

**A Systematic Review of Research in Psychology Training Clinics:
How Far Have We Come?**

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A systematic review of research in psychology training clinics:

How far have we come?

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Abstract

Psychology training clinics provide evidence-based, cost-effective psychological services to the general public, while at the same time providing a training ground for future psychotherapists. Research in training clinics can advance the clinical literature, train psychotherapists in evidence-based practice and improve outcomes for clients. However, since the last published review of research published in psychology training clinics (Todd, Kurcias, & Gloster, 1994), it is unclear how much the training clinic literature has advanced in the last two decades or if findings can be synthesized across sites. A systematic, quantitative literature review with strict inclusion and exclusion criteria described 257 empirical studies conducted in training clinics since the previous review (1993-2015). Studies were coded and categorized into themes by three independent raters. Studies explored the nature and organization of training clinics, client characteristics, assessment, intervention, staff and clinical training, as well as research and research training. Across themes, it appeared that the literature has broadened extensively, highlighting that researchers have embraced training clinics as a sample source. While there was a great breadth of topics researched, there remains insufficient depth in the majority of areas, and a need for multi-site collaborations with a shared research agenda across training clinics. The review highlighted the extent to which training clinics are valuable research locations, although more research is needed to compare different training clinics and between training clinics versus non-training clinics.

Keywords: psychology training clinic; systematic review; psychotherapy; trainee psychotherapist; evidence-based training

A systematic review of research in psychology training clinics: How far have we come?

Due to their limited intake capacity and academic calendar constraints, psychology training clinics tend to be quiet achievers in mental health service delivery. University-affiliated psychology training clinics provide evidence-based, outcome informed assessment and outpatient psychotherapy to the general public or students, within a supportive training environment including increased supervision for trainee psychotherapists. These training clinics are predominantly serviced by psychology, counseling or marriage and family therapy post-graduate students who are not yet fully licensed, although opportunities for clients to see licensed psychotherapists may also be available within the clinic. Research has shown that psychologists in training are often just as effective as experienced psychologists (Hansen, Lambert, & Forman, 2002; Nyman, Nafziger, & Smith, 2010), although they may take a longer to achieve the same results (Callahan & Hynan, 2005; Reese, Norsworthy, & Rowlands, 2009). This effectiveness even with limited training may be due to inherent therapist characteristics (Lutz, Leon, Martinovich, Lyons, & Stiles, 2007; Okiishi et al., 2006), increased supervision (Wheeler & Richards, 2007), feedback and routine outcome monitoring (Miller, Hubble, Chow, & Seidel, 2013; Lambert, 2017), purposeful practice (Chow et al., 2015), or a myriad of other factors.

Training clinics may therefore be an interesting and informative setting for answering the oft-debated questions about what makes psychotherapy effective, whether client outcomes can be modified through psychotherapist training, or whether psychotherapeutic qualities can be made and not born. As clientele are community-based, experiencing genuine mental-health problems that they are seeking help for, training clinics can be a useful and available clinical sample for the research community, who are often physically close to the training clinic. Training clinics also offer a high degree of control and standardization from supervision and training, they serve real

clients with real problems, and they often do not have the strict inclusion/exclusion criteria of randomized controlled trials. Therefore, training clinics may provide a ‘middle ground’ between effectiveness and efficacy research (Neufeldt & Nelson, 1998), combining the most desirable aspects from each approach. Conducting research in training clinics offers further benefits to trainees, including training psychotherapists in evidence-based practice, the routine integration of the latest research findings into their clinical practice to provide the best care for clients, the use of scientific methodology, the curiosity to assess their clients and the development of clinically relevant research topics for further investigation.

However, the extent to which both the research and training communities can synthesize and draw from research conducted in training clinics is unknown. The most recent systematic review of the training clinic literature was published in 1994 (Todd, Kurcias, & Gloster), examining studies published between 1974 and 1992. Clearly, research and training have advanced substantially since this time, but the impact this has had on the training clinic literature is yet to be described. This current review aims to highlight how training clinics are valuable for the research literature and for training the next generation of evidence-based practitioners. It systematically summarises the areas of research conducted in training clinics over the last two decades and highlights where research in training clinics might be able to advance the psychological literature and psychotherapy training.

