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How to Conduct Research in Your Private Practice

Jacqueline B. Persons[1, 2]
[1] Oakland Cognitive Behavior Therapy Center
[2] University of California, Berkeley

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Correspondence concerning this article should be addressed to Jacqueline B. Persons, Oakland Cognitive Behavior Therapy Center, 5625 College Avenue, Suite 215, Oakland, CA, 94618. E-mail: persons@oaklandcbt.com

Abstract

Mental health professionals who work in private practice and other clinical settings have huge opportunities to contribute to the science of our field. But they rarely do so. This article describes ways that practitioners who have research training can capitalize on recent developments in practice, science, and technology to conduct research in their private practice. I describe a model for conducting research as a practitioner that entails tightly integrating the research into clinical practice, and I point out why conducting research in your private practice is worth doing. The remainder of the article provides a primer, describing strategies for implementing in a clinical setting all the elements of the research enterprise: Addressing ethical and legal issues, keeping up to date with the scientific literature, selecting a good research question, conducting a single case experimental design, finding collaborators and assistants, collecting the data, analyzing the data, writing the paper and getting it published, and handling time and money. Although this article focuses on research in a solo or group private practice setting, many of the strategies described here can also prove useful in the conduct of research in hospital or community settings.

Keywords: private practice, practice-based research, progress monitoring, measurement-based care

How to Conduct Research in Your Private Practice

Mental health professionals who work in private practice and other clinical settings have huge untapped opportunities to contribute to the science of our field. They grapple daily with the full range of psychopathology and painful problems in living. They have learned important skills to promote change and to personalize care for each individual they treat. In addition, they collect many types of observational, self-report, and other data to guide their work. These are rich longitudinal data that observe change as it unfolds over time, shed light on understudied populations and problems, permit tests of important hypotheses about psychopathology and the change process in psychotherapy, and have high external validity.

However, these data rarely contribute to the science of our field. The failure of practitioners to contribute to the scientific literature is a huge loss to the field. As Kazdin (2008) pointed out, "[W]e are letting the knowledge from practice drip through the holes of a colander." (p. 155).

I argue in this article that the gap between practice and science in our field is ripe for change. Recent developments in practice, science, and technology make it easier than ever before, and easier than practitioners may realize, for them to contribute to the science of our field. In *practice*, the field is embracing evidence-based practice and measurement-based care, so that systematic data collection by practitioners is now an essential element of clinical practice (APA, 2006; Boswell, 2020). In *science*, increasing recognition by clinical scientists of the limitations of group-based research designs (Fisher et al., 2018) has led to the development of new methodologies for studying intensive longitudinal data from a single case (Piccirillo & Rodebaugh, 2019), and the open science movement is increasing access to the scientific literature and to free open-source software for collecting data, conducting statistical analyses, and more. New developments in *technology* make it easy and inexpensive to collect assessment data during treatment using secure online tools that patients can access from their smartphone, and for practitioners to access the scientific literature and other tools (e.g., statistical packages) they need for research, and to collaborate with investigators anywhere in the world.

In this article I describe ways practitioners can capitalize on these developments in practice, science, and technology to conduct research in their private practice. My audience is the sizeable group of mental health professionals who were trained to conduct research but are letting those skills lay fallow as they engage in their clinical work. I focus on private practice because it is the most common work setting for research-trained psychologists who work as practitioners (Norcross et al., 2005), because private practitioners have the autonomy to carry out the activities I describe here, and because I have experience conducting research in that environment. However, I expect the methods I describe here for implementing research in clinical practice to be useful in other practice settings as well.

I begin the article with a brief overview of the model I use and recommend to practitioners for conducting research in practice, and I anchor the model in the context of other important models for conducting research in practice and efforts to link practice and science. Next, I offer a rationale for conducting research in your private practice. In the remainder of the article, I offer strategies for handling many of the challenges that clinician-researchers encounter: Addressing ethical and legal issues, keeping up to date with the scientific literature, selecting a good research question, conducting a single case experimental design, finding collaborators and assistants, collecting the data, analyzing the data, writing the paper and getting it published, and handling issues of time and money.

A model for conducting research in practice: Simultaneous Practice and Research

I describe here a model for conducting research in clinical practice that I have dubbed Simultaneous Practice and Research (Persons, 2018) because many of the research and practice activities happen simultaneously. In Simultaneous Practice and Research, the research is based on hypotheses that clinicians develop and data they collect as they go about their daily clinical work. The smooth fit of science and practice in the Simultaneous Practice and Research model is tied to the fact that good clinical work itself relies on hypothesis-testing, especially about the mechanisms that maintain a patient's symptoms and underpin the change process. These hypotheses are of central importance to both the clinician who is working to help his or her patient and to the science of our field, and for that reason, the data clinicians collect to guide their clinical work can also contribute to the advance of knowledge in our field (Boswell, 2020; Kazdin, 2008; Persons 2007).

