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Psychological Treatments for Mental Disorders in Children and Adolescents: A Review of the Evidence of Leading International Organizations

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1
2 **Abstract**
3

4 In recent decades, the evidence on psychological treatments for children and adolescents
5 has increased considerably. Several organizations have proposed different criteria to
6 evaluate the evidence of psychological treatment in this age group. The aim of this study
7 was to analyze evidence-based treatments drawn from RCTs, reviews, meta-analyses,
8 guides and lists provided by four leading international organizations. The institutions
9 reviewed were the National Institute for Health and Care Excellence (NICE), the Society
10 of Clinical Child and Adolescent Psychology (Division 53) of the American
11 Psychological Association (APA), Cochrane Collaboration and the Australian
12 Psychological Society (APS) in relation to mental disorders in children and adolescents.
13 A total of 137 treatments were analyzed for 17 mental disorders and compared to
14 determine the level of agreement among the organizations. The results indicate that, in
15 most cases, there is little agreement among organizations and that there are several
16 discrepancies within certain disorders. These results require reflection on the meaning
17 attributed to evidence-based treatments with regard to psychological treatments in
18 children and adolescents. The possible reasons for these differences could be explained
19 by a combination of different issues: the procedures or committees may be biased,
20 different studies were reviewed, different criteria are used by the organizations or the
21 reviews of existing evidence were conducted in different time periods.
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51 **Keywords:** Psychological Treatments; Child and Adolescent Mental Disorders;
52 Evidence-based Psychology; Review article
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Introduction

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2 Psychological treatments for children and adolescents have been given less
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4 attention than those implemented in the adult population. In many cases, psychological
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6 interventions involving children and adolescents were designed as adaptations of those of
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8 adults (Jacobs, Hlastala, & McCauley, 2008) when in clinical practice it can be verified
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10 that, for example, a child suffering from depression has specific characteristics that differ
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12 greatly from those of adults in terms of the etiology, symptoms, evolution and treatment
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14 of this disorder. In their comprehensive review of the literature on the treatment of
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16 adolescents, Weisz and Hawley (2002) examined 25 empirically supported
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18 psychotherapies that have been used in children and adolescents. According to these
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20 authors, 14 of the 25 therapies have been shown to be effective in adolescents.
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22 Interestingly, seven are downward adaptations of treatments originally designed for
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24 adults and six are upward adaptations of treatments originally designed for children,
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26 leaving only one that was developed specifically for adolescents. In conclusion, few of
27
28 the 14 empirically supported treatments that have been used in adolescents were designed
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30 with a focus on the primary developmental task of adolescence (Holmbeck, Devine, &
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32 Bruno, 2010).
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41 Interest in therapies for children and adolescents began a little later than Eysenk's
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43 influential work (1952), which questioned the benefit of psychotherapies, and the
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45 subsequent meta-analyses of Smith and Glass (1977) and Shapiro and Shapiro (1982),
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47 which supported the beneficial effects of psychotherapy in adults. In this regard, Casey
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49 and Berman (1985) published a meta-analysis of child treatment studies, concluding that
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51 "the evidence from this review suggests that previous doubts about the overall efficacy
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53 of psychotherapy with children can be laid to rest" (p. 388). Later, Weisz and colleagues
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55 conducted two meta-analyses of psychotherapy studies with children (Weisz, Weiss,
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Alicke, & Klotz, 1987; Weisz, Weiss, Han, Granger, & Morton, 1995). These studies were the first to provide empirical evidence that the effects of child psychotherapy appear to differ depending on a variety of factors, including the child’s problem and the type of therapy (Southam-Gerow & Prinstein, 2014). Recently, Weisz et al. (2017) have performed a new meta-analysis of child and adolescent treatment studies encompassing the last five decades, concluding that youth psychological therapy has a beneficial effect of moderate magnitude and is relatively durable over time, although this effect depends on the child’s problem, the type of therapy used, the control condition employed and who reports the outcome.

The American Psychological Association (APA) Task Force on Promotion and Dissemination of Psychological Procedures made a significant effort to systematically define how psychological treatments should be evaluated, which included professionals from the private health sector, the public health system, researchers and users. The task force published several reports (Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Chambless et al., 1996; Chambless et al., 1998) with lists of evidence-based treatments based on criteria to assess randomized controlled trials (RCTs) using control groups following standardized treatment guidelines (APA, 2006). Criteria began to be developed to clearly define empirically supported treatments (ESTs) for mental health disorders (Barlow, 1996; Seligman, 1995; Shapiro, 1996).

Possibly one of the major contributions of the list of ESTs has involved the creation of institutions that act as mediators between research and clinical practice, as well as the establishment of explicit criteria for judging the quality of evidence of the various interventions. This mediation entails both the evaluation of evidence (through selective reviews guided by criteria) and the transfer of information (through publications, books, manuals, training courses, etc.) to the different stakeholders involved

1 (psychologists, patients, health institutions and the general public). However, the
2 institutions that evaluate the evidence often use different criteria and degrees of
3 assessment, thus suggesting that the reliability among lists is significantly different in
4 terms of how they are constructed and analyzed (Primero & Moriana, 2011).
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9 The evidence concerning psychosocial treatments for children and adolescents
10 experiencing behavioral health problems is building up at an impressive rate (Southam-
11 Gerow & Prinstein, 2014). For the period 1965–2009, Chorpita et al. (2011) identified
12 over 750 treatment protocols from 435 studies on child and adolescent mental health.
13
14 Moreover, in the last few decades, professionals and stakeholders have shown a growing
15 interest in psychosocial treatments that have been found to ameliorate child and
16 adolescent clinical disorders (Silverman & Hinshaw, 2008), and several authors have
17 proposed different criteria to evaluate the evidence of psychological treatments in
18 children and adolescents (Chorpita et al., 2011; Kazdin & Wilson, 1978). In addition, the
19 Society of Clinical Child and Adolescent Psychology of the APA (Lonigan, Elbert, &
20 Johnson, 1998; Silverman & Hinshaw, 2008; Southam-Gerow & Prinstein, 2014) and
21 other organizations (e.g., National Institute for Health and Care Excellence, Australian
22 Psychological Society, Cochrane Collaboration) have made different proposals in this
23 regard, although agreement among them is not unanimous.
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43 The present study therefore aims to analyze and compile lists of evidence-based
44 psychological treatments in children and adolescents by disorder using data provided by
45 RCTs, meta-analyses, guidelines and systematic reviews of the Society of Clinical Child
46 and Adolescent Psychology of the APA, the National Institute for Health and Care
47 Excellence (NICE), the Australian Psychological Society (APS) and Cochrane
48 Collaboration. The data were then reviewed to compare the criteria, levels of evidence
49 and lists of these organizations with the aim of analyzing the level of agreement among
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them.

These four organizations were selected for the review for the following reasons. The Society of Clinical Child and Adolescent Psychology of the APA is a leading international organization which promotes evidence-based psychological treatments in children and adolescents. NICE and Cochrane Collaboration are international organizations that provide guidance on all kinds of evidence-based therapies on a wide range of health disorders, and the APS facilitates clear and rigorous information about the efficacy of a broad range of psychological interventions across mental disorders.

Method

The method used in this review conforms to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Moher, Liberati, Tetzlaff, & Altman, 2009).