The previous review of research conducted in psychology training clinics (Todd et al., 1994) included 134 studies, establishing the presence of an extensive literature based on research conducted in training clinics. It highlighted an enormous diversity with respect to the nature, staffing and training in clinics and it was clear that these factors required more systematic and detailed descriptions. However, 36 of the studies included in the review contained no explicit

reference to being conducted in a training clinic. The authors recommended that although training clinic research can, and has, contributed to clinical knowledge, there was still not much known about the clients, services offered and the nature of the clinics themselves, or about the training offered in clinics. Several suggestions were posited to remedy this deficit in the literature: expanding beyond one specific research topic; including contextual information about the clinic and training practices; describing how participant samples compare to the population the clinic serves; comparing what differentiates training clinic environments from each other, such as by differences in service or training, and how these differences might relate to clinical outcomes; encouraging collaboration between training clinics and pooling data across settings; and, most importantly, specifically identifying that research is conducted in a training clinic.

In addition, there were few examples of how research and practice could be integrated within a training environment: an aspect the authors considered particularly achievable given the unique environment of training clinics. The review concluded that due to the diversity of training clinics, the ability to generalize across studies and draw conclusions about ‘training clinics’ in general was unlikely. To consider generalizations across studies, an explicit statement that the research was conducted in a training clinic, along with clearer descriptions of the clinic environments and the variables being researched were required. They further concluded that more research was needed to determine the effectiveness of services provided in training clinics.

Aim of the Current Research

The aim of the current study was to conduct a systematic literature review (from 1993 – 2015) of the published research conducted in psychology training clinics since the last systematic review (Todd et al., 1994). The current review aimed to highlight the recent topics that have been covered by research in training clinics, to reveal topics that have not yet been studied and to

determine whether Todd et al.'s (1994) recommendations were implemented over the next two decades. A systematic quantitative review allows for reproduction, as its methodology is explicit; it reduces bias by aiming to cover all extant literature meeting eligibility criteria; and it provides richer, more detailed information than a traditional systematic narrative review (Pickering & Byrne, 2014). It is also ideal for situations where meta-analyses are not possible due to the diverse methodology or topics covered by the examined research (Pickering & Byrne, 2014). This quantitative methodology highlights areas where research has already provided useful conclusions, but also highlights gaps in the literature, which can be addressed in future research (Pickering & Byrne, 2014).

Method

Eligibility Criteria

Inclusion criteria for studies were: (a) research conducted in a psychology outpatient training clinic (including outpatient clinics servicing only students, such as university counselling centers), (b) use of trainee psychotherapists, (c) original empirical research studies, (d) published in English, and (e) published between 1993 and 2015. Exclusion criteria for studies were: (a) psychiatric studies, including psychoanalytical studies in medical faculties (medical training and treatment is very different to psychological training and treatment), (b) studies published in a language other than English, and (c) non-empirical articles (e.g., descriptive case studies, discussion / commentary articles). It was not possible to differentiate between training clinics that offered first placement practicum and those who offered subsequent practicums, so practicum number was not used as an inclusion or exclusion criteria.

Psychoanalytic studies were retained if these studies utilized trainee psychology therapists; and studies involving trainee psychiatry therapists were retained if trainee psychology

therapists were also included in the same study (i.e., some training clinics provide training opportunities for both trainee psychologists and trainee psychiatrists). Disciplines involving overlapping training with psychology (e.g., counselling, marriage/family therapy etc.) were also retained. Any clinic utilizing a majority of trainee psychotherapists was retained, as it was often difficult to distinguish between ‘training clinics’ and clinics where training opportunities are provided (e.g. university counselling centers utilizing trainee psychotherapists). Unpublished dissertations were retained unless they had since been published, in which case the journal article was included and the dissertation excluded.

Search Methods and Data Collection

Using similar but expanded search terms to Todd et al. (1994), searches were conducted in both the PsycINFO and PubMed databases using the keywords of [(psycho*) AND (training clinic OR university clinic OR training centre OR training center OR university center OR university centre OR department clinic)] in English language for the period of January 1993 to December 2015, resulting in 367 and 208 studies, respectively. Results from the two databases were combined and duplicates removed, leaving 550 studies. After reviewing study titles and abstracts, 308 studies were excluded for not meeting inclusion criteria. Upon review of the 242 articles whose full-texts were examined to determine eligibility, 99 articles were found to meet inclusion criteria and were eligible for inclusion in this review. A further 139 articles were excluded due to not meeting inclusion criteria, and four articles were unable to be accessed because they were dissertations only available in hard-copy at their universities. One dissertation was excluded and the published paper resulting from the dissertation was instead included.

The authors supplemented the findings from the systematic search with their knowledge of other published studies that had been conducted in university training clinics and by reviewing

the reference lists of previously identified studies ($N = 53$). The authors then hand-searched the abstracts from all articles (1993-2015) of journals that had published two or more studies thus far included in the review ($N = 20$ journals; see online supplemental information) and one other recommended journal (The Clinical Supervisor). This identified a further 105 studies; thus, a total of 257 studies were included in this review.

