

WHAT IS AN EVIDENCE-BASED CASE FORMULATION?

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Resumen:

Este trabajo plantea y responde a la pregunta acerca de '¿Qué es una formulación de caso basada en la evidencia?' Trata de arrojar luz sobre el tema proponiendo tres criterios clave, que cualquier terapeuta puede tener en cuenta a la hora de valorar desde esta perspectiva un modelo de formulación de caso (FC) concreto, o al tomar en consideración su propia práctica: El primero, relativo a la fundamentación de la hipótesis central de la formulación en una teoría con apoyo en una evidencia sólida y relevante; el segundo, relativo a las características del razonamiento en el que se basa el juicio que nutre la formulación; y el tercero, relativo al grado en que el proceso de formulación se ha apoyado en un sistema o modelo de FC estructurado. Además, se revisan los antecedentes de la FC basada en la evidencia como parte de la Práctica Basada en la Evidencia en Psicología (PBEP), se discute qué se considera una evidencia adecuada en FC, y se ofrece un marco de trabajo sistemático y basado en la evidencia para esta tarea.

Palabras clave: *Formulación de caso, Psicología basada en la Evidencia, Psicoterapia*

Abstract:

This work posits and answers the question about 'What is an evidence-based case formulation?' It tries to shed some light on the topic by proposing three key criteria that any therapist could follow to assess a particular model of case formulation (CF), or when taking into consideration his or her own practice: The first criterion relates to the grounding of the CF's core hypothesis on a theory supported by a solid and relevant evidence; the second criterion relates to the features of the kind of reasoning, in which the clinical judgement that nurtures the formulation is based; and the third criterion, that relates to the extent in which a given formulation is founded on a structured model of CF. Furthermore, the background of evidence-based CF as a form of Evidence-Based Practice in Psychology (EBPP) is reviewed, as well as what constitutes appropriate evidence in CF. An evidence-based, systematic framework for CF is also provided and explained.

Keywords: *Case Formulation, Evidence-Based Psychology, Psychotherapy*

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The idea of an “evidence-based” case formulation (EBCF) may sound oxymoronic initially since a case formulation is essentially a hypothesis. It is the therapist’s inferences about the causes, precipitants and maintaining influences of a person’s psychological, interpersonal, and behavioral problems (Eells, 2015). In contrast, “evidence” refers to something empirical not theoretical. However, just as ideally a hypothesis in an experimental design is based on a combination of theory and evidence, so may a case formulation. In this paper, I propose three criteria to consider when evaluating whether a case formulation is evidence-based. First, a case formulation may be considered evidence-based if the hypothesis offered is based on theory with sound and relevant supporting evidence, whether from the psychotherapy research literature or the psychological research literature more broadly. Second, since clinical judgment is involved, a case formulation may be considered evidence-based if empirically based reasoning skills were followed in developing the formulation. Third, a formulation is evidence-based if it is systematically developed following a structured format that facilitates the presentation and evaluation of relevant information. I begin with some background and perspectives on the concept of evidence-based practice in psychology.

Background and Perspectives on EBCF

In 2005 the American Psychological Association (APA) published a task force report on evidence-based practice in psychology (EBPP) (APA Presidential Task Force on Evidence-Based Practice, 2006). EBPP is defined as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (p. 273). The report asserted that EBPP “promotes effective psychological practice and enhances public health by applying empirically supported principles of psychological assessment, *case formulation*, therapeutic relationship, and intervention” [italics added] (p. 271). The task force gives high priority to case formulation; indeed, one could consider systematic case formulation as at the center of EBPP. As stated in the report, “Although clinical practice is often eclectic or integrative. . . , and many effects of psychological treatment reflect nonspecific aspects of therapeutic engagement . . . , psychologists rely on well-articulated case formulations, knowledge of relevant research, and the organization provided by theoretical conceptualizations and clinical experience to craft interventions designed to attain desired outcomes” (p. 278).

