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## Systematic review to examine the methods used to adapt evidence-based psychological treatments for adults diagnosed with a mental illness

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### Abstract

**Question**—The context for the implementation of evidence-based psychological treatments (EBPTs) often differs from the context in which the treatment was developed, which necessitates adaptations. In this systematic review we build on, and add to, prior approaches by examining the method used to guide such adaptations. In particular, we sought to elucidate the extent to which an empirical process is used.

**Study selection and analysis**—We focused on publications describing adaptations made to EBPTs for adults diagnosed with a mental illness. We searched PubMed, PsycINFO, Embase and Web of Science from database inception to July 2018. Two raters independently coded the articles for the method used to conduct the adaptation, the reason for and nature of the adaptation, and who made the adaptation.

**Findings**—The search produced 20 194 citations, which yielded 152 articles after screening. The most commonly used methods for planned adaptations were literature review (57.7%), clinical intuition (47.0%) and theory (38.9%). The use of data from stakeholder interviews ranked fourth

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**Contributors** The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organisation or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript. Author names: HL, MD, AM, HH, MT, VP, AT, AM, AF, CB, EK and CL. AGH conceived the study and wrote the first draft of the manuscript. AGH and HSL conceived of the search terms and conducted the searches. AGH, HSL and MRD devised the processes to extract the data and summarize it. AGH, HSL, MRD, ACM, HEH and VP wrote the results section and developed the tables and figures. All authors participated in all stages of the review process and approved the final version of the manuscript.

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(21.5%) and the use of other types of data (eg, pilot study, experiment, survey, interview) ranked last at fifth (12.1%). Few publications reporting ad hoc adaptations were identified (n=3).

**Conclusions**—This review highlights a need to (a) educate providers and researchers to carefully consider the methods used for the treatment adaptation process, and to use empirical methods where possible and where appropriate, (b) improve the quality of reporting of stakeholder interviews and (c) develop reporting standards that articulate optimal methods for conducting treatment adaptations.

## BACKGROUND

There is no doubt that the large-scale implementation of evidence-based psychological treatments (EBPTs) for mental illness could have a tremendous positive impact. However, barriers to implementation have been identified. In particular, the context for implementation often differs from the context in which the treatment was developed and initially tested. This can cause a lack of ‘fit’ between the context and the EBPT.<sup>1–5</sup> Horner *et al*<sup>6</sup> defined fit ‘as the match between the strategies, procedures or elements of an intervention, and the values, needs, skills and resources available in a setting’ (p 1). For EBPTs, poor fit is a common problem because the context for implementation typically differs from the original treatment development and initial testing contexts in a broad range of domains including client age, race, ethnicity and culture. Hence, adapting EBPTs to maximise the fit between the context and the intervention is a centrepiece of successful scaling and sustainability.<sup>7</sup>

Treatment adaptation is defined as the modification of programme content, format, process or logistics to accommodate the needs of a new group of consumers, a new group of providers and/or a new context.<sup>24</sup> The treatment adaptation process can be ‘thoughtful and deliberate’ (p 1),<sup>8</sup> which we will refer to as ‘planned adaptation’. Alternatively, ad hoc adaptations are the changes made by treatment providers to the delivery, structure or content of a treatment to address perceived patient-specific needs.<sup>29–11</sup> On the one hand, there have been calls to embrace ad hoc adaptations as data to drive ongoing learning about optimal intervention delivery over time.<sup>1012</sup> Moreover, systematic study of ad hoc adaptations has been encouraged via an online ‘adaptome’ that would capture and classify adaptations.<sup>1</sup> On the other hand, experts have highlighted ad hoc modifications as problematic because they are common, they reduce fidelity and they can contribute to poorer outcome.<sup>121113–17</sup> Most recently, this tension is resolving into a shift from a conversation about ‘fidelity versus adaptation (two opposing concepts) to *balancing* fidelity *and* adaptation (two competing concepts)’ (p 2, italics added).<sup>18</sup>