The Simultaneous Practice and Research model shares elements with other models of practice-based research, including the patient-focused research model described by Wolfgang Lutz, the practice-based evidence model described by Michael Barkham and colleagues, and the Practice Research Network model developed by Louis Castonguay (see Castonguay et al., 2013 for a description of all three models). Other models for conducting research in a clinical practice setting are described by LeJeune and Luoma (2015) and in the edited book by Trent Codd III (2018). Another important contribution to bridging the gap between science and practice is the collaborative Two-Way Bridge between research and practice that was developed jointly by Divisions 12 (Society of Clinical Psychology) and Division 29 (Psychotherapy) of the APA (Goldfried et al., 1984), which established a mechanism for clinicians to provide input to researchers.

Why conduct research in your practice

Conducting research in your clinical practice offers many rewards. One is clinical. Your research effort can improve the quality of care you provide to your patients and the outcomes you obtain. Lewis et al. (2018) showed that patients treated by clinicians who use measurement-based care (defined as "the systematic evaluation of patient symptoms before or during each clinical encounter to inform behavioral health treatment" (p. E2)) have better outcomes than patients whose clinicians do not do this. Conducting research requires you to keep up with the literature and latest findings in your field, and this effort can also strengthen your clinical work.

Second, conducting research gives you the opportunity to make a larger contribution. Participating in research allows you to help not just the patients who come into your office, but the patients treated by many other clinicians for generations to come. As a clinician in the front lines of clinical practice, you have a unique opportunity to share with others knowledge you have gained from your unique clinical experiences that otherwise may be lost. Clinicians can highlight and investigate phenomena that we view as important that are under-studied by researchers, including the role of the idiographic case conceptualization, the effects of comorbidity, and the management of therapy-interfering behavior. Think about what you have learned from your clinical experience that could contribute to the science in our field and the treatments available to our patients. Use that idea to guide your data collection in your practice, carry out a piece of research to test your hypothesis, and disseminate your findings to the scientific community.

Third, by adding a research element to your clinical practice, you can build a unique professional identity as an accomplished and esteemed practitioner in your professional community. Finally, the process of conducting research will provide you with a collegial network that provides you with a rewarding antidote to the isolation that many practitioners experience. As a researcher, you will interact with collaborators, assistants, other investigators, journal editors and reviewers, conference program chairs and reviewers, and many others as a participant in the national and international community of scientists and scholars.

The benefits of conducting research in your clinical practice are real. So are the challenges. In the remainder of the paper, I describe strategies that research-trained mental health professionals can use to carry out, in their private practice, the key tasks of the research enterprise, beginning with the ethical ones.

Addressing Ethical and Legal Issues

The primary ethical challenges confronted by the clinician who aims to conduct research in his or her clinical practice are obtaining and documenting training in the ethical conduct of research, obtaining informed consent for research from patients, navigating the dual relationship of treatment provider and research investigator, identifying what type of ethical review process is needed for your research proposal, and implementing the review in an affordable way. A key legal challenge is determining whether you are required to obtain the patient's HIPAA authorization for research and obtaining the authorization. I discuss all these issues briefly here, and I point readers to sources where they can obtain more detailed information.

Both to expand your knowledge and to strengthen your liability protection, it's a good idea to complete a course on the ethics of conducting human research. This can easily be done online free or at a low cost, and some courses even provide continuing education units. Persons et al. (2021) and the box below list some sources for obtaining those trainings.

A bedrock principle underpinning research (Amdur et al., 2006) is that patients must provide informed consent for use of their data for research. If you want to collect data simply for program evaluation purposes, and the information will be shared by you and your practice colleagues but not the larger scientific community, this is not research and informed consent from your patients is not needed (Amdur et al., 2006). But if you want to use data you collect from your patients to contribute to the body of scientific knowledge, you must obtain the patient's informed consent for research. To do this, you can add a paragraph asking the patient for consent for research to the document in which you obtain the patient's consent for assessment and treatment. The APA Ethical guideline (American Psychological Association, 2017) in section 8.02 describes the elements of informed consent for research. I provide the document I use, which includes all those elements listed by the APA Ethical guideline at https://oaklandcbt.com/resources-for-clinician-researchers.

When you identify a hypothesis you want to test in a piece of research, it's important to obtain some sort of ethical review of your proposed project. You are not generally required by federal law to obtain a review of your research by a federally registered institutional review board (IRB) unless your project is supported by federal funding (Persons et al., 2021). Nevertheless, a documented ethical review of your project can help you be confident that you are holding to generally accepted ethical principles of research and protect you in the unlikely event of a disgruntled research participant or some other adverse event. A detailed description of the range of strategies available for obtaining an ethical review of a piece of research conducted in a

clinical practice setting are outside the scope of this article and are described in detail in Persons et al. (2021). Because the Simultaneous Practice and Research model I highlight here involves the study of data that were collected for clinical purposes, the researcher will often be studying archival (that is, already-collected) data. If the clinician-researcher is working with an institutional review board, s/he can inquire about whether research based on archival data is eligible for an expedited review process.

