Title: Alternative psychotherapies: conceptual elucidation and epidemiological framework

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Abstract: This article elucidates and defines alternative psychotherapies, as well as describing the variables that explain why some professional psychologists are prone to endorse these practices. First, the novel concept of "Complementary and Alternative Psychotherapies" (CAP) is defined within the framework of the established hierarchy of clinical evidence. Second, we report a literature review to aid understanding of the main variables explaining why some clinicians prefer CAP. We review rejection of scientific reasoning, misconceptions about human nature, and pragmatic limitations of evidence-based practice.

Keywords: evidence-based psychology, alternative psychotherapies, alternative medicine, CAP, pseudoscience.

Public Significance Statement: This article coins the concept of Complementary and Alternative Psychotherapies (CAP): all techniques presented as psychotherapies without adequate evidence for effective treatment. Moreover, we disclose the reasons that explain clinicians' lenient attitude towards them. Both the philosophical discussion and the epidemiological analysis of CAP open a promising new research line to further elucidate the causes of evidence-based practice rejection.

Pseudoscience is one of the greatest threats to the scientific development of psychology (Lilienfeld, 2010), yet is long-established in clinical practice (Lilienfeld, Lynn, & Lohr, 2003). Alternative psychotherapies frequently share certain historical backgrounds1 (Mercer, 2014; Fasce, 2018), with popular yet potentially harmful instances (Lalich & Singer, 1996). Although negative effects are present in evidence-based psychotherapies as side effects (Berk & Parker, 2009; Schermuly-Haupt, Linden & Rush, 2018), the negative implications of alternative psychotherapies are more abundant and go far beyond long-term deterioration in target symptoms (for a review see Lilienfeld, 2007). This is due to their lack of ethical controls and standardization, as well as to the detachment of pseudoscientific models from empirical evidence.

In this article, we define these alterative health care techniques in the context of professional psychology. In addition, we review why are these techniques so popular among clinicians. In the first section of the article, we introduce and define "Complementary and Alternative Psychotherapies" (CAP), a concept analogous to "Complementary and Alternative Medicine" (CAM), within the framework of clinical psychology. The definition of this concept is of great relevance as, until today, alternative psychotherapies have been scarcely considered and studied as a unified concept. In the second section, we carry out a literature review on the variables explaining the presence of CAP and the associated rejection of Evidence-Based Psychology (EBP) among clinicians. In this context, we review the rejection of scientific reasoning, misconceptions about human nature, and the pragmatic problems that hinder evidence-based decision-making.

1 This historical background is often traced back to mesmerism and includes as milestones the Salpêtrière School of Hypnosis, Freudian psychoanalysis, and the Human Potential Movement. Therefore, most alternative psychotherapies share a substantial amount of conceptual foundations, such as regression, repressed memories, catharsis as a form of healing, and the emotional, traumatic and infantile etiology of mental disorders.

Psychology and Pseudopsychology

Establishing a border between science and non-science is a task framed within the so-called "demarcation problem". This task can be focused on any of the limits of science, however, in defining the borderlines of psychology the most interesting is the demarcation between science and pseudoscience — as it involves defining non-science as well as various rhetorical strategies deployed in order to imitate the trappings of science (Blancke, Boudry, & Pigliucci, 2016). There are two major forms of pseudoscience: pseudo-theory promotion and science denialism (Hansson, 2017; Fasce & Picó, 2019a), although mixed instances are common[2]. For example, the anti-psychiatry movement can be conceptualized as an instance of science denialism within psychology, promoting unfounded controversies that characterize mental health care as a repressive "myth" — in fact, these authors claim that psychiatry and clinical psychology constitute pseudoscience. In contrast, graphology, transactional analysis, and Lacanianism are better described as instances of pseudo-theory promotion, as they involve complex, albeit wrong, doctrinal content that mainly tries to coexist with science. The epidemiology of pseudoscience is of great interest in psychological terms, as these beliefs become recalcitrant under conditions of motivated reasoning (Kahan, 2016), thus being resistant to information (e.g. Nyhan, Reifler, Richey, & Freed, 2014; Palm, Lewis, & Feng, 2017) and analytical thinking (e.g. Kahan, 2013).

Nevertheless, even though we assume that it is philosophically legitimate to draw a distinction between psychology and pseudopsychology on the basis of radical epistemic transgressions, is it empirically feasible to determine if a particular technique is, or is not,

2 The demarcation of pseudoscience should not be considered as a by-product of the definition of science; pseudosciences such as homeopathy, intelligent design, and quantum mysticism show clear extra-scientific traits. Hence, science and pseudoscience are defined by distinctive and exclusive features that characterize pseudoscience as an *extreme* label that should not be weaponized to discredit, among others, proto-science, soft-science, and promising research lines.