The task force’s discussion of EBPP helps advance our understanding of EBCF. As noted, EBPP entails the integration of three major components: best available research, clinical expertise, and patient characteristics. Case formulation may be considered a form of clinical expertise since it is the structure that contains the integration of these components. The task force prescribed specific desirable features of a case formulation for it to be consistent with EBPP and to reflect expertise. It should be “systematic” (p. 276), “planful” (p. 278), “clear and theoretically coherent” (p. 276), and should “assess patient psychopathology as

well as clinically relevant strengths, understand complex patient presentations, and make accurate diagnostic judgments” (p. 276). According to the APA task force, “EBPP articulates a decision-making process for integrating multiple streams of research evidence—including but not limited to [randomized clinical trials] RCTs—into the intervention process” (p. 273). A systematic, well-planned case formulation provides a structure for this task. With the APA’s concept of EBPP in mind, we now explore some specific perspectives on evidence-based case formulation.

Luborsky’s (1977; Luborsky & Barrett, 2007) Core Conflictual Relationship Theme (CCRT) may be the original and best example of a systematic, structured and evidence-based approach to case formulation. The CCRT is a method for case formulation and a tool for psychotherapy research that involves careful parsing of psychotherapy transcripts to identify the patient’s core relationship conflict, specifically, the patient’s wishes, responses of others to those wishes, and the patient’s responses to the responses of others. Once identified, the CCRT remains consistent through time, across different relationships and throughout therapy; it also predicts therapy outcome and symptom onset, and specific CCRTs are associated with specific diagnoses and defense styles (Luborsky & Barrett, 2007; Luborsky & Crits-Christoph, 1998).

Kuyken and colleagues (Bieling & Kuyken, 2003; Kuyken, 2006; Kuyken, Padesky, & Dudley, 2009) describe EBCF from the cognitive-behavioral therapy (CBT) perspective as “the crucible where the individual particularities of a given case, relevant theory, and research synthesize into an understanding of the person’s presenting issues in CBT terms which then informs the treatment” (Kuyken, 2006, p. 12). They examined the extent to which CBT case formulation can accurately be described as evidence-based. From the “top down” perspective, they explored whether the theory underpinning CBT formulation is empirically supported. From the “bottom up” perspective, they asked questions about the impact, process, and utility of CBT case formulation. These refer to issues such as the reliability of case formulations, their incremental validity and contribution to outcome, cross-validation issues, cost-effectiveness, and the relevance of case formulation to patients’ experiences. Kuyken and colleagues’ review of EBCF from the CBT perspective is mixed but generally positive and a paucity of evidence is noted.

Also from the CBT perspective, Persons (2008) described a case formulation approach that places empirical evidence at its center. For example, when inferring an explanatory mechanism of an individual’s problems, she proposed that the default explanation be the implicit formulation underlying empirically supported treatments (EST). This default explanation should be modified only as warranted by the specifics of the individual’s case. For example, the individual may present with problems for which an EST has not been developed, or the individual may have a host of problems for which ESTs exist but none for the specific combination of problems, or the individual may have moderating factors requiring clinical attention, including poverty, unemployment, or physical disability or disease. Under these

circumstances, Persons advises developing mechanisms based on empirically supported basic cognitive and behavioral principles, such as Aaron T. Beck's cognitive theory, attribution theory, mindfulness theory, and operant and responding conditioning. She also advises drawing from well-supported theories of emotion.

An additional perspective of evidence-based case formulation is offered by Fishman (1999) from the context of pragmatic psychology, which he contrasts with positivistic psychology. Fishman proposes a strategy of "disciplined inquiry" that begins with the individual, continues with an assessment, and then leads to a formulation combining experience, research and a guiding conception as they apply to the specific individual's case. An action plan is developed and monitored, with adjustments made as needed. Fishman (2002) envisions a research strategy moving "from single case to database", with each case contributing to an ever accumulating, accessible, indexable, and pragmatic knowledge base about psychotherapy processes and outcomes. Fishman has explored and expanded this idea through the development of the online journal, *Pragmatic Case Studies in Psychotherapy* (<http://pcsp.libraries.rutgers.edu/index.php/pcsp>), which he edits. Each case presented in the journal includes a systematic case formulation that is developed based on theory and evidence, and serves as the basis for interventions which are then described and evaluated. The contribution of the formulation to the outcome is also assessed.

