The focus of this study (mental and physical wellness) was also consistent with the purpose of the course (success in college). A non-probability, convenience sampling procedure was employed by sending a recruitment message to students' email addresses via the Qualtrics online survey platform. The response rate was approximately 15%, with a total of 222 prospective participants indicating their interest in the study by clicking on the electronic recruitment link, which automatically sent them an invitation to attend an information session about the study. One hundred forty-four students showed up for the information session, 129 of which provided their voluntary informed consent to enroll in the study. Participants were given a confidential identification number to track their pretest/posttest responses, and then they completed the pretest (see the Measures section below). Respondents were randomly assigned in equal groups to either (a) deep breathing with progressive muscle relaxation condition, (b) group exercise condition, or (c) both exercise and deep breathing with progressive muscle relaxation condition.

A missing values analysis showed that less than 5% of data was missing for all cases. Expectation maximization was used to impute missing values, as Little's Missing Completely at Random (MCAR) test revealed that the data could be treated as MCAR ($p = .367$). Data from five participants who did not return to complete the posttest at the end of the semester were removed, yielding a robust sample of $N = 124$. Participants ($N = 124$) ranged in age from 18 to 33 ($M = 21.64$, $SD = 3.70$). In terms of gender identity, 65.0% ($n = 80$) self-identified as female, 32.2% ($n = 40$) as male, 0.8% ($n = 1$) as transgender, and 2.4% ($n = 3$) did not specify their gender identity. For ethnic identity, 50.0% ($n = 62$) identified as White, 26.7% ($n = 33$) as Latinx, 12.1% ($n = 15$) as Asian, 9.6% ($n = 12$) as Black, 0.8% ($n = 1$) as Alaskan Native, and 0.8% ($n = 1$) did not specify their ethnic identity. In terms of generational status, 36.3% ($n = 45$) of participants were first-generation college students and 63.7% ($n = 79$) were second-generation or beyond.

Group Exercise and Deep Breathing Programs

I was awarded a small grant to offer on-campus deep breathing with progressive muscle relaxation and group exercise programs. The structure of the group exercise program was based on Patterson et al. (2021), which consisted of more than 50 available exercise classes each week (e.g., cycling,

yoga, swimming, dance). There was no limit to the number of classes that participants could attend; however, attending at least one class each week was required for participation in the study. Readers can refer to Patterson et al. for more information about the group exercise programming.

Neeru et al.'s (2015) deep breathing and progressive muscle relaxation programming was used in the present study. Participants completed daily deep breathing and Jacobson Progressive Muscle Relaxation (JPMR). JPMR was selected because of its documented success with treating anxiety disorders (Neeru et al., 2015). Specifically, the program consisted of four deep breathing steps completed five times and JPMR for approximately 25 minutes daily. Participants attended a weekly deep breathing and JPMR session facilitated by a licensed professional counselor. Participants also practiced deep breathing and JPMR on their own daily and kept a log to document their practice sessions. Readers can refer to Neeru et al. for more information about JPMR and the deep breathing exercises.

Measures

Prospective participants read an informed consent statement and indicated their voluntary informed consent by clicking on a checkbox. Next, participants confirmed that they met the following inclusion criteria: (a) at least 18 years old and (b) currently enrolled in at least one undergraduate college class. The instrumentation began with demographic items regarding participants' gender identity, ethnic identity, age, and confidential identification number to track their pretest and posttest scores. Lastly, participants completed a convergent validity measure (Mental Health Inventory – 5) and the Generalized Anxiety Disorder (GAD)-7 to measure the outcome variable (anxiety severity).

Reliability and Validity Evidence of Test Scores

Tests of internal consistency were computed to test the reliability of scores on the screening tool for appraising anxiety severity with undergraduate students in the present sample. For internal consistency reliability of scores, coefficient alpha (α) and coefficient omega (ω) were computed with the following minimum thresholds for adults' scores on attitudinal measures: $\alpha > .70$ and $\omega > .65$, based on the recommendations of Kalkbrenner (2021b).

The Mental Health Inventory–5. Participants completed the Mental Health Inventory (MHI)-5 to test the convergent validity of undergraduate students in the present samples' scores on the GAD-7, which was used to measure the outcome variable in this study, anxiety severity. The MHI-5 is a 5-item measure for appraising overall mental health (Berwick et al., 1991). Higher MHI-5 scores reflect better mental health. Participants responded to test items (example: "How much of the time, during the past month, have you been a very nervous person?") on the following Likert-type scale: 0 = *none of the time*, 1 = *a little of the time*, 2 = *some of the time*, 3 = *a good bit of the time*, 4 = *most of the time*, or 5 = *all of the time*. The MHI-5 has particular utility as a convergent validity measure because of its brief nature (5 items) coupled with the myriad of support for its psychometric properties (e.g., Berwick et al., 1991; Rivera-Riquelme et al., 2019; Thorsen et al., 2013). As just a few examples, Rivera-Riquelme et al. (2019) found acceptable internal consistency reliability evidence ($\alpha = .71$, $\omega = .78$) and internal structure validity evidence of MHI-5 scores. In addition, the findings of Thorsen et al. (2013) demonstrated convergent validity evidence of MHI-5 scores. Findings in the extant literature (e.g., Foster et al., 2016; Vijayan & Joseph, 2015) established an inverse relationship between anxiety and mental health. Thus, a strong negative correlation ($r > -.50$; Sink & Stroh, 2006) between the MHI-5 and GAD-7 would support convergent validity evidence of scores.

The Generalized Anxiety Disorder–7. The GAD-7 is a 7-item screening tool for appraising anxiety severity (Spitzer et al., 2006). Participants respond to test items based on the following prompt: "Over the last 2 weeks, how often have you been bothered by the following problems?" and anchor definitions:

0 = *not at all*, 1 = *several days*, 2 = *more than half the days*, or 3 = *nearly every day* (Spitzer et al., 2006, p. 1739). Sample test items include “being so restless that it’s hard to sit still” and “feeling afraid as if something awful might happen.” The GAD-7 items can be summed into an interval-level composite score, with higher scores indicating greater levels of Anxiety Severity. GAD-7 scores can range from 0 to 21 and are classified as mild (0–5), moderate (6–10), moderately severe (11–15), or severe (16–21).

In the initial score validation study, Spitzer et al. (2006) found evidence for internal consistency ($\alpha = .92$) and test-retest reliability (intraclass correlation = .83) of GAD-7 scores among adults in the United States who were receiving services in primary care clinics. In more recent years, a number of additional investigators found internal consistency reliability evidence for GAD-7 scores, including samples of undergraduate college students in the southern United States ($\alpha = .91$; Sriken et al., 2022), Black and Latinx adults in the United States ($\alpha = .93$, $\omega = .93$; Kalkbrenner, 2022), and English-speaking college students living in Ethiopia ($\omega = .77$; Manzar et al., 2021). Similarly, the data set in the present study displayed acceptable internal consistency reliability evidence for GAD-7 scores ($\alpha = .82$, $\omega = .81$).

Spitzer et al. (2006) used factor analysis to establish internal structure validity, correlations with established screening tools for convergent validity, and criterion validity evidence by demonstrating the capacity of GAD-7 scores for detecting likely cases of generalized anxiety disorder. A number of subsequent investigators found internal structure validity evidence of GAD-7 scores via CFA and multiple-group CFA (Kalkbrenner, 2022; Sriken et al., 2022). In addition, the findings of Sriken et al. (2022) supported both the convergent and divergent validity of GAD-7 scores with other established tests. The data set in the present study ($N = 124$) was not large enough for internal structure validity testing. However, a strong negative correlation ($r = -.78$) between the GAD-7 and MHI-5 revealed convergent validity evidence of GAD-7 scores with the present sample of undergraduate students.

In terms of norming and cross-cultural fairness, there were qualitative differences between the normative GAD-7 sample in the original score validation study (adults in the United States receiving services in primary care clinics) and the non-clinical sample of young adult college students in the present study. However, the demographic profile of the present sample is consistent with Sriken et al. (2022), who validated GAD-7 scores with a large sample ($N = 414$) of undergraduate college students. For example, the demographic profile of the sample in the current study for gender identity closely resembled the composition of Sriken et al.’s sample, which included 66.7% women, 33.1% men, and 0.2% transgender individuals. In terms of ethnic identity, the demographic profile of the present sample was consistent with Sriken et al. for White and Black participants, although the present sample reflected a somewhat smaller proportion of Asian students (19.6%) and a greater proportion of Latinx students (5.3%).

Data Analysis and Assumption Checking

The present study included two categorical-level independent variables and one continuous-level dependent variable. The first independent variable, program, consisted of three levels: (a) deep breathing with progressive muscle relaxation, (b) group exercise, or (c) both exercise and deep breathing with progressive muscle relaxation. The second independent variable, time, consisted of two levels: the beginning of the semester and the end of the semester. The dependent variable was participants’ interval-level score on the GAD-7. Accordingly, a 3 (program) X 2 (time) mixed-design analysis of variance (ANOVA) was the most appropriate statistical test for answering the research question (Field, 2018).

The data were examined for the following statistical assumptions for a mixed-design ANOVA: absence of outliers, normality, homogeneity of variance, and sphericity of the covariance matrix based on the recommendations of Field (2018). Standardized z-scores revealed an absence of univariate

outliers ($z > 3.29$). A review of skewness and kurtosis values were highly consistent with a normal distribution, with the majority of values less than ± 1.0 . The results of a Levene's test demonstrated that the data met the assumption of homogeneity of variance, $F(2, 121) = 0.73, p = .486$. Testing the data for sphericity was not applicable in this case, as the within-subjects IV (time) only comprised two levels.

End Exemplar

Conclusion

The current article is a primer on guidelines, best practices, and recommendations for writing or evaluating the rigor of the Methods section of quantitative studies. Although the major elements of the Methods section summarized in this manuscript tend to be similar across the national peer-reviewed counseling journals, differences can exist between journals based on the content of the article and the editorial board members' preferences. Accordingly, it can be advantageous for prospective authors to review recently published manuscripts in their target journal(s) to look for any similarities in the structure of the Methods (and other sections). For instance, in one journal, participants and procedures might be reported in a single subsection, whereas in other journals they might be reported separately. In addition, most journals post a list of guidelines for prospective authors on their websites, which can include instructions for writing the Methods section. The Methods section might be the most important section in a quantitative study, as in all likelihood methodological flaws cannot be resolved once data collection is complete, and serious methodological flaws will compromise the integrity of the entire study, rendering it unpublishable. It is also essential that consumers of quantitative research can proficiently evaluate the quality of a Methods section, as poor methods can make the results meaningless. Accordingly, the significance of carefully planning, executing, and writing a quantitative research Methods section cannot be understated.

