

Methods used for evaluation of psychotherapy treatment. Evaluation of psychotherapy

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Abstract

One of the goals of research in the field of psychotherapy is to improve knowledge about processes and outcomes of psychotherapeutic treatments. Researchers and professionals have been discussing the best methods for evaluating the effectiveness and efficiency of psychotherapeutic treatments for many years. This paper aims to give an overview of the specifics of quantitative and qualitative research methods, by noting the advantages and disadvantages of these methods in the evaluation of psychotherapeutic treatments. Within the quantitative scientific research, three approaches are described: randomized controlled research, mood enhancement by psychoanalytic and cognitive therapies, and meta-analysis. The most common collection methods (observation, interview, other verbal techniques and visual approaches to data collection) and data analysis (comprehensive process analysis, consensual qualitative research and grounded theory) are described within a qualitative scientific methodology. Finally, an approach related to integration of qualitative and quantitative methodology, as well as this related with application of case studies in the evaluation of psychotherapeutic treatments are described. Scientists and professionals in the field of social sciences should use both quantitative and qualitative research methods, separately or in combination, depending on the goal and problems of the research.

quantitative methods; qualitative methods; mixed methods; case study; evaluation of psychotherapeutic treatment

INTRODUCTION

The main goal of the most research focused on psychotherapy is to try to improve knowledge of the course of the psychotherapy, as well as the process of psychotherapy and its effects. Researchers often try to identify optimal treatment choices for individual client with a given mental health problems or disorders [1].

Quantitative methods reflect the most dominant paradigm used in research into psychother-

apy treatments from the very beginning more than one hundred years ago. Over the years, they have become increasingly complex, and therefore psychotherapists need to bear a large number of methodological issues in mind when planning research [2]. Quantitative research methods are useful tools for achieving these goals. They assist professionals and researchers in studying the complex relationships between therapist, client, therapeutic process, and life events of clients outside of therapeutic sessions. Furthermore, they provide insight into progress during the session, progress after the session, and the effects of therapy at the end of treatment as well as during the follow-up period. Final-

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ly, they support the aggregation and integration of psychotherapy findings (e.g., through meta-analysis) [1].

However, in the 1970s, Goldman [3] began a discussion of the acceptability of quantitative methods for researching psychotherapeutic processes and outcomes. Therefore, there was great enthusiasm for some researchers and therapists in the field of psychotherapy research when they discovered a new qualitative approach to the evaluation of psychotherapy that has its roots in education and anthropology [4, 5]. Qualitative research methods in psychotherapy developed in the years that followed. A number of promising approaches are now available to researchers, such as comprehensive process analysis [6], consensual qualitative research [7], grounded theory [8], and phenomenological approaches [9].

According to Rodgers and Elliott [10], there are four qualitative approaches to collecting information: observation, interviews, other verbal techniques and visual approaches to qualitative data collection. In observation, the therapist or other persons express their opinions on the changes they have observed in the client. Interviews, as the most frequent qualitative method of collecting information, consist of questions or framework topics to which the participant in the research responds. Other verbally-based techniques include qualitative questions, that is, questionnaires with open response questions, and using personal data (diaries, letters...). Alongside these approaches there are also visual approaches, although rarely used, based on the use of photographs and/or videos, projective drawings, timelines and lifelines, and other graphic techniques for assessment of the effectiveness of treatment. The criteria for evaluating qualitative research are also aimed at the procedure and the product – that is also at research methods applied to the changes in ideas themselves, or interpretation [11, 12].

Qualitative and quantitative research methods are often opposed to one another, and in a way comprise two different views of research. The supporters of quantitative research usually look on qualitative research with suspicion and see it as “easy” research and because it involves small samples of subjects, who are perhaps not representative of the wider population, they believe it is not objective and the results of

this kind of research may be biased, that is, subject to the researchers’ own experiences or opinions. Supporters of qualitative research believe that quantitative research excessively simplifies individual experiences in an attempt to generalize the results, it fails to recognize the researchers’ bias and their expectations in creating the research design, and requires the creation of presumptions in order to understand the significance of the data collected [13].