The perspectives on EBCF just described share multiple related features. First, they call for the use of a case formulation as a structure in which theory, evidence, clinical expertise and the idiographic circumstances of a single individual with distinct problems at a particular time and in a specific cultural and social context, all come together to create an integrated and coherent explanation that guides treatment. Second, they call for a systematic construction of case formulations and using these formulations as a primary guide to conducting psychotherapy. Third, they are practical and patient-centered while also scientifically based. Since EBCF requires a systematic process of sifting and selecting evidence, it leads to the question: What constitutes appropriate evidence in a case formulation? It is to that question that I now turn.

What Constitutes Appropriate Evidence in a Case Formulation?

Evidence for a case formulation can be of many types and come from multiple sources, including patient self report, psychometric instruments, psychotherapy process and outcome research, psychopathology research, and epidemiological findings (Eells, 2015; Eells & Lombart, 2011). Other sources are therapist intuitions, expert advice, remembered experiences from previous patients, and the therapist's experience of the patient in the consultation room. Although these are not all equally valuable in every circumstance, no consensus exists on what constitutes appropriate evidence for a case formulation. For this reason, and since case formulation always involves making inferences and forming hypotheses to be tested, it is helpful to view evidence in relative terms—as more or less probative—than categorically as valid or

invalid. Therefore, drawing from their knowledge base and taking into account potential systematic biases in judgment, which are discussed in the next section, therapists might think of an evidence continuum, one end representing strong forms and the other weaker forms. At the former end, one could imagine compelling outcomes from empirically supported treatments, well-demonstrated and general mechanisms underlying forms of psychopathology, powerfully predictive epidemiological data, or well-documented and replicated findings about basic psychological processes, for example, the age at which reliable autobiographical memories can be formed. At the other end of the continuum one might place a therapist's hunches or intuitions. These might offer valuable insights that could be tested, but in themselves might not be described by most observers as evidence-based. Between these two end points might be included data such as psychological test findings, remembered examples of similar cases, rating scale results, a patient's narrative of a relationship episode, a dream account, a thought record, a patient's account of automatic thinking or an assertion by the patient or therapist that a thought is a core belief. Criteria for placing a type of evidence along the continuum could include consistency with well-established outcome and process studies; consistency with well-established knowledge about psychopathology, personality development, and cognition; plausibility in terms of base rate knowledge; as well as factors such as internal consistency, parsimony, and comprehensiveness. Of course, obtaining the patient's view of the formulation is also important in evaluating it.

Sound Reasoning as a Criterion of an Evidence-Based Case Formulation

Since formulation involves clinical judgment in applying theory and evidence to a specific case, it is critical that such judgments be sound. In the last several decades, cognitive science researchers have identified systematic errors in reasoning and judgment that affect everyone, and may adversely affect how a therapist conceptualizes patients. Kahneman (2011) attributes these reasoning errors to the interaction of two well-researched cognitive systems, which he calls "System 1" and "System 2." System 1 is automatic, effortless, quick, impulsive, and intuitive. It is the system responsible when a therapist concludes a patient is depressed or "borderline", based on a quick interaction. In contrast, System 2 involves intentional efforts to apply inductive or deductive reasoning and logic to solve a problem. System 2 is deliberate, slow, effortful, and systematic, but requires a considerable expenditure of concentration and attention. System 2 is involved when a therapist compares a patient's symptoms with a set of diagnostic criteria and weighs whether or not each criterion is part of the clinical presentation. System 1 tends to dominate cognition since it is less taxing, but we need System 2 as a check on System 1. The two systems operate in an uneasy alliance to produce patterns of heuristic thinking that allow us to make quick decisions that may often be adequate, although not optimal. One example is the "availability heuristic", which is based on the principle

that we make judgments based on information that most easily comes to mind. As applied to case formulation, the availability heuristic may lead therapists to overvalue their own personal experience or impressions and undervalue objective, empirical evidence. For example, a therapist may tend to agree with a patient who compellingly asserts through tears and anger that she is the victim of satanic ritual abuse, when other explanations are readily available and despite evidence that base rates of such abuse are diminishingly low. Another example is the “representative heuristic”, which is a mental shortcut based on the principle that “like goes with like.” For example, one might infer that all victims of child sexual abuse have borderline personality disorder and are significantly damaged in their capacity for love and intimacy. Such a conclusion would fail to acknowledge evidence that many – although clearly not all – victims of child sexual abuse find success in life and love (Rind, Tromovitch, & Bauserman, 1998, 2001). Elsewhere, I describe additional examples of heuristic thinking that can lead to errors in to psychotherapy case formulation (Eells, 2015).