The clinician who is collecting data both for clinical and research purposes has a dual role and relationship with his/her patient as provider and as researcher and must carefully attend to APA ethical principle 3.05 to verify that the research agenda does not "impair the psychologist's objectivity, competence, or effectiveness in performing his or her functions as a psychologist, or otherwise risks exploitation or harm to the person with whom the professional relationship exists." (APA, 2017). The Simultaneous Practice and Research model addresses this issue well, because the research flows directly out of the clinical work, and many of the tasks clinicians using the Simultaneous Practice and Research model carry out to promote their research agenda do not impair the clinician's competence or effectiveness; in fact, they advance it, and this is especially true of the tasks of collecting good assessment and progress monitoring data, and staying up to date with the literature. Nevertheless, it is important to monitor your research interests and behaviors, to be sure that your research goals do not impede the clinical work or impose more than a minimal burden on your patient.

A legal issue confronting all private practitioners doing research is that if your practice is covered by the federal government's Health Insurance Portability and Accountability Act (HIPAA), you must obtain the patient's HIPAA authorization for research. You can obtain information about whether your practice is a HIPAA covered entity at

https://personcenteredtech.com/2013/05/16/am-i-a-hipaa-covered-entity-how-much-does-it-matter-if-i-am-or-not/. A sample HIPAA research authorization document is posted at https://oaklandcbt.com/resources-for-clinician-researchers. Depending on the location of your practice, you may have other legal requirements for conducting research in your practice.

Because the Simultaneous Practice and Research model I highlight here involves the study of data that were collected for clinical purposes, the researcher will often be studying archival (that is, already-collected) data. All the points I make above are relevant to the study of archival data. In addition, if the clinician-researcher is working with an institutional review board, s/he may find that research based on archival data is eligible for an expedited review process.

Handling ethical and legal challenges	***Tips***
Obtaining training in research ethics	https://about.citiprogram.org/en/course/human-subjects-research-2/ https://acrpnet.org/courses/ethics-human-subject-protection/
Obtaining informed consent from patients	Add a paragraph asking the patient for consent for research to the document in which you obtain the patient's consent for assessment and treatment. For an example, go to https://oaklandcbt.com/resources-for-clinician-researchers.

Identifying what type of ethical review is needed for your research and implementing the review	A review by a federally registered Institutional Review Board is not generally needed unless your project is federally funded. Other types of ethical review and suggestions for implementing them are described in Persons et al. (2021).
Navigating the dual relationship of treatment provider and research investigator	Discuss the dual relationship with your patient. Monitor your research interests and behaviors to be sure that your research goals do not impede the clinical work or impose more than a minimal burden on your patient.
Ascertaining whether your practice is a HIPAA-covered entity and obtaining the patient's HIPAA authorization for research	Useful material on the definition of a HIPAA covered entity: https://personcenteredtech.com/2013/05/16/am-i-a-hipaa-covered-entity-how-much-does-it-matter-if-i-am-or-not/ A sample HIPAA research authorization document is posted at https://oaklandcbt.com/resources-for-clinician-researchers

Keeping Up to Date with the Scientific Literature

To make a contribution that moves science forward, the clinician-researcher must know where the science currently stands. It's ideal if you can obtain access to a university library; you may be able to do this by obtaining a volunteer or adjunct faculty appointment, perhaps by contributing to the clinical training of the graduate students. However, even without library privileges, the internet and the open science movement make access to the scientific literature easier than ever before. A simple search on Google Scholar can open the portal to the literature in your area of interest. The full text of many publications is posted on Google Scholar, and if you cannot locate the full text, you may be able to obtain the abstract or the author's e-mail address so you can reach out directly to the author to get the paper you are seeking. The government website PubMed (https://www.ncbi.nlm.nih.gov/pubmed) posts, free of charge, publications of studies funded by the NIH. Practitioners can often get access to the journals published by professional associations they join, either as part of their membership fee or for a reasonable additional cost. For example, APA members can buy an annual subscription that gives access to the full text of articles from all APA journals for a cost of $139 at the date of this writing. ResearchGate (www.Researchgate.net) is a social networking site for researchers, who share copies of their publications to the site, and you can go there and get them and communicate with investigators. Another option is DeepDyve, a commercial website that sells access to scientific articles from a wide range of academic publishers; some access is free, and a

professional subscription costs about $50/month. Most journals, whether you are a subscriber or not, will allow you to sign up to receive an alert that provides the titles and abstracts of the articles in the latest issue of the journal. Attending conferences to hear talks in which researchers present their latest work is also a great way to stay up to date.

Resources that provide access to the scientific literature

- Google Scholar (https://scholar.google.com/)
- PubMed (https://www.ncbi.nlm.nih.gov/pubmed)
- ResearchGate (www.Researchgate.net)
- DeepDyve (www.deepdyve.com)

Choosing a Good Research Question

When conducting research using data collected for clinical purposes, the best research questions are those that flow out of clinicians' efforts to help their patients. Fortunately, these questions are important to science as well as to practice (Kazdin, 2008; Persons, 2007). I discuss several examples here: the effectiveness of innovative interventions, the effectiveness of personalized interventions, the nature of mechanisms of change during treatment, and the psychometric properties and treatment utility of assessment and clinical support tools. Other important questions clinicians can study include factors associated with treatment outcome and dropout (e.g., Gates et al., 2021), therapist effects (e.g., Kraus et al., 2011), and the trajectory of the change process (e. g., Lutz et al, 2009).