The aim of this study was to give a review of specific quantitative and qualitative methods of research, as well as new research approaches comprising a combination of these two methods, and to list the advantages and disadvantages of using these research methods in evaluating psychotherapy treatments.

RESEARCH METHODS

Randomized controlled trials (RCT)

We usually consider the components of change in psychotherapy work by analysing the moderator and mediator of the effect, as well as observing the mechanisms of change, and one quantitative research approach that provides for this is a *randomized controlled trial*; RCT; [14]. Randomized controlled trials (RCT) are prospective studies that measure the effectiveness of a new intervention or treatment [15]. The key elements of the RCT research method include *randomization* of different treatments, *control* of accuracy and *comparison* within a treatment group [16]. A well-designed RCT study ensures a high level of scientific stringency and the validity of the data collected longitudinally from a large representative sample that took part in the treatment [17]. One of the weaknesses of the RCT research method is that it focuses on large, generalized quantitative data, and basically the results come down to tables of figures without taking various factors into account which may affect the treatment. The RCT method also lacks “external validity”. Moreover, this method is difficult to apply during routine clinical practice [17]. Critics of the RCT approach in the evaluation of psychotherapy trends [18] often emphasize the greater use of qualitative research measures, which can provide more “contextu-

al knowledge” and make greater focus possible on the perspective of the beneficiary of psychotherapy services.

Quasi-experimental studies

Improving mood with psychoanalytic and cognitive therapies – IMPACT [19] is one approach with a high level of empirical and scientific strength. This strength stems from carefully implemented randomization and blind procedures [20] and consistently adhering to the *Consolidated Standards of Reporting Trials* [21]. Participants in the research have an equal and unbiased chance of being randomly selected to participate in the research. During the research, the researchers remain unknown to the participants in the research, and in that way, it ensures that the theoretical and professional tendencies of the researchers and clinicians remain neutral towards the outcome of individual participants in the research, or the form of intervention in which they are included. Further, how far and to what degree various forms of treatment prevent the return of symptoms is also one of the goals in evaluation of treatments. To that end, clients are monitored for 18 months after the end of treatment.

Case studies

Case studies written and published by the founders of some schools of psychotherapy have had a significant effect on the development of psychotherapy and psychotherapy techniques [22-23]. Within the framework of psychotherapy, case studies may be based on a single episode during a session, one session, a certain phase of therapy, or may give an overview of the entire treatment of an individual client [24]. Although we can see from this how important case studies were for the development of psychotherapy, there are few contemporary scientific studies and books dealing with this subject.

Iwakabe and Gazzola [25] gave a review of the various types of case studies. *Clinical case studies* are a narrative form used by therapists. Their importance has been recognized in the development of psychotherapy trends and the educa-

tion of psychotherapists, but they are not acceptable for research purposes because they do not meet the methodological criteria for research. However, there is increasing understanding of the need to train psychotherapists in research methodology in the form of case studies, especially the development of skills that will enable them to design case studies that meet systematic and rigorous scientific criteria [24]. *Experimental case studies*, also known as *N=1 studies*, are used to test hypotheses about the effects of treatment [26]. The aim of these studies is to record specific changes that can be observed in clients, which may be ascribed to specific interventions. *Standard testing or behavioural assessment* is conducted at the beginning of treatment, and changes that take place during in treatment are compared with the initial target behaviour and other measurements assessed before the beginning of treatment [25]. This method is particularly used by behavioural therapists [27]. And finally, *naturalist/systematic case studies* which overcome all the methodological weaknesses of clinical case studies in that information is collected from multiple sources, such as questionnaires, assessment by the therapist and other observers, interviews with the participants in the treatment etc. All this information is analysed in the end and conclusions are drawn on the effectiveness of the treatment [25]. A team of researchers is usually included in the implementation and analysis of the results of such studies [25, 27, 28].

Follow-up studies

One of the most important aspects of psychotherapy research related to identifying changes mainly consists of comparing two groups using analysis before treatment and after treatment [29-30]. Follow-up evaluations studies are planned to make measurements for a certain period of time. The methods of follow-up evaluation should match those applied for the initial evaluation. These may include different means of measuring changes in knowledge, competence, performance, or health care outcomes. There is no empirically based standard on when follow-up is mandatory or applicable. It is reasonable that the follow-up period (i.e., time point in relation to the intervention experience)

will be mandated by the desired outcome. With complex outcomes follow-up periods are generally longer than with more simple outcomes. Tian et al. [31] suggest that it may take at least 12 months to determine the sustainability of the outcome of the intervention.