Data Analysis

Todd et al.'s (1994) original broad categories of research topics were expanded in this review to address current uses of training clinic data. New topics were added to Todd et al.'s (1994) original list of topics prior to reviewing any studies. This original list therefore comprised topics that could be studied in the training clinic environment. A sub-set of studies were then reviewed according to this new list. This new list was expanded to include topics that were included in the sub-set of studies but not in the original list of topics. While the list of topics was not exhaustive, it represented all topics included in this review, and additional topics that were not examined in this review.

Three of the authors independently categorized all studies with up to three categories that best represented the topics under study in each article. Only the main aims and findings from studies were coded to determine where the training clinic literature was focused. All three raters agreed on at least one topic for 68.1% of articles; whereas, two raters agreed on at least one topic for 96.5% of articles. All raters then discussed each article until there was 100% agreement on categorization of topics for each article. Differences in ratings were usually due to coding error or to slightly different interpretations of categories rather than true disagreement, and thus discrepancies were easily resolved.

Results

Characteristics of Studies

The 257 studies were published across 12 different countries and included 228 journal articles and 29 dissertations. The USA contributed the majority of studies to the review (83.7% of studies and all 29 dissertations), followed by Australia (4.7%) and Canada (2.7%). The 123 journal articles were published in 58 different journals. The most popular journals were *Psychotherapy/Psychotherapy: Theory, Research, Practice, Training* (change of name in journal); *Training and Education in Professional Psychology*; *Psychotherapy Research*; *Journal of Counseling Psychology*; *Journal of Clinical Psychology*; and *The American Journal of Family Therapy*. The number of studies based on research in training clinics increased substantially over the examined period, with 50% of studies being published in 2009 or later. The majority of studies (91.8%) used a quantitative methodology. For more detailed information, please see the online supplemental material.

Most studies (80.9%) utilized clinic clients as their sample. Of these 208 studies, the majority (73.6%) used an adult and/or university student population exclusively, and only 10.6% used a child/adolescent population exclusively (see online supplemental material). Client sample size ranged from 3 to 6099 clients. Eight studies did not report a specific participant sample size, as they combined individuals, couples and groups, reporting only on the number of participant units included; two studies predominantly utilizing psychotherapist participants also reported client sample size. When three very large samples were removed as outliers ($N = 6099$, $N = 4676$ and $N = 1930$), the mean number of client participants in a study was 187.40 ($SD = 227.79$; range = 3-1318; $N = 199$ studies). However, the sample was significantly positively skewed, with 50% of the studies having sample sizes of 95 or fewer. Of the studies reporting the number of participating psychotherapists ($n = 130$), the mean number of psychotherapists in a study was

50.59 ($SD = 51.41$; range = 2-294), although again the sample was positively skewed with 50% of the studies having psychotherapist sample sizes of 32 or fewer. Of the studies reporting the number of participating supervisors or other staff ($n = 35$), the mean number of participants in a study was 42.97 ($SD = 65.14$; range = 3-328) with 50% of the studies utilizing 18 supervisors/staff members. Sample size did not significantly increase or decrease over the publication period studied for client ($r = 0.40, p = .58$), therapist ($r = 0.13, p = .15$) or supervisor/staff participants ($r = 0.04, p = .84$).

Theoretical orientation was reported in 81.3% of the studies ($n = 209$). The majority ($n = 74$ studies) reported operating from either an eclectic therapeutic perspective, or from at least two different therapeutic orientations. Of studies reporting only two therapeutic orientations, cognitive-behavioral therapy (CBT), psychodynamic, interpersonal psychotherapy and acceptance and commitment therapy (ACT) were most common ($n > 1$). Of studies that reported only one theoretical orientation, Counselling/Counseling Psychology, Couple/Marriage and Family Therapy, CBT and psychodynamic were the most frequently reported therapeutic approaches utilized. It is worth noting that 44 studies (17.1%) did not report the type of psychotherapy provided to clients, and four studies did not conduct psychotherapy (1.6%).

Research Topics within Studies

Research topics were diverse and varied. The frequency of research topics studied is shown in Table 1. Thirty-eight different research topics were included and examined for their frequency. Just under half of the studies (49.4%; $n = 127$) focused on a single topic. However, many studies researched more than one topic, with 99 studies (38.5%) examining two topics concurrently, and 31 studies (12.1%) examining three topics. The most studied research topics were understanding working alliance, predictors of dropout, supervision, clinical training and

competency, psychotherapy process and patterns of response to psychotherapy. Five research topics were only examined once across all studies. Only two potential areas for research generated by the authors were not found in this review of the literature (the scientist-practitioner model and research training).