Description of the organizations included in the study

Society of Clinical Child and Adolescent Psychology (Division 53) of the APA

APA is the leading scientific and professional organization representing psychology in the United States. APA's 54 divisions are interest groups organized by members. Some represent subdisciplines of psychology (e.g., clinical psychology), while others focus on thematic areas such as aging or ethnic minorities. The Society of Clinical Child and Adolescent Psychology (Division 53) includes APA members who are active in practice, research, teaching, administration and/or conduct studies in the field of clinical child and adolescent psychology. The mission of Division 53 of the APA (D53) is to promote the advancement of clinical child and adolescent psychology by integrating its scientific and professional aspects, and promoting scientific inquiry, training, and professional practice in clinical child and adolescent psychology as a means of improving the mental health of children, adolescents and families. The D53 website

1 (www.effectivechildtherapy.com) informs the general public about research evidence for
2 psychological treatments in this age group.
3

4 Evidence-based treatment reviews have appeared in the *Journal of Clinical Child*
5 *and Adolescent Psychology (JCCAP)* over the past two decades and have also been
6 disseminated on the D53 website. In 1998, Lonigan et al. (1998) published a special issue
7 on empirical support for specific psychological treatments. Some years later, Silverman
8 and Hinshaw (2008) published a second special issue of evidence-based treatment
9 updates. Due to the large number of new treatment studies, the D53 Board of Directors
10 determined that a decennial review of the evidence base was insufficient to keep up with
11 the rapidly collecting evidence (Shotham-Gerow & Prinstein, 2014). Therefore, a new
12 special issue focusing on evidence-based treatments was published in 2014 (Shotham-
13 Gerow & Prinstein, 2014) and D53 aimed to publish more updates on evidence-based
14 treatments for various child and adolescent problems more regularly.
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31 D53 currently classifies levels of evidence into five levels. To be considered a
32 Level One treatment (also defined as “Works well” or “Well-established treatments”), at
33 least two large-scale RCTs must have demonstrated the superior efficacy of the treatment
34 to some other treatment and the studies must have been conducted by independent
35 investigatory teams working in different research settings. Level Two therapies (also
36 defined as “Works” or “Probably efficacious therapies”) have strong research support,
37 but may not have been tested by different or independent teams. In Level Three therapies
38 (also defined as “Might work” or “Possibly efficacious therapies”), there may be one
39 study showing that the treatment is better than no treatment, or there may be a number of
40 smaller clinical studies without all of the appropriate procedural controls. Level Four
41 therapies (also defined as “Unknown,” “Untested” or “Experimental therapies”) may be
42 in use, but have not been studied carefully. For some child/adolescent symptoms or
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1 disorders with limited therapy options, a treatment at this level could be worth
2 considering. Finally, Level Five therapies (also defined as “Does not work” or “Tested
3 but did not work”) have been tested in well-designed studies and have not yet shown
4 positive results or have been shown to make symptoms or behaviors worse. A therapy
5 currently listed as Level Five would not be a good treatment option.
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12 *National Institute for Health and Care Excellence (NICE)*
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14 NICE is an organization that is responsible for providing evidence-based guidance
15 on health and social care to the National Health Services (NHS) in the UK, which works
16 closely with other organizations such as NHS England, Public Health England or Health
17 Education England. NICE publishes clinical guidelines, technology appraisal guidance,
18 interventional procedures guidance and public health guidelines that make evidence-
19 based recommendations on a wide range of health, public health and social care topics.
20 Its competences range from providing information, education and advice to launching
21 campaigns and prevention programs for specific treatments for primary, secondary and
22 specialized services covering all medical specialties. Each NICE guideline is developed
23 by a different committee of experts, which includes members from clinical practice,
24 public health and social care. In addition, all committees include at least two lay members,
25 who can be patients, caregivers, service users or the general public. The committees
26 conduct systematic reviews and network meta-analyses for evaluating and comparing the
27 benefits and cost effectiveness of the different forms of treatment included in each
28 guideline. The process to develop each guideline usually takes between 18 and 24 months,
29 although there are “short clinical guidelines” that take between 11 and 13 months to
30 produce and are generally used in cases where the development of a guide on an emerging
31 problem is considered urgent. NICE classifies evidence by level in a hierarchy which is
32 similar to that of D53, although different criteria are used. Level I includes the type of
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1 evidence obtained from meta-analyses and RCTs (at least one) and corresponds to
2 recommendation grade “A”; level II includes evidence from at least one controlled study
3 without randomized groups, or a quasi study, and corresponds to grade “B”; level III,
4 which includes descriptive studies (or those which do not fully meet the criteria in levels
5 I and II), also corresponds to grade “B”; and level IV, which includes evidence obtained
6 from expert committee reports or opinions and/or clinical experiences, corresponds to
7 grade “C”. More recently, the NICE guidelines were incorporated into the GRADE
8 system for rating clinical guidelines (Atkins et al., 2004). The GRADE system classifies
9 levels of evidence as high quality (further research is very unlikely to change our
10 confidence in the estimate of the effect); moderate quality (further research is likely to
11 have an important impact on our confidence in the estimate of the effect and may change
12 the estimate); low quality (further research is likely to have an important impact on our
13 confidence in the estimate of the effect and is likely to change the estimate) and very low
14 quality (any estimate of effect is very uncertain).
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33 *Cochrane Collaboration*

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36 This organization comprises a network of researchers, practitioners, patients and
37 caregivers from over 130 countries working cooperatively to provide evidence-based data
38 in order to facilitate decision making about which treatment to choose for a particular
39 disorder or health problem. The Cochrane collaborators are affiliated to the organization
40 through Cochrane groups, which are review groups related to health topics, thematic
41 networks, groups involved in the methodology of systematic reviews and regional
42 centers. These groups are established around the world and most of their work is done
43 online. Each group is a “mini-organization” in itself, with its own funding, website and
44 workload. Based on their interests, experience or geographical location, collaborators join
45 a group or, in some cases, various groups. The Cochrane groups perform systematic
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1 reviews and meta-analyses of specific health topics on all kinds of diseases. The reviews
2 provide a summary of the results of available studies, mainly RCTs, which present
3 information about the effectiveness of interventions in a specific health topic. Cochrane
4 reports on evidence for and against treatments, treatment efficacy and treatment
5 comparison studies to facilitate decision making in health care. Like NICE, Cochrane has
6 also recently incorporated the GRADE model (Atkins et al., 2004) as criteria to determine
7 the quality of evidence.
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10 *Australian Psychological Society (APS)*

11 The APS is the premier professional organization for psychologists in Australia.
12 The functions of the APS are conducted through more than 201 active member
13 groups within the society. Each group consists of an elected committee that meets
14 regularly and organizes activities, such as professional development. Evidence-based
15 practice has become a central issue in the delivery of health care in Australia and, as such,
16 government-sponsored health programs require the use of treatment interventions that are
17 evidence-based as a means of discerning the allocation of funding.
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20 The National Health and Medical Research Council (NHMRC) of Australia has
21 published a guide for evaluating evidence and developing clinical practice guidelines.
22 The NHMRC guide informs public health policy in Australia and has been adopted as a
23 protocol for evidence reports by the APS. The NHMRC has developed a rating scale to
24 designate the level of evidence of clinical studies: Level I – systematic review of all
25 relevant randomized controlled trials; Level II – at least one properly designed
26 randomized controlled trial; Level III-1 – well-designed pseudo-randomized controlled
27 trials (alternate allocation or some other method); Level III-2 – comparative studies with
28 concurrent controls and allocation of not randomized (cohort studies) or interrupted time
29 series with a control group; Level III-3 – comparative studies with historical control, two
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or more single-arm studies or interrupted time series without a parallel control group; and Level IV – case series, either post-test or pre-test and post-test.

APS has published a comprehensive review of the available evidence up to January 2010, which examines the efficacy of a broad range of psychological interventions across mental disorders affecting adults, adolescents and children (APS, 2010). This review of the literature examining the efficacy of a broad range of psychological interventions for the ICD-10 mental disorders has been undertaken to support the delivery of psychological services under government mental health initiatives. To determine the level of evidence of the treatments included in the review, APS uses the criteria developed by NHMRC mentioned above.

Search strategy

We first consulted the websites of the organizations described above (APA, Division 53, www.effectivechildtherapy.org; NICE, www.nice.org.uk; Cochrane, www.cochrane.org; and APS, www.psychology.org.au) to gather all the treatments, disorders and levels of evidence they report for children and adolescents. In a second stage, we collected the RCTs, reviews and meta-analyses presented by each organization. The last date of access and updated information uploaded by the organization was October 15, 2017.