The Effectiveness of Innovative Interventions

Our field needs treatment innovations. Large numbers of patients do not benefit from the currently available evidence-based therapies (Cuijpers et al., 2014). We lack empirically supported psychosocial treatments for many important problems, including, for example, many disorders (e.g., most personality disorders, Persistent Depressive Disorder, dissociative disorders), and innumerable conditions that do not fit neatly into diagnostic categories, such as low empathy, poor insight, and rigid thinking. Practitioners grapple with these phenomena every day and can contribute their intervention innovations.

If you have developed an intervention that helped a patient who has a problem for which we do not currently have any empirically supported treatments, consider writing up your case for publication, so that your creativity and your patient's good fortune can contribute to our field. If you successfully used a treatment that was developed for one problem to treat another, you can make a useful contribution. For example, in a single case series of six individuals, Willson et al. (2016) showed that imagery rescripting, a technique originally developed in the context of treatment for PTSD and personality disorders, can be effective for treating body dysmorphic disorder. Psychotherapists can also test hypotheses about whether the therapies developed in research settings for treatment of single disorders retain their effectiveness when applied in naturalistic settings where patients have many comorbidities and therapists are not guided by a protocol. For example, Stiles et al. (2008) found that the naturalistic outcomes of cognitive-behavioral, person-centered, and psychodynamic therapies across treatment sites in the UK were

comparable to outcomes of the therapies when they were provided in randomized controlled trials in research settings.

Clinicians can also collect data to test the effectiveness of innovations that other creative practitioners have developed that need more empirical study, such as functional analytic psychotherapy (Kohlenberg & Tsai, 1991), and innovations clinicians developed as they adapted to the virtual environment during the pandemic. Treatment failure and harm resulting from treatment are understudied topics where practitioners can contribute. Psychotherapists can make lemonade out of lemons if they publish their failures and report what they learned from them.

Questions readers can ask themselves to identify possible scientific contributions in this area include: What treatment innovations have I developed? Are my patients benefiting from an innovative treatment developed by someone else for which little or no evidence has been published? Am I using a treatment or techniques in a novel way or with a novel population? Did I have a recent treatment failure from which I learned something and that would contribute to the literature if I published it?

The Effectiveness of Personalized Interventions

Clinicians always personalize the treatment they provide, adapting it to the patient's demographic and diagnostic features, preferences, values, attachment style, reactance level, and other factors. Studies of these personalization efforts can make useful contributions to the literature, such as the finding that less directiveness by therapists improves the outcomes of reactant clients in alcoholism treatment (Karno & Longabaugh, 2005). Particularly important now are questions about the degree to which our currently available empirically-supported treatments, most of which were developed by White people and studied in White samples provide help to BIPOC individuals. We also want to know about the effects of gender and sexual orientation diversity, ethnicity, culture, acculturation, stigma, and discrimination on the process and outcome of psychotherapy.

To identify their potential for contributing in this area, readers can ask themselves: Have I had experience successfully adapting an empirically supported treatment that was studied in a White sample to an individual who differed from that sample in race, culture, ethnicity, acculturation, disability, gender diversity, sexual diversity, psychiatric comorbidity, medical illness, socio-economic status, or in any other way? Do I have data showing that I provided treatment that improved my patients' functioning or well-being or another outcome that was of personal interest to my patient but has not been extensively studied by the research literature?

Mechanisms of Change During Treatment

There is wide agreement (e.g., Kazdin, 2007) that an understanding of the mechanisms responsible for change during a therapy can help us strengthen the therapy. Nevertheless, despite the millions of dollars spent on randomized trials to identify efficacious treatments, we have little information about how the empirically-supported treatments work (Nielsen et al., 2017). Two questions about the change process are of particular interest to both clinicians and researchers: Do the interventions of the therapy produce the expected changes in the treatment targets of the therapy? Do the changes in the treatment targets produce the expected changes in the patient's symptoms? In a creative example of the use of a single case experimental design to study these questions, Boswell et al. (2014) studied whether symptoms of depression and anxiety changed

when treatment targets (e.g., mindfulness and cognitive appraisal) changed, and whether changes in those psychological mechanisms occurred after the interventions targeting those mechanisms were delivered, as would be expected. As in the Boswell (2014) example, practitioners can test hypotheses about mechanisms, that is, what Kazdin (2007) defines as "the processes or events that are responsible for the change." (p. 3). Practitioners can also study mediators, defined by Kazdin (2007, p. 3) "an intervening variable that may account (statistically) for the relationship between the independent and dependent variable. . . A mediator may be a guide that points to possible mechanism but is not necessarily a mechanism."