Methods of research based on the complexity science paradigms

Method that combines aspects of both qualitative and quantitative research is known as the *task analysis method* [32]. Task analysis as an evaluation method aims to study changes in clients, and has been used for the past 20 or so years [33]. Elliott et al. [34] developed a new combined research approach which includes hermeneutic case studies. This approach was to some extent taken from judicial proceedings, and relates to the use of arguments in order to determine the weight of evidence about whether a change has taken place in the psychotherapy process. Further, Schielke and Stiles [35] presented a new approach stemming from architecture (the Ward method) in order to help research teams include the different opinions of the members of the research team in the development of the conceptualization process.

Effectiveness versus efficacy of research methods

For many years, a fierce debate has been going on about the best methods for evaluation of the effectiveness and efficiency of psychotherapy treatments. According to Hunsley and Lee [36] the difference between efficacy research and effectiveness research is central to attempts to transfer successful treatments into routine clinical practice. Treatment efficacy studies include methodological efforts to maximize the internal validity of the study. This usually involves the use of design features, such as random assignment to treatment and control conditions, training therapists to a certain level of competence in providing the treatment and ensuring that all participants have the condition for which the treatment was designed. Treatment effectiveness studies, on the other hand, seek to maximize external validity while maintaining an appropri-

ate level of internal validity (without which, of course, sustainable conclusions about the impact of treatment could not be drawn). Most commonly, efforts to increase external validity include locating the treatment study within clinical service sites that provide ongoing health services, using both clinicians who routinely provide psychological services and clients referred to the clinical settings [37].

On the one hand, there are some who maintain that quantitative research methods are the only reliable and scientifically credible way of assessing the success of psychological interventions. Quantitative research methods help to analyse the complex relationships between the client, therapist, the course of treatment and external factors which may influence the course of treatment, progress at each meeting, progress between individual meetings, treatment outcome, and also the period of monitoring after the end of treatment.

In contrast, there are authors and professionals who believe that psychotherapy treatments cannot be adequately evaluated by methodologies developed to assess the effectiveness of medication, that is, quantitative evaluation methods. A large amount of clinical information important for the effectiveness of the therapy (e.g. the client's perception) cannot be collected by quantitative approach. Noticing the weaknesses of quantitative research led to the fact that some clinicians tried to bridge the gap between science and practice [38]. In that case, they point out the advantages of using qualitative methodology. Researchers use their (imperfect) empathetic understanding of the internal experience of participants as their source of data. They try to understand events and report on them through their unique context. The subject of the research (the research problem) may be chosen for research because it is a good example, and not because it can represent a specific population in a good way. The size and composition of the sample may be supplemented during the research (e.g. inclusion of new participants because some have dropped out, etc.). The emancipation or progress of participants may be deemed a legitimate purpose of the research. As a result of these features of this research method, interpretation is always conditional and limited to the context in which the research was conducted [11].

Recently, a new approach has emerged in research into the effectiveness of psychotherapy interventions, which some researchers are calling “the third research paradigm” [39], in which qualitative and quantitative methods of research are combined in the form of mixed-method research. The use of both research methods enables researchers at the same time to generalize results they have obtained from a specific sample of subjects, but also to obtain a better insight and a better understanding of the phenomena they are interested in. Further, researchers can test theoretical models and modify them on the basis of feedback information received from subjects. In these cases the results obtained by precise assessment using psychological measuring instruments can be additionally explained by contextual information [40]. Although mixed-method research has a long history of use in research, it has only recently begun to be used systematically to evaluate the effectiveness of psychotherapy treatments.

Also in newer research into the outcome of psychotherapy treatments, case studies are increasingly being used as a method of evaluating the efficiency of treatment. Therefore researchers who work in research into the effectiveness of psychotherapy treatments have begun to direct their attention towards the methodology of case studies, and how this form of research can be improved in order to obtain the most reliable research results [18, 24].