An Evidence-Based, Systematic Framework for Case Formulation

Figure 1 presents a framework for evidence-based, case-formulation-guided psychotherapy. It adapts Fishman’s (1999) disciplined inquiry approach to research and is designed to be simple, practical, stepwise, adaptable to patients of all degrees of complexity and adaptable to multiple theories of psychotherapy and sources of information. For a full description of the model, see Eells (2015). As shown, formulation occurs after initial information gathering and prior to providing treatment; in practice, of course, one moves fluidly among these steps. Information gathering is the first step in any form of psychotherapy and usually involves a standard intake interview (Morrison, 2008). The therapist might also gather information with symptom measures, psychological tests, reports from family members of the patient, and review of medical records or records from previous psychological treatments. All this information serves as input to develop the formulation.

The formulation step has four major components. First is the collaborative identification of a comprehensive problem list that includes symptoms, signs, and problems in living, including how the patient functions interpersonally and in society. It is important to know whether any “red flags” are present since they require immediate attention. These include suicidality, homicidality, neglect, substance abuse, and domestic violence.

The second component is diagnosis, which despite the reliability problem (Regier et al., 2013) is included for at least four reasons: First, most treatment protocols are designed for individuals with specific diagnoses. Knowledge of diagnosis, therefore, helps the clinician select treatment interventions. Second, since treatment models contain implicit formulations and are linked to diagnoses, diagnosis can provide an initial direction in developing an explanatory hypothesis.

Third, diagnosis facilitates communication among mental health professionals. Fourth, diagnosis is often a practical necessity in order to bill and collect for one's services.

The third component of the general formulation model, developing an explanatory hypothesis, is where multiple theoretical and evidentiary sources come to bear on a specific individual. Multiple explanatory hypotheses can often be proposed for a set of problems. There may not be a single correct explanation. Rather, the power of the explanatory hypothesis is evidenced primarily in its practical application. Experts develop explanatory hypotheses that are adequately comprehensive in explaining items on the problem list, sufficiently elaborated and complex in linking together multiple facets of the individual's functioning, coherent and internally consistent, precise in the use of language, and based on a systematic approach to formulation (Eells, Lombart, Kendjelic, Turner, & Lucas, 2005). Although the explanatory hypothesis could have multiple and varying components depending on the specific model one is following, I suggest that five components be included in all formulations. First, consider *precipitants*. These are events, stressors, experiences, or appraisals that trigger symptom onset or the hypothesized mechanism that leads to symptoms. Second, provide an account of the *origins* of the proposed mechanism. This can include a hypothesized learning history that led to the individual's vulnerability to the problems. Alternatively, it can include traumas or empathic failures that hurt the person, genetic or other biological vulnerabilities, or contributing cultural factors. Third, consider the individual's personal *resources* or strengths. These can be used to marshal hope, motivation, and leverage to recover. Examples of resources include unimpaired areas of functioning, pre-morbid functioning, intelligence, inferred level of psychosocial development, social support, capacity for pleasure, and sense of humor or irony. Fourth, consider *obstacles* that may interfere with a successful treatment outcome. These can be quite varied. Examples may include primitive or image distorting defense mechanisms, dichotomous thinking patterns, intolerance of ambiguity, poor social skills, financial problems, or a lack of social support. Finally, a *core hypothesis* is offered to succinctly capture the therapist's and patient's collaborative understanding of the mechanism that is generating problems. The hypothesis is based on well-established theories of psychotherapy and psychopathology.

The final step in the EBCF framework is that of treatment planning, which links the explanatory hypothesis to treatment intervention. The treatment plan should flow directly and logically from the prior formulation steps and should be well-elaborated and sequenced. Figure 1 suggests beginning with some "set point" considerations, all of which have empirical support as factors influencing outcome in psychotherapy (Norcross, 2011). Finally, long- and short-term process and outcome goals are identified and interventions are planned to achieve them.

Once the formulation is developed, it should be tested in treatment and revised, especially if the treatment is not succeeding. The feedback loops in Figure 1 depict

the process of regularly monitoring, testing and assessing problems and progress.