Inclusion and exclusion criteria

Owing to the sheer number of related disorders and treatments, we selected as our inclusion criteria only those investigated in children and adolescents. Problems related to health psychology, learning disorders, speech disorders, personality disorders, substance abuse, self-harm, body-focused repetitive behaviors and drug therapies were excluded. In the case of Cochrane, the following types of reviews were also excluded: reviews of specific sectors of the population (e.g., psychological interventions for depression in

1 adolescents and adults with congenital heart disease), prevention reviews, reviews on
2 assessment tools, systematic reviews of studies on specific non-psychological procedures
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4 (i.e., cranial magnetic stimulation or electroconvulsive therapy), systematic reviews of
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6 studies assessing diagnostic test accuracy and the protocols for reviews.
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8 9 *Data collection process*

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11 Treatment recommendations for the disorders addressed in this study can be found
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13 in the Results section. Information on the evidence provided by the different
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15 organizations for each treatment is specified in the tables, while the box corresponding to
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17 treatments for which there is no reference to evidence is left blank. When an organization
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19 deems that there are not enough studies to consider the treatment effective, we use the
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21 term “Insufficient Evidence.” In addition, next to the level of evidence we specify the
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23 number of RCTs and meta-analyses or systematic reviews that each organization has used
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25 to reach their conclusions.
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31 As a result, in the row corresponding to D53 we classify the quality of the evidence
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33 of a particular treatment as Level One, Level Two, Level Three, Level Four or Level Five.
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35 In the row corresponding to NICE, we specify the grade of recommendation (A, B, C) for
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37 post-traumatic stress disorder and obsessive-compulsive disorder, or the level of evidence
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39 according to the GRADE criteria (high, moderate, low and very low) for other disorders
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41 included by this organization. Moreover, the update guideline for attention deficit
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43 hyperactivity disorder (ADHD) (NICE, 2013a) does not report the level of evidence of
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45 behavioral classroom management (BCM) and organization training (OT). Consequently,
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47 we only indicate whether these treatments are considered effective, non-effective or if
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49 there is insufficient evidence, without specifying the level of effectiveness of the
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51 treatments in the tables. Finally, some treatments are accompanied by the indication “no
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53 research support” or, when appropriate, “advised against using.” For Cochrane, we opted
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1 to show the data exactly as it appears in the systematic reviews obtained from the system.
2 Specifically, for all the reviews conducted after 2012 and that of Reichow, Steiner, and
3 Volkmar (2012); Storebø, Skoog, Damm, Thomsen, Simonsen, and Gluud (2011) and
4 Krisanaprakornkit, Ngamjarus, Witoonchart, and Piyavhatkul (2010), we indicate the
5 level of evidence according to the GRADE criteria, while for other reviews we indicate
6 whether a particular treatment is effective or non-effective. Regarding APS, we specify
7 the levels of evidence according to the criteria used by the organization itself, which are
8 described above (Level I, Level II, Level III-1, Level III-2, Level III-3 and Level IV).
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19 Finally, the total number of organizations that report a given therapy as being
20 effective is shown in the tables. For this purpose, we have considered that a therapy is
21 deemed effective by an organization in the following cases. D53: Level One, Level Two,
22 Level Three and Level Four; NICE: A, B, C, high, moderate, low, very low or effective;
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Statistical Analysis

To analyze agreement among organizations, we have classified the different levels of evidence proposed by each organization into an ordinal scheme as no evidence, weak evidence, moderate evidence and strong evidence (see Table 1). In the case of NICE for autism and D53 for autism, depression and disruptive disorder, where different levels of evidence may appear for a treatment (see Table 3, Table 5 and Table 6, respectively), we have used the higher level of evidence.

(Insert Table 1 about here)

The intra-class correlation (ICC) is one of the most commonly-used statistics for assessing inter-rater reliability (IRR) for ordinal, interval and ratio variables (Hallgren, 2012). The ICC is suitable for this type of measurements since it evaluates the reliability of the obtained qualifications when comparing the variability of the different grades for

1 the same treatment with total variation across all classifications and treatments. As in the
2 previous study of Moriana, Gálvez-Lara, and Corpas (2017), IRR has been performed
3
4 using a two-way mixed, consistency, average-measures ICC to assess the level of
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6 agreement among the four organizations for each diagnosis, taking into account only
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8 those therapies considered effective by at least one institution.
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11 According to Hallgren (2012), higher ICC values suggest a greater IRR, with an
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13 ICC estimate of 1 indicating perfect agreement and 0 indicating only random agreement.
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15 Moreover, this author states that negative ICC estimates indicate systematic
16
17 disagreement, and some ICCs may be less than -1 when there are three or more coders.
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19 The cutoffs proposed by Cicchetti (1994) for the qualitative rating of agreement based on
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21 ICC values were used, with IRR being poor for ICC values less than .40, fair for values
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23 between .40 and .59, good for values between .60 and .74 and excellent for values
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25 between .75 and 1.
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31 **Results**

32 *Search results*

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36 The APA Division 53 website includes a list of 13 diagnostic categories. In
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38 accordance with the inclusion criteria, 10 mental disorders were analyzed, giving rise to
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40 a total of 91 psychotherapeutic interventions associated with them.
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43 We consulted the guidelines relating to mental disorders published on the NICE
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45 website and reviewed sections corresponding to evidence-based treatments. Of the 39
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47 guidelines published by the Mental Health and Behavioral Conditions group, nine met
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49 the criteria for inclusion in our review. One set of guidelines on Urological Conditions
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51 that provides information on 13 disorders and 63 therapies was also included.
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54 We analyzed the systematic reviews provided by Cochrane for the group of mental
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56 disorders in children and adolescents and obtained data from the evidence for each of the
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1 treatments reviewed. The Cochrane website includes a total of 935 reviews belonging to
2 the Mental Health and Developmental, Psychosocial & Learning Problems group. Of
3 these, 22 which provide information on 26 psychological treatments for eight disorders
4 met the criteria for inclusion in our analysis.
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9 Finally, we incorporated the lists of treatments included in the document published
10 by APS (2010). This guide includes 17 disorders in the interventions in children and
11 adolescents section. Consistent with the inclusion criteria, 14 disorders relating to 21
12 interventions were selected.
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18 *Agreement for included disorders*

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20 In what follows, we compare the four organizations to determine whether there is
21 agreement among them regarding treatments for the disorders.
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25 *Anxiety disorders*

26 *General symptoms of anxiety*

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28 The only organizations that provide information about effective psychological
29 treatments for general symptoms of anxiety are D53 and Cochrane, which present 21
30 different types of treatments supported by some degree of evidence. The ICC (.266)
31 indicates poor agreement among organizations for this disorder. The review presented by
32 D53 (Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016) does not specify the
33 number of studies included in analyses for each treatment family. According to the
34 review, there is Level One evidence for cognitive behavioral therapy (CBT), exposure,
35 modeling, CBT with parents, education and CBT with medication; Level Two evidence
36 for family psychoeducation, relaxation and assertiveness training, attention control, CBT
37 for children and parents, cultural storytelling, hypnosis and stress inoculation; Level
38 Three evidence for contingency management and group therapy; Level Four evidence for
39 biofeedback, CBT with parents only, play therapy, psychodynamic, rational emotive
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1 therapy and social skills; and Level Five evidence for assessment/monitoring, attachment
2 therapy, client-centered therapy, eye movement desensitization and reprocessing
3 (EMDR), peer pairing, psychoeducation, relationship counseling and teacher
4 psychotherapy. In turn, Cochrane (James, James, Cowdrey, Soler, & Choke, 2015)
5 suggests that CBT is an effective treatment for childhood and adolescent anxiety
6 disorders, with a low to moderate level of evidence (41 RCTs).
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14 *Specific Anxiety Disorders*