Fortunately, there have been great strides forward in characterising the nature, origin, timing and impact of treatment adaptations. Scholars have scientifically derived a ‘Framework for Reporting Adaptations and Modifications-Enhanced’ or ‘FRAME’ to characterise adaptations (eg, <sup>81920</sup>). Stirman, Gamarra, Bartlett, Calloway and Gutner<sup>21</sup> used this coding system in a systematic review involving 108 primary studies and 3 meta-analyses of EBPTs. A meta-analysis could not be conducted due to the dearth of studies that compared an adapted version with the original EBPT, at least in part due to the large samples needed to appropriately power such research.<sup>21</sup> Nonetheless, based on the evidence available, the

authors were able to conclude that there is currently little evidence pointing to adaptations being detrimental. Meanwhile, a systematic review of 42 articles investigated the use of adaptation frameworks. The key finding was that adaptation frameworks were surprisingly infrequently employed.<sup>22</sup> Also, in a scoping review by the same group of scholars, 13 adaptation frameworks were identified and used to distill 11 adaptation steps.<sup>23</sup> Relatedly, Movsisyan *et al*<sup>24</sup> conducted a systematic review of guidance on how to adapt complex population health interventions to new contexts (38 publications). These researchers distilled 11 common steps of guidance as to how to optimally conduct a treatment adaptation. Recently, the Model for Adaptation Design and Impact (MADI) has been published.<sup>18</sup> MADI builds on prior frameworks and offers an approach to specify how types of adaptations impact outcomes and under which circumstances. MADI is geared toward providers and is devised to be used prospectively (when planning an adaptation) and retrospectively (when an adaptation has been completed). The main elements of each of these approaches are listed in table 1.

Following the treatment development traditions described by Clark,<sup>25</sup> Salkovskis<sup>26</sup> and Onken *et al*,<sup>28</sup> the use of an empirical process involving scientific data should be the cornerstone of all treatment development and adaptation efforts. Also, the National Institutes of Mental Health emphasise that adaptations ‘should only be undertaken if there is an empirical rationale for the adaptation and for the corresponding mechanism by which the adapted intervention or augmentation is expected to substantially enhance outcomes’ (RFA-MH-16-410). Importantly, Stirman *et al*<sup>21</sup> point out that it is not efficient nor feasible to expect appropriately powered randomised controlled trials (RCTs) to test adaptations to every intervention, context and adaptation type (including combinations of adaptation types).

## OBJECTIVE

The objective of the systematic review reported herein is to focus on the methods used to derive the treatment adaptation and to determine the extent to which the field is endeavouring to be data driven in as many steps as possible from the beginning to the end of the treatment adaptation process. Of note, while an empirical process is included within the adaptation processes captured in table 1 (eg, piloting, evaluation), there is room to more rigorously infuse scientific data as a basis for the treatment adaptation process so as to ensure adaptations optimise treatment outcomes.

Taken together, the fresh lens we seek to offer is to examine the methods used to conduct the treatment adaptation. In particular, we sought to establish the extent to which empirical methods and scientific data are used. The first aim was to evaluate the methods used to make planned adaptations. This will shed light on the extent to which the adaptation process is data-informed. We also examined the reasons for the treatment adaptation, who made the treatment adaptation and the nature of the treatment adaptation. The second aim was to examine ad hoc adaptations and document the following: the basis for the ad hoc adaptation, the frequency of ad hoc modifications, the measures used to identify the ad hoc adaptation and the impact on treatment outcome. A meta-analysis was not conducted given the dearth

of studies designed to specifically illuminate the effect of the treatment adaptation; namely, a comparison of the adapted version with the standard version of an EBPT.<sup>21</sup>

## STUDY SELECTION AND ANALYSIS

We followed the reporting guideline, Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)<sup>29</sup> and registered the protocol with PROSPERO (CRD42018106214) on 7th August 2018.