Questions readers can ask themselves to identify scientific contributions they can make in this area include: What psychological mechanisms does my case formulation propose are maintaining symptoms in this patient or a group of patients? What interventions am I using to attempt to change those mechanisms? Can I collect data to evaluate whether my interventions are producing changes in these mechanisms, and/or whether changes in these mechanisms are producing the changes in symptoms I am expecting? Can I collect data to test my hypotheses?

Psychometric Properties and Treatment Utility of Assessment and Clinical Support Tools

Practitioners can provide valuable data about the psychometric properties of assessment tools and methods. For example, Moore et al. (2015) found that the Overall Anxiety Severity and Impairment Scale (OASIS), which previously had been examined only in the context of clinical trials in academic settings, had strong psychometric properties in their clinical practice setting. The increasing importance of monitoring progress in treatment increases the importance of studying the sensitivity to change of assessment tools (see Hunsley & Mash, 2018), and clinicians can easily collect the data needed to do these studies.

To identify their potential for contributing to this area, readers can ask themselves: Am I using an assessment tool that is understudied? Do I have information about the sensitivity to change in response to treatment for an assessment tool that I can contribute? Do I have hypotheses about improving clinical decision-making that I can test by collecting data in my practice? Do I need an assessment tool that is not available in the literature, and can I develop it?

Guidelines for selecting research questions and hypotheses

- Select a research question that arises in your clinical work, such as, "Does intervention X help reduce PTSD intrusions?" or "Does change in depressive symptoms in this patient coincide with cognitive change?"
- State your question as a hypothesis, make a prediction about what you will find, and offer a rationale for your prediction
- Identify a clear and specific hypothesis you want to test, not just a topic or interest area
- Check the current state of the literature to see if your hypothesis has already been tested.

Conducting a Single Case Experimental Design

A single case experimental design is ideally suited to the clinical enterprise, as the methodology of conducting a single case experimental design overlaps quite a bit with high

quality evidence-based practice (Hayes, 1981). A single case experimental design (SCED) is different from a case report, and involves repeated measurements, sequential introduction and/or withdrawal of interventions, and analysis of the findings to test hypotheses about the effects of interventions on the dependent variables of interest (Krasny-Pacini & Evans, 2018). A SCED differs from a case report in that the SCED involves tight controls that can provide experimental tests of hypotheses about relationships between interventions and outcomes. Single case studies are receiving increasing attention in the literature recently. One reason for this interest may be that the Oxford Centre for Evidence-Based Medicine (http://www.cebm.net) has rated the SCED as Level 1 evidence for treatment decisions, alongside systematic reviews of randomized controlled trials.

With some planning, you can carry out a study using a single case experimental design. If you can show that your patient's symptom remits during the treatment you provided but not otherwise, you have data showing that the intervention causes changes in the symptom. In an elegant example, Wallenstein & Nock, 2007 published a letter to the editor of the *American Journal of Psychiatry* in which they showed that their patient's nonsuicidal self-injury decreased markedly following introduction of an aerobic exercise intervention, returned when she stopped the exercise, and remitted again when she restarted exercising. The data reported in this publication are the same data an evidence-based practitioner would collect to guide the clinical work, the statistics are simple, and the finding is important.

Kazdin's (2020) text lays out the methods for designing and analyzing data from single case experimental studies. Krasny-Pacini and Evans (2018) also provide a useful step-by-step guide to conducting a SCED. To analyze the data, the practitioner-researcher may be able to use simple visual inspection, or simple *t* tests, as in the Wallenstein and Nock (2007) example. Piccirillo et al. (2019) offer a primer for the clinician of some of the newer idiographic modeling methods that have been developed for analyzing longitudinal data from a single case, and Piccirillo & Rodebaugh (2019) provide a more substantial review of these methods. Piccirillo et al. (2019) point out that most of the statistical analyses needed for idiographic modeling can be conducted using R. Casey Brown and colleagues (2019) provide a case illustration of the use of case-specific regression models to test hypotheses about changes in mechanisms and symptoms during treatment, and offer a web-based platform (go to www.changestat.org) that allows the clinician to simply enter their clinical data and push a few buttons to obtain results of these types of idiographic models for their own cases.

Conducting a single case experimental design: Guidelines

- Start by identifying an outcome measure you'll use to evaluate the effectiveness of your intervention
- Consider also selecting measures to assess control variables (variables you do not expect will change), other variables you expect might change as a result of your intervention, measures that demonstrate implementation of your intervention, measures of the mechanism you expect your intervention to change, and standardized assessments
- An AB design, where A is baseline and B is when you introduce your intervention, that is, you show that your patient's scores on the outcome measure change during B but not A, does not provide sufficient control to meet criteria for a SCED
- To meet minimal criteria for a SCED, your study must demonstrate at least two phase changes (that is, from A to B and back to A, or show in at least 3 participants or

behaviors or contexts that the outcome variable changes only when the intervention is introduced in all 3 cases or behaviors or contexts

Finding Collaborators and Assistants

Borrowing from Hillary Clinton and the African proverb, "It takes a village to conduct research." All researchers need collaborators. This is particularly true for the practitioner who is attempting to establish and maintain an identity as a researcher in the clinical practice world (Osborne, 2018). Even one like-minded colleague who works with you on research can make it possible to sustain the research effort and enjoy the process. Collaborators can also contribute library access, statistical skills, or expertise in a content area. Assistants can help with tasks like conducting literature searches, and assembling a database of your clinical practice data.