CAP? The APA defines evidence-based practice in psychology as “the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences” (APA, 2006, p.273), thus integrating research and practice by adapting the classic definition of evidence-based medicine provided by Sackett, Rosenberg, Gray, Haynes, and Richardson (1996). Moreover, APA is currently developing a professional practice guideline to clarify and implement the tripartite model expressed by its definition of EBP (APA, 2019).

Although research on the effectiveness and efficiency of psychotherapies is still limited, we know enough to reject the strong version of the non-specifics argument (DeRubeis, Brotman, & Gibbons, 2005), also referred to as the “dodo bird verdict”: the idea that all psychotherapies have the same efficacy, as what is relevant for positive clinical outcomes are their common factors — especially psychotherapeutic alliances. Although in some contexts equivalence seems to be the norm, treatment differences are common for some conditions and some populations. Accordingly, there are significant differences between treatments for primary outcomes. A significant number of psychotherapies have not demonstrated their effectiveness, either due to negative research outcomes or to a lack of reliable empirical research (Marcus, O’Connell, Norris, & Sawaqdeh, 2014). In fact, considering level I (randomized clinical trials or meta-analyses of randomized clinical trials) and II (quasi-experimental designs such as prospective studies and non-randomized clinical trials) as a threshold of acceptable statistical evidence (Burns, Rohrich, & Chung, 2011), only a few psychotherapies have confirmed their effectiveness, whereas their efficiency varies from case to case — in effect, only 18 are deemed “well established” treatments by APA (Duncan & Reese, 2012).

Certainly, the assessment of scientific practices within clinical psychology involves some methodological complexities, such as the definition and operationalization of placebos and control groups, non-specific treatment components, lack of external validity of non-

standardized techniques, and a lack of meaningful comparisons between some treatments. Moreover, widespread questionable research practices worry experimental psychologists (John, Loewenstein, & Prelec, 2012; for an example of these questionable practices within clinical research see O'Donohue, Snipes, & Soto, 2016). Nevertheless, numerous evidence-based clinical practice guidelines have been published (Hollon, Arean, Craske, Crawford, Kivlahan, Magnavita, et al., 2014), facilitating rational decision-making regarding the selection of appropriate psychotherapies and the distinction between science and pseudoscience (Lee & Hunsley, 2015). Clinical psychology studies natural phenomena, uses reliable methodologies capable of overcoming sample and measurement issues, and achieves consistent theory-driven evidence. Therefore, these domain-specific difficulties are no greater than those encountered when identifying pseudoscience within other fields of knowledge such as physical therapy, history, or nutrition science.

Complementary and Alternative Psychotherapies

There is no widely accepted concept encompassing pseudoscientific techniques within clinical psychology, and current alternative medicine questionnaires do not include techniques such as regressive hypnosis, long-term psychoanalysis, family constellations, gestalt therapy, rebirthing, transpersonal psychology, neuro-linguistic programming (NLP) and characteroanalytic vegetotherapy. Therefore, we consider it necessary to introduce a new concept, “Complementary and Alternative Psychotherapies” (CAP), defined as:

All techniques presented as psychotherapies without adequate evidence for effective treatment.

This definition[3] meets the requirements of the widely established hierarchy of clinical evidence to be considered an *empirically supported treatment* or an *evidence-based treatment*, rather than the more demanding requirements needed to be considered a *well-established treatment* (Duncan & Reese, 2012). *Adequate* evidence is here defined as level I or II research outcomes, obtained through the use of reliable methodologies (informative experiment designs, control groups, well-conducted data analysis, etc.), consistent under the light of systematic reviews and meta-analyses, and not refuted by more reliable or comprehensive information. Furthermore, even though common factors' influence on clinical outcomes is strong, particularly for secondary outcomes, *adequate* evidence must be focused on specific treatment components in order to validate the specific postulates of a certain therapeutic approach[4]. In sum, *adequate* evidence should be *reliable*, *consistent*, *specific*, and *in force*.