### Search strategy

Our search criteria were intended to identify EBPTs for adults diagnosed with a mental illness. Studies were identified by searching the following electronic databases: PubMed, PsycINFO, Embase and Web of Science. The time frame for the searches was from database inception to the date of the last search which was July 2018. Key words for the search included *modif\* or adapt\* or alter\* and mental disorders and cognitive behavior therapy*. The search strategy can be found in online supplemental file 1. We downloaded relevant citations into Covidence.<sup>30</sup> We also examined the reference lists of included review articles, systematic reviews and meta-analyses. UC Berkeley librarians were consulted.

### Eligibility criteria

There were four eligibility criteria. First, the article had to include a substantial focus on describing the process of adapting a treatment within the rationale or the methods or the results section. Articles that tested an already adapted treatment and did not describe the process of adaptation were excluded. Articles that only mentioned treatment adaptation as a domain for future research, without specific details, were excluded. Articles that described the development of a new treatment, as opposed to an adaptation, were excluded. Second, the treatment that was adapted had to be a cognitive and/or behavioural EBPT (specific details are in online supplemental file 1). Third, the participants had to be adults (18 years old and over) diagnosed with a mental disorder and the context had to be a mental health setting (eg, hospital, university, community or via internet). We also included publications that report on a survey or interview of people who provide EBPTs to adults with a mental disorder. Studies that focused on subclinical levels of psychopathology were excluded. Fourth, we did not have the resources to include articles in languages other than English. Note that publications, book chapters, dissertations and abstracts were all included.

### Screening

See figure 1 for the PRISMA flow diagram. All authors served as trained reviewers who independently screened within Covidence. The first round of screening focused on titles and abstracts only and yielded 829 publications. Reviewers were then instructed to re-review these using the full texts. This yielded 220 publications. These moved to the data extraction phase. The first author resolved disagreements between the reviewers. For the meta-analyses and systematic reviews, we reviewed the lists of included studies and compared them with our search results. For those not identified by the initial review, two reviewers screened the titles/abstracts. Four studies met eligibility criteria and were included in the data extraction phase.

## Data extraction

The full text was examined. Articles were excluded if the full text could not be located after an exhaustive search (n=12). After a final eligibility screen, yielding 152 papers, data extraction was conducted by six review teams each comprised of two authors. Each reviewer independently extracted the data and entered the results into a standardised and piloted Google Form. The Google Form was developed based on the data collection form from Cochrane and adapted to address our primary and secondary outcomes. The pair of reviewers compared their data. If there were differences, discussion was used to achieve consensus. Disagreements were resolved with the first author. The consensus data for the primary outcomes are presented in online supplemental file 2.

## Data synthesis and presentation

For aim 1, the method used to make the treatment adaptation was coded as: theory, data, literature review, clinical intuition, stakeholder interview, none provided and other. This is the primary outcome for aim 1. 'Data' was operationalised as including pilot testing of the adapted intervention that informed the adaptation process or any kind of research (experimental, survey, interview and so on) to inform the adaptation of the intervention. Usually this took the form of a case study, case series or an open trial. In other words, papers that qualified for this category collected data before or during the adaptation process and were used to inform the adaptation process. Case studies, open trials or RCTs that tested the adapted treatment after it had already been adapted were excluded from receiving the 'data' code because these data were collected to test, not inform, the adaptation.

The categories for the reason for the treatment adaptation, who made the adaptations and the nature of the treatment adaptation were drawn from Stirman *et al's*<sup>8</sup> taxonomy and are listed in table 2.

For aim 2, in addition to the coding described for aim 1, verbatim descriptions of the basis for the adaptation (primary outcome), the frequency, how the ad hoc adaptations were recorded as was the impact of ad hoc adaptations on treatment outcome.

## Risk of bias (quality) assessment

The Cochrane Handbook<sup>31</sup> and the guidelines of the Cochrane Consumers and Communication Review Group<sup>32</sup> were reviewed. The criteria these publications set forth appear to be designed for RCTs. In contrast, most studies included in this systematic review were pilot open trials or case series and/or underpowered and/or non-randomised. These are appropriate designs for the stage of research at which adaptations are typically made to treatments. Hence, a formal quality assessment was not conducted.