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Appendix

Outline and Brief Overview of a Quantitative Methods Section

Methods

- Research design (e.g., group comparison [experimental, quasi-experimental, ex-post-facto], correlational/predictive) and conceptual framework
- Researcher bias and reflexivity statement

Participants and Procedures

- Recruitment procedures for data collection in enough detail for replication
- Research ethics including but not limited to receiving institutional review board (IRB) approval
- Sampling procedure: Researcher access to prospective participants, recruitment procedures, and data collection modality (e.g., online survey)
- Sampling technique: Probability sampling (e.g., simple random sampling, systematic random sampling, stratified random sampling, cluster sampling) or non-probability sampling (e.g., volunteer sampling, convenience sampling, purposive sampling, quota sampling, snowball sampling, matched sampling)
- A priori statistical power analysis
- Sampling frame, response rate, raw sample, missing data, and the size of the final useable sample
- Demographic breakdown for participants
- Timeframe, setting, and location where data were collected

Measures

- Introduction of the instrument and construct(s) of measurement (include sample test items)
- Reliability and validity evidence of test scores (for each instrument):
 - Existing reliability (e.g., internal consistency [coefficient alpha, coefficient omega, or coefficient H], test/retest) and validity (e.g., internal structure, convergent/divergent, criterion) evidence of scores
 - *Note: At a minimum, internal structure validity evidence of scores should include both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA).
 - Reliability and validity evidence of test scores with the data set in the present study
 - *Note: Only using coefficient alpha without completing statistical assumption checking is insufficient. Compute both coefficient omega and alpha or alpha with proper assumption checking.
- Cross-cultural fairness and norming: Commentary on how and in what ways cross-cultural fairness guided the selection, administration, and interpretation of procedures and test results
 - Review and citations of original psychometric studies and normative samples

Data Analysis

- Operationalized variables and scales of measurement
- Procedures for matching variables with appropriate statistical analyses
- Assumption checking procedures

Note. This appendix is a brief summary and not a substitute for the narrative in the text of this article.

School Counselors' Emotional Intelligence and Comprehensive School Counseling Program Implementation: The Mediating Role of Transformational Leadership



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The authors examined whether school counselors' emotional intelligence predicted their comprehensive school counseling program (CSCP) implementation and whether engagement in transformational leadership practices mediated the relationship between emotional intelligence and CSCP implementation. The sample for the study consisted of 792 school counselors nationwide. The findings demonstrated the significant mediating role of transformational leadership on the relationship between emotional intelligence and CSCP implementation. Implications for the counseling profession are discussed.

Keywords: emotional intelligence, school counselors, transformational leadership, comprehensive school counseling program, implementation

School counselors have been called upon to design and implement culturally responsive comprehensive school counseling programs (CSCPs) that have a deliberate and systemic focus on facilitating optimal student outcomes and development (American School Counselor Association [ASCA], 2017, 2019b). To this end, school counselors are expected to align their activities with the ASCA National Model (ASCA, 2019b) with an aim toward facilitating students' knowledge, attitudes, skills, and behaviors to be academically and socially/emotionally successful and preparing students for college and career (ASCA, 2021). Relatedly, ASCA (2019a) urges school counselors to apply and enact a model of leadership in the process of program implementation. Several studies (e.g., Mason, 2010; Mullen et al., 2019; Shillingford & Lambie, 2010) have provided empirical evidence that supports the predictive role of school counselors' leadership on their program implementation outcomes. Still, little is known about the relationship between school counselors' program implementation and their leadership practices grounded in a specific model such as transformational leadership (Bolman & Deal, 1997; Kouzes & Posner, 1995). Understanding this relationship may allow school counselors to better align their practices within a specific leadership framework consistent with best practice (ASCA, 2019a).

Although leadership has been broadly established as a macro-level capability, emotional intelligence has started to gain interest in recent literature, as intra- and interpersonal competencies are central to school counselors' practice (Hilts et al., 2019; Hilts, Liu, et al., 2022; Mullen et al., 2018). For instance, school counselors must be emotionally attuned to themselves and others to more effectively navigate the complexities of systems in which they operate (Mullen et al., 2018). One way to achieve such emotional attunement may be by respecting and validating others' perspectives and providing emotional support to enact interpersonal influence aimed at facilitating educational partners' keenness toward programmatic efforts (Hilts et al., 2019; Hilts, Liu, et al., 2022; Jordan & Lawrence, 2009). The purpose of the current study is to examine the mechanisms between school counselors' emotional intelligence, transformational leadership, and CSCP implementation.

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Comprehensive School Counseling Programs

Although school counseling programs will vary in structure based on the unique needs of school and community partners (Mason, 2010), programs should be comprehensive in scope, preventative by design, and developmental in nature (ASCA, 2017). CSCP implementation, which comprises a core component of school counseling practice, involves multilevel services (e.g., instruction, consultation, collaboration) and assessments (e.g., program assessments, annual results reports). The functioning of these services and assessments is further defined and managed within the broader school community by the CSCP (Duquette, 2021). Moreover, CSCPs are generally aligned with the ASCA National Model (ASCA, 2019b) to create a shared vision among school counselors to have a more deliberate and systemic focus on facilitating optimal student outcomes and development.

Over the past 20 years, researchers have consistently found positive relationships between CSCP implementation and student achievement reflected through course grades and graduation/retention rates (Sink et al., 2008) and achievement-related outcomes such as behavioral issues and attendance (Akos et al., 2019). Students who attend schools with more well established and fully implemented CSCPs are more likely to perform well academically and behaviorally (Akos et al., 2019). Additionally, researchers have found that school counselors who engage in multilevel services associated with a CSCP are more likely to have higher levels of wellness functioning compared to those who are less engaged in delivering these services (Randick et al., 2018). As such, CSCP implementation seems to not only be positively related to student development and achievement but also the overall well-being of school counselors.

Designing and implementing a culturally responsive CSCP demands a collaborative effort between both school counselors and educational partners to create and sustain an environment that is responsive to students' diverse needs (ASCA, 2017). This ongoing and iterative process requires school counselors to be emotionally attuned with school, family, and community partners to co-construct, facilitate, and lead initiatives to more efficaciously implement equitable services within their programs (ASCA, 2019b; Bryan et al., 2017). School counselors must engage in leadership and be attentive toward their self- and other-awareness and management to traverse diverse contexts involving differences in personalities, values and goals, and ideologies (Mullen et al., 2018). Although researchers have reported that school counselors' CSCP implementation is positively related to their leadership (e.g., Mason, 2010), no studies have investigated the relationship between emotional intelligence and CSCP implementation.

Emotional Intelligence

Emotional intelligence generally refers to the ability to recognize, comprehend, and manage the emotions of oneself and others to accomplish individual and shared goals (Kim & Kim, 2017). Scholars have purported that emotional intelligence can be subsumed into two overarching forms: trait emotional intelligence and ability emotional intelligence (Petrides & Furnham, 2000a, 2000b, 2001). *Trait emotional intelligence*, also known as trait emotional self-efficacy, involves "a constellation of behavioral dispositions and self-perceptions concerning one's ability to recognize, process, and utilize emotional-laden information" (Petrides et al., 2004, p. 278). *Ability emotional intelligence*, also referred to as cognitive-emotional ability, concerns an individual's emotion-related cognitive abilities (Petrides & Furnham, 2000b). Said differently, trait emotional intelligence is in the realm of an individual's personality (e.g., social awareness), whereas ability emotional intelligence denotes an individual's *actual* capabilities to perceive, understand, and respond to emotionally charged situations.

Over the past two decades, scholars have expanded the scope of emotional intelligence to have a deliberate focus on how emotional intelligence occurs within teams or groups in the workforce context (Jordan et al., 2002; Jordan & Lawrence, 2009). Given the salience of emotions in various professional

and work contexts (e.g., Jordan & Troth, 2004), Jordan and colleagues' (2002) Workgroup Emotional Intelligence Profile (WEIP) facilitates a better understanding of how emotional intelligence manifests in teams. The WEIP centralizes emotional intelligence around the "understanding of emotional processes" (Jordan et al., 2002, p. 197). Using the WEIP, researchers revealed that higher emotional intelligence scores are positively related to job satisfaction, organizational citizenship (e.g., performing competently under pressure), organizational commitment, and school and work performance (Miao et al., 2017a, 2017b; Van Rooy & Viswesvaran, 2004). Conversely, higher scores of emotional intelligence were negatively associated with turnover intentions and counterproductive behavior (Miao et al., 2017a, 2017b).

Emotional intelligence has also gained increased attention in the counseling literature. For example, Easton et al. (2008) found emotional intelligence as a significant predictor of counseling self-efficacy in the areas of attending to the counseling process and dealing with difficult client behavior. Following a two-phase investigation, Easton and colleagues demonstrated the stability of emotional intelligence during a 9-month timeframe in both groups of professional counselors and counselors-in-training; thus, the researchers argued that emotional intelligence may be an inherent characteristic associated with the career choice of counseling. In an earlier study with a sample with 108 school counselors, emotional intelligence was found to be significantly and uniquely related to school counselors' multicultural counseling competence (Constantine & Gainor, 2001). More recently, school counselors' emotional intelligence was found to be positively related to leadership self-efficacy and experience (Mullen et al., 2018).

School Counseling Leadership Practice

Leadership practice is a dynamic, interpersonal phenomenon within which school counselors engage in behaviors that mobilize support from educational partners to achieve programmatic and organizational objectives aimed at promoting student achievement and development (Hilts, Peters, et al., 2022). The focus on leadership practice entails an emphasis on the actual behavior of the individual, which scholars have contended is a byproduct of both individual and contextual factors in which these behaviors occur (Hilts, Liu, et al., 2022; Mischel & Shoda, 1998; Scarborough & Luke, 2008). For instance, school counselors' support from other school partners (Dollarhide et al., 2008; Robinson et al., 2019) and previous leadership experience (Hilts, Liu, et al., 2022; Lowe et al., 2017) have been found to influence school counselors' engagement in leadership. Hilts, Liu, and colleagues (2022) found that intra- and interpersonal factors significantly predicted school counselors' engagement in leadership such as multicultural competence, leadership self-efficacy, and psychological empowerment. Across several models of leadership (e.g., Bolman & Deal, 1997; Kouzes & Posner, 1995), transformational leadership has been situated in the context of school counseling (Gibson et al., 2018).

Transformational School Counseling Leadership

Transformational leadership is described as behaviors aimed at encouraging others to enact leadership, challenge the status quo, and actively pursue learning and development to achieve higher performance (Bolman & Deal, 1997; Kouzes & Posner, 1995). Individuals employing transformational leadership foster a climate of trust and respect and inspire motivation among others by facilitating emotional attachments and commitment to others and the organization's mission. More recently, Gibson et al. (2018) constructed and validated the School Counseling Transformational Leadership Inventory (SCTLI) in an effort to support school counselors in conceptualizing and informing their approach to leadership. The SCTLI (Gibson et al., 2018)—grounded in the ASCA National Model (ASCA, 2012) and the general transformational leadership literature (e.g., Avolio et al., 1991)—offers a framework to support engagement in leadership within a school context. For example, school counselors build partnerships with important decision-makers in the school and community and empower educational

partners to act to improve the program and the school. School counselors engaging in transformational leadership ascribe to an egalitarian structure in which they engage in shared decision-making, promote a united vision, and inspire others to work toward positive change among students and the broader school community (Lowe et al., 2017). Beyond being studied as an outcome variable itself (Hilts, Liu, et al., 2022), school counselors' enactment of leadership has also been found to be positively associated with their outcomes of CSCP implementation (Mason, 2010; Mullen et al., 2019).