Whilst research into each broad category increased over the period examined in the current review (see Figure 1), consistent with the general increase in interest in publishing data from training clinics, there was more increase in studies looking broadly at research and research training, staff and clinical training, and intervention. The current review included significantly more research in area of client characteristics, $\chi^2(1, n = 551) = 4.47, p = .03$; significantly less research into the nature and organisation of training clinics, $\chi^2(1, n = 551) = 4.10, p = .04$, assessment, $\chi^2(1, n = 551) = 3.91, p = .048$, and research and research training, $\chi^2(1, n = 551) = 10.87, p < .001$; and the same amount of studies in the areas of interventions, $\chi^2(1, n = 551) = 3.76, p = .053$ and staff and clinical training, $\chi^2(1, n = 551) = 0.57, p = .45$.

Discussion

Over twenty years ago, Todd et al. (1994) advocated for the research community to utilize training clinics as a method of fully integrating science and practice. The current study appears to show that research interest in psychology training clinics has indeed grown substantially (257 studies over a 22-year period, compared to the previous 134 studies over an 18-year period), suggesting that researchers are utilizing the training clinic as a valuable setting for research. The largest area of research was into intervention, as it was in Todd et al.'s (1994) review, comprising almost half of the topics covered. Again, like the previous review, the least studied areas were research and research training, and client characteristics. In this regard, despite utilizing training clinic research, the literature does not seem to have advanced according to Todd et al.'s (1994)

recommendations to better understand the nature of training clinics to understand the contribution they can make to clinical knowledge.

In addition, we do not know much about differences between training clinics and non-training clinics, and whether the findings from training clinics can be applied to non-training settings. The studies in this review that compared trainee psychotherapists to registered psychotherapists found that while trainees improved in effectiveness over the course of their training (Driscoll et al., 2003; Hill et al., 2015; Powell, Hunter, Beasley, & Vernberg, 2010; Reese, Usher et al., 2009), they can still be as effective as registered psychotherapists (Nyman et al., 2010). The preliminary findings are therefore promising that training clinic research can be applied outside of the training environment, but it is premature to apply these findings yet, without more understanding of how psychotherapist competence changes over the course of their training, and how other dimensions of training, such as increased supervision or reduced caseload, might also influence psychotherapy process and outcome. These findings combined with the literature which demonstrates that psychotherapist effectiveness can be improved even after registration – through avenues such as routine outcome monitoring, seeking feedback from clients, purposeful practice and a focus on the working alliance (e.g. Chow et al., 2015; Miller et al., 2013; Lambert, 2017) – highlights the need for ongoing training of clinicians and controlling for these factors when examining psychotherapist outcomes in non-training environments.

Todd et al. (1994) recommended that to advance the literature, several methods should be employed: expanding beyond one specific research topic; including contextual information about the clinic and training practices; describing how participant samples compare to the population the clinic serves; comparing what differentiates training clinic environments from each other, such as by differences in service or training, and how these differences might relate to clinical

outcomes; encouraging collaboration between training clinics and pooling data across settings; and, most importantly, specifically identifying that research is conducted in a training clinic.

Some of these recommendations appear to have been followed. For instance, just over half of the studies examined two or more research topics concurrently, helping to grow the literature on relationships between variables. Collaboration between training clinics was rare, but has occurred sporadically. However, the implementation of this recommendation may occur in the not too distant future: Callahan et al. (2014) and McAleavey, Lockard, Castonguay, Hayes, and Locke (2015) have proposed a collaborative research network for psychology training clinics and university and college counselling centers in the United States. If successful, collaboration between training clinics could not only boost sample size, but a shared, programmatic agenda for research topics could be developed. This agenda could address the need for deeper exploration of research topics to allow more generalizable conclusions to be drawn and to compare aspects of training that may lead to better client outcomes, or psychotherapist competence. This will be especially likely if training clinics adapt the growing practice of providing psychotherapists feedback based on monitoring client treatment response — so-called routine outcome monitoring (Lambert, 2017).

Some of Todd et al.'s (1994) recommendations could still be easily implemented. The majority of studies did not include in-depth description of the clinic and did not compare their sample with the clinic population; and except for studies specifically examining clinical training and competence, most did not report any aspects of training, and even within those examining clinical training and competence, many did not report beyond their specific study's focus. Studies that collaborated across training clinic sites did not compare the sites beyond differences in the variables that were examined. We reiterate these recommendations of including description of the

clinic and training, and how the study fits into the broader environment of the clinic and the population it serves. These descriptions would be especially important in multi-site collaborations, or if conducting a meta-analysis of findings across sites. The implications of this for advancing the training of future psychotherapists would be valuable if it sheds light on what training practices promote psychotherapist competence and better outcomes for clients.