The particular advantage of using quantitative RCT method is how it assesses the effectiveness of therapeutic treatment because it gives results which, in most cases, can be reliably explained in relation to the control group, and the groups of variables can be carefully analysed. Different outcomes can be ascribed with greater reliability to the influence of different treatments, which are evaluated and compared and, in the process, any bias which may stem from external factors is minimized.

The RTC and IMPACT methods of researching psychotherapy outcomes are based on a battery of widely applicable validated measuring instruments, including structured interviews and questionnaires. These methods make reliability and validity possible, as well as the comparison of research results from different studies. However, this also means that only what the re-

searchers or professionals deem to be an important treatment outcome is evaluated, without including the clients’ opinion. IMPACT method of long-term monitoring of clients is aimed at overcoming the lack of evidence on the long-term effects of many psychological treatments [17].

Meta-analysis is an important tool that enables researchers to collect data from a large amount of research, but also to demonstrate the effectiveness and efficiency of psychotherapy in comparison with medical or psycho-pharmacological treatments [1]. In relation to the first research of this type [41] numerous changes have been introduced in the implementation of this kind of analysis, which enable the more precise definition of the size of the effect and the statistical significance of effects, as well as testing homogeneity (including e.g. moderator variables).

Case studies have led to innovative approaches and methods in psychotherapy treatment, or have served to test and verify the effectiveness of new therapy approaches, or even in order to demonstrate psychotherapy techniques to other experts [42]. Although not without controversies [43], case studies remain central to research of psychotherapy processes [44]. This is particularly true of systematic case studies, the most common form of case study in contemporary psychotherapy research [45]. Widdowson [24] states that systematic case studies are probably the most appropriate and most acceptable method of assessment of the effectiveness of treatment based on the results of research.

Systematic cases usually involve a team of researchers collecting data from multiple different sources (e.g., questionnaires observations by the therapist, interviews, statistical findings, clinical assessment, etc.), and involve a rigorous data triangulation process to assess whether the data from different sources converge [27]. Because systematic case studies are methodologically pluralistic, they have a greater interest in situating patients in a wider population study than clinical case studies [25]. Systematic case studies are considered an affordable method for developing a research evidence base in psychotherapy [24], especially since they correct some of the methodological limitations (e.g. lack of ‘third party’ perspectives and bias in data analysis) inherent to classic clinical case studies [25]. They have been used for the purposes of clini-

cal training [46], outcome assessment [47], and meta-analysis of qualitative findings [48]. All of these developments signal a revived interest in the case study method, but also point to an obvious lack of tools to evaluate research appropriate for case studies in psychotherapy.

Methodological weakness of methods used for evaluation of psychotherapy treatment

Although qualitative method is deemed to be very flexible in methodological terms it is very complex to perform. Therefore, scientists with less research experience find difficulty understanding the discourse and practical application of concepts and processes used in this research method. However, qualitative research also have certain methodological weaknesses which should be mentioned. Many qualitative methods rely on interviews as their source of information. Knox and Burkard [49] state the most frequent weaknesses of these methods and propose ways to overcome them. According to these authors, it is necessary to operationalize more clearly the interview technique itself, and to develop precisely defined protocols for conducting interviews etc. Williams and Morrow [50] bring into question the reliability of qualitative data in view of the fact that it is not as easy to define the quality of qualitative data as it is for quantitative data, where it is much simpler to calculate the reliability and validity of the data obtained. One more methodological question related to conducting qualitative research is the researchers' awareness of their own possible bias and expectations, which may affect the collection and interpretation of data. Further, one methodological difficulty in qualitative research is collecting, but also analysing and comparing the research results of different studies. One of the questions, for example, is whether a specific word has the same meaning for all the participants in the research. Researchers have tried to resolve this methodological difficulty by developing methods for qualitative meta-analysis or meta-synthesis, in order to resolve these problems. You can read more about how to overcome these difficulties in the study by Timuluk [48].