Emotional Intelligence and the Mediating Role of Transformational Leadership

Over the past several decades, emotional intelligence has been increasingly attributed as a critical trait and ability of individuals employing effective leadership (Kim & Kim, 2017). For instance, Gray (2009) asserted that effective school leaders are able to perceive, understand, and monitor their own and others' internal states and use this information to guide the thinking and actions of themselves and others. Mullen and colleagues (2018) found that, among a sample of 389 school counselors, domains of emotional intelligence (Jordan & Lawrence, 2009) were significant predictors of leadership self-efficacy and leadership experience. Specifically, Mullen et al.'s (2018) results showed that (a) awareness of own emotions and management of own and others' emotions were positively related to leadership self-efficacy; (b) management of own and others' emotions significantly predicted leadership experience; and (c) awareness and management of others' emotions was positively associated with self-leadership.

Moreover, initial research has revealed that not only is emotional intelligence an antecedent of leadership (Barbuto et al., 2014; Harms & Credé, 2010; Mullen et al., 2018), but that leadership, particularly transformational leadership, mediates the relationship between emotional intelligence and job-related behavior such as job performance (Hur et al., 2011; Hussein & Yesiltas, 2020; Rahman & Ferdausy, 2014). For example, Hussein and Yesiltas's (2020) results indicated that not only were higher scores of emotional intelligence positively associated with organizational commitment, but that transformational leadership partially mediated the relationship between emotional intelligence and organizational commitment. In another study, Hur and colleagues (2011) sought to examine whether transformational leadership mediated the link between emotional intelligence and multiple outcomes among 859 public employees across 55 teams. The researchers' results showed that transformational leadership mediated the relationship between emotional intelligence and service climate, as well as between emotional intelligence and leadership effectiveness. Scholars have explained this relationship as the ability of individuals employing transformational leadership to inspire and motivate others to accomplish beyond self- and organizational expectations and redirect feelings of frustration from setbacks to constructive solutions (Hur et al., 2011; Hussein & Yesiltas, 2020).

Purpose of the Study

Taken together, emotional intelligence has been identified in the counseling literature as a significant predictor of counseling self-efficacy and competence (Constantine & Gainor, 2001; Easton et al., 2008). It has also been well established in the workforce literature as being positively related to job performance and leadership outcomes (Hussein & Yesiltas, 2020; Kim & Kim, 2017). The broader leadership literature also comprises evidence in support of the mediating role of transformational leadership between emotional intelligence and performance outcomes (Hur et al., 2011; Hussein & Yesiltas, 2020; Rahman & Ferdausy, 2014). Emotional intelligence has not been examined in relation to school counselors' CSCP implementation and service outcomes, although CSCP implementation has been widely embraced as a core of the ASCA National Model. Likewise, although emotional intelligence has been studied with counseling practice and leadership separately, we identified no empirical research that has examined the mechanisms between school counselors' emotional intelligence, transformational leadership practice, and outcomes of program implementation. The present study seeks to address these gaps. Thus, the two

research questions that guided our study were: (a) Does school counselors' emotional intelligence predict their CSCP implementation? and (b) Does engagement in transformational leadership practice mediate the relationship between emotional intelligence and CSCP implementation? Given the synergistic focus on collaboration (or teamwork) shared by the school and workforce contexts coupled with previous empirical evidence, we hypothesized that (a) school counselors' emotional intelligence predicts their CSCP implementation, and (b) transformational leadership practice mediates the relationship between emotional intelligence and CSCP implementation.

Method

Research Design

In the present study, we utilized a correlational, cross-sectional survey design. We used the Statistical Package for Social Sciences (SPSS, version 27). To test our hypotheses, we performed a mediation analysis using Hayes's PROCESS in order to establish the extent of influence of an independent variable on an outcome variable (through a mediator; Hayes, 2012). Mediation analysis answered *how* an effect occurred between variables and is based on the prerequisite that the independent variable/predictor is often considered the "causal antecedent" to the outcome variable of interest (Hayes, 2012, p. 3). Furthermore, we expected that the effects of school counselors' emotional intelligence on their CSCP implementation would be partly explained by the effects of their engagement in transformational leadership.

Participants

Participants included for final analysis were 792 practicing school counselors in the United States, 94.6% ($n = 749$) of which reported to be certified/licensed as school counselors and 5.4% ($n = 43$) indicated to be either not certified/licensed or "unsure." The sample's geographic location was mostly suburban ($n = 399$, 50.4%), followed by rural ($n = 195$, 24.6%) and urban ($n = 184$, 23.2%); and 1.8% of participants ($n = 14$) did not disclose their setting. Public schools accounted for 86.2% ($n = 683$) of participants' work settings, followed by charter ($n = 42$, 5.3%) and private ($n = 40$, 5.1%), while 3.4% ($n = 27$) of participants indicated "other" or did not disclose. For grade levels served by participants, 13% ($n = 103$) worked at the PK–4 level, 20.8% ($n = 165$) at the 5–8 level, 28.4% ($n = 225$) at the 9–12 level, and 37.8% ($n = 299$) worked at the combined K–12 level. Participants' race/ethnicity included Asian/Native Hawaiian/Pacific Islander ($n = 26$, 3.3%), Multiracial ($n = 47$, 5.9%), Black/African American ($n = 56$, 7.1%), Hispanic/Latino ($n = 70$, 8.8%), and White ($n = 593$, 74.9%). Lastly, participants' mean age was 43, ranging from 23 to 77 years of age. Of the 792 participants, 82.4% ($n = 653$) identified as cisgender female, 11.0% ($n = 88$) as cisgender male, 0.3% ($n = 2$) as transgender female, 0.3% ($n = 2$) as transgender male, 3.8% ($n = 30$) chose "prefer to self-identify," and 2.2% ($n = 17$) chose "not to answer." Our sample was representative of the larger population based on the results of a recent nationwide study by ASCA (2021), in which approximately 7,000 school counselors were surveyed; demographic statistics from that study similar to ours included 88% of participants working in public, non-charter schools; 19% working at the middle school level; and 24% working in urban schools..

Procedures and Data Collection

Prior to engaging in data collection, we received approval from our university's IRB. According to our a priori power analysis conducted using G*Power 3.1 Software (Faul et al., 2007), a sample size of 558 participants would be considered sufficient for the current study, assuming a small effect size ($f^2 = 0.1$); therefore, we attempted to achieve a nationally representative sample through a variety of recruitment methods. In efforts to represent the target population, non-probability sampling methods (Balkin & Kleist, 2016) were used and included either sending, posting, or requesting dissemination of a research recruitment message and survey link to (a) school counselors of current or former Recognized

ASCA Model Program (RAMP)-designated school counseling programs, (b) state school counseling associations, (c) several closed groups on Facebook for school counselors, (d) the ASCA Scene online discussion forum, and (e) the university's school counselor listserv. In addition, similar to recruitment methods used by Hilts and colleagues (2019) in previous school counseling research, we emailed ASCA members directly with an invitation to participate. We shared one to two follow-up announcements through these same methods between 2 to 4 weeks after the initial recruitment message.

The link within the research recruitment announcement directed participants to an informed consent page. After indicating their willingness to participate in the study, participants were then directed to the online survey managed by the Qualtrics platform. On average, the survey took approximately 15 minutes to complete.

Instrumentation

Demographic Questionnaire

The demographic questionnaire consisted of 18 questions asked of all eligible participants. The demographic form included questions about participants' school level, geographic location, school type, and student caseload. We also asked participants about other demographic information including race/ethnicity, gender, age, and years of experience.

Workgroup Emotional Intelligence Profile

The Workgroup Emotional Intelligence Profile-Short Version (WEIP-S; Jordan & Lawrence, 2009), a shortened version of the WEIP (Jordan et al., 2002) and the WEIP-6 (Jordan & Troth, 2004), is a 16-item, self-report scale that measures participants' emotional intelligence within a team context. Jordan and Lawrence (2009) selected just 25 behaviorally based items from the 30-item WEIP-6 (Jordan & Troth, 2004). Through confirmatory factor analyses (CFA) to achieve the best fit model, the final WEIP-S measure consisted of 16 items with four factors, each of which had good internal consistency reliability in the sample: awareness of own emotions (4 items, $\alpha = .85$), management of own emotions (4 items, $\alpha = .77$), awareness of others' emotions (4 items, $\alpha = .88$), and management of others' emotions (4 items, $\alpha = .77$). To enhance construct validity of the WEIP-S, Jordan and Lawrence employed model replication analyses and test-retest stability across three time periods. Examples of items from each dimension are (a) "I can explain the emotions I feel to team members" (awareness of own emotions); (b) "When I am frustrated with fellow team members, I can overcome my frustration" (management of own emotions); (c) "I can read fellow team members 'true' feelings, even if they try to hide them" (awareness of others' emotions); and (d) "I can provide the 'spark' to get fellow team members enthusiastic" (management of others' emotions). The items are measured on a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). For analyses, we summed scores of all dimensions, with higher scores indicating a greater amount of emotional intelligence. Cronbach's α and McDonald's omega (ω) for the WEIP-S were both .93, which indicated good internal consistency.

School Counseling Transformational Leadership Inventory

The SCTLI (Gibson et al., 2018) is a 15-item, self-report inventory that measures the leadership practices of school counselors. The items are measured on a Likert-type scale ranging from 1 (*never*) to 5 (*always or almost always*) and a total score indicates the self-reported level of engagement in overall leadership practices. Sample items on the SCTLI include "I have empowered parents and colleagues to act to improve the program and the school" and "I have used persuasion with decision-makers to accomplish school counseling goals." Findings from Gibson et al.'s (2018) exploratory factor analyses (EFAs) and CFAs revealed a one-factor model of transformational leadership practices based on transformational leadership theory and responsibilities as described within the ASCA

National Model (ASCA, 2019b; $CFI = .94$, $TLI = .93$, $RMSEA = .08$). Through Pearson's correlation, the researchers revealed that concurrent validity was significant ($r = .68$, $p < .01$). Additionally, in their sample, Gibson et al. reported strong internal consistency reliability with a Cronbach's $\alpha = .94$. In the current study, Cronbach's α and McDonald's (ω) for the SCTLTI were .93 and .94, respectively.

School Counseling Program Implementation

The School Counseling Program Implementation Survey-Revised (SCPIS-R; Clemens et al., 2010; Fye et al., 2020) is a self-report survey that measures school counselors' level of CSCP implementation. The SCPIS-R (Fye et al., 2020), used in the current study, is a 14-item Likert-type scale ranging from 1 (*not present*) to 4 (*fully implemented*). The factor structure was established through two studies that utilized EFA (Clemens et al., 2010) and CFA (Fye et al., 2020) to test the factor structure. The data from the original study (Clemens et al., 2010) yielded a three-factor model structure of the SCPIS, which includes programmatic orientation (7 items, $\alpha = .79$), school counselors' use of computer software (3 items, $\alpha = .83$), and school counseling services (7 items, $\alpha = .81$), and a total SCPIS of $\alpha = .87$. That said, Fye et al.'s (2020) CFA findings suggested a modified two-factor model was a more appropriate fit; thus, the modified two-factor model structure of the SCPIS includes only programmatic orientation (7 items, $\alpha = .86$) and school counseling services (7 items, $\alpha = .83$) and a total SCPIS of $\alpha = .90$. Examples from each factor are (a) needs assessments are completed regularly and guide program planning (programmatic orientation) and (b) services are organized so that all students are well served and have access to them (school counseling services). We calculated participants' total SCPIS scores with higher scores indicating greater CSCP implementation (Mason, 2010; Mullen et al., 2019). In the present study, the SCPIS-R demonstrated good reliability (Cronbach's $\alpha = .90$; McDonald's $\omega = .90$) in our sample.