Obviously, the extent to which researchers are not explicitly stating that research is conducted in a training clinic is unknown merely by a literature search. One method to overcome this could be to contact training clinic directors and ask for a list of all the studies that have been conducted within their clinic, within the context of a review. However, utilizing listservs for this purpose would be country-specific, and may still miss studies that the clinic directors are unaware of, such as studies conducted before their involvement in the clinic. This remains a difficult recommendation to test, but the inclusion of descriptions of the setting of research is valuable outside the training clinic environment too, so we again reiterate the importance of researchers identifying that their research is conducted in a training clinic and describing the clinic environment.

Within the six broad categories, studies covered an ample breadth of research topics, highlighting the diversity of the training clinic environment. However, there appeared to be few topics that have been studied in sufficient depth to draw general conclusions, such as with meta-analytic techniques. Therefore, we chose not to report effect sizes or strength of relationships. Two well-researched areas that may warrant meta-analyses were predictors of dropout (premature termination) and understanding working alliance, and results relating to efficacy of specific treatments and of the overall clinic may also warrant meta-analyses. Meta-analyses of findings from training clinics could not only be used to determine the effectiveness of training clinics, but

could also be compared to standardized findings in other settings and could determine how applicable the findings from the training environment might be to non-training environments.

For this to occur and the literature to advance, there needs to be consistency in definitions and statistical methodologies. For example, if researchers were to consistently use the two definitions for clinically meaningful change proposed by Jacobson and Truax (1991) – namely, one that considers amount of change (the reliable change index) and one that considers a return to normal functioning – then results may be more directly compared given the wide array of research variables and topics covered.

Only two randomised controlled trials were identified as being conducted in a training clinic. This suggests several possibilities: that training clinics are not well-suited to conducting RCTs; that training clinics are being underutilized for this purpose; or that studies are not reporting that they are using a university training clinic with trainee psychotherapists in their manuscripts. Additionally, many plausible topics such as continuity of care, evidence-based assessment, ethics, interprofessional learning, and various therapist predictors of outcome were only investigated by one or two studies each. Whilst the scientist-practitioner model and research training were not explicitly investigated by a single study, it could be argued that whilst this was not an explicit goal of other studies, it was implicit in the design and orchestration of most other studies.

The review also highlighted that research has been conducted internationally and accepted by a vast number of journals. Unfortunately, this information was not available for the previous review, so we do not know if the spread of training clinic research internationally has changed over the past two decades, or indeed if the acceptability of training clinic research to journals has either. Interestingly, the current review highlighted that the USA is the main contributor to the

training clinic literature, followed by Australia (in English-language publications); and there were a number of topic areas that had not been researched outside of the USA. Given that the training of professional psychologists differs dramatically in these countries and that there are few studies emanating from other parts of the world, it is important to consider how this influences the literature. It may be that there is greater endorsement for evidence-based care and training in the USA and Australia, or that training clinics are more commonplace in the training pathway. It is highly recommended that training clinics in other countries consider publishing data to enhance our understanding of how culture can influence findings. It is of course possible to extrapolate from other clinical findings conducted cross-culturally, but given that training and licensing/registration requirements are vastly different internationally, training clinics are likely also to be different, and an investigation of international differences in training and in training clinics would be a welcome addition to the literature.

Although not common, large sample sizes have been achieved, usually through collating across years or between universities. Interestingly, even with the advent of the Internet and easy file-sharing, sample sizes did not increase over the period studied. Most studies used clinic clients as their participants, particularly adult or student client populations. There were a limited number of studies utilizing child or adolescent clients, and likely not enough within a single category to make valid assumptions about this population in training clinics. It may be that youth are not as commonly seen in training clinic environments, but more research needs to be published with youth participants to accurately understand trainee psychotherapists' competencies with youth, and the unique dynamic that youth bring to the psychotherapy environment. This may also highlight that trainee psychotherapists are not receiving adequate exposure to working with youth prior to completing practicum placements outside the university. Additionally, there were several

studies that did not report the type of client sample used, or did not report the specific number of participants included. These are limitations that should be addressed and easily overcome in future research. Similarly, there were a significant number of studies that did not report what therapy was provided to clients, or what the theoretical orientation of the clinic was. Of those that did, the majority reported an eclectic orientation or multiple orientations, consistent with the view that psychotherapy should be adapted to each unique client and their presenting problems.