CAP includes two categories. It may denote psychotherapies that lack adequate evidence for the treatment of a specific mental disorder (context-dependent CAP; CD-CAP) or for all mental disorders (radical or pseudoscientific CAP; R-CAP)[5]. In other words, a technique would be considered as R-CAP if its categorization as an alternative psychotherapy is independent of which disorder are we assessing, or as CD-CAP if its categorization is disorder-

3 Additional examples of CAP: emotional freedom techniques, thought field therapy, narrative therapy, energy psychology, psychodrama, art therapy, psychomagic, hypnotic regression, and primal therapy.

4 The effectiveness of specific postulates of therapeutic approaches must be assessed independently, particularly to avoid confounding. For example, there is a lively debate on the effectiveness of the specific factors of Eye Movement Desensitization and Reprocessing (EMDR). Some studies argue that saccadic eye movements have no causal role in positive psychotherapy outcomes (e.g. Davidson & Parker, 2001) while other studies argue that they have a clinical effect because eye movements tax working memory during the recollection of stressful memories (e.g. van der Hout & Engelhard, 2012). Nevertheless, this explanation contradicts EMDR's theory of "bilateral stimulation" and only affects the efficiency of the intervention — that is to say, eye movements would be a moderator, not a mediator of positive clinical outcomes, and imaginal exposure would be a confounding variable. Whether or not EMDR works by means of covert exposure is not a minor issue: despite the evidence of non-specific efficacy that has placed EMDR as a first-line treatment for post-traumatic stress disorder, it could still be a CAP technique if its specific postulates do not show a causal link with positive clinical outcomes.

5 It is worth mentioning that CAP is here defined as a set of specific interventions with complex theoretical backgrounds, so the concept does not include therapists' attitudes, responsiveness and personal characteristics, whether or not they are positive or negative moderators of psychotherapy — for example, empathy and a tendency towards confrontation or negative hostile remarks (for a review see Norcross & Wampold, 2019). Therefore, CAP includes only strongly theory-driven techniques intended to work as mediators for positive psychotherapy outcomes. In this regard, it is important for psychologists to explicitly define the process variables included in their theoretical models, as ambiguity hinders their empirical assessment.

specific — for example, a CD-CAP therapy may be effective for the treatment of major depressive disorder but not for autism spectrum disorder. Therefore, even techniques such as cognitive-behavioural therapy, highly effective and efficient for a wide range of mental disorders, must be deemed CD-CAP for disorders for which its effectiveness has not been substantiated with adequate evidence. Conversely, techniques such as bioenergetic analysis, narrative therapy and primal therapy must be considered as R-CAP for all mental disorders[6].

Furthermore, CAP status may vary over time: not all its current instances involve unavoidable logical problems or metaphysical content, so future research outcomes could potentially back up psychotherapies that currently must be considered as alternative techniques. Thus, CAP should be interpreted not as an ahistorical, conclusive category, but as a scientific and ethical one, framed in a history-dependent *corpus* of scientific knowledge. Of course, it is not the same to be *invalidated* as to be *unvalidated* (Westen & Morrison, 2001), and not all CAP techniques have been invalidated. Indeed, many of them have not been sufficiently studied. Nevertheless, due to the nature of the concept, closely related to scientific knowledge and professional ethics, unvalidated techniques must also be counted as CAP.

There is at least one previous attempt to subsume pseudoscientific psychotherapies under a conceptual category: David and Montgomery's (2001) definition of "Pseudoscientifically Oriented Psychotherapies" (POPs) as "therapies used and promoted in the clinical field as if they were scientifically based, despite strong contrary evidence related to at least one of their two components (i.e., therapeutic package and theory)" (p. 92). However, there are some relevant differences between POPs and CAP. Firstly, CAP is defined

6 All the instances of CAP mentioned in this article are uncontroversial, as these techniques show a complete absence in evidence-based practice guidelines and, therefore, are widely discredited. For controversial cases, in which we are compelled to value the quality and adequacy of research outcomes (sample sizes, measurement, reliability of peer review, soundness of data analyses, etc.), further research is needed in order to develop proper protocols. Nevertheless, as happens with the definition of "pseudoscience", we consider that the definition of CAP would be more useful for scientific and social purposes if it is restricted to radical instances of epistemic misconduct.

by the current hierarchy of clinical evidence, while POPs are defined within a novel and still controversial evidential framework that includes both theoretical/mechanistic evidence and well-established treatment criteria (for some of the difficulties with their proposal see Lilienfeld, 2011). Secondly, while POPs are classified into six categories, in two of which theory is prioritized over clinical trials, CAP is restricted to radical cases of epistemic misconduct, characterized by a lack of minimum adequate statistical evidence and not by flawed theoretical foundations. Hence, CAP's definition identifies alternative techniques through a lack of statistical evidence of effectiveness in clinical settings, thus making a clear distinction between evidence-based and alternative psychotherapies.