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16 Psychological treatment for social anxiety disorder (SAD) in children and
17 adolescents has been studied by NICE and APS, which report three different types of
18 treatments supported by some degree of evidence. The ICC (0) indicates random
19 agreement among organizations for this disorder. The only treatment that APS (2010)
20 considers effective for this disorder is CBT, which was rated as Level II evidence (two
21 RCTs). However, in addition to considering CBT effective and assigning it a low level of
22 evidence (eight RCTs), NICE (2013b) also considers CBT with parents (very low to low;
23 three RCTs) and self-help therapy (low; two RCTs) to be effective for this disorder. As a
24 result, CBT is the only therapy considered effective by NICE and APS.
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39 Specific phobias (SP) in children and adolescents are only documented by APS
40 (2010), which assigns CBT a Level II of evidence (one RCT). This organization is also
41 the only one that provides evidence for generalized anxiety disorder in this age group, for
42 which it confers a Level I of evidence to CBT (one RCT). Given that only one
43 organization included treatments for these disorders, the ICC could not be calculated.
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51 Finally, no organization provides information regarding empirically supported treatments
52 for panic disorder in this age group.
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55 *Attention Deficit Hyperactivity Disorder*

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58 In reviewing the treatments included by the four organizations for attention deficit
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1 hyperactivity disorder (ADHD) in children and adolescents, we found nine different types
2 of treatments supported by some degree of evidence (see Table 2). The ICC (.173)
3 indicates poor agreement among organizations for this disorder. Behavioral parent
4 training (BPT) was the treatment with the highest level of agreement (three organizations
5 consider it effective), while the other treatments were regarded as effective by less than
6 three institutions.
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13 **(Insert Table 2 about here)**

14 *Autism*

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19 In examining treatments for autism in children and adolescents, we identified 14
20 different types of treatments supported by some degree of evidence (see Table 3). The
21 ICC (-1.447) indicates systematic disagreement among organizations for this disorder.
22 Parent training was the treatment with the highest level of agreement (three organizations
23 consider it effective). The other treatments were regarded as effective by less than three
24 institutions, 12 of which are considered effective by only one organization.
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33 **(Insert Table 3 about here)**

34 *Bipolar Disorder*

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39 When analyzing treatments for bipolar disorder in children and adolescents, we
40 found four different types of treatments supported by some degree of evidence (see Table
41 4). The ICC (.667) indicates good agreement among organizations for this disorder.
42 Family-focused therapy (FFT) was the treatment that obtained the highest level of
43 agreement (three organizations consider it effective), while the other therapies were
44 deemed effective by only one institution.
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53 **(Insert Table 4 about here)**

54 *Depression*

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58 An analysis of the treatments for depression in children and adolescents revealed
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12 treatments supported by some degree of evidence (see Table 5). The ICC (.286) indicates poor agreement among organizations for this disorder. CBT, interpersonal therapy, FFT and self-help therapy obtained the highest level of agreement (three organizations consider them effective), but none of them obtained the consensus of the four organizations, since Cochrane suggests that there is very limited evidence upon which to base conclusions about the relative effectiveness of psychological interventions for treating depressive disorders in this age group (Cox et al., 2014). The other treatments studied were regarded as effective by less than three institutions, five of which are considered effective by only one organization.

(Insert Table 5 about here)

Disruptive Behavior

In examining treatments for disruptive behavior in children and adolescents, we found 12 different types of treatments supported by some degree of evidence (see Table 6). The ICC (-.273) indicates systematic disagreement among organizations for this disorder. Family-focused interventions (FFI) and parent-focused behavior therapy (PFBT) both obtained the highest degree of agreement (three organizations regard them to be effective). The other treatments were considered effective by one or two institutions.

(Insert Table 6 about here)

Eating Disorders

Anorexia nervosa

When reviewing the treatments documented for anorexia nervosa (AN), five different treatments were found to be supported by some degree of evidence (see Table 7). The ICC (.655) indicates good agreement among organizations for this disorder. Family therapy-behavioral (FTB) obtained the highest level of agreement (three organizations consider it effective). However, other types of treatments were regarded as

effective by one or two organizations.

(Insert Table 7 about here)

Bulimia nervosa

We found four treatments supported by some degree of evidence when reviewing treatments for bulimia nervosa (see Table 8). The ICC (0) indicates random agreement among organizations for this disorder. FTB obtained the highest level of agreement (three organizations consider it effective), while the other treatments were considered effective by one or two institutions.

(Insert Table 8 about here)

Binge eating disorder

Binge eating disorder (BED) in children and adolescents is only documented by NICE (2017), which assigns a low level of evidence for individual CBT (1RCT/0 meta-analysis or systematic reviews), group CBT (0/0) and self-help therapy (1/0). With regard to other organizations, although D53 states that CBT is somewhat effective in adolescents with BED, according to this division, no child and adolescent therapies for this disorder have been tested for effectiveness. In the case of Cochrane, there are no reviews for this age group. In turn, APS (2010) reports that no recent studies have been found to indicate the effectiveness of any interventions for this disorder. Given that only one organization included treatments for this disorder, the ICC could not be calculated.

Enuresis

In reviewing the treatments included by the four organizations for enuresis, we identified 10 different types of treatments supported by some degree of evidence (see Table 9). The ICC (-1.15) indicates systematic disagreement among organizations for this disorder. Enuresis alarm, CBT, random waking and star charts were the treatments with the highest level of agreement (two organizations regard them to be effective). The other

six therapies were considered effective by only one organization.

(Insert Table 9 about here)

Insomnia

Insomnia in children and adolescents is only documented by APS (2010), which assigns a Level II of evidence to CBT (one meta-analysis). Given that only one organization included treatments for this disorder, the ICC could not be calculated.

Obsessive-Compulsive Disorder

We found three treatments supported by some degree of evidence when reviewing treatments for obsessive-compulsive disorder (OCD) (see Table 10). The ICC (.955) indicates excellent agreement among organizations for this disorder. Individual CBT obtained the maximum level of agreement (four organizations consider it effective). The other therapies, both variants of CBT, were deemed effective only by D53.

(Insert Table 10 about here)

Posttraumatic Stress Disorder

In examining treatments for posttraumatic stress disorder (PTSD), we found 10 different types of treatments supported by some degree of evidence (see Table 11). The ICC (.579) indicates fair agreement among organizations for this disorder. CBT was the treatment that obtained the highest level of agreement (three organizations consider it effective). The other treatments studied were regarded as effective by less than three institutions, eight of which are considered effective by only one organization.

(Insert Table 11 about here)

Psychosis and schizophrenia

Psychosis and schizophrenia in children and adolescents are only documented by NICE (2013f), which assigns a low level of evidence to CBT (12 RCTs), family therapy (two RCTs) and arts therapies (one RCT), including dance movement therapy, body

1 psychotherapy, drama therapy and music therapy. Furthermore, this organization
2 recommends that supportive therapy or social skills training not be routinely provided as
3 specific therapies for children and adolescents with psychosis or schizophrenia. Given
4 that only one organization included treatments for this disorder, the ICC could not be
5 calculated.
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11 **Discussion**

12 The goal of the criteria used to evaluate psychological treatment is to help
13 therapists and clients make good choices about the treatments they provide or request
14 (Southam-Gerow & Prinstein, 2014). However, recommendations regarding the
15 effectiveness of a given treatment depend on the organization being reviewed (Moriani
16 et al., 2017). These authors analyzed evidence-based treatments provided by Division 12
17 of the APA, NICE, Cochrane and APS in relation to mental disorders in adults and
18 concluded that, in most cases, there was little agreement among organizations and that
19 there were several discrepancies within certain disorders.
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33 Based on the previous study, the objective of this work was to compile a list of
34 evidence-based psychological treatments by disorder in relation to mental disorders in
35 children and adolescents. For this purpose, data provided by four international
36 organizations were used to analyze the level of agreement among them regarding each
37 diagnosis and each treatment within the disorders. The results of the analysis showed that
38 agreement is low for most of the disorders, as only three of them show an acceptable ICC.
39 Excellent agreement among organizations was found OCD, while good agreement was
40 observed for bipolar disorder and anorexia nervosa. For all other treatments, the
41 agreement among institutions was low.
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55 As in adults, the main findings of this study highlight the existing discrepancies
56 in the evidence presented by different organizations reporting on the effectiveness of
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psychological treatments in children and adolescents. Moriana et al. (2017) reported that the discrepancies in adults could be explained by a combination of different issues: the procedures or committees may be biased, different studies were reviewed, different criteria are used by each organization or the reviews of existing evidence were conducted in different time periods.