## FINDINGS

Our search terms provided 20 194 citations that yielded 152 distinct articles after the two levels of screening (see figure 1 for the PRISMA flow diagram). The main reasons for exclusion were a lack of description of the adaptation process, not being focused on a mental illness, and not focusing on a cognitive, behavioural and related EBPT.

## Characteristics of included studies

As evident in table 3, the majority of publications reported on an adaptation to cognitive-behavioural therapy (CBT) (n=117, 78.3%) for anxiety (n=40, 26.3%), depression (n=31, 20.4%) or comorbid disorders (n=28, 18.4%). The more common designs were open trials or case series (n=60, 39.5%) or narrative descriptions of an adaptation (n=49, 32.2%). Most publications were published in journals (n=147, 96.7%).

The majority of the publications reported planned adaptations; only three reported on ad hoc adaptations. The majority involved adults diagnosed with a mental disorder (n=149, 98.0%); only three publications reported on a survey or interview of people who provide EBPTs. These are the same three publications that focused on ad hoc adaptations.

### Aim 1: planned adaptation

As depicted in figure 2, the top three methods of adaptation used were literature review (n=86, 57.7%), clinical intuition (n=70, 47.0%) and theory (n=58, 38.9%). The use of stakeholder interviews ranked fourth (n=32, 21.5%) and the use of data was ranked last (n=18, 12.1%). During data extraction, we noticed that the quality of reporting for the stakeholder interviews varied across studies. Hence, two coders reviewed the descriptions provided for the stakeholder interviews and coded them using the following system which was developed for this study. A score of '1' was assigned when a full description of the methods and results was provided. A score of '2' was assigned when there were some details provided but details were missing in one or more of the key domains (eg, number of participants, questions asked, results). A score of '3' was assigned when there was mere mention of a stakeholder interview but no description of the methods or results. Disagreements were resolved by a third coder. Of the 31 papers which mentioned using a stakeholder interview as a method for conducting the treatment adaptation, 17 received a score of 1 (54.8%), 8 received a score of 2 (25.8%), and 6 received a score of 3 (19.4%).

Many publications used more than one method to conduct the treatment adaptation (n=88, 59.1%). The average number of methods used was 2.5 methods (range 1–5). Common combinations of methods used are depicted in figure 3. Theory and literature review or literature review or clinical intuition were the most common combinations.

As evident in table 2, the most common reasons for conducting the adaptation were to improve the fit with recipients (87.2%), improve effectiveness/outcomes (n=79.9%) and increase reach or engagement (53.7%). The most common people to make the adaptation were the researcher/s (92.6%) followed by the treatment/intervention teams (14.1%). The most common types of adaptations were tailoring/tweaking/refining (81.2%), adding elements (65.1%) and changing packaging or materials (57.0%).

### Aim 2: ad hoc adaptation

All three studies interviewed providers of EBPTs about their use of ad hoc adaptations. In all three publications, consensus coding indicated that providers relied on clinical intuition as the basis for making the ad hoc modification. The methods used to assess ad hoc modifications were a web-based survey and telephone-based interview,<sup>33</sup> a survey<sup>34</sup> and



focus groups using semistructured interviews.<sup>35</sup> None of the papers addressed the frequency of ad hoc adaptations nor the impact of ad hoc adaptations on treatment outcome. All three reports highlight that ad hoc modifications are common and are guided by clinical intuition.

## CONCLUSIONS AND IMPLICATIONS

The first aim was to evaluate the methods used to guide planned adaptations. Consistent with the systematic review conducted by Stirman *et al*,<sup>21</sup> the majority (98%) of the articles we reviewed reported on planned adaptations. It is laudable that many articles (n=88; 59.1%) used a combination of methods to conduct the adaptation. Multimethod approaches yield a more complete basis, and a fuller range of perspectives, for conducting adaptations.<sup>36</sup> Future research could usefully invest in determining which of the combination approaches, depicted in figure 3, yield better outcomes relative to others.