Limitations

Despite our systematic search methods, we acknowledge there may be more studies that were not identified as being conducted in a training clinic, and thus were not included in the review. We chose to retain the same keywords and search methods used by Todd et al. (1994), albeit broadened, except contacting training clinic directors to identify further studies. Todd et al.'s (1994) methodology for utilizing listservs asked training clinic directors to confirm or add studies that their clinic had published. The decision to not utilize listservs to contact clinic directors was made to not bias the results towards any one country, as listservs are generally country-specific. However, asking clinic directors to add research that has been published in their clinic or elsewhere would have been helpful. Should this review be updated again in the future, we recommend this as a valuable step to uncover as many training clinic studies as possible.

This means there may be studies that explicitly stated that they were conducted in a training clinic, for example in their methodology, which were not identified through our search methods. For example, 53 studies were included from the authors' knowledge and stated that they were conducted in a training clinic; however, these were studies that were not identifiable with our initial search method. Whilst the inclusion of studies from the authors' knowledge increased the number of studies available to review, it also deviated from the systematic search

methodology. It may have also biased the topics covered, as the majority of the studies fell within the intervention topic area, which may have inflated the proportion of studies examining intervention topics to the detriment of other areas if the authors' knowledge-base had have been in a different area. Other researchers may therefore find that works they consider relevant to the training clinic literature were not identified, and thus, this review may not be representative of all the research that might be possible in a training clinic environment.

Even within the included studies, it was often difficult to differentiate whether the studies were conducted in a psychology department training clinic, a research clinic based at a university utilizing trainee psychotherapists, or a student services clinic with training placements offered. It was also very difficult to determine whether the clinic provided training for first practicum students or students completing their second or third practicum. The training environment is also different across countries, and as such, the authors may have wrongly identified some clinics as being 'training clinics' by including university-affiliated clinics with the majority of psychotherapists still in training; but some countries may not consider these to be 'training clinics', and the population of clinics included may not have been as homogenous as was intended for the review. We reiterate Todd et al.'s (1994) recommendation that researchers need to identify explicitly in the manuscript and abstract when research is conducted in a training clinic and provide a detailed description of the practicum placement and training provided.

A second limitation is that only studies that were published in English were included, possibly excluding valuable research from non-English speaking countries. This again may have influenced conclusions drawn from the literature. A multilingual team would be invaluable in conducting this task and updating the current review. Again, given that training differs across countries, it would be valuable to be able to compare different training practices and registration

requirements; however, this is not currently possible with the small number of studies found from outside the USA.

A third limitation is that it was outside of the scope of this review to determine how many individual clinics contributed research to this review. Whilst the volume of different authors indicates that it is unlikely that only a few highly-productive training clinics are contributing to the literature, the increase in number of studies may be due to more widespread utilization of training clinics, an increase in the base-rates of training clinics, or the broadening of the search strategy for the current review casting a larger net in the literature (Todd et al., 1994).

Finally, this review was unable to fully describe and compare all studies to draw conclusions about the training clinic environment, due to the number and diversity of studies included. We hope that this review serves as a starting point for future research to take smaller sections of the training clinic literature, and to conduct more in-depth analyses in specific topic areas. These in-depth analyses would be necessary before the training clinic literature could be compared to the findings in the general psychotherapy literature.

Implications and practical significance of this review

Training clinics are often costly to universities and there is often a demand for training clinics to reduce spending or to bring in funds to help support their activities. Good research can attract significant funding, which might be one way to make training clinics more relevant to universities' mission and more attractive to the university finance teams. If high impact publications emerge from data collected in training clinics, the clinics and their staff become more valuable to the university. This review highlights that it is indeed possible to conduct research in training clinics, and a vast number of clinics do utilize this option; even using their research to address a number of topics in psychology, not just about the nature of the training

environment. However, the extent to which outcomes from training clinics are consistent or divergent from typical community mental health practices with licensed psychologists is still unknown: this could be a valuable research area for future systematic reviews or meta-analyses.

Additionally, other authors (e.g. Borkovec, 2004; Gard, Tremblay, DiLillo, & Pantesco, 2002; Neufeldt & Nelson, 1998) have outlined the benefits that conducting research in training clinics can have on training the next generation of evidence-based practitioners to fully integrate research into their practice and their clinical knowledge into research. If this integration occurs from the outset of training, it may be more likely to be integrated after completion of training as barriers to practitioners integrating research may be due to a lack of training, or to not seeing the relevance to their practice (Neufeldt & Nelson, 1998). However, research is finding that the most effective psychotherapists are those who engage in deliberate practice (Chow et al., 2015), integrating feedback and routine evaluation of outcomes into their practice (Miller et al., 2013): skills which can be developed through training in research and evidence-based care. Thus, if the eventual goal of training is to make the most effective psychotherapists who can alleviate distress for their clients, bringing research into training clinics may be seen as an integral part of training.