In analyzing the existing discrepancies in children and adolescents, the fact that numerous treatments are included by a single organization may support the theory that the procedures or committees are biased. In most cases, these institutions only provide information on treatments they consider effective with a higher or lower level of evidence. Therefore, we cannot determine why they do not recommend certain treatments. This is evident in PTSD, where eight out of 10 treatments are considered effective by only one organization. In some cases, however, organizations also provide information about therapies they do not consider effective, but numerous treatments are still included by a single organization. In autism, for example, information is provided for 18 therapies, of which 11 are reported by a single organization. This also occurs with ADHD or depression in seven out of 12 treatments and five out of 12 treatments, respectively. Moreover, the evidence provided by NICE and Cochrane may be biased as it relies on the meta-analyses which they commission, and the recommendations of D53 are based on the reviews that they perform. APS is the only institution that bases part of its recommendations on the reviews or meta-analyses conducted by other organizations or institutions.

As concerns the issue of whether or not different studies were reviewed, the analysis of the main discrepancies regarding therapies for mental disorders in children and adolescents shows that, in some cases, the organizations do indeed use different studies to determine the quality of the evidence. For example, in the case of ADHD, D53

1 (Evans, Owens, & Bunfond, 2014) considers that behavioral classroom management is a
2 Level One treatment for this disorder based on the RCTs of Fabiano et al. (2010) and
3 Mikami et al. (2013), while NICE (2013a), based solely on Mikami et al. (2013), deem
4 that the evidence on the beneficial effect of this therapy is insufficient. The same applies
5 to bladder training and retention control training (BTRCT) for enuresis, where Cochrane
6 (Caldwell, Nankivell, & Sureshkumar, 2013) confers a low level of evidence for this
7 therapy but NICE (2010b) does not believe that the evidence for BTRCT is sufficient to
8 recommend its use over other treatments. When comparing the six studies used by
9 Cochrane (Caldwell et al., 2013) and the five studies on which the NICE (2010b)
10 recommendations are based, we found that only two coincide (i.e., Bennett, Walkden,
11 Curtis, Burns, Rees, & Gosling, 1985 and Harris & Purohit, 1977).
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27 Several discrepancies were found for autism, which may also be due to the fact
28 that different studies were reviewed. For instance, while NICE (2013a) considers that the
29 evidence for music therapy is inconclusive based solely on the RCT of Gattino, Riesgo,
30 Longo, Leite, and Faccini (2011), Cochrane (Geretsegger, Elefant, Mössler, & Gold,
31 2014), based on 10 studies (including the RCT of Gattino et al., 2011), supports that music
32 therapy may help children with autism to improve their skills in important areas such as
33 social interaction and communication with a low to moderate level of evidence. The same
34 applies to picture exchange communication system (PECS). Thus, while D53 (Smith &
35 Iadarola, 2015) reports a Level Two of evidence on the effectiveness of PECS based on
36 the RCTs of Yoder and Stone (2006a, 2006b), NICE (2013c) considers that it is not
37 possible to draw conclusions about the relative benefit of PECS on reciprocal social
38 communication and interaction in children with autism based on the RCT of Howlin,
39 Gordon, Pasco, Wade, and Charman (2007).
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58 As to the different criteria used by each organization, a comparison among them
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1 showed that the requirements for granting, for example, the highest level of evidence to
2 a certain treatment differed among institutions. D53 requires at least two large-
3 scale RCTs which have demonstrated the superior efficacy of the treatment to some other
4 treatment. The criteria used initially by NICE require at least one meta-analysis or RCT.
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6 The GRADE system, used later by NICE and Cochrane, grants the highest level of
7 evidence if further research is very unlikely to change the confidence in the estimate of
8 the effect. Finally, APS requires a systematic review of all relevant RCTs to confer the
9 highest level of evidence. The analysis of these discrepancies also shows that, in other
10 cases, the studies which the institutions use to determine the quality of the evidence are
11 the same. Therefore, in these cases, the reason for the discrepancies could be the criteria
12 used. This is the case of autism, where, for example, D53 (Smith & Iadarola, 2015)
13 confers a Level Three of evidence to the early start Denver model (ESDM) based on the
14 RCT of Dawson et al. (2010), while NICE (2013c), based on the same study, considers
15 that the evidence for ESDM on overall autistic behaviors was inconclusive. The case of
16 family therapy for depression is significant. NICE (2015) considers this therapy to be
17 effective (low level of evidence) based solely on the RCT of Diamond, Reis, Diamond,
18 Siqueland, and Isaacs (2002), while D53 (Weersing, Jeffreys, Do, Schwartz, & Bolano,
19 2017) grants a Level Three of evidence to this therapy based on Diamond et al. (2002)
20 and Brent et al. (1997), among other studies. In contrast, Cochrane (Henken, Huibers,
21 Churchill, Restifo, & Roelofs, 2007) suggests that the current evidence base is too
22 heterogeneous and sparse to draw conclusions on the overall effectiveness of family
23 therapy in the treatment of depression also based on Diamond et al. (2002) and Brent et
24 al. (1997), among others. Lastly, APS (2010) confers a Level I of evidence to family
25 therapy based on this Cochrane review and another review presented by David-Ferndon
26 & Kaslow (2008).

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As regards enuresis, we have also found differences among organizations which
may be due to the fact that different criteria were used. For instance, while Cochrane
(Caldwell et al., 2013) suggests that dry bed training is effective for enuresis based solely
on the study of Bennet et al. (1985), NICE (2010b) recommends that dry bed training not
be used for the treatment of enuresis in children and young people based on five studies,
among them the study of Bennet et al. (1985). The same applies to fluid restriction. Thus,
while Cochrane (Caldwell et al., 2013) concludes that there is evidence to suggest that
this therapy is effective based on the study of Bhatia, Dhar, Rai, and Malik (1990), NICE
(2010b) concludes that no evidence for fluid restriction was found based on the same
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The fact that some reviews of existing evidence were conducted in different time
periods may also explain the discrepancies found. For this reason, it is advisable to that
lists reporting effective psychological treatments be updated on a regular basis since a
substantial number of these lists, reviews and guides are currently out of date (Moriana
et al., 2017). Moreover, the fact that NICE (2005) suggests that the evidence of EMDR
for the treatment of PTSD in children is inconclusive, while D53 (Dorsey et al., 2017)
confers a Level Two of evidence to this treatment based on three RCTs after the year
2007 and APS (2010) grants a Level I of evidence to EMDR, indicates that these
discrepancies in the observed evidence may be due to the different time periods in which
the reviews were conducted.

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Hence, as in adults, the discrepancies in the effectiveness of psychological
treatments in children and adolescents can be explained by the combination of the issues
discussed above. These results reinforce the argument of Moriana et al. (2017) that it
would be advisable to unify the criteria for assessing evidence and improve coordination
between organizations in order to verify that a treatment is truly effective using high-

quality reproducibility studies performed by independent teams.

The four organizations examined in this work are not the only sources that provide information on evidence of psychological treatments for mental disorders in children and adolescents. In many cases, these organizations do not include information contributed by other reviews that have been independently published, such as Davis, May, and Whiting (2011), who reviewed evidence-based treatments for anxiety and phobias in children and adolescents. These authors considered that CBT in the form of a one-session treatment (Davis, Ollendick, & Öst, 2009) is the best overall treatment option (well established) for specific phobias, either behavior therapy or group CBT would be optimal (probably efficacious) for SAD, CBT is the treatment of choice (well established) for OCD, CBT is the most efficacious choice (well established) for PTSD and group CBT merits well-established status for childhood anxieties (combined), while individual CBT and family-focused CBT merit probably efficacious status for this last disorder. Additionally, the recent meta-analysis of Öst and Ollendick (2017) has shown that brief, intensive and concentrated CBT is effective for anxiety disorder, and that there is strong support for specific phobia, modest support for PTSD and OCD, and minimal support for panic disorder, SAD, separation anxiety disorder and mixed anxiety disorders. Another recent review of a meta-analysis of CBT in children and adolescents (Crowe & McKay, 2017) has obtained overall medium effect sizes for anxiety, small to medium effect sizes for depression, a large effect size for OCD and a small to medium effect size for PTSD. Focusing on PTSD, the recent meta-analysis of Brown, Witt, Fegert, Keller, Rassenhofer, and Plener (2017) has shown a medium to large effect size for CBT, EMDR, narrative exposure therapy and classroom-based interventions. Another meta-analysis (Gutermann, Schreiber, Matulis, Schwartzkopff, Deppe, & Steil, 2016) showed a medium to large effect size for CBT and a small to large effect size for EMDR, concluding that CBT is the

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most promising treatment for this disorder.