One strategy for finding collaborators is to join and take an active role in a professional association of like-minded clinicians, scientists, and clinician-scientists. Participate in the group's listserve, and go to the conference and attend research presentations you are interested in. Useful groups for this purpose include the Society for Psychotherapy Research, Divisions 29 (Psychotherapy) and 12 (Clinical Psychology) of the American Psychological Association, the Society for a Science of Clinical Psychology (section 3 of Division 12 of the APA), the Association for Behavioral and Cognitive Therapies (ABCT), the ABCT Special Interest Group on Research in Clinical Practice, the Association for Contextual Behavioral Science, and the Anxiety and Depression Association of America. Remember that a key thing you have to offer a collaborator is gorgeous data from your clinical setting.

You can also seek collaborators at a local hospital, medical center, or university, attending talks there, or by doing a google search to see if there might be an already-established project you can join. The faculty and students at a local university or professional school are great sources of collaborators and research assistants. Graduate students often have well-developed research skills and may be eager to collaborate with a clinician who has "real world" clinical data. Undergraduate students are often eager to get research experience, especially in a clinical setting, so they can get some research training and a letter of recommendation to help with graduate school applications, and they are often willing to volunteer their time to get these things. To guard against exploitation, take care to provide the students with a good learning and training experience, and try to provide them with work that will allow them to be an author on a conference presentation or publication. If you have a clinical faculty appointment, you may be able to offer the students credit for an independent study course.

You can also hire research assistants, statistical consultants, and others who have time and skills that you do not. Another collaboration strategy is to join a Practice Research Network (PRN), a group of academics and practitioners who collaborate to conduct research in naturalistic

clinical settings (Castonguay et al., 2013). Castonguay and colleagues (2015) describe the process of transforming a psychotherapy training clinic into a PRN.

Sources of collaborators and assistants
● Research investigators, other professionals, and students at local universities, professional schools, or hospitals ● Practitioners who share your interests ● Research investigators you meet at a local grand rounds or similar, or at a professional conference ● Graduate and undergraduate students at a local university ● Statistical consultants or students you can pay by the hour

Collecting the Data

In the Simultaneous Practice and Research model of research, the clinician-researchers' data collection decisions are guided by their clinical needs. The clinician needs initial assessment data to develop a diagnosis and a case conceptualization, and progress monitoring data to monitor the process and outcome of treatment. The progress monitoring data allow the clinician to test hypotheses about mechanisms maintaining the patient's symptoms, the role of the alliance, whether interventions are leading to changes in the mechanisms, and the effectiveness of the interventions at helping patients reach their idiographic goals. These same data, of course, allow the clinician to answer the types of research questions described in the section above on Selecting a Good Research Question.

Clinicians who are new to progress monitoring may want to start by using a standardized symptom scale like the Patient Health Questionnaire (PHQ-9) or the GAD-7 (both reviewed in Kroenke et al., 2010), or the Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995), which assess symptoms common in many depressed adult outpatients. All these measures are in the public domain. Another option is to purchase an online tool like PsychSurveys (www.PsychSurveys.com) or My Best Practice (www.mbpractice.com) that provides a library of assessment tools. Or the clinician can create a simple google doc to track almost anything, and can even use a google doc for the session progress note (a Business Associate Agreement for Google Suite provides a HIPAA compliant platform). The contents of a google doc can be downloaded into an excel document and easily be uploaded into any statistical tool for data analysis. Alternatively, several multi-dimensional scales assessing symptoms, well-being, and functioning have been developed for use in a broad variety of cases, including the Outcome Questionnaire 45 (OQ-45) and the Partners for Change Outcome Management System (PCOMS), both reviewed by Lambert et al. (2018). To identify measures you want to use, you can consult Hunsley & Mash (2018) or Beidas et al. (2014) and the library of public domain measures posted by the NIH Science of Behavior Change Program (Nielsen et al., 2017) (go to www.scienceofbehaviorchange.org).

The increasing availability of smartphone technology also opens the door to the use of ecological momentary assessment (EMA), in which participants receive prompts instructing them to respond on their smartphone to questions posted via a web link or a mobile app. As the name indicates, EMA increases the clinician's access to information about events and symptoms the participant experiences as they unfold in real time. EMA data can provide more fine-grained and accurate information about symptoms, triggers, maintaining mechanisms, and adherence

than is otherwise available (Myin-Germeys et al., 2009). With EMA data, rather than relying on your patient's retrospective recall of their experience, you can review data that were collected in real time. New technologies also permit passive monitoring. Passive sensing can be done by smartphones, which can track things like numbers of texts sent and social media activity, and by wrist-worn biosensors that can record heartrate, movement, sleep duration, heart rate, and skin conductance, thus providing data that can offer an important alternative to the self-report data we otherwise over-rely on. Kleiman & Nock (2017) describe use of EMA and passive sensing methods in research more generally, and Bentley et al. (2019) and Vilardaga et al. (2014) describe using these methods to support collection and analysis of data for a single case design. Although EMA and passively collected data can be extremely clinically useful, these options are likely not ones that clinicians would adopt unless they also had a research agenda. Thus, clinicians who have research goals can expand their thinking about data collection in a way that strengthens both the research and the clinical work.