Therefore, despite stimulating debates on the role of theoretical plausibility, mediators, and processes in the assessment of therapeutic causality (e.g. Kazdin, 2007), CAP's definition fits well with the definition and operationalization of CAM. It also fits well with evidence-based practice guidelines, offering a parsimonious and functional definition of alternative psychotherapies.

Why is CAP still so popular among clinicians?

Despite current institutional efforts within clinical psychology, a large gap between researchers and clinicians regarding EBP acceptance is still widespread for manifold reasons (Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2015). Accordingly, researchers tend to endorse EBP (r = 0.39) while clinicians show an opposite attitude (r = -0.11; both effect sizes extracted from Seligman, Hovey, Hurtado, Swedish, Roley, Geers, Kene, et al., 2016). Moreover, clinical psychologists are less prone to endorse evidence-based practices in comparison to other health professionals. Indeed, they have shown lower levels of support for

EBP than social workers and registered counsellors (d = 1.68[7], in Padmanabhanunni & Sui, 2017), nurses (d = 0.21, in Rye, Friborg, & Skre, 2019) and non-clinical psychologists (d = 0.25, in Rye, Friborg, & Skre, 2019).

This reluctance to support EBP is higher among private practitioners (β = -0.24, in Nelson & Steele, 2007; β = -0.19, in Rye, Friborg, & Skre, 2019) and within some theoretical orientations — as expected, acceptance of EBP is significantly lower among CAP practitioners than, for example, cognitive-behavioural clinicians (β = -0.32, in Nelson & Steele, 2007; for a qualitative study see Gyani, Shafran, Rose, & Lee, 2015). Additionally, despite leadership have influence on the acceptance of EBP by means of an empowering workplace climate (β = -0.19, in Brimhall, Franwick, Farahnak, Hurlburt, Roesch, & Aarons, 2016), some recent studies indicate that clinical leaders show the same overall level of commitment to EBP as their subordinates (Stadnick, Lau, Barnett, Regan, Aarons, & Brookman-Frazee, 2018; Rye, Friborg, & Skre, 2019).

High rates of CAM use among clinical psychologists illustrate resistance to evidence-based practice, with popular apologists of its clinical use (Barnett, Shale, Elkins, & Fisher, 2014) and strong science-based opposition (Swan, Skarsten, Heesacker, & Chambers, 2015). In Liem and Newcombe (Indonesia; 2017), 73% of clinicians recommended CAM to their clients and 98% had used it for treating their own health problems. In two Australian studies, around 69% of clinicians reported using CAM (Wilson, White, & Obst, 2011; Ligorio & Lyons, 2018). Of these, 81% used CAM for psychological well-being and 86% for general health (Ligorio & Lyons, 2018), whereas 51% of clinicians referred clients to CAM practitioners (Wilson, White, & Obst, 2011). In Stapleton, Chatwin, Boucher, Crebbin, Scott, Smith, and Purkis (2015), a sample formed by Australian, American, New Zealander and

7 This result was obtained by analyzing the differences between clinical psychologists (n = 27) vs others (social workers and registered counsellors; n = 13) in the Requirements subscale from the Evidence-Based Practice Attitude Scale (Aarons, 2004).

British clinicians reported 99.6% CAM use, with 64.2% of respondents having received some level of formalized training in at least one CAM technique[8].

Despite this situation, clinicians mostly accept scientific research as important in their professional decision-making, but do not consider research a main source of information (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009). Consequently, they tend to prioritize informal discussions with other professionals (Nelson, Steele, & Mize, 2006; Stewart & Chambless, 2007; Pignotti, 2009; Gyani, Shafran, Rose, & Lee, 2015), direct experience with patients (Nelson, Steele, & Mize, 2006; Stewart & Chambless, 2007; Pignotti, 2009; Gyani, Shafran, Rose, & Lee, 2015), compatibility with their theoretical orientation (Stewart & Chambless, 2007; Pignotti , 2009; Stewart, Chambless, & Baron, 2012), and even compatibility with their intuition, personality and emotions (Pignotti, 2009).

Several theories have been proposed in order to explain the persistence of clinicians' disregard of EBP (e.g. Lilienfeld, 2010; Gallo & Barlow, 2012; Stewart, Chambless, & Baron, 2012; Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2013; Lilienfeld, Marshall, Todd, & Shane, 2014; Lee & Hunsley, 2015). The most accepted explanations will be analyzed in detail in the following subsections.