Data Analysis

Missing Data Analysis and Assumptions Test

We received a total of 1,128 responses. Of all these responses, 336 respondents missed a significant portion (over 70%) of one or more of the main scales (i.e., WEIP-S, SCTLTI, and SCPIS-R). We assessed this portion of values as not missing completely at random (NMICAR), and we proceeded with employing listwise deletion to 336 cases. The data NMICAR may be because of the survey length and time commitment, which is discussed more in the Limitations section. With the remaining 792 cases, the missing values counted for 0.1%–0.7% of missing values across respective scales. We performed a Little's Missing Completely at Random test using SPSS Statistics Version 26.0 with a nonsignificant chi-square value ($p > .05$), which suggested that the missing values (across cases) were missed completely at random. Therefore, we retained all 792 cases and followed multiple imputation (Scheffer, 2002) to replace the missing values, using SPSS. Our data met assumptions for mediation analysis, normality based on histograms, and linearity and homoscedasticity as demonstrated through the scatterplots generated from univariate analysis.

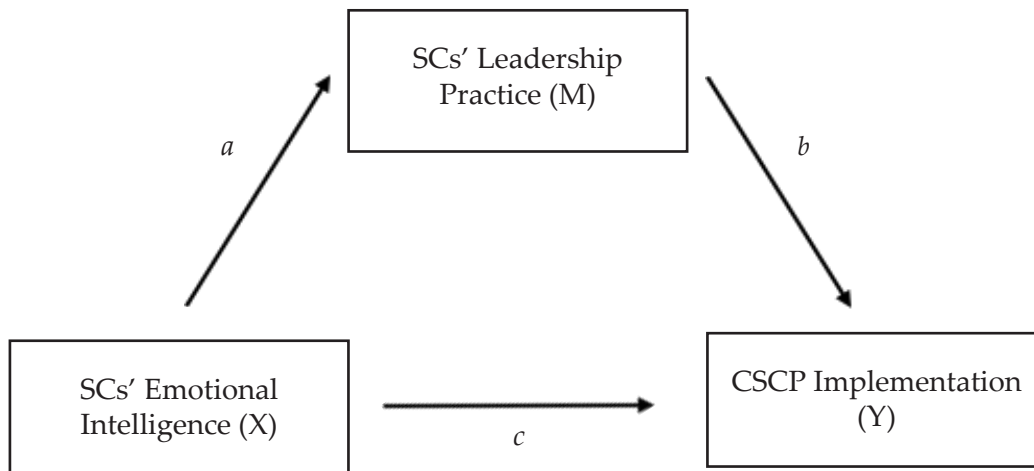
Mediation Analysis

In our mediation model (see Figure 1), given its combined trait-ability nature and stability over time, school counselors' emotional intelligence was hypothesized as the causal antecedent to program implementation; we then hypothesized transformational leadership practice to be a mediator for the effect of school counselors' emotional intelligence on program implementation. We tested our mediation model based on Baron and Kenny's (1986) approach. Specifically, our mediation analysis entailed four steps involving (a) the role of school counselors' emotional intelligence (X) in predicting CSCP implementation (Y), with the coefficient denoted as c to reflect the total effect that X has on Y; (b) the predictive role of school counselors' emotional intelligence (X) on transformational leadership practice (M), with the coefficient denoted as a ; (c) the effect of transformational leadership practice

(M) on CSCP implementation (Y), controlling for the effect of emotional intelligence (X), with the coefficient denoted as b ; and (d) the association between school counselors' emotional intelligence (X) and CSCP implementation (Y), using transformational leadership practice (M) as a mediator with coefficient denoted as c' (MacKinnon et al., 2012). The difference between the coefficients c and c' , ($c - c'$), is the mediation effect of transformational leadership practice.

Figure 1

The Hypothesized Mediation Model



Note. SC = school counselors; CSCP = Comprehensive School Counseling Program.

Hayes's PROCESS v3.5 (with 5,000 regenerated bootstrap samples) was used to perform the mediation analysis. Hayes's PROCESS is an analytical function in SPSS used to specify and estimate coefficients of specified paths using ordinary least squares (OLS) regression (Hayes, 2012). We consulted Fritz and MacKinnon (2007) regarding sample adequacy for detecting a mediation effect. Specifically, in order to allow .80 power and a medium mediation effect size, a sample of 397 is recommended for Baron and Kenny's test, and a sample of 558 is considered adequate to detect small effects via percentile bootstrap (Fritz & MacKinnon, 2007). As such, our sample size of 792 met both criteria. According to MacKinnon et al. (2012), the mediation effect is significant, if zero (0) is excluded from the designated confidence interval (95% in our study).

Results

Correlations

We performed a bivariate analysis on the main study variables of school counselors' emotional intelligence (measured using the WEIP-S), transformational leadership practice (measured using the SCTLI), and school counselors' CSCP implementation (measured using the SCPIS-R). School counselors' emotional intelligence scores were positively correlated with their transformational leadership practice ($r = .42, p < .001$) and were positively correlated with their CSCP implementation ($r = .34, p < .001$). Similarly, school counselors' transformational leadership practice was found to be positively correlated with CSCP implementation ($r = .56, p < .001$). Table 1 denotes the correlations among variables.

Table 1*Correlation Matrix of Study Variables*

| Variable | EI | TL | CSCP |
|----------|-------|-------|-------|
| EI | - | .42** | .34** |
| TL | .42** | - | .56** |
| CSCP | .34** | .56** | - |

Note. EI = school counselors' emotional intelligence scores; TL = school counselors' transformational leadership; CSCP = school counselors' comprehensive school counseling program implementation.

** $p < .001$

Mediation Analysis Results

With the total effect model (Step 1), we found a positive relation between school counselors' emotional intelligence (X) and their CSCP implementation (Y; coefficient $c = 0.24$; $p < .001$; CI [0.20, 0.29]). Namely, school counselors' emotional intelligence scores significantly predicted their CSCP implementation. In Step 2, we found a positive association between school counselors' emotional intelligence scores (X) and their transformational leadership practice (M; coefficient $a = 0.38$; $p < .001$; CI [0.32, 0.43]). In Step 3, school counseling transformational leadership practice (M) was found to significantly predict their CSCP implementation (Y; coefficient $b = 0.40$; $p < .001$, CI [0.35, 0.45]) while controlling for the effect of emotional intelligence (X). Lastly, after adding transformational leadership practice as a mediator, we noted a significant direct effect of emotional intelligence on school counselors' CSCP implementation (coefficient $c' = 0.09$; $p = .0001$; CI [0.05, 0.14]). We also detected a mediation effect (coefficient $ab = 0.15$ which equaled $c - c'$; $p < .001$; CI [0.12, 0.18]) of emotional intelligence on CSCP implementation through transformational leadership practice. The 95% confidence intervals did not include zero (0), so the path coefficients were significant.

We performed a Sobel test to further evaluate the significance of the mediation effect by school counseling transformational leadership practice, which yielded a Sobel test statistic of 9.97 with a p value of $< .001$. The Sobel outcome corroborated the significance of our mediated effect. To calculate the effect size of our mediation analysis, we generated kappa-squared value (k^2 ; Preacher & Kelley, 2011). Our kappa-squared (k^2) value of .17 suggested a medium effect size (Cohen, 1988). Table 2 demonstrates regression results for the effect of school counselors' emotional intelligence on their CSCP implementation outcomes mediated by transformational leadership practice.

Table 2*Regression Results for Mediated Effect by Leadership Practice*

| Model | Coefficient | S.E. | CI (Lower) | CI (Upper) |
|-------------------------------|-------------|------|------------|------------|
| Total Effect Model | | | | |
| Intercept | 19.14 | 2.29 | 14.65 | 23.62 |
| EI→CSCP (<i>c</i>) | 0.24** | 0.02 | 0.20 | 0.29 |
| R^2 (Y,X) ^a | 0.12** | | | |
| The Mediation Model | | | | |
| Intercept | 19.81 | 2.80 | 14.31 | 25.30 |
| EI→TL (<i>a</i>) | 0.38** | 0.03 | 0.32 | 0.43 |
| TL→CSCP (<i>b</i>) | 0.40** | 0.03 | 0.35 | 0.45 |
| EI→CSCP (<i>c'</i>) | 0.09** | 0.02 | 0.05 | 0.14 |
| Indirect Effect (<i>ab</i>) | 0.15** | 0.02 | 0.12 | 0.18 |
| R^2 (M,X) ^b | 0.17** | | | |
| R^2 (Y,MX) ^c | 0.33** | | | |

Note. $N = 792$. EI = emotional intelligence; TL = transformational leadership; CSCP = comprehensive school counseling program; CI = 95% Confidence Interval. The 95% CI for *ab* is obtained by the bias-corrected bootstrap with 5,000 resamples.

^a R^2 (Y,X) is the proportion of variance in CSCP implementation explained by EI.

^b R^2 (M,X) is the proportion of variance in TL explained by EI.

^c R^2 (Y,MX) is the proportion of variance in CSCP implementation explained by EI and TL.

** $p < .001$.

Discussion

In this national sample of 792 practicing school counselors, we examined whether school counselors' emotional intelligence predicts their CSCP implementation. We also investigated whether engagement in transformational leadership practice mediated the relationship between school counselors' emotional intelligence and CSCP implementation. First, we found that school counselors who reported higher scores of emotional intelligence were also more likely to score higher in CSCP implementation. Given that designing and implementing a CSCP requires school counselors to engage in a culturally responsive and collaborative effort (ASCA, 2017), our result that suggested emotional intelligence is positively correlated with CSCP implementation is not entirely unpredicted. This result was consistent with previous evidence supporting the positive correlation between emotional intelligence and work performance (Miao et al., 2017a, 2017b; Van Rooy & Viswesvaran, 2004). The result also illustrated the predictive role of school counselors' emotional intelligence on their CSCP implementation, beyond its significant association with counseling competencies (Constantine & Gainor, 2001; Easton et al., 2008).

Secondly, school counselors' emotional intelligence was found to be positively associated with their engagement in transformational leadership. This result aligned with previous evidence that school counselors' emotional intelligence is linked to leadership outcomes demonstrated through the workforce literature (Barbuto et al., 2014; Harms & Credé, 2010; Kim & Kim, 2017). Similarly, the result

echoed Mullen et al.'s (2018) finding on the positive relationship between school counselors' emotional intelligence and leadership scores measured by the Leadership Self-Efficacy Scale (LSES; Bobbio & Manganello, 2009). Noteworthy, the LSES was normed and validated with college students. Our results advanced the school counseling literature and corroborated the relationship between emotional intelligence and school counseling transformational leadership measured by the SCTLL, a scale developed specifically for school counselors. Our results suggest that school counselors may actively attend to emotional processes in order to effectively enact transformational leadership practice.