The ‘data’ code was the least commonly used method for planned treatment adaptations (n=18; 12.1% of articles). This code was operationalised as pilot testing of the adapted treatment in order to inform the adaptation process or the use of any kind of research to empirically guide the adaptation. Hence, the use of an empirically grounded adaptation process appears to be rare. The approach articulated by Clark<sup>2526</sup> and Salkovskis<sup>27</sup> emphasises the extensive use of data from experimental studies, surveys and other types of research to (a) develop, evaluate and refine a theory of the maintenance of the problem, and (b) clarify specific procedures within multicomponent EBPTs. It seems fair to say that returning to such a rigorous framework would be a wise path forward for the treatment adaptation enterprise. Of course, it is not realistic for every minor tweak to an EBPT to be empirically verified.<sup>2127</sup> Hence, it would be beneficial to develop consensus guidelines as to the types of adaptations that should be empirically derived and verified.

The ‘stakeholder interview’ code captured another important form of data. This was the second least commonly used method (n=32; 21.5% of articles). The much-needed pivot toward patient-centred outcomes has brought stakeholder interviews to the fore.<sup>37</sup> However, a proportion of these studies (45.2%) did not provide sufficient detail on the methods and results of the stakeholder interview. Thus, the quality of the data produced is not known and there is a need to improve the reporting of stakeholder interviews.

Our consensus coding process indicates that the most common method used to adapt treatments was literature review (n=86, 57.7%). Done well, a literature review summarises the relevant data used to inform each step of the adaptation. The use of theory to guide the adaptation process was the third most common method (n=58, 38.9%). A valid theory has been derived and tested empirically and is a cornerstone for understanding the logic of the treatment and identifying the core components of the EBPT that should not be altered.<sup>23</sup> Theory also serves as a ‘road map’ for deriving and adapting treatments.<sup>26</sup> The conclusion we draw is that our field would greatly benefit from precisely articulating the constituents of a high-quality literature review and the skilful application of a validated theory. This would guide those who are conducting the adaptations as well as consumers who need to make judgements about the quality of the adaptation process.



Consistent with prior research showing that clinicians rely heavily on clinical intuition,<sup>38</sup> we found that clinical intuition was the second most commonly used source for adapting treatments (n=70, 47%). On the one hand, clinical intuition can be a source of new hypotheses to be tested empirically<sup>2527</sup> and is effectively combined with an empirical approach.<sup>39</sup> On the other hand, clinical intuition is prone to cognitive biases<sup>40</sup> and feedback as to the veracity of intuition is unlikely to be available.<sup>39</sup>

We found only three articles to inform our second aim. These document that ad hoc modifications are common practice and that clinical intuition was the basis for the ad hoc adaptations made. Together, this indicates that these ad hoc adaptations are infrequently studied, rely on clinician intuition and should be prioritised in future research. Going forward, we need to work out when and how to go beyond clinical intuition and infuse an empirical process into the inevitable ad hoc adaptations that providers make to EBPTs, such as session-by-session progress monitoring.<sup>41</sup> Also, we need to determine how to use ad hoc adaptations as a basis for a next generation of treatment adaptations, such as an online ‘adaptome’ that would capture and classify adaptations.<sup>1</sup>

There are several limitations. First, we focused on adults so we cannot generalise to younger people. Second, we only included published research studies because the ‘file drawer’ of unpublished studies in this field is likely to be very substantial. Including these would be impractical and unfeasible. Third, a meta-analysis could not be conducted. There is a need for studies comparing adapted and standard EBPTs. Fourth, CBT was the most common treatment in this review. Future research is needed to determine if the findings generalise to other treatment types. Finally, typical quality assessment tools were not a good match for the treatment adaptation phase of a research programme. There is a need to develop risk of bias assessment tools appropriate for research focused on the process of treatment adaptations.