Rejection of scientific reasoning

One of the most important features of the reasoning style of professionals who resist EBP is what philosophers call “naive realism”: the idea that the intuitive information we receive “through our own eyes” greatly or completely represents the true structure and

8 Similarly, prior research has shown that CAM use among mental health patients is also substantial (Spinks & Hollingsworth, 2012; Hansen & Kristoffersen, 2016; deJonge, Wardenaar, Hoenders, Evans-Lacko, Kovess-Masfety, Aguilar-Gaxiola, Al-Hamzawi et al., 2018).

behaviour of reality (Ross & Ward, 1996). In the dual process view of cognition, particularly in the default-interventionist view (Evans, 2007), the fast and intuitive response derived from System-1 is our cognitive default, but this can be overridden by the slow and reflective System-2 processes. Intuitive thinking is not inherently wrong, but some authors overstate its epistemic benefits (e.g. Gigerenzer, 2007), as intuition is easily affected by cognitive biases (Myers, 2003). In relation to this, Seligman, Hovey, Hurtado, Swedish, Roley, Geers, Kene, et al. (2016) found worrying results: intuitive decision-making is positively correlated with interest in clinical practice (r = 0.17) whereas analytical thinking is strongly and positively correlated with interest in a research-focused career (r = 0.43). Furthermore, a greater intuitive thinking style among clinicians is negatively associated with positive attitudes towards EBP (r = -0.33, in Seligman, Hovey, Hurtado, Swedish, Roley, Geers, Kene, et al., 2016), as well as positively with magical beliefs about health (r = 0.43, in Gaudiano, Brown, & Miller, 2011) and with endorsement of alternative medicine (r = 0.57, in Gaudiano, Brown, & Miller, 2011).

There are other logical-methodological factors that interfere with the acceptance of EBP, such as poor understanding of the logic of the burden of proof (Pigliucci & Boudry, 2014) — the reversal of this epistemic standard generates an "argument from ignorance" in which lack of evidence becomes confirmatory evidence. Furthermore, the tension between nomothetic and ideographic research in understanding human nature is also a common problem (Grove & Meehl, 1996). Even though due to probability distribution actuarial prediction does not work for all patients, it offers the greatest warranty to the majority of them and facilitates uncertainty reduction during clinical decision-making (Egisdottir, White, Spengler, Maugherman, Anderson, & Cook, 2006). Nevertheless, the disparity between the statistical approach of researchers and individualized clinical practice hinders the use of group-based findings and leads many clinicians to demand more flexibility to implement research outcomes (Nelson, Steele, & Mize, 2006; Kendall & Frank, 2018).

Generally, clinicians have shown greater difficulties than researchers in understanding the logical framework of scientific epistemology — provisional and incomplete, but reliable knowledge — especially regarding randomized controlled trials (Nelson, Steele, & Mize, 2006; Gyani, Shafran, Rose, & Lee, 2015). Practitioners show a striking tendency towards a "philosophical approach" to RCTs, oversizing their concerns about philosophical issues relating to the nature, the methodology, and the hierarchy of clinical evidence (Gyani, Shafran, Rose, & Lee, 2015). In the most extremes cases, this approach can be conceptualized as a form of "pseudo-scepticism" (Torcello, 2016).

Misconceptions about human nature

There are many myths about psychology, many of them directly related to the etiology and treatment of mental disorders (Lilienfeld, Lynn, Ruscio, & Beyerstein, 2010; Hughes, Lyddy, Kaplan, Nichols, Miller, Saad, Dukes et al., 2015) — for example, that people with schizophrenia show dissociative identity disorder or that dreams reflect unconscious desires. The persistence of these misconceptions strongly skews clinicians' conceptions of which psychotherapy best fits human nature. Misconceptions related to the functioning of memory are particularly harmful in this regard (Lynn, Lock, Loftus, Krackow, & Lilienfeld, 2003), as the repression of traumatic memories has been postulated by some authors as the etiology of virtually all mental disorders (e.g. Ross & Pam, 1995). In the United States, 60.3% of clinical psychologists, 77.6% of psychology students, 89.8% of NLP practitioners, and 82% of hypnotherapists believe that repressed memories are a real psychological phenomenon with deep implications for mental health care (Patihis, Ho, & Tingen, 2014).