The current review highlighted that many training clinics can achieve adequate sample sizes by collating data across years or between universities. Technological limitations may have made such collaborations challenging two decades ago when Todd et al.'s (1994) review was conducted; however, with the advent of secure cloud-based file sharing and patient management systems, collapsing data has become easier and more common. Collaborative research networks (Callahan et al., 2014; McAleavey et al., 2015) could not only boost sample size, but a shared, programmatic agenda for research topics could be developed. This agenda could address the need

for deeper exploration of research topics to allow more generalizable conclusions to be drawn and comparisons between training practices to be conducted.

Results from our review highlight that a shared agenda could involve several currently under-researched topics, such as: continuity of care (particularly for clients of psychotherapists who complete their practicum before the client finishes psychotherapy), evidence-based assessment, ethics, interprofessional learning and therapist predictors of outcome. Another research topic well suited for training clinics is competency. Our review demonstrated that in general, psychotherapists in training clinics are effective, but previous research has also highlighted that not all psychotherapists are equally effective (e.g. Kraus, Castonguay, Boswell, Nordberg, & Hayes, 2011). With a trend towards formulating nationally and internationally recognised competencies during training, training clinics would be the ideal environment to examine what makes psychotherapists effective, how to best assess competencies, and how to enhance and maximise supervision. These are just some interesting avenues for future research.

Conclusions

So, how far has the psychology training clinic literature come over the past two decades? It appears definite progress has been made and the training clinic has been embraced as a research environment, but there is still much progress to be made, specifically to advance the training of future psychotherapists and to understand the contribution that the training clinic literature can make to the general psychotherapy literature. The current review demonstrated that the number of training clinics publishing research has increased substantially, but there is still much to learn about the unique training environment and comparing training clinics with non-training environments. Whilst the shift towards exploring clinical topics is commendable and vital, researchers must not neglect the valuable questions about training that still need to be

answered, which are perhaps only answerable in a training clinic. Multi-site collaboration between training clinics with a shared research agenda would be beneficial (Callahan et al., 2014; McAleavey et al., 2015) and between training clinics and non-training clinics to compare different aspects of training, and how the training environment differs.

Training clinics are a valuable asset to both the research and training communities, and to the clients for whom they provide services. If training clinics are regularly evaluating their outcomes and seeking feedback, then routinely collected data can be studied, with the eventual goal of informing better practices for clients and better training of psychotherapists (Miller et al., 2013; Lambert, 2017). Research can be seen as an integral part of treatment and training and when research principles are implemented in a standardized way across all clients and psychotherapists (Sauer, 2006), it need not be expensive nor compromise treatment; and it may even be beneficial to clients' experiences in psychotherapy (Miller et al., 2013; Sauer, 2006; Sauer & Huber, 2007). For research purposes, training clinics may be the perfect balance between the "clinical context" of effectiveness research and the "research context" of efficacy research (Neufeldt & Nelson, 1998), with a variety of data easily available to researchers after ethical approval. For training purposes, research can inform learning experiences and train practitioners to provide evidence-based care. For clients, research and routine outcome monitoring may even improve their outcomes and experience of psychotherapy (Miller et al., 2013; Lambert, 2017).

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Table 1

The main aim(s) of each study included in the review by number of USA and non-USA studies

Aim: Topic of Research	Number of Studies		
	USA	Non-USA	Total
Nature and Organisation of Training Clinics			52
Program Evaluation	9	5	14
Description of Service Delivery	6	6	12
Policy and Procedures	6	4	10
Clinic Demographics (description of clinic clients)	7	2	9
Access to Care	3	3	6
Continuity of Care	1	0	1
Client Characteristics			48
Client Intrapersonal Factors as a Possible Predictor of Outcome	9	1	10
Client Symptom Severity as a Possible Predictor of Outcome	10	0	10
Client Demographics as a Possible Predictor of Outcome	8	1	9
Client Interpersonal Factors as a Possible Predictor of Outcome	6	0	6
Client Expectations as a Possible Predictor of Outcome	4	1	5
Client Diagnosis/Type of Problem as Possible Predictors Outcome	4	0	4
Understanding Client Expectations	3	1	4
Assessment			42
Scale Development or Validation	23	3	26
Understanding Psychopathology/Symptomatology	14	0	14
Evidence-based Assessment	2	0	2
Intervention			202
Understanding Working Alliance	32	3	35
Predictors of Drop-Out	28	4	32
Psychotherapy Process	19	4	23
Patterns of Response to Psychotherapy	21	1	22
Effectiveness of a Specific Treatment(s)	9	7	16
Working Alliance as a Possible Predictor of Outcome	11	1	12
Effectiveness of Overall Clinic	10	1	11
Therapist Experience as a Possible Predictor of Outcome	10	0	10
Therapist Intrapersonal Factors as a Possible Predictor of Outcome	5	3	8
Number of Sessions as a possible Predictor of Outcome	6	1	7
Feedback as a possible Predictor of Outcome	6	0	6
Client-Therapist Match on Demographics as possible predictor of Outcome	3	2	5
Therapist Interpersonal Factors as Possible Predictors of Outcome	4	1	5
Type of Outcome/How to Measure Outcome	3	0	3
Therapist Theoretical Orientation as Possible Predictor of Outcome	2	0	2
Efficacy (RCTs)	2	0	2
Therapist Demographics as a Possible Predictor of Outcome	1	0	1
Therapist Expectations as a Possible Predictor of Outcome	1	0	1
Therapist Allegiance as Possible Predictor of Outcome	1	0	1
Staff and Clinical Training			67
Supervision	26	3	29
Clinical Training and Competency	22	8	29*
Cultural Competence	6	0	6
Ethics	2	0	2
Interprofessional Learning	0	1	1
Research and Research Training			6
Role of Clinic in Research	2	1	3
Non-Clinical Research in the Clinic	2	1	3
Scientist-Practitioner Model	0	0	0
Research Training	0	0	0