Thirdly, we found that school counselors' engagement in transformational leadership significantly mediated the relationship between their emotional intelligence and CSCP implementation. Because leadership is woven into the ASCA National Model and is considered an integral component of a CSCP (ASCA, 2019b), and school counselors are required to develop collaborative partnerships with a range of educational partners (ASCA, 2019a; Bryan et al., 2017), we were not surprised to find these two concepts were related to CSCP implementation. This result also aligns with empirical evidence in the broader leadership literature that transformational leadership mediated the relationship between emotional intelligence and work performance (Hur et al., 2011; Hussein & Yesiltas, 2020). This result is particularly meaningful in that it demonstrates school counseling leadership as either a significant predictor (Mason, 2010; Mullen et al., 2019) or an outcome variable itself (Hilts, Liu, et al., 2022; Mullen et al., 2018). It enables a more nuanced understanding of mechanisms involved in emotional intelligence, leadership, and program implementation in a school counseling context. To our best knowledge, the current study was the first study that found that through leadership practice, school counselors' emotional intelligence may offer an indirect effect on their CSCP implementation.

Implications

Results of this study have implications for school counselor practice and school counselor training and supervision. Given the significant relationships between emotional intelligence, transformational leadership, and CSCP implementation, we suggest that practicing school counselors begin by assessing their emotional intelligence, transformational leadership, and CSCP implementation and then set goals to enhance their performance. This may be especially important considering that other research has suggested that school counselors' engagement in leadership, as well as their other roles and responsibilities (e.g., multicultural competence; challenging co-workers about discriminatory practices) have changed since the onset of the COVID-19 pandemic (Hilts & Liu, 2022). For instance, Hilts and Liu's (2022) results indicated that school counselors' leadership practice scores were higher during the pandemic compared to prior to the COVID-19 outbreak.

Next, school counselors can seek resources and professional development opportunities to support their goals. For example, school counselors may benefit from professional development focused on social-emotional learning (SEL), given SEL's competency approach to building collaborative relationships (Collaborative for Academic, Social, and Emotional Learning, n.d.). That said, school counselors should also seek supports to experientially integrate their intrapersonal, interpersonal, and systemic skills associated with emotional intelligence, transformational leadership, and CSCP implementation. Intentional application of the Model for Supervision of School Counseling Leadership (Hilts, Peters, et al., 2022) may provide one such example for both school counseling practitioners and those in training.

School counselor training programs can also identify meaningful opportunities to infuse emotional intelligence and transformational leadership into school counselor coursework and supervision. Scarborough and Luke (2008) identified the important role of exposure in training to models of

successful CSCP implementation and related resources on subsequent self-efficacy. As such, not only can school counseling coursework infuse the *ASCA National Model Implementation Guide: Manage & Assess* (ASCA, 2019b) and the *Making DATA Work: An ASCA National Model* publication (ASCA, 2018) along with additional emotional intelligence and transformational leadership resources, school counseling faculty and supervisors should intentionally incorporate school counseling students' ongoing exposure to practicing school counselors and supervisors with high scores of emotional intelligence and transformational leadership.

Limitations

As with all research, the results of this study need to be understood in consideration of the methodological strengths and limitations. Despite obtaining a large national sample, the data collection procedures used in this study prevented our ability to determine the survey response rate. As such, we are unable to make any claim about non-response bias and it is possible that school counselors who declined to participate significantly differed from those who completed the study. Relatedly, the sample included a proportionately large number of participants who started the survey but did not finish. It is possible that the attrition of these school counselors reflected an as of yet unidentified confounding construct that is also related to the variables under study (Balkin & Kleist, 2016). Our sample is nonetheless generally representative of the national school counselor demographic data reported in the recent state of the profession survey of approximately 7,000 school counselors (ASCA, 2021), strengthening the validity and subsequent generalizability of our results.

Another limitation of our study is that all data were cross-sectional and non-experimental. The correlation and mediation analyses used in the study demonstrate the strength of associations between the examined constructs, and do not reflect temporal or causal relationships. The cross-sectional design does not allow statistical control for the predictor and outcome variables; thus, it may not accurately specify the effect of the predictor on the mediator (Maxwell & Cole, 2007). Therefore, any inclination to impose intuitive logic or imbue directionality that emotional intelligence is an antecedent to either transformational leadership or CSCP implementation should be interpreted with caution. Further, all data from this study were collected at the same time and relied upon self-report. As such, common-method variance could have inflated the identified relationships between the constructs.

An important consideration is that this study was delineated to focus on illustrating individual path coefficients between emotional intelligence, leadership, and CSCP implementation and provides limited insight into understanding of complex relationships among latent variables. Likewise, we used Hayes's PROCESS to examine our mediation model which features *procedure* rather than overall model fit created through more sophisticated statistical analyses such as structural equation modeling (SEM). Given that PROCESS is a modeling tool that relies on OLS regression, it may be biased in estimating effects without taking into consideration measurement error (Darlington & Hayes, 2017).

Suggestions for Future Research

The results of this study have numerous implications for future research. Future studies may explore the relationship between emotional intelligence and other forms of leadership prevalent in the counseling literature, such as charismatic democratic or servant leadership (Hilts, Peters, et al., 2022). In addition, because self-report emotional intelligence measures have been described as better to assess intrapersonal processes and ability emotional intelligence measures have been shown to be related to emotion-focused coping and work performance (Miao et al., 2017a, 2017b), future research may consider incorporating ability and mixed emotional intelligence measurements to examine a causal model of emotional intelligence and transformational leadership (or other forms of leadership).

Future research could extend the unit of analysis in this study (e.g., individual school counselor) and adopt a similar perspective to Lee and Wong (2019) to examine emotional intelligence in teams. Studies could similarly expand the use of self-report emotional intelligence measures and include ability or mixed emotional intelligence measurement. Relatedly, as Miao et al. (2017b) described significant moderator effects of emotional labor demands of jobs on the relationship between self-report emotional intelligence and job satisfaction, future research could assess this in the school counseling context, wherein the emotional labor demands of the work may vary. Given the robust workforce literature grounding associations between emotional intelligence and job performance, job satisfaction, organizational commitment, and resilience in the face of counterproductive behavior in the workplace (Hussein & Yesiltas, 2020), future school counseling research can examine emotional intelligence and other constructs, including ethical decision-making, belonging, attachment, burnout, and systemic factors.

Lastly, as most constructs involved in school counseling practice are latent variables in nature, we recommend future scholars consider SEM when it comes to investigating overall model fit between the variables of interest. SEM offers more specification to the model including goodness of fit of the model to the data (Hayes et al., 2018). It minimizes bias involved in mediation effect estimation with consideration of individual indicators for each latent variable (Kline, 2016).

Conclusion

As an initial examination of the relationship between emotional intelligence and CSCP implementation, as well as the role of school counselors' transformational leadership in mediating the relationship between emotional intelligence and CSCP implementation, this study was grounded in the empirical scholarship on leadership in both school counseling and allied fields. We found support for our hypothesized model of school counselors' emotional intelligence and their CSCP implementation, mediated by their engagement in transformational leadership. Our examination yielded evidence in support of the significant mediating role of school counselors' transformational leadership engagement on the relationship between emotional intelligence and CSCP implementation. In the meantime, our results supported the robust reliability of three instruments in our sample: the WEIP-S (Jordan & Lawrence, 2009), the SCTLI (Gibson et al., 2018), and the SCPIS-R (Clemens et al., 2010; Fye et al., 2020), which can be useful for future school counseling researchers and practitioners. This study serves as an important necessary step in establishing these relationships, and we anticipate that our results will ground further investigation related to school counselors' emotional intelligence, leadership practices, and CSCP implementation, including the development of additional measurements.

Conflict of Interest and Funding Disclosure

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Barriers to Seeking Counseling Among STEM Students: The Revised Fit, Stigma, and Value Scale



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Meeting the mental health needs of students enrolled in science, technology, engineering, and mathematics (STEM) majors is particularly challenging for professional counselors who work in college settings, as STEM students are a subgroup of college students that face unique risks for developing mental health issues. The scarcity of literature on STEM student mental health coupled with their reticence to seek counseling is concerning. An important next step in this line of research is understanding why STEM students are reticent to seek counseling. Accordingly, the present investigators validated STEM students' scores on the Revised Fit, Stigma, and Value (RFSV) Scale, a screening tool for measuring barriers to seeking counseling. Results also established the capacity of STEM students' RFSV scores to predict peer-to-peer referrals to the counseling center and revealed demographic differences in barriers to counseling. Findings have implications for enhancing professional counselors' efforts to support STEM students' mental health.

Keywords: Revised Fit, Stigma, and Value Scale; STEM; student mental health; barriers to counseling; peer-to-peer referrals

The frequency and complexity of college students presenting with mental health issues is a notable concern for professional counselors who work in university settings (Al-Maraira & Shennaq, 2021; Hong et al., 2022). Students enrolled in science, technology, engineering, and mathematics (STEM) majors are a distinctive group of college students who face unique risks for developing mental health issues (Daker et al., 2021; Kalkbrenner, James, & Pérez-Rojas, 2022; Lipson et al., 2016; Shapiro & Sax, 2011). When compared to their non-STEM counterparts, STEM students are less likely to recognize warning signs of mental distress, and they access mental health support services at lower rates than their peers. In addition, the harsh and competitive academic environment in STEM majors can exacerbate students' risk for mental health distress (Lipson et al., 2016; Shapiro & Sax, 2011). Moreover, Rice et al. (2015) demonstrated that STEM students exhibit higher levels of maladaptive perfectionism, which is associated with higher levels of mental distress.

Whereas substantial academic and financial resources exist to support STEM students (U.S. Department of Education, 2020), there is a dearth of literature on supporting STEM students' mental health, which is essential for retaining students and ensuring their success both in and out of the classroom (Kivlighan et al., 2021; Schwitzer et al., 2018). This gap in the literature is concerning, as STEM students are at risk for mental health issues, which can lead to attrition, isolation, and suicide (Daker et al., 2021; Kalkbrenner, James, & Pérez-Rojas, 2022; Lipson et al., 2016). As just one example, academic mental health distress is a significant predictor of lower enrollment and completion rates in STEM fields (Daker et al., 2021). Moreover, Muenks et al. (2020) found that higher levels of psychological vulnerability among STEM students was a significant predictor of lower class attendance, higher dropout intentions, and less class engagement.