I conclude this data collection section with several recommendations based on my experience collecting clinical data for research purposes. First, collect process and outcome data at every session. Patients benefit more from treatment when their therapists collect and review feedback data about the patient's progress before or during each session and use the data to guide clinical decision-making (Lewis et al., 2018). And if you are using the data to guide clinical hypothesis-testing about change in mechanisms and other change processes, you will want to see the data at every session. As a clinician, you can collect intensive longitudinal data that even large grant-funded investigations do not collect. Second, collect data online. Online data collection is efficient for patient and clinician alike, especially in pandemic times, and will help the clinician aggregate the data into a database without any additional data entry that can introduce errors. Third, select assessment tools that allow you to download your data in csv or similar format for easy export to a software tool for statistical analysis. Fourth, rely on measures (e.g., the PHQ-9 and the GAD-7) that are widely used in the research community; doing so will increase your ability to compare your results to those of other investigators and pass muster with reviewers and editors who evaluate your manuscript.

Collecting the data: Recommendations

- Collect data at every session
- Collect data to monitor the outcome and process of therapy
- Collect data online
- Rely on software tools that allow you to download the data into a database
- Rely on measures that are widely used by researchers

Analyzing the Data

To analyze your clinical data for group-based studies, you will need to aggregate the data into a database. Over time, you can amass a large and rich database. Persons et al. (2021) provide detailed strategies for creating a research database for group studies from data that were collected for clinical purposes.

Sometimes the design and results of the study are so simple and clear that little or no data analysis is needed, as in the open trial of the effectiveness of case formulation-driven CBT by Persons et al. (2006), which asks a clear and straightforward question of data that are well-suited

to answer it, involves little more than calculating means and standard deviations of pre- and post-treatment scores on symptom measures. These types of analyses can be conducted using Excel.

Of course, as clinician-researchers progress in their work, they will want to ask more complicated research questions that involve more complex statistical methods, especially if they want to be able to capitalize on the intensive longitudinal data they are able to collect as part of their clinical work. Free open-source software like R (R Core Team, 2018) facilitates this work. If you did not learn to use tools like R in graduate school, you may find that your professional association offers training sessions. Collaborators and consultants are essential to the clinician-researcher who never had very good data analysis skills or has not kept up with developments in the field. If you are hiring a statistical consultant to analyze your data, it's important to consult with that person early in the data collection process, to be certain you are collecting the data needed to test the hypothesis you want to test.

Analyzing the data: Tips

- Data analysis can be simple, perhaps just a calculation of pre- and post-test scores on key measures
- Rely on open-source software to store your database and analyze your data
- If your skills are weak or outdated, consider inviting a collaborator who has up-to-date statistical skills to work with you and share authorship on the project
- If you hire a statistical consultant to analyze your data, review the hypotheses and data collection plan with the consultant before you collect the data

Writing the Paper and Getting it Published

No matter how hard you work on your research, you do not contribute to the advance of knowledge in the field unless you publish your findings so others can learn from them. Before writing your paper, it is helpful to identify the journal you want to submit to so you can write with that journal in mind. To select a journal, consider the journals that published the papers that you drew on most as a foundation for your own project and the journals read by the audience you want to reach. Although it can be a bit challenging to publish a single case study, the field is increasingly interested in them (Barlow & Nock, 2009), and numerous journals will publish them (Persons & Jensen, 2018).

When writing your paper, of course use the format described in the APA Publication manual (American Psychological Association, 2020). Daryl Bem (2004) offers a beautifully-written, detailed account of how to write an empirical journal article. He recommends beginning the paper by describing a problem or phenomenon your grandmother would be interested in, rather than stating, "Previous researchers have found. . . ." He also recommends writing the Method and Results sections first, and then framing the Introduction to provide the most elegant possible setting for the jewel of your results. At the same time, scientific ethical behavior does not encourage the strategy of revising your hypotheses to fit your results. Another invaluable reference is *The Elements of Style* (Strunk & White, 2005). The best sentence and piece of advice in the book is: "Omit needless words." (p. 23). Zotero is a useful free reference software tool.