In conclusion, this systematic review highlights several pressing needs. First, there is a need to educate providers and those seeking to adapt treatments to use empirical methods for the treatment adaptation process. A broad range of empirical approaches are relevant, including stakeholder interviews, case series, surveys and experiments. Second, there is a need to educate peer reviewers to ensure information about the methods used to derive treatment adaptations are included in reports. Third, there is a need to improve the reporting of stakeholder interviews that were conducted to derive a treatment adaptation. Fourth, there is a need to improve the quality of literature reviews conducted to guide a treatment adaptation. Fifth, the method used to conduct the adaptation is proposed as an additional domain for inclusion in FRAME and MADI. Finally, there is a need to establish regulatory requirements for EBPTs, and the associated adaptations, to ensure optimal implementation.<sup>42</sup>

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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This study was funded by the National Institute of Mental Health (R01MH120147).

## Data availability statement

All data relevant to the study are included in the article or uploaded as supplemental information. The data that support the findings of this study are available from the corresponding author, AH, upon reasonable request.

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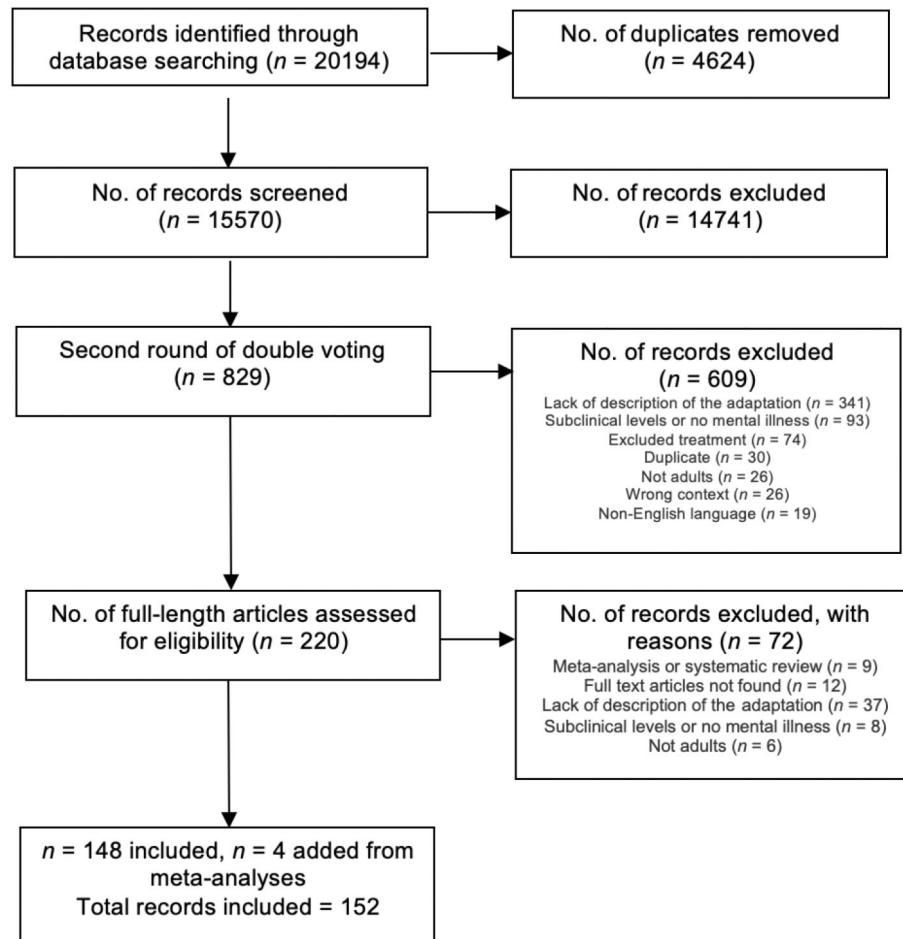
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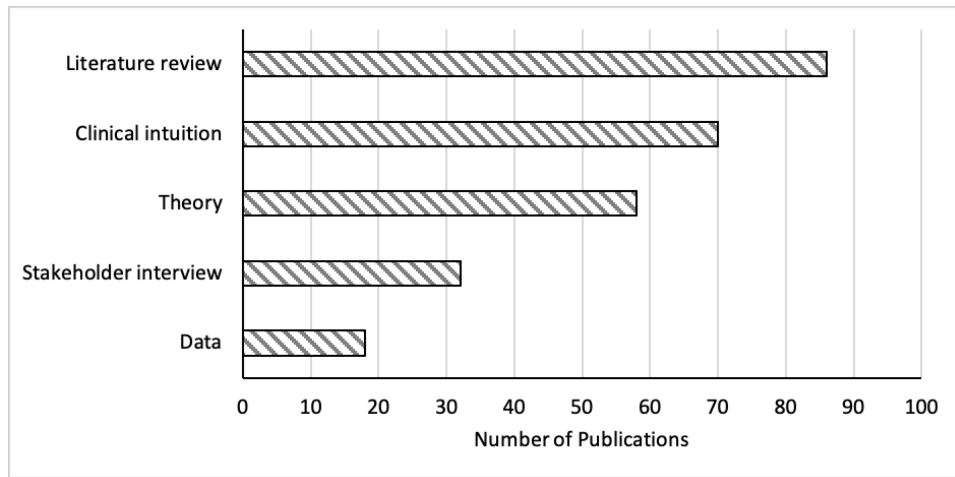
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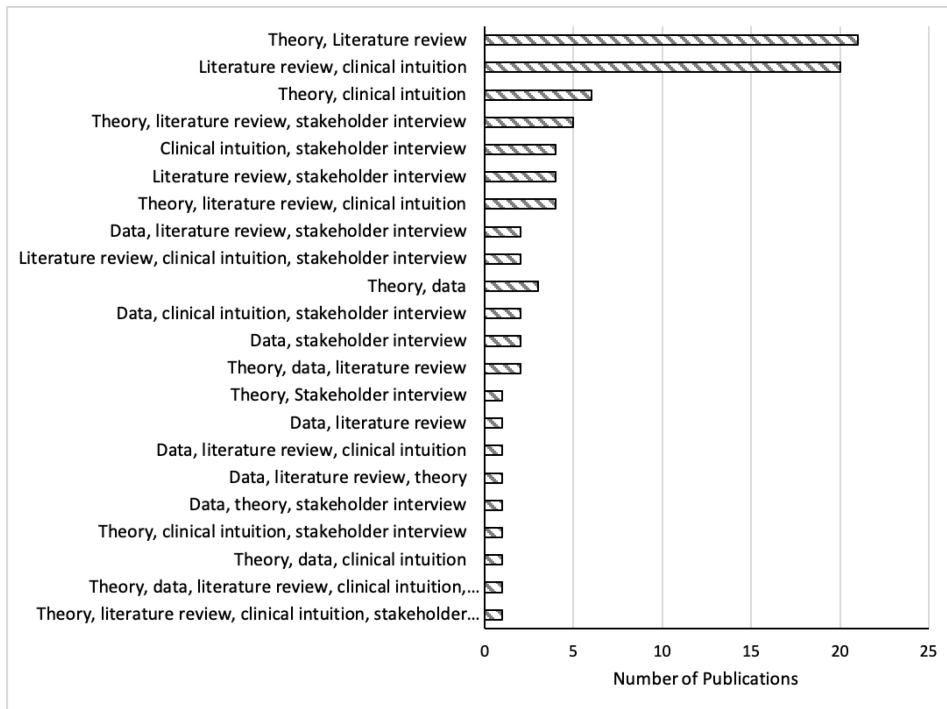
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**Figure 1.**  
Systematic review flow diagram (modified).



**Figure 2.** Frequency of methods used to adapt evidence-based psychological treatments. Publications often reported more than one method.



**Figure 3.** Combinations of methods used to adapt evidence-based psychological treatments. Publications often reported more than one method.