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The literature is lacking research on why STEM students tend to seek counseling at lower rates than non-STEM students. One of the first steps in supporting STEM students' mental health is validating scores on a screening tool for identifying barriers to accessing mental health support services among STEM students. Although screening tools that appraise barriers to counseling exist, none of them have been validated with STEM students. The Revised Fit, Stigma, and Value (RFSV) Scale is a screening tool for appraising barriers to counseling that has been normed with non-college-based populations (e.g., adults in the United States; Kalkbrenner & Neukrug, 2018) and college students with mental health backgrounds (e.g., graduate counseling students; Kalkbrenner & Neukrug, 2019), as just a few examples. When compared to the existing normative RFSV Scale samples, STEM students are a distinct college student population who utilize counseling services at lower rates than students in mental health majors (e.g., psychology; Kalkbrenner, James, & Pérez-Rojas, 2022). The psychometric properties of instrumentation can fluctuate significantly between different populations, and researchers and practitioners have an ethical obligation to validate scores on instruments before interpreting the results with untested populations (Mvududu & Sink, 2013). Accordingly, the primary aims of the present study were to validate STEM students' scores on the RFSV Scale (Kalkbrenner & Neukrug, 2019), test the capacity of RFSV scores for predicting referrals to the counseling center, and investigate demographic differences in STEM students' RFSV scores.

The Revised Fit, Stigma, and Value (RFSV) Scale

Neukrug et al. (2017) developed and validated scores on the original version of the Fit, Stigma, and Value (FSV) Scale for appraising barriers to counseling among a large sample of human services professionals. The FSV Scale contains the three following subscales or latent traits behind why one would be reluctant to seek personal counseling: Fit, Stigma, and Value. Kalkbrenner et al. (2019) validated scores on a more concise version of the FSV Scale, which became known as the RFSV Scale, which includes the same three subscales as the original version. Building on this line of research, Kalkbrenner and Neukrug (2019) found a higher-order factor, the Global Barriers to Counseling scale. The Global Barriers to Counseling scale is composed of a total composite score across the three single-order subscales (Fit, Stigma, and Value). Accordingly, the Fit, Stigma, and Value subscales can be scored separately and/or users can compute a total score for the higher-order Global Barriers to Counseling scale.

Scores on the RFSV Scale have been validated with a number of non-college populations, including adults in the United States (Kalkbrenner & Neukrug, 2018), professional counselors (Kalkbrenner et al., 2019), counselors-in-training (Kalkbrenner & Neukrug, 2019), and high school students (Kalkbrenner, Goodman-Scott, & Neukrug, 2020). If scores are validated with STEM students, the RFSV Scale could be used to enhance professional counselors' mental health screening efforts to understand and promote STEM student mental health. Specifically, campus-wide mental health screening has implications for promoting peer-to-peer mental health support. For example, college counselors are implementing peer-to-peer mental health support initiatives by training students to recognize warning signs of mental distress in their peers and, in some instances, refer them to college counseling services (Kalkbrenner, Sink, & Smith, 2020).

Peer-to-Peer Mental Health Support

College students tend to discuss mental health concerns with their peers more often than with a faculty member or student affairs professional (Wawrzynski et al., 2011; Woodhead et al., 2021). To this end, the popularity and utility of peer-to-peer mental health support initiatives has grown in recent years (Kalkbrenner, Lopez, & Gibbs, 2020; Olson et al., 2016). The effectiveness of these peer-to-peer support initiatives can be evaluated by test scores (e.g., scores on mental distress and well-being inventories) as well as non-test criteria (e.g., increases in the frequency of peer-to-peer mental health

referrals). For example, Olson et al. (2016) found that college students who attended a Recognize & Refer workshop were significantly more likely to refer a peer to counseling when compared to students who did not attend the workshop. Similarly, Kalkbrenner, Lopez, and Gibbs (2020) found that increases in college students' awareness of warning signs for mental distress were predictive of substantial increases in the odds of making peer-to-peer referrals to the counseling center.

Peer-to-peer mental health support also has implications for improving college student mental health (Bryan & Arkowitz, 2015; Byrom, 2018; Caporale-Berkowitz, 2022). For example, Bryan and Arkowitz (2015) found that peer-run support programs for depression were associated with significant reductions in depressive symptoms. In addition, Byrom (2018) demonstrated that peer support interventions were associated with increases in college students' well-being. The synthesized results of the studies cited in this section suggest that peer-to-peer mental health support has utility for promoting mental health among general samples of undergraduate college students. However, to the best of our knowledge, the literature is lacking research on peer-to-peer mental health support with STEM majors, a subgroup of college students with unique mental health needs (Daker et al., 2021; Lipson et al., 2016; Shapiro & Sax, 2011).

The Present Study

College counseling services are a valuable resource for students, as attendance in counseling is associated with increases in GPA and retention rates (Kivlighan et al., 2021; Lockard et al., 2019; Schwitzer et al., 2018). Considering STEM students' unique vulnerability to mental health distress (Daker et al., 2021; Lipson et al., 2016; Shapiro & Sax, 2011) and their reticence to seek counseling (Kalkbrenner, James, & Pérez-Rojas, 2022), professional counselors who work in university settings need screening tools with validated scores for identifying why STEM students might avoid accessing counseling services. The RFSV Scale has potential to fill this gap in the measurement literature, as a number of recent psychometric studies (e.g., Kalkbrenner, Goodman-Scott, & Neukrug, 2020; Kalkbrenner & Neukrug, 2018) demonstrated support for the psychometric properties of scores on the RFSV Scale with non-college populations. However, the literature is lacking a screening tool for appraising barriers to counseling with validated scores among STEM students. Accordingly, a score validation study with STEM students is an important next step in this line of research, as the internal structure of instrumentation can vary notably between different samples (Mvududu & Sink, 2013). The literature is also lacking research on the potential of peer-to-peer mental support (e.g., students recognizing and referring a peer to counseling) among STEM students. This is another notable gap in the literature, as college students are more likely to discuss mental health concerns with a peer than with faculty or other university personnel (Wawrzynski et al., 2011; Woodhead et al., 2021). If STEM students' scores on the RFSV Scale are validated, we will proceed to test the capacity of scores for predicting peer-to-peer referrals to the counseling center as well as examine demographic differences in STEM students' RFSV scores.

The findings of the present investigation have implications for campus-wide mental health screening, increasing peer-to-peer mental health support, and identifying subgroups of STEM students that might be particularly reticent to seek counseling. To this end, the following research questions (RQs) and hypotheses (H_a) guided the present investigation: RQ1: Is the internal structure of scores on the RFSV Scale confirmed with STEM students? H_a 1: The dimensionality of the RFSV Scale will be confirmed with STEM students. RQ2: Are STEM students' RFSV scores significant predictors of making at least one referral to the counseling center? H_a 2: Higher RFSV scores will emerge as a statistically significant positive predictor of STEM students making one or more peer referrals to the counseling center. RQ3: Are there significant demographic differences in FSV barriers to counseling among STEM students? H_a 3: Statistically significant demographic differences in STEM students' RFSV scores will emerge.

Methods

Participants and Procedures

Following IRB approval, first author Michael T. Kalkbrenner obtained an email list from the Office of University Student Records of all students who were enrolled in a STEM major at a research-intensive university with four campus locations in three cities located in the Southwestern United States. A recruitment message was sent out to the email list via Qualtrics Secure Online Survey Platform. A total of 407 prospective participants clicked on the survey link. A response rate could not be calculated, as Qualtrics does not track inaccurate or inactive email addresses. A review of the raw data revealed 41 cases with 100% missing data. Likely, these 41 prospective participants clicked on the link to the survey and decided not to participate. Following the removal of those 41 cases, less than 20% of data were missing for the remaining 366 cases. Little's Missing Completely at Random test indicated that the data could be treated as missing completely at random ($p = .118$) and expectation maximization was used to impute missing values. An investigation of standardized z-scores revealed six univariate outliers ($z > \pm 3.29$) and Mahalanobis distances displayed eight multivariate outliers, which were removed from the data set, yielding a robust sample of $N = 352$.

Participants ranged in age from 18 to 63 ($M = 24.29$; $SD = 8.59$). The demographic profile for gender identity consisted of 65.1% ($n = 229$) female, 30.4% ($n = 107$) male, 2.0% ($n = 7$) non-binary, 1.1% ($n = 4$) transgender, 0.6% ($n = 2$) an identity not listed ("please specify"), and 0.9% ($n = 3$) prefer not to answer. The ethnoracial demographic profile consisted of 2.6% ($n = 9$) Native Indian or Alaska Native; 3.1% ($n = 11$) Asian or Asian American; 2.0% ($n = 7$) Black or African American; 48.3% ($n = 170$) Hispanic, Latinx, or Spanish origin; 2.0% ($n = 7$) Middle Eastern or North African; 3.4% ($n = 12$) Multiethnic; 36.6% ($n = 129$) White or European American; 1.1% ($n = 4$) Another race, ethnicity, or origin ("please specify"); and 0.9% ($n = 3$) preferred not to answer. The present sample was composed of notably more diverse groups of STEM students when compared to national estimates of STEM students (National Center for Educational Statistics [NCES], 2020). The NCES's estimates revealed fewer women (33.0%, $n = 263,034$) and Latinx (12.3%, $n = 94,927$) STEM students as well as fewer White students (49.8%, $n = 385,132$). But the NCES's national estimates included larger proportions of Black (7.2%, $n = 55,642$) and Asian (11.0%, $n = 85,135$) STEM students when compared to the present sample.

Instrumentation

Participants completed a demographic questionnaire by indicating their informed consent, then confirming they met the following inclusion criteria for participation: (a) 18 years or older, (b) enrolled in at least one undergraduate STEM course, and (c) currently a STEM major. The demographic questionnaire concluded with questions about respondents' age, gender identity, ethnoracial identity, help-seeking history, and if they had referred one or more peers to the counseling center.

The Revised FSV Scale

The RFSV Scale is a screening tool that was designed to measure barriers to seeking counseling (Kalkbrenner, Neukrug, & Griffith, 2019). Participants respond to a prompt ("I am less likely to attend counseling because . . .") for 14 declarative statements on the following Likert scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, or 5 = *Strongly Agree*. The RFSV Scale is composed of three subscales or latent traits behind one's reticence to seek counseling, including Fit, Stigma, and Value. Scores on the Fit subscale can range from 5 to 25, with higher scores indicating more restraint from seeking counseling because one believes the process of counseling is not suitable with their personal worldview (e.g., "I couldn't find a counselor who would understand me"). Scores on the Stigma subscale also range from 5 to 25, and higher scores denote a greater hesitation to seek

counseling due to feelings of embarrassment or shame (e.g., “It would damage my reputation”). Scores on the Value subscale range from 4 to 20, with higher scores indicating a greater disinclination to seek counseling because they believe the effort required would not be worth the potential benefits (e.g., “Counseling is unnecessary because my problems will resolve naturally”).

The Global Barriers to Counseling scale is composed of test takers’ average composite score across the three Fit, Stigma, and Value subscales and produces an overall estimation of a test taker’s sensitivity to barriers toward seeking counseling. Scores on the Global Barriers to Counseling scale range from 13 to 65, with higher scores indicating a greater reticence to seek counseling. The collective findings of past investigators demonstrated evidence for the internal structure validity (confirmatory factor analysis) and internal consistency reliability ($\alpha = .70$ to $\alpha = .91$) of scores on the RFSV Scale with a number of non-college populations (Kalkbrenner, Goodman-Scott, & Neukrug, 2020; Kalkbrenner & Neukrug, 2018, 2019; Kalkbrenner et al., 2019).