As regards effective treatments for depression, a meta-analysis in pre-adolescent children (12 years and younger) indicated that evidence on the effectiveness of CBT, FFT and psychodynamic therapy is inconclusive for this age group as the number of participants in the trials was relatively small (Forti-Buratti, Saikia, Wilkinson, & Ramchandani, 2016). In contrast, other meta-analyses have shown that CBT is effective in children with depression (Yang et al., 2017) and behavioral activation may be effective for this kind of patients, although this last conclusion should be interpreted with caution (Martin & Oliver, 2018; Tindall, Mikocka-Walus, McMillan, Wright, Hewitt, & Gascoyne, 2017). In the case of bipolar disorder, a narrative review (Weinstein, West, & Pavuluri, 2013) considered that FFT, psychoeducational psychotherapy, child- and family-focused CBT, dialectical behavior therapy, interpersonal and social rhythm therapy and CBT are effective treatments for children and adolescents. Although evidence of the effectiveness of psychological treatments in pediatric psychotic disorders is limited, Stevens, Prince, Prager, and Stern (2014) suggested in their review that CBT and psychoeducation are available treatments for these patients.

Concerning ADHD, Fabiano, Schatz, Aloe, Chacko, and Chronis-Tuscano (2015) conducted a review of meta-analyses to investigate the degree to which some narrative reviews (Evans et al., 2014; Pelham & Fabiano, 2008; Pelham, Wheeler, & Chronis, 1998) that use operationalized criteria to graduate the effectiveness of psychological treatments were consistent with the meta-analytic literature. The authors concluded that the recommendations of the narrative reviews about the effectiveness of behavioral parent training and school-based contingency management were consistent with the meta-analytic literature; in turn, no meta-analysis calculated the effect sizes for training- and peer-focused interventions, which the narrative reviews determined to be effective. For

1 disruptive behavior, a recent meta-analysis has pointed out that parent-child interaction
2 therapy, multicomponent intervention and parent-focused intervention are effective
3 treatments, although there is not enough evidence to determine which of them is superior
4 (Bakker, Greven, Buitelaar, & Glennon, 2017). Another meta-analysis suggested that
5 treatments categorized as multicomponent interventions and treatments with only a parent
6 component are similar in their effectiveness, while therapies with only a child component
7 are less effective (Epstein, Fennesbeck, Potter, Rizzone, & McPheeters, 2015).
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17 Brunner and Seung (2009) conducted a literature review on evidence-based
18 treatments for autism spectrum disorder. The authors concluded that there is solid
19 evidence regarding the efficacy of applied behavior analysis (ABA), milieu teaching,
20 pivotal response treatment (PRT), developmental interventions (including parent
21 training), video modeling and augmentative and alternative communication (PECS and
22 sign language training), and that the evidence on classroom-based treatments, social skill
23 interventions and functional communication treatment remain in an exploratory stage of
24 investigation.
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36 As regards eating disorders, several systematic reviews and meta-analyses
37 consider that CBT is an effective treatment for anorexia nervosa, although it is not
38 superior to other treatments such as dietary counseling, non-specific supportive
39 management, interpersonal therapy or behavioral family therapy (Galsworthy-Francis &
40 Allan, 2014), that behavioral family therapy for adolescents with eating disorders is
41 superior to individual therapy at follow-up, while there is no difference at the end of the
42 treatment (Couturier, Kimber, & Szatmari, 2013), and that cognitive remediation therapy
43 has potential as a supplementary treatment for young people with anorexia nervosa
44 (Tchanturia, Giombini, Leppanen, & Kinnaird, 2017). Another recent review also
45 recommends the use of CBT and family-based therapy to treat eating disorders, anorexia
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and bulimia in children and adolescents (Herpertz-Dahlmann, 2017).

Regarding nocturnal enuresis, Caldwell, Deshpande, and Von Gontard (2013) affirm that although behavioral therapies (such as fluid restriction or rewards) are superior to no active treatment, they are inferior to alarm training, which is the first-line treatment for this disorder. Another review suggests that alarm training alone or combined with dry bed training increases the number of dry nights compared to no treatment, while the evidence for acupuncture, hypnotherapy and dry bed training alone is weak (Kiddoo, 2015). Lastly, a recent meta-analysis on insomnia has provided evidence that CBT is an efficacious treatment for adolescents with sleep and mental health problems (Blake, Sheeber, Youssef, Raniti, & Allen, 2017).

The lists of ESTs for different disorders are an important source of consultation, information and guidance for professionals who work with patients, as well as for professors and students in the higher education setting and in the qualification and on-going training of professionals. The lack of consensus among the list of ESTs provided by the different organizations suggests the need to better identify these treatments. A first step would be to guarantee the quality of all the RCTs included in the systematic reviews and meta-analyses. Currently, several institutions have taken steps to ensure the quality of RCTs through prior registration in a database and subsequent monitoring. This is the case of the U.S. National Library of Medicine and their ClinicalTrials.gov database (<https://clinicaltrials.gov/>). Likewise, it would advisable to guarantee the quality of the systematic reviews and meta-analyses by registering in the International Prospective Register of Systematic Reviews (PROSPERO; <https://www.crd.york.ac.uk/prospéro/>) of the Centre for Reviews and Dissemination of the University of York (UK), which is funded by the UK's National Institute for Health Research. Although RCTs are considered to provide the most reliable evidence on the effectiveness of interventions

1 (Akobeng, 2005) and the existence of one or two RCTs with a quality methodological
2 design is usually a requirement to reach the first levels in the different evidence
3 classification systems, it is recommended that the results of individual trials be endorsed
4 by systematic reviews and meta-analyses, taking into account that the samples used in
5 this type of studies in psychology are usually not very large.
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12 Given the importance of scientific research on psychological treatments and its
13 important repercussion on the mental health of the population, international consensus
14 should be promoted through the creation of working groups formed by various
15 organizations in order to establish common criteria to graduate the quality of the evidence
16 and select RCTs, systematic reviews and other empirical studies that ensure minimum
17 quality standards. In this regard, it seems that the GRADE system for rating clinical
18 guidelines (Atkins et al., 2004) has met with increasing international support. These
19 working groups should establish measures to improve the methodological aspects of RCT
20 design and the inclusion and exclusion criteria of studies in systematic reviews and meta-
21 analyses, in addition to controlling the biases produced by competing theoretical models
22 in order to improve and ensure the objectivity of the scientific method in psychology.
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40 Due to the difficulty of interventions with children or adolescents when complex
41 techniques or proper programs are used (i.e., therapies based on relaxation training or
42 problem solving), it is even harder to determine to what extent each treatment played a
43 part in the individual's improvement. Most ESTs are packages comprising several
44 techniques. In many cases, there are no explanations for the causal mechanism and we
45 cannot know which component of the treatment is responsible for the effect.
46 Comprehensive treatment programs have often been evaluated without identifying their
47 causal mechanisms. Because programs are designed prior to being evaluated, we do not
48 know if the design of a chosen program is superior to the multiple possible variants
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1 (O'Donohue & Yeater, 2003). This raises doubts concerning the causal mechanisms of
2 the treatment (Primerio & Moriana, 2011). The next generation of research could analyze
3 procedures (techniques, strategies) that are simpler units of analysis to determine what is
4 useful, harmful or harmless in each treatment guide and thus make changes that will
5 improve treatment efficacy (Westen, Novotny, & Thompson-Brenner, 2004). In this line,
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7 a recent review of 136 published RCTs of youth CBT treatments by Rith-Najarian et al.
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9 (2017) has proposed the need to use multi-parameter filtering in treatment selection and
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11 clinical decision making with different types of evidence. However, although we believe
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13 that the analysis of techniques or strategies is very positive for research on evidence-based
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15 psychological treatments, studies which jointly apply several techniques are
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17 recommended. That is, it is equally important to determine the efficacy of both a single
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19 technique and the interaction of several techniques packaged into a treatment.
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30 In addition, RCTs with children and adolescents pose an ethical and legal
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32 challenge to clinicians and researchers due to several factors (Hoagwood & Cavaleri,
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34 2010). One of them involves the informed consent of parents who must authorize
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36 experimental therapies with their children or the possibility of being assigned to a control
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38 group or waiting list, which usually involves a higher level of resistance than that
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40 normally found in research with adults. Another aspect is the cultural and ethnic diversity
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42 of children and their families (Kazdin, 2008). It is also necessary to consider the
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44 therapist's abilities, the context in which the treatments are developed and the specific
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46 characteristics of each developmental stage. Moreover, in the context of child psychology
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48 there is a basic differentiating component compared to adult treatments: in many of the
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50 interventions the direct or indirect participation of the parents and/or relatives is essential,
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52 thus adding complexity to the process.
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60 *Limitations*