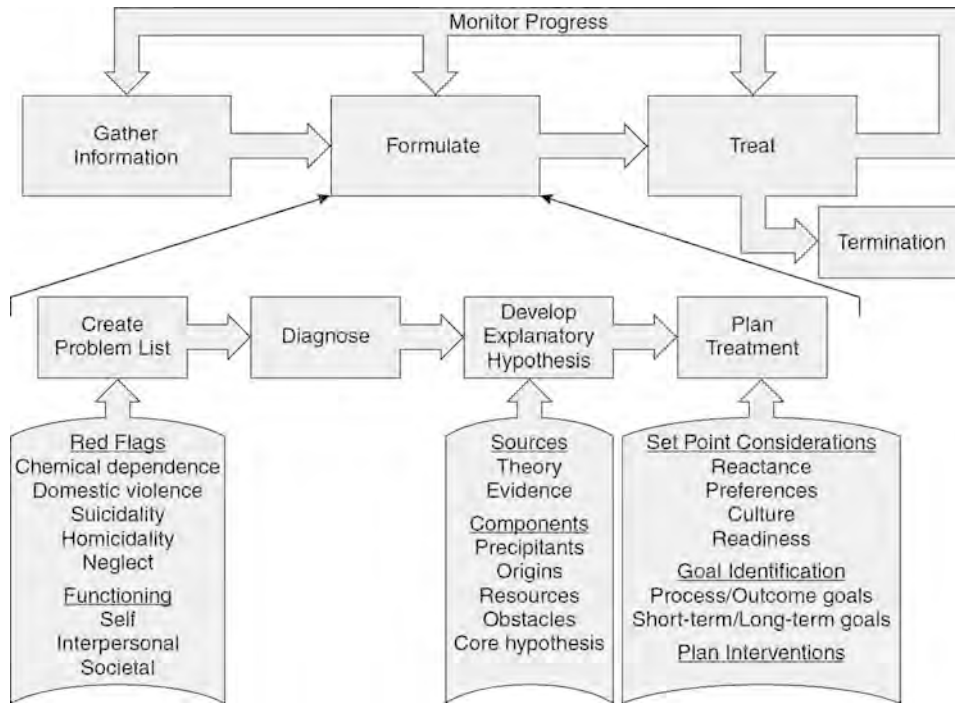


Figure 1.

Framework for Evidence-Based, Case-Formulation Guided Psychotherapy

Why Practice Psychotherapy Using EBCF?

What justifies the time it takes a therapist to develop an EBCF? Clearly, it is ethically and pragmatically untenable to treat based solely on one's personal experiences and unexamined intuition. In contrast, empirically supported treatment (EST) models exist for many psychological conditions (Nathan & Gorman, 2007). Would it not be more straightforward to forego formulation and simply employ these models? Elsewhere I provide a number of reasons to support the claim that the EBCF approach is empirically defensible alternative to the empirically supported treatment movement (Eells, 2013a, 2013b). Here, I provide a brief summary of those reasons. First, if both approaches produce comparable outcomes, there is no empirical basis for preferring one over the other. Although the literature is not extensive, it suggests that outcomes may be comparable. Second, the EBCF approach allows the therapist to tailor the treatment to the full set of problems presented by the patient, not solely to the diagnosis that the treatment approach is designed to address. In addition, the therapist's empirical approach is not limited to

a relatively narrow range of evidence when compared to range of empirical findings in psychological literature, including those in the social, developmental, and cognitive sciences. As Persons (2008) advised, when appropriate to the patient's set of problems the relevant EST can be delivered. Finally, since therapists practicing empirically supported treatments likely tailor treatment to meet patient needs as they arise, a false dichotomy likely exists between the EST and EBCF approaches when considering psychotherapy as it is actually practiced.

In this paper, I suggest three basic criteria for considering a case formulation to be evidence based. First, it should be based on theory that has strong empirical support. Second, since clinical judgment is involved, that judgment should be mindful of pitfalls in human decision-making. Third, the process of case formulation should be systematic and structured. When these criteria are met, the therapist can be assured that a sound and empirically justifiable formulation has been developed. Even so, EBCF is more a process than a product, and the case-formulation-guided therapist constantly reconsiders the formulation as new evidence becomes available.

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