Other misconceptions, such as radical environmentalism and the clinical primacy of

childhood experiences, are at the basis of the so-called "trauma-centric" view of psychopathology (Giesbrescht, Lynn, Lilienfeld, & Merckelbach, 2010), leading to claims such as "serious chronic childhood trauma is the overwhelming driver of psychopathology in Western civilization" (Ross & Pam, 2005, p.122). These misleading conceptual frameworks foster preferences toward CAP among clinicians and are a major impediment for choosing psychotherapies which do not seek to delve into a supposedly traumatic past of patients — cognitive-behavioural therapy being one example.

Pragmatic limitations

There are some attitudes, related to the practice and teaching of clinical psychology, that explain why some professionals prefer CAP instead of EBP (Gallo & Barlow, 2012; Stewart, Chambless, & Baron, 2012). For example, many clinicians are emotionally exhausted by high workloads and do not have the time to search for evidence-based interventions (Gallo & Barlow, 2012; Barnett, Brookman-Frazee, Regan, Saifan, Stadnick, & Lau, 2017). Some of them feel overwhelmed by the massive amount of existing information about EBP and see the search for relevant research outcomes as an endless endeavour (Gallo & Barlow, 2012), while many find the technical language used as greatly problematic — especially the statistical jargon of academic articles (Backer, 2000). Moreover, a high number of clinical psychologists do not have a clear understanding of what a treatment manual is and of its value for clinical practice (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2015).

Another pragmatic reason that explains the acceptance of CAP is the environment of political correctness that traditionally characterizes interplays among psychologists. Because of this, many clinicians consider that CAP suppliers belong to an equally respectable "school

of thought" (Lilienfeld, 2010). In scientific fields, such as clinical psychology, it is legitimate to defend a hypothesis or an underdetermined theory, but "school of thought" is a concept related to dogmatism, unacceptable within the epistemology and the *ethos* of scientific inquiry.

In light of this situation, scholars such as Lilienfeld, Lohr and Morier (2004) have argued that the education of psychologists should include explicit training for the detection of pseudoscience. The empirical grounds of these pedagogical proposals are strong: although there are negative linear correlations between some components of scientific literacy and certain types of unwarranted beliefs (Fasce & Picó, 2019b), only courses that specifically and directly address unwarranted beliefs have been associated with a reduction of such beliefs, while unrelated general education classes on critical thinking and research methods have not achieved a reduction (Wilson, 2018; Dyer & Hall, 2018). Indeed, general psychological education does not have a robust effect against EBP rejection (e.g. Aarons & Sawitzky, 2006; Nelson & Steele, 2007; Aarons, Glisson, Hoagwood, Kelleher, Landsverk, & Cafri, 2010). On the contrary, EBP courses ($\beta = 0.27$, in Nelson & Steele, 2007), and a constructive institutional culture ($d = 0.55$, in Aarons & Sawitzky, 2006; $\beta = 0.38$, in Nelson & Steele, 2007) are particularly effective to improve openness towards EBP.

Concluding remarks

As our literature review shows, some clinicians suffer from a systematic and persistent lack of internalized understanding of both the philosophical foundations of psychology as a scientific field and of the pragmatic and ethical benefits of EBP. Consequently, these clinicians need to increase their understanding and commitment, while, in general terms, clients must be better informed about the potential consequences of alternative psychotherapies. Although there are advances, such as APA's commitment to EBP (APA, 2006), deeper improvements are

needed in psychology teaching, dissemination, professional accreditation and ethical control.

It would be interesting, in this respect, to analyse how these improvements have been implemented in medicine, although clinical psychology may have some intrinsic shortcomings. For example, certain philosophical peculiarities such as the abstract and diffuse nature of psychological constructs, the relative lack of knowledge about therapeutic processes and lower level mechanisms, and the wide range of demanding statistical techniques may hinder proper understanding of the field. In relation to the pragmatic advantages of EBP, the historical stigma of mental health care, postmodern science denialism such as the anti-psychiatry movement, and the deep emotional and relational implications of mental health may be particularly problematic for the public acceptance of clinical psychology as a scientific field.

We have offered a definition of alternative psychotherapies, to be used in further research on the subject. Nevertheless, the most basic aim of this article is to encourage other researchers to investigate CAP in the same way as for CAM. This is important, as CAP has shown some distinctive characteristics that are deeply rooted in mental health care, as well as being a persistent and potentially harmful practice. Furthermore, the study of CAP is not only preventative: it may help us to improve current EBP deployment through better understanding of its shortcomings, in addition to explaining why its rejection is so appealing.

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