Data Analysis

A confirmatory factor analysis (CFA) based on structural equation modeling was computed in IBM SPSS AMOS version 26 to answer the first RQ about the dimensionality of STEM students’ RFSV scores. We used the joint suggestions from Dimitrov (2012) and Schreiber et al. (2006) for acceptable model fit in CFA: chi-square absolute fit index (CMIN; non-significant p -value or χ^2 to $df < 3$), comparative fit index (CFI; .90 to .95 = acceptable fit and $> .95$ = close fit), root mean square error of approximation (RMSEA; $\leq .08$), and the standardized root mean square residual (SRMR; $\leq .08$). Internal consistency reliability evidence of test scores is another important step in testing a scale’s psychometric properties. Cronbach’s coefficient alpha (α) is the most popular internal consistency reliability estimate; however, its proper use is dependent on the data meeting several statistical assumptions (McNeish, 2018). Composite internal consistency reliability estimates, such as McDonald’s coefficient omega (ω), tend to produce more stable reliability estimates of scores. Accordingly, the present investigators computed both α and ω .

College students are more likely to discuss mental health concerns with their peers than with faculty, staff, or other university personnel (Wawrzynski et al., 2011; Woodhead et al., 2021). Accordingly, college counseling researchers and practitioners are devoting more time to peer-to-peer mental health support initiatives with the goal of increasing peer-to-peer referrals to the counseling center (Kalkbrenner, Sink, & Smith, 2020; Olson et al., 2016). Past investigators (e.g., Kalkbrenner, Neukrug, & Esquivel, 2022) found that the RFSV barriers were significant predictors of peer-to-peer referrals to the counseling center with non-STEM students. To test the generalizability of this finding with STEM students, we conducted a logistic regression analysis to answer the second RQ regarding the capacity of STEM students’ RFSV scores to predict at least one peer referral to the counseling center. STEM students’ interval-level composite scores on the Fit, Stigma, and Value subscales were entered into the model as predictor variables. The criterion variable was quantified on a categorical scale. On the demographic questionnaire, students responded to the following question: “Have you ever referred (recommended) another student to counseling services?” and selected either “0 = never referred a peer to the counseling center” or “1 = referred one or more peers to the counseling center.”

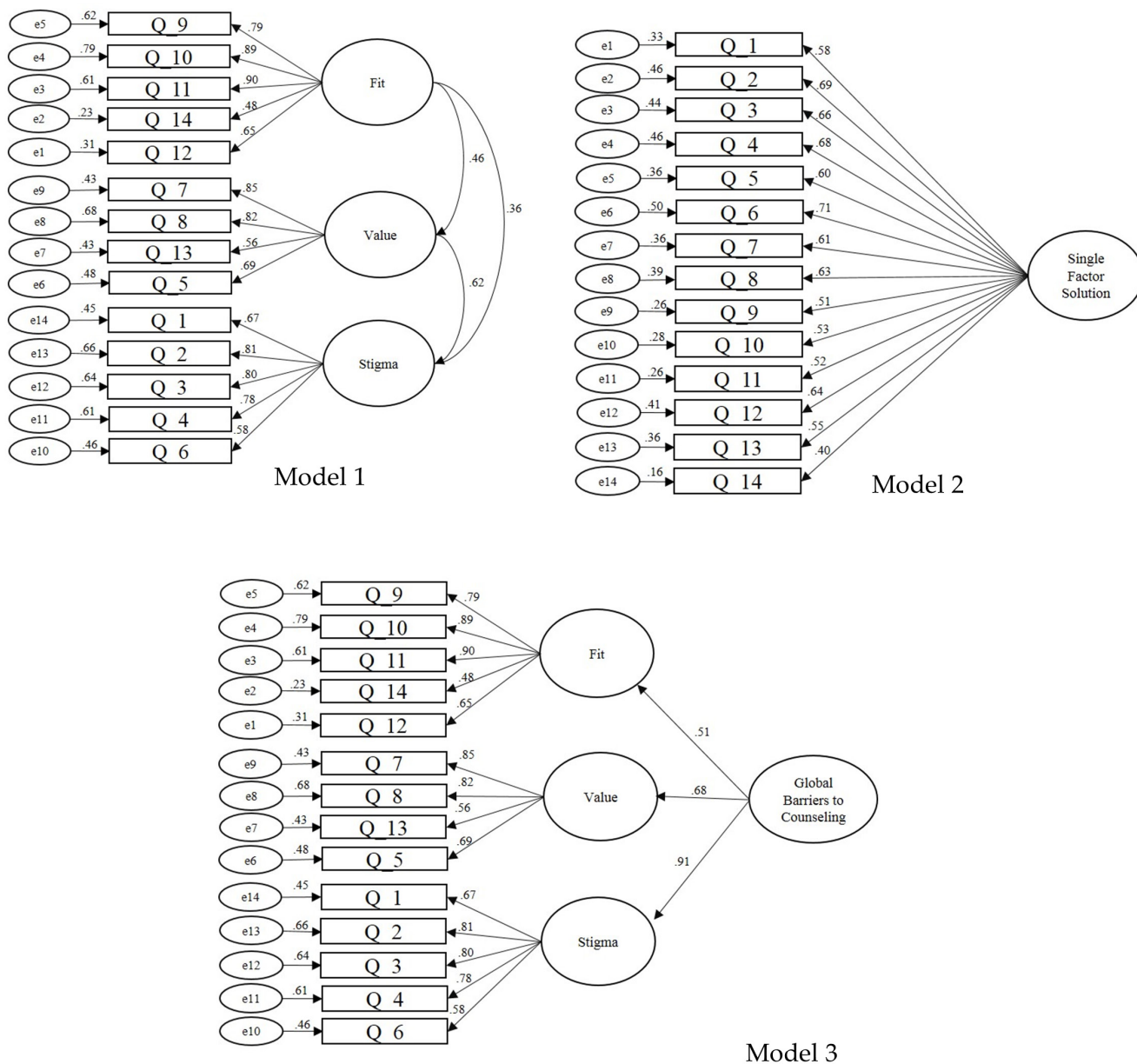
A 2(gender) X 3(race/ethnicity) X 2(help-seeking history) multivariate analysis of variance (MANOVA) was computed to investigate the third RQ regarding demographic differences in RFSV barriers among STEM students. The three categorical-level independent variables included gender (male or female), race/ethnicity (Latinx, White, or other ethnicity), and help-seeking history (never attended counseling or attended at least one counseling session). The three interval-level dependent variables included STEM students’ composite scores on the Fit, Stigma, and Value subscales. Discriminant analysis was employed as a post hoc test for MANOVA (Warne, 2014).

Results

The RFSV Scale items were entered into a CFA to test the dimensionality of scores with STEM students (RQ1). Excluding the CMIN ($\chi^2 [74] = 257.55, p < .001, \chi^2$ to $df = 3.48$), results revealed a satisfactory model fit: CFI = .92; RMSEA = .08, 90% CI [.07, .10]; and SRMR = .08. The CMIN tends to underestimate model fit with samples that are large enough for CFA (Dimitrov, 2012). Thus, adequate internal structure validity evidence of scores was achieved based on the collective CFI, RMSEA, and SRMR results. The standardized factor loadings were all acceptable-to-strong and ranged from .48 to .90 (see Figure 1, Model 1).

Figure 1

Revised FSV Scale Path Models With Standardized Coefficients



Based on the findings of Kalkbrenner and Neukrug (2019), we computed a higher-order confirmatory factor analysis (HCFA) to test for a Global Barriers to Counseling scale. As expected, the single-factor RFSV model (see Figure 1, Model 2) revealed poor model fit: CMIN ($\chi^2 [77] = 1,013.71$, $p < .001$, χ^2 to $df = 13.17$); CFI = .61; RMSEA = .19, 90% CI [.18, .20]; and SRMR = .13. Accordingly, the theoretical support for a higher-order model (Kalkbrenner & Neukrug, 2019) coupled with the poor fitting single-factor model (see Figure 1, Model 2) indicated that computing an HCFA was appropriate. Except for the CMIN ($\chi^2 [74] = 257.55$, $p < .001$, χ^2 to $df = 3.48$), the higher-order model (see Figure 1, Model 3) displayed a satisfactory model fit: CFI = .92; RMSEA = .08, 90% CI [.07, .10]; and SRMR = .08. Tests of internal consistency reliability revealed satisfactory reliability evidence of scores on the Fit ($\alpha = .84$, $\omega = .83$), Stigma ($\alpha = .86$, $\omega = .87$), and Value ($\alpha = .79$, $\omega = .79$) subscales and the Global Barriers to Counseling scale ($\alpha = .88$, $\omega = .88$).

STEM students' RFSV scores were entered into a logistic regression analysis to answer RQ2 regarding the capacity of STEM students' RFSV scores to predict at least one referral to the counseling center. The logistic regression model was statistically significant, $X^2(1) = 80.97$, $p < .001$, Nagelkerke $R^2 = .064$. The odds ratios, $Exp(B)$, revealed that a decrease of one unit in STEM students' scores on the Value subscale (higher scores = less value toward counseling) was associated with a decrease in the odds of having made at least one peer-to-peer referral to the counseling center by a factor of .559.

A factorial MANOVA was computed to answer RQ3 regarding demographic differences in RFSV barriers among STEM students. A significant main effect emerged for gender on the combined dependent variables, $F(3, 316) = 5.23$, $p = .002$, Pillai's Trace = 0.05, $\eta_p^2 = 0.047$. The post hoc discriminant analysis (DA) revealed a significant discriminant function, Wilks $\lambda = 0.93$, $\chi^2 = 23.60$, $df = 3$, canonical correlation = 0.26, $p < .001$. The standardized canonical discriminant function coefficients between the latent factors and discriminant functions showed that the Value factor loaded more strongly on the discriminant function (1.10) than the Stigma (0.17) or Fit (-0.62) factors. The mean discriminant score on the function for male participants was 0.40. The mean discriminant score on the function for female participants was -0.19. In other words, the MANOVA and post hoc DA revealed that male STEM students scored significantly higher (higher scores reflect greater reluctance to seek counseling) on the Value barrier when compared to female STEM students.

A significant main effect also emerged for help-seeking history on the combined dependent variables, $F(3, 467) = 4.65$, $p = .003$, Pillai's Trace = 0.04, $\eta_p^2 = 0.042$. The post hoc DA displayed a significant discriminant function, Wilks $\lambda = 0.93$, $\chi^2 = 24.10$, $df = 3$, canonical correlation = 0.26, $p < .001$. The standardized canonical discriminant function coefficients between the latent factors and discriminant functions showed that the Value factor loaded more strongly on the discriminant function (1.10) than the Stigma (0.01) or Fit (-0.71) factors. The mean discriminant score on the function for participants without a help-seeking history was 0.25. The mean discriminant score on the function for participants with a help-seeking history was -0.29. In other words, the MANOVA and post hoc DA showed that STEM students without a help-seeking history scored significantly higher on the Value barrier than STEM students with a help-seeking history.