1 First, the heterogeneity of levels of evidence established by the different
2 organizations greatly hinders a comparative assessment. Second, our objective has been
3 to compile and compare the information provided by the four organizations exactly as it
4 is provided by them. Thus, it is possible that some of the treatments included in our review
5 share several components. Third, although we have reviewed and compared data provided
6 by four international organizations, many other organizations confer grades and levels of
7 evidence whose inclusion would have made our review more robust. And lastly, the
8 disorders examined in this study only comprise a small part of the spectrum of mental
9 disorders in children and adolescents.
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21 *Future directions*

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24 Future studies should aim to reach a consensus on the scientific methods used to
25 validate psychological treatments in order to unify the criteria among organizations,
26 researchers and professionals on levels of evidence and methodological approaches for
27 improving the quality of the studies that support them. Moreover, performing studies
28 similar to ours on addictions, health psychology and other related areas not addressed in
29 this study is both necessary and of interest.
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38 **Conclusions**

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41 This study is the first to compare evidence provided by four leading international
42 organizations on different psychological treatments for the principal child and adolescent
43 mental disorders. From the main findings, it should be highlighted that there is no
44 consensus regarding the evidence presented to support the effectiveness of psychological
45 treatments for most mental disorders in children and adolescents. In addition, although
46 there are numerous treatments for many of the disorders addressed here, not all provide
47 the same quality of evidence or studies to support them. As a result, we need to contribute
48 to improving the quality of RCTs through more independent studies that promote and
49 contemplate reproducibility as a much more important criterion than envisaged so far.
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Finally, as regards the comparison, we found that while similar evidence exists for some disorders (e.g., OCD), for others there is a significant number of treatments for which the level of evidence varies greatly depending on the organization (e.g., autism), and some notable divergences between organizations regarding the evidence presented for treatments for disorders (e.g., enuresis).

Compliance with Ethical Standards

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Ethical Approval. This article does not include any studies with human participants performed by any of the authors.

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Table 1. Ordinal scheme to classify the different levels of evidence.

	D53	NICE	COCHRANE	APS
No evidence	Level Five	Insufficient evidence; Non-effective; No Research Support; Do not use	Insufficient evidence	Insufficient evidence
Weak evidence	Level Three; Level Four	C; Very low; Low	Very low; Low	Level IV; Level III-3; Level III-2
Moderate evidence	Level Two	B; Low to moderate; Moderate; Low to high	Low to moderate; moderate	Level III-1; Level II
Strong evidence	Level One	A; Moderate to high; High, Effective	Moderate to high; High; Effective	Level I

Table 2. Attention deficit hyperactivity disorder. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	BCM	BPI	BPT	CBMI	CBT	CT	CTI	FT	MT	NT	OT	SST
D53 (Evans et al., 2014)	Level One 2/0	Level One 1/0	Level One 6/0	Level One 6/0	---	Level Four 2/0	Level Two 2/0	---	---	Level Three 1/0	Level One 2/0	Level Five
NICE (2009; 2013a)	IE 1/0	---	Moderate 1/0	---	Moderate to High ¹ 10/0	---	---	---	---	---	Effective 2/0	---
Cochrane (Bjornstad & Montgomery, 2005; Krisanaprakornkit et al., 2010; Storebø et al., 2011; Zwi et al., 2011)	---	---	Effective 5/0	---	---	---	---	IE 2/0	IE 4/0	---	---	IE 11/0
APS (2010)	---	---	---	---	Level I 1/3	---	---	---	---	---	---	---
No. of organizations in agreement	1	1	3	1	2	1	1	---	---	1	2	---

Note: BCM = Behavioral Classroom Management; BPI = Behavioral Peer Interventions; BPT = Behavioral Parent Training; CBMI = Combined Behavior Management Interventions; CBT = Cognitive Behavioral Therapy; CT = Cognitive Training; CTI = Combined Training Interventions; FT = Family Therapy; MT = Meditation Therapies; NT = Neurofeedback Training; OT = Organization Training; SST = Social Skills Training
IE = Insufficient evidence

¹ Some studies include mixed CBT/social skills interventions

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

No. of organizations in agreement

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Note: AAC = Augmentative and Alternative Communication; ABA = Applied Behavior Analysis; DSP = Developmental Social-Pragmatic; EIBI = Early Intensive Behavioral Intervention; ESDM = Early Start Denver Model; LEAP = Learning Experiences: An Alternative Program for Preschoolers and Parents; PECS = Picture Exchange Communication System; PRT = Pivotal Response Treatment; RIT = Reciprocal Imitation Training
IE = Insufficient Evidence

¹Information provided for behavioral intervention in general, including ESDM and RIT; ²D53 includes evidence for different types of parent training; ³Some studies include social skills group interventions

* Fletcher-Watson, McConnell, Manola, & McConachie, 2014; Sinha, Silove, Hayen, & Williams, 2011; Spain and colleagues, 2017

** Geretsegger, Elefant, Mössler, & Gold, 2014; Oono, Honey, & McConachie, 2013; Reichow, Steiner, & Volkmar, 2012.

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 4. Bipolar disorder. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	CBT	DBT	FFT	IPSRT
D53* (Fristad & MacPherson, 2014)	---	Level Two 0/0	Level One ¹ 5/0	Level Four 0/0
NICE (2014)	---	---	Very low 2/0	---
Cochrane	---	---	---	---
APS (2010)	Level IV ¹ 0/0	---	Level II ² 0/0 [A]	---
No. of organizations in agreement	1	1	3	1

Note: CBT = Cognitive Behavioral Therapy; DBT = Dialectical Behavior Therapy; FFT = Family-Focused Therapy; IPSRT = Interpersonal and Social Rhythm Therapy

¹Family Skill Building plus Education; ²Adjunct to medication

*Levels of evidence provided by D53 do not exactly match the levels proposed by Fristad & MacPherson (2014).