If you are fortunate, you'll get a "revise and resubmit" invitation from the journal. If that happens, write a detailed letter to the editor in which you write out every request for revision and offer your account of how you handled it in your revised manuscript. Try to write your letter in

such a way that the editor, almost without reading the manuscript, is convinced that you addressed each and every revision request the reviewers made. Sometimes you will want to respectfully decline to make certain revisions requested by the reviewers; when you do this, you will need to provide the editor and reviewers with a compelling rationale for your decision

If the journal rejects your paper, as likely will happen if you shoot high enough, examine the reviewer and editor feedback to address any flagrant errors that *must* be corrected, and then submit your paper to another journal without making any other revisions. I have learned the hard way that time spent revising my paper to address the reviews I got from the journal that rejected the paper is wasted when the next journal asks me to make another round of revisions and even questions some of the revisions I just made. Rejections can be demoralizing. To protect myself from getting so demoralized that I abandon the paper, I identify the journal I will submit it to next if I get a rejection letter from the journal that is currently reviewing it.

Persistence is the key to success. All researchers can tell you about good papers they published after multiple rejections. One of my papers (Thomas & Persons, 2013) was published in a prestigious journal seven years after it was first submitted and was rejected at several high-powered and not-so-high-powered journals along the way.

Writing the paper and getting it published: Key points

- Before you write the paper, select the journal you plan to submit to, and write with that journal in mind.
- Select a journal by noting what journals you read most often as you developed your research ideas, and what journals are read by those who want to read your paper.
- Obtain a copy of the APA Publication manual and follow it.
- Begin your paper by describing a phenomenon your grandmother would be interested in, rather than stating, “Previous researchers have found. . .”
- Write in active, not passive voice.
- Be prepared to respond to reviewers’ critiques and resubmit repeatedly until your paper is accepted for publication. Persistence is the key to success.

Handling Issues of Time and Money

The major cost of the research the clinician conducts using the Simultaneous Practice and Research model is the clinician’s time. The Simultaneous Practice and Research strategy addresses this issue in part by tightly integrating the research and clinical tasks, so that some core research tasks, especially data collection and keeping up to date with the literature, are tasks the practitioner is already carrying out as part of the clinical work.

That said, integrating research into one’s clinical practice is only workable if the clinician finds the research process to be intrinsically rewarding. The most fun parts are often formulating hypotheses, working with colleagues, presenting papers at conferences (including international ones that allow you to visit exciting places and write off the cost of your trip as a business expense) to people who are interested in the same things you are interested in. Teaching and mentoring the young research assistants and student collaborators is often intrinsically rewarding as well, and offers the opportunity to pay forward those who did the same for us. To increase the intrinsic value of the research, study questions that interest you. If you have developed a

treatment innovation or assessment tool you believe in, your passion can sustain the research. You can also manage the time cost of research by seeking out a limited research role by sharing duties with others, perhaps colleagues in a group practice, by collaborating with well-established investigators, or joining a Practice Research Network (Castonguay et al., 2013).

Conducting research can yield rewards of recognition, respect, and regard from others in your professional community. However, these rewards typically appear years down the road. Along the way, posting your outcome data and your publications on your webpage can increase the value and reputation of your practice. Finally, it can be intrinsically rewarding to contribute to the development of knowledge in the field. Many practitioners contribute to the field or the community in other ways, including by doing pro bono work or contributing time to professional associations. Instead of doing those things, you can contribute by conducting research.

Costs of research outside of the clinician's time are often quite manageable. Many measures and software tools for managing references, collecting data, and conducting statistical analyses are inexpensive or free. Many talented young people who want to learn from you and get experience to prepare them for graduate school will volunteer their time to help with your research. A key to success here is conducting studies that do not require costly measures or equipment.

Another solution to the money issue is to seek grant funding from NIMH, NIDA, the Patient-Centered Outcomes Research Institute (PCORI) or another funding source. The Small Business Innovation Research grant mechanism is an NIMH mechanism designed to support the development by non-academics of software and other tools. Few granting sources will make a grant to a practitioner (the SBIR mechanism is an exception), and to enter the grant funding world, you will need to collaborate with a colleague based in a university or medical center or be accepted as an investigator of a free-standing research institution that will provide an IRB and administer your grant in exchange for collecting the overhead expense from the grant.

Although seeking research funding is an option for the clinician, the tight link between the clinical work and research using the Simultaneous Practice and Research model lends itself to inexpensive projects that are easy to self-fund. Remember: to make a useful contribution, you do not need to lead a federally funded multi-center randomized controlled trial. An experimental study of a single case can make a fine contribution to the literature, as in the Wallenstein & Nock (2007) publication described as the first example in this article.

Handling issues of time and money: Key points

- Study a question that is intrinsically interesting to you
- Build the background reading, data collection, and other tasks into your clinical work
- Share the work with collaborators and assistants
- Rely on low cost or free software tools for collecting and analyzing data, handling references, and similar
- Consider seeking grant funding

Conclusion

Research-trained clinicians can contribute to the scientific literature by studying the data they collect from their patients to guide their clinical work. Although I focus on private practice,

the strategies described here can be used in other practice settings as well, including hospital settings (Fowler et al., 2019), and community settings (Sauer-Zavala et al., 2019). Although the focus of this article is clinical psychology, the Simultaneous Practice and Research model I describe here can be used by any mental health professional who has research training and by clinicians of any theoretical orientation treating any patient population.

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