Discussion

The purpose of the present study was to validate STEM students' scores on the RFSV Scale and investigate demographic correlates with the Fit, Stigma, and Value barriers. The CFA results demonstrated that the RFSV Scale and its dimensions were estimated adequately with a sample of STEM students. This finding is consistent with the existing body of literature on the generalizability

of scores on the RFSV Scale with a number of non-college populations (e.g., Kalkbrenner, Goodman-Scott, & Neukrug, 2020; Kalkbrenner & Neukrug, 2018). In addition to a stringent test of internal structure validity, CFA is also a theory-testing procedure (Mvududu & Sink, 2013). Thus, our CFA results indicated that Fit, Stigma, and Value comprise a tri-dimensional theoretical model of barriers to counseling among STEM students. Consistent with the results of Kalkbrenner and Neukrug (2019), we found support for a higher-order Global Barriers to Counseling scale. The presence of a higher-order factor (see Figure 1, Model 3) indicates that the covariation between the first-order Fit, Stigma, and Value subscales comprises a meta-level latent trait. Collectively, the single-order and higher-order CFA results indicate that Fit, Stigma, and Value are discrete dimensions of an interconnected latent trait. Accordingly, CFA results provided support for the dimensionality of both the single-order RFSV model (see Figure 1, Model 1) and the higher-order model (see Figure 1, Model 3) with STEM students.

STEM students face unique risks for mental health issues, including maladaptive perfectionism as well as intense pressure to perform in harsh and competitive academic environments (Rice et al. 2015; Shapiro & Sax, 2011). These unique risk factors coupled with STEM students' reticence to seek counseling (Kalkbrenner, James, & Pérez-Rojas, 2022) created a need for a screening tool for appraising why STEM students might avoid accessing counseling services. The results of the CFA and HCFA in the present study begin to address the gap in the literature regarding the lack of a screening tool with validated scores for appraising barriers to counseling among STEM students. Our CFA and HCFA results suggest that college counselors can use the RFSV Scale as one way to understand why STEM students on their campus are reluctant to access counseling services.

Consistent with the findings of Kalkbrenner and Neukrug (2019), we found statistically significant differences in peer-to-peer referrals and demographic differences in STEM students' scores on the Value barrier. Specifically, increases in STEM students' belief in the value of attending counseling were associated with significant increases in the odds of making one or more peer referrals to the counseling center, as indicated by the moderate effect size of the finding. It appears that STEM students' attendance in personal counseling increases their propensity for recommending counseling to their peers. Similar to Kalkbrenner and Neukrug (2018), tests of group demographic differences revealed that STEM students in the present study with a help-seeking history were less sensitive to the Value barrier than STEM students without a help-seeking history. These findings indicate that attendance in counseling might enhance STEM students' belief that the effort required to attend counseling is worth the benefits. Perhaps experiencing counseling firsthand increases STEM students' belief in the value of counseling as well as their disposition to refer a peer to counseling. This finding has particularly important implications, as STEM students are a distinct college-based population with unique mental health needs who tend to utilize mental health support services at lower rates than non-STEM students (Kalkbrenner, James, & Pérez-Rojas, 2022; Rice et al., 2015; Shapiro & Sax, 2011). In particular, our results suggest that STEM students who access counseling services usually see value in the process. STEM students' general attitudes about counseling might become more positive if more and more STEM students participate in counseling.

Also, consistent with the findings of Kalkbrenner and Neukrug (2018), we found demographic differences in STEM students' scores on the Value barrier by gender identity, with males attributing less value to attending counseling than females. Macro- and micro-systemic gender role forces tend to contribute to men's reticence to seek counseling (Neukrug et al., 2013). These forces might be intensified among male STEM students considering the intersectionality between gender roles and the high-pressure environment in STEM majors to not show vulnerability (Lipson et al., 2016; Neukrug et al., 2013). Specifically, gender-role pressures to avoid showing vulnerability coupled

with a high-pressure academic environment might make male STEM students especially reluctant to seek counseling. Men are also less likely than women to recognize and seek treatment for mental health issues (Kalkbrenner & Neukrug 2018; Neukrug et al., 2013). Thus, it is also possible that male STEM students are less likely to recognize mental distress as a potentially serious health issue, which contributes to them placing less value on the benefits of counseling when compared to their female counterparts. Future research is needed to test these possible explanations for this finding.

Implications

The findings of this study have a number of implications for professional counselors who work in college settings. The CFA and HCFA results extend the psychometric properties of the RFSV Scale to STEM students (RQ1), which is an important contribution to the measurement literature, as the scale offers professional counselors a brief screening tool that usually takes 10 minutes or less to complete. The RFSV Scale can be administered at the systemic level (e.g., all STEM students at a university). Tests of internal structure reveal support for a three-dimensional RFSV model (see Figure 1, Model 1) as well as a higher-order model (see Figure 1, Model 3) with STEM students. Accordingly, professional counselors can administer and score one or both RFSV models depending on their mental health screening goals. The Global Barriers to Counseling scale might have utility for college counselors who are aiming to gather baseline information about STEM students' general reticence to seek counseling. The three-dimensional model can provide more specific information (Fit, Stigma, and/or Value) about the reasons why STEM students on a particular campus are reluctant to seek counseling.

Our results reveal that increases in STEM students' scores on the Value subscale were associated with a noteworthy increase in the odds of making a peer-to-peer referral to the counseling center. This finding coupled with STEM students' vulnerability to mental distress (Daker et al., 2021; Kalkbrenner, James, & Pérez-Rojas, 2022; Lipson et al., 2016; Shapiro & Sax, 2011) suggests that peer-to-peer referrals to mental health support services might be more important than ever before in connecting STEM students in mental distress to support services. Professional counselors who work in college settings can administer the RFSV Scale to STEM students and use the results as one method of informing the content of peer-to-peer mental health support initiatives. If, for example, STEM students on a particular campus score higher on the Value subscale (higher scores denote less value toward counseling), there might be utility in including information about the many benefits of counseling in peer-to-peer outreach initiatives for STEM students. Specifically, it might be beneficial to discuss both the academic and personal benefits associated with attending counseling. For groups of STEM students who score higher on the Stigma scale, college counselors might take a strengths-based perspective by discussing how attending counseling takes courage and strength.

College counselors and student affairs officials can reach STEM students by partnering with STEM faculty and administrators to attend STEM orientations and classes that are held in large lecture halls. College counselors may build relationships with department heads and program directors of STEM programs through sharing empirical evidence on STEM students' unique mental health needs and their reticence to access mental health support services (Kalkbrenner, James, & Pérez-Rojas, 2022; Lipson et al., 2016; Shapiro & Sax, 2011). College counselors might also discuss how increases in STEM students' mental health is associated with greater retention and academic success, which are key values in STEM programs (Daker et al., 2021; Lockard et al., 2019; Meaders et al., 2020; Muenks et al., 2020). As buy-in from STEM department heads and program directors increases, there might be utility in professional counselors regularly making presentations and facilitating discussions about mental health and the benefits of attending counseling during new STEM student orientations. The content of these presentations can be based on the extant literature regarding the socio-personal factors that can

place STEM students at risk for mental distress—for example, maladaptive perfectionism (Rice et al., 2015), high-pressure academic environments (Shapiro & Sax, 2011), and difficulty recognizing warning signs for mental distress (Kalkbrenner, James, & Pérez-Rojas, 2022). Once STEM students learn about these socio-personal factors, the presentation content can shift to psychoeducation about the utility of counseling for improving both personal and academic outcomes (Lockard et al., 2019).

The RFSV Scale can also be administered on more targeted levels, for example, to specific groups of STEM students who might be particularly vulnerable to mental health distress. There might be utility in administering the RFSV Scale to male STEM students considering that we found male STEM students were more sensitive to the Value barrier than female STEM students. College counselors can use the RFSV results to identify specific barriers (e.g., Value) that might be making STEM students on their campus unlikely to access counseling services. Such results can be used to inform the curriculum of mental health programming (e.g., peer-to-peer support initiatives). When working with male STEM students, college counselors might consider the intersectionality of academic pressure (Lipson et al., 2016) and gender-role-based mental health stressors (Neukrug et al., 2013) they might be facing. In all likelihood, considering the intersectionality between these socio-personal factors will help college counselors address their clients' presenting concerns holistically.

Limitations and Future Research

The methodological limitations of this research should be reviewed when considering the implications of the results. The present data were collected from STEM students in three different cities located in the Southwestern United States; however, results might not generalize to STEM students in other geographical locations. Future researchers can validate RFSV scores with national and international samples of STEM students. Moreover, the findings of cross-sectional research designs are correlational, which prevents researchers from drawing conclusions regarding cause-and-effect. Now that STEM students' scores on the RFSV Scale are validated, future investigators can extend this line of inquiry by conducting outcome research on the effectiveness of interventions geared toward promoting the utilization of mental health support services among STEM students.

Although factor analytic results in the present study were promising, STEM students are not a homogenous group. To this end, future investigators can extend this line of research by conducting factorial invariance testing to examine the psychometric equivalence of RFSV scores across subgroups of STEM students. As just one example, past investigators (e.g., Shapiro & Sax, 2011) found differences in STEM students' mental health by gender identity. Relatedly, our results did not reveal demographic differences by race/ethnicity in STEM students' vulnerability to barriers to counseling. However, we used a dummy-coding procedure to create racial/ethnic identity comparison groups (Latinx, White, or other ethnicity) that were large enough for statistical analyses. Clustering participants with racial/ethnic identities other than White or Latinx into one group might have masked significant findings within the other race/ethnicity group. It is also possible that some participants identified as White and Latinx, as White is a racial category and Latinx is an ethnic category. Future researchers should examine potential disparities in barriers to counseling among more racially and ethnically diverse samples of STEM students. In an extension of the extant literature on samples of primarily male STEM students, the present study included notably more (> 50%) female STEM students when compared to a national demographic profile of STEM students (NCES, 2020). However, the findings of the present study might not generalize to STEM students with gender identities that extend beyond only male or female. Accordingly, future researchers can test the invariance of RFSV scores with more gender-diverse samples.

The findings of the CFA and HCFA in the present study supported Fit, Stigma, and Value as barriers to counseling among STEM students. However, the deductive nature of quantitative research does not capture the nuances of participants' lived experiences. One way that future investigators can extend this line of research is through qualitative investigations of STEM students' attitudes and values about seeking counseling services. Qualitative results might reveal important nuances and insights into STEM students' propensity to access mental health support services.

Conclusion

To the best of our knowledge, the present investigation is the first to establish the psychometric properties of a barriers to counseling tool with STEM students. The results represent an important contribution to the measurement literature, as confirming the internal structure of test scores on an existing measure with a previously untested population is a vital step in demonstrating construct validity. We also found that decreases in STEM students' reticence to seek counseling was predictive of statistically significant increases in the odds of making a peer referral to the counseling center. In addition, results revealed demographic differences in barriers to counseling among STEM students by gender and help-seeking history. Collectively, our findings suggest that professional counselors who work in college settings can use the RFSV Scale as one way to support STEM college student mental health by identifying why STEM students might be reticent to access counseling services. Supporting STEM students' mental health has implications for increasing their retention rates, completion rates, and overall psychological well-being.

Conflict of Interest and Funding Disclosure

The authors reported no conflict of interest or funding contributions for the development of this manuscript.

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