Note. Clinical Training and Competency includes a study conducted in the USA and Canada, which was therefore included in both columns, but only counted once in the total.

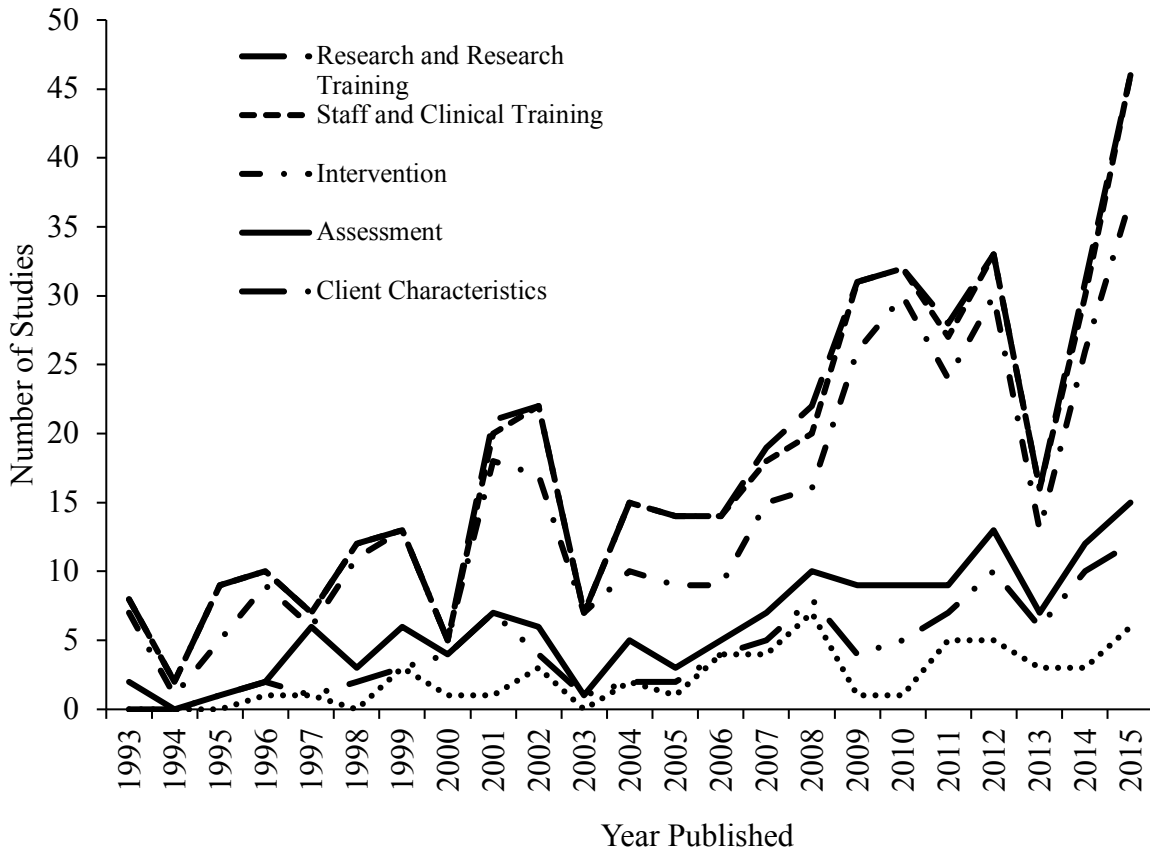


Figure 1. Number of studies publishing research in each topic area between 1993 and 2015