Inclusion of both quantitative and qualitative data in research provides researchers with much

better research results than if they use only one form of research methodology [51-53]. Despite insights into the use of this research method for evaluating psychotherapy treatment and the available literature on its use within applied psychology, or counselling and psychotherapy [54-55], it is still used far less than other research methods [56]. The reasons for this may be the preference for quantitative and experimental research methods in psychology [57-58], difficulties learning new research methods, and the use of both research methodologies at the same time [59-60], and in general the lack of attention paid to new methods during the period of education and training [61]. Regardless of the many challenges and difficulties this method involves (a lack of literature and education, difficulties in creating research, negative attitudes of researchers etc.), it is a good alternative to purely quantitative or qualitative research methods. However, it is also linked to a large number of conceptual and pragmatic difficulties in research design and how this research is conducted [17].

The case study method is also often the subject of criticism. One of the most frequent criticisms is that since every case is specific, it is not possible to generalize the results of case studies, and other research methods are more suitable for setting hypotheses and creating new theories. The methodology of case studies has low internal validity (because there is no control group), but Flyvbjerg [62] states that it has high validity and can provide useful information to a large number of therapists, which they can use in their practice. Further, clinical case studies are written by therapists and therefore may be influenced by their subjectivity (which may also be unconscious), that is, they may be biased. What is usually lacking in case studies is the client's perspective, that is, data obtained by standard measuring instruments, which then serve to confirm the success of treatment or changes in the course of treatment [62]. And finally, the lack of objectivity is stressed [24].

Reflections on the process of selection of a research method in addressing concrete research questions

The advancement of knowledge of psychotherapy processes, as well as of the course and out-

comes of psychotherapy treatments, is one of the goals of research in the field of psychotherapy and mental health in general. Researchers often try to identify the best possible treatment approach for clients with a specific problem, disorder or set of disorders. In ideal conditions, this makes it possible for the choice of treatment to be optimal for each client. Identification and analysis of changes in psychotherapy treatments is one of the important components of evaluation of psychotherapy treatments.

A review of the available scientific and professional papers published so far, dealing with procedures to evaluate psychotherapy treatments, indicates the significant interest shown by researchers and professionals in this field of research [63]. For more than three decades attempts have been made to develop new methods to research the outcomes of therapeutic treatments and methodological improvement [3, 64, 65]. Efforts have been focused on introducing qualitative research methods [66-68], but also integration of quantitative and qualitative methods into mixed research methods.

As scientists and professionals in the field of social sciences, it is recommended that we use both quantitative and qualitative research methods, separately or in combination, depending on the aim and problem of the research. In so doing, we must know when to use each of these methods, but the choice itself depends on the researchers' own preference.

As for quantitative methodology, Lutz and Knox [69] point out three important aspects: a) development of new and improvement of existing measures in psychotherapy research, b) identification and analysis of changes in psychotherapy and c) interpretation of differences in results obtained by meta-analysis procedures. The clinical and scientific value of psychotherapy research stems from the validity of the measures applied. One trend in science is the development of new research and statistical procedures to improve the validity of the measuring instruments. Today complex research statistical procedures exist which ensure this validity, such as using item response theory, multitrait-multimethod procedures, generalizability theory etc. which in terms of their content go beyond the aim of this study. The results of quantitative research can also be analysed through meta-anal-

ysis, and give us integrated data on the success of individual therapeutic treatments [1].

If we want to obtain what actually happens in therapy case studies are more appropriate rather than research conducted in a strictly controlled situation which is perhaps not at all similar to a normal therapy session or treatment. Someone who reads a case study may have a clearer insight into the personality of the client, the therapist, the therapy and the therapy outcome. In addition, case studies are very important for the personal development of therapists, that is, for learning and developing the skills they need, because they provide specific information within the therapy context [62].

CONCLUSION

In conclusion, this article describes how the methodology of evaluating the processes and outcomes of psychotherapeutic treatments has shifted towards an innovative research approach that allows clinicians to more objectively measure changes related to clients as well as clinician actions performed in clinical content. Due to the diverse methodological approach outlined in the article, client characteristics and an approach to measuring preference-based psychological outcomes need to be considered. Hence, reflecting the rich variety of methodological approaches for evaluating the treatment of mental health problems or disorders in general, there seems to be a strong future need to address approaches to evaluative treatment for specific mental health conditions.

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