[A] = Adolescents only

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 5. Depression. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	AR	BT	CBT	CBT group	CCBT	FFT	IPT	IPT group	NDST	PDT	SHT	SM
D53 Support for children (Weersing et al., 2017)	---	Level Three 2/0	Level Four 3/0	Level Three 4/0	Level Three 1/0	Level Four 1/0	---	---	---	Level Four 1/0	---	---
D53 Support for adolescent (Weersing et al., 2017)	----	----	Level One 14/0	Level One 12/0	Level Four 1/0	Level Three 5/0	Level One 4/0	Level Two 3/0	---	---	Level Three 2/0	---
NICE (2015)	Moderate 2/0	---	Very low to moderate 6/0	Very low to moderate 15/0	Moderate to high 2/0	Low 1/0	Low 2/0	---	Low to moderate 1/0	Very low to moderate 1/0	Low 2/0	Low 1/0
Cochrane (Henken et al., 2007; Cox et al., 2014)	---	---	---	---	---	IE 6/0	---	---	---	---	---	---
APS (2010)	---	---	Level I 0/2	---	---	Level I 0/2	Level I[A] 0/2	---	---	---	Level II [A] 0/0	---
No. of organizations in agreement	1	1	3	2	2	3	3	1	1	2	3	1

Note: AR = Applied Relaxation; BT = Behavior Therapy; CBT = Cognitive Behavioral Therapy; CCBT = Computerized Cognitive Behavioral Therapy; FFT = Family-Focused Therapy; IPT = Interpersonal Therapy; NDST = Non-Directive Supportive Therapy; PDT = Psychodynamic Therapy; SHT = Self-Help Therapy; SM = Self-Modeling

[A] = Adolescents only

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 6. Disruptive behavior in children and adolescents. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	CBI	CBT	CHFBT	DBT	FCFI	FFI	MCI	MMI	PFBT	PFBT+CH	PFBT group	Play Therapy	PTBI
D53 Support for younger children (Kaminsky & Claussen, 2017)	---	---	Level Two 6/0	---	---	Level Four ¹ 1/0	---	---	Level Two** 17/0	Level One 8/0	Level One 8/0	Level Two 2/0	---
D53 Support for adolescents*	---	---	Level Two	---	---	Level Four ¹	---	---	Level One / Level Two***	---	---	Level Two	---
NICE (2013d)	Low to High 10/0	---	Low to Moderate 27/0	---	High 3/0	Low to Moderate 8/0	Moderate to High 16/0	Low to High 14/0	Moderate to High 54/0	Low to moderate 12/0	---	---	Non- effective 7/0
Cochrane (Armeliuss & Andreassen, 2007; Furlong et al., 2012; Littell et al., 2005; MacDonald & Turner, 2007; Montgomery et al., 2006; Woolfenden et al., 2001)	---	Effective 16/0	---	---	Effective 5/0	Effective 9/0	---	IE ² 8/0	---	---	Effective 10/0	---	---
APS (2010)	---	Level I 2/1	---	Level IV [A] 0/0	---	---	---	---	Level I 0/2	---	---	---	---
No. of organizations in agreement	1	2	2	1	2	3	1	1	3	2	2	1	---

Note: CBI = Classroom-Based Interventions; CBT = Cognitive Behavior Therapy; CHFBT = Child-Focused Behavior Therapy; FCFI = Foster Carer-Focused Interventions; FFI = Family-Focused Interventions; MCI = Multi-component interventions; MMI = Multimodal Interventions; PFBT = Parent-Focused Behavior Therapy; PFBT+CH = Parent-Focused Behavior Therapy with Child Participation; PTBI = Parent-Teacher-Based Interventions

[A] = Adolescents only; IE = Insufficient Evidence

¹Family Problem-Solving training; ²Multisystemic Therapy

*D53 does not inform about the review on which their recommendations in adolescents are based. The information provided by the review included in the D53 website (McCart & Sheidow, 2016) does not match the recommendation provided by D53

**Parent-focused behavior therapy and including any of the following: individual child, child groups, family problem solving training, teacher training or self-directed parent training

***Parent-focused behavior therapy and including any of the following: self-directed parent training or teacher training

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 7. Anorexia Nervosa. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	AFT / IOP	CBT	CT	FTB	FTS
D53 (Lock, 2015)	Level Two 1/0	Level Four 1/0	Level Four 1/0	Level One 9/0	Level Two 1/0
NICE (2017)	Low 2/0	Low 1/0	---	Low 13/0	---
Cochrane	---	---	---	---	---
APS (2010)	---	---	---	Level I (0/2)	---
No. of organizations in agreement	2	2	1	3	1

Note: AFT= Adolescent Focused Therapy; CBT = Cognitive Behavioral Therapy; CT = Cognitive Training; FTB = Family Therapy-Behavioral; FTS = Family Therapy-Systemic; IOP = Insight-Oriented Psychotherapy

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 8. Bulimia Nervosa. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	CBT	FTB	SHT	ST
D53 (Lock, 2015)	Level Four 0/0	Level Three 2/0	Level Three 1/0	Level Four 1/0
NICE (2017)	Very low to low 2/0	Very low to low 3/0	---	---
Cochrane	---	---	---	---
APS (2010)	---	Level II [A] (2/0)	Level II [A] (1/0)	---
No. of organizations in agreement	2	3	2	1

Note: CBT = Cognitive Behavioral Therapy; FTB = Family Therapy-Behavior; SHT= Self-Help Therapy; ST = Supportive Therapy

[A] = Adolescents only

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 9. Enuresis. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	Alarm	BTRCT	CBT	CT	DR	DRYBT	FR	RW	SC	SHT	TSP
D53	---	---	---	---	---	---	---	---	---	---	---
NICE (2010)	Low ¹ 6/0	IE 5/0	Low 1/0	---	NRS 1/0	Do not use 5/0	NRS 1/0	Very low 6/0	Very low to low 6/0	---	Very low 1/0
Cochrane (Caldwell et al., 2013)	Low 9/0	Low 6/0	---	Low 1/0	---	Low 1/0	Low 1/0	Low 6/0	Low 5/0	---	---
APS (2010)	---	---	Level I 1/3	---	---	---	---	---	---	Level II 1/0	---
No. of organizations in agreement	2	1	2	1	---	1	1	2	2	1	1

Note: BTRCT= Bladder Training and Retention Control Training; CBT = Cognitive Behavioral Therapy; CT = Cognitive Therapy; DR = Diet Restriction; DRYBT = Dry Bed Training; FR = Fluid Restriction; RW = Random Waking; SC = Star Charts; SHT = Self-Help Therapy; TSP = Three Step Program

NRS = No Research Support; IE = Insufficient Evidence

¹ Quality of evidence for alarm compared to no treatment

Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 10. Obsessive-compulsive disorder. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	CBT	CBT group	CCBT
D53 (Freeman et al., 2014)	Level Two 12/0	Level Three 3/0	Level Four 2/0
NICE (2006; 2013e)	B 21/0	---	---
Cochrane (O'Kearney et al., 2006)	Effective 8/0	---	---
APS (2010)	Level I 0/2	---	---
No. of organizations in agreement	4	1	1

Note: CBT = Cognitive Behavioral Therapy; CCBT = Computerized Cognitive Behavioral Therapy
 Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)

Table 11. Post-traumatic stress disorder. Level of evidence/RCTs /Meta-analyses or systematic reviews of psychological treatments and number of organizations in agreement.

	CBT	CBT group	CBTP	CBTP group	Debriefing	EMDR	GCE+CBT	ITCT	MBS	MBS group	PDT	PT
D53 (Dorsey et al., 2017)	Level One 8/0	Level One 6/0	Level One 11/0	Level Two 2/0	---	Level Two 3/0	Level Five 2/0	Level Three 1/0	Level Four 1/0	Level Three 1/0	Level Four 0/0	Level Four 1/0
NICE (2005)	B 7/0	---	---	---	No research support 7/0	IE 1/0	---	---	---	---	---	---
Cochrane (Guillies et al., 2012)	Effective 5/0	---	---	---	---	---	---	---	---	---	---	---
APS (2010)	---	---	---	---	---	Level I (This intervention was not included in the review)	---	---	---	---	---	---
No. of organizations in agreement	3	1	1	1	---	2	---	1	1	1	1	1

Note: CBT = Cognitive Behavioral Therapy; CBTP = Cognitive Behavior Therapy with parent involvement; EMDR = Eye Movement Desensitization and Reprocessing; GCE = Group Creative Expressive; ITCT = Integrated Therapy for Complex Trauma; MBS = Mind-Body Skills; PDT = Psychodynamic Therapy; PT = Play Therapy
Each box includes information about the level of evidence, the number of RCTs and the number of meta-analyses or systematic reviews that each organization has used to reach their conclusions (level of evidence/RCTs/meta-analyses or systematic reviews)