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**Table 1**  
Each column summarises a major recent contribution to knowledge on treatment adaptation

<b>Wiltsey-Stirman et al<sup>6</sup> Framework for reporting adaptations</b>	<b>Escoffery et al<sup>22</sup> Adaptation steps</b>	<b>Movsisyan et al<sup>24</sup> Adaptation steps</b>	<b>Kirk et al<sup>18</sup> Model for adaptation design and impact</b>
When did the modification occur?	Assess community	Initial assessment	Adaptation characteristics
Were adaptations planned?	Understand the intervention	Intervention selection	Potential mediators
Who participated in the decision to modify?	Select intervention	Intervention exploration	Potential moderators
What is modified?	Consult with experts	Identification of potential mismatches	Implementation outcomes
At what level of delivery (for whom/what is the modification made)?	Consult with stakeholders	Intervention model development	Intervention outcomes
Contextual modifications are made to which of the following? (Format, setting, personnel, population)	Decide what needs adaptation	Establishment of networks, capacity and infrastructure	Impact
What is the nature of the content modification?	Adapt the original programme	Undertaking modifications	
Relationship fidelity/core elements	Train staff	(Pilot) testing	
What was the goal?	Test the adapted materials	Intervention revision and implementation	
	Implement	Evaluation	
	Evaluate	Maintenance and evolution	

**Table 2**

Summary of the reason for the treatment adaptation, who made the adaptation and the nature of the adaptation for the planned adaptations (n=149)

	N (%)
Reason for the treatment adaptation	
Increase reach or engagement	80 (53.7)
Increase retention	33 (22.1)
Improve feasibility	56 (37.6)
Improve fit with recipients	130 (87.2)
To address cultural factors	62 (41.6)
Improve effectiveness/outcomes	119 (79.9)
Reduce cost	23 (15.4)
Increase satisfaction	27 (18.1)
Improve acceptability	4 (2.7)
None provided	0 (0.0)
Who made the adaptation	
Intervention developer/purveyor	10 (6.7)
Researcher	138 (92.6)
Funder	0 (0.0)
Administrator	1 (0.7)
Programme manager	1 (0.7)
Treatment/intervention team	21 (14.1)
Individual practitioners	13 (8.7)
Community members	6 (4.0)
Recipients	4 (2.7)
Political leaders	0 (0.0)
Programme leader	0 (0.0)
Community advisory board	1 (0.7)
None provided	2 (1.3)
Nature of the adaptation	
Tailoring/tweaking/refining	121 (81.2)
Changes in packaging or materials	85 (57.0)
Adding elements	97 (65.1)
Removing/skipping elements	12 (8.1)
Shortening/condensing (pacing/time)	38 (25.5)
Lengthening/extending (pacing/time)	19 (12.8)
Substituting	10 (6.7)
Reordering of intervention modules or segments	10 (6.7)
Spreading (breaking up session content over multiple sessions)	4 (2.7)
Repeating elements or modules	10 (6.7)
Loosening structure	20 (13.4)
Departure from the intervention ('drift') followed by a return to protocol within the encounter	0 (0.0)

	N (%)
Drift from protocol without returning	0 (0.0)
Simplification	1 (0.7)
None provided	4 (2.7)

Many publications received more than one code for some categories.

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**Table 3**

Summary of characteristics of included publications (n=152)

	N (%)
Type of EBPT	
Cognitive-behavioural therapy	119 (78.3)
Dialectical behaviour therapy	20 (13.2)
Mindfulness-based intervention	10 (6.6)
Cognitive behavioural system of psychotherapy	2 (1.3)
Problem-solving therapy	1 (0.7)
Acceptance and commitment therapy	1 (0.7)
Mental disorder	
Anxiety	40 (26.3)
Depression	31 (20.4)
Mixed or comorbid mental illness	28 (18.4)
Schizophrenia/psychosis	13 (8.6)
Eating disorder	11 (7.2)
Substance use	10 (6.6)
Insomnia	4 (2.6)
Borderline personality disorder	3 (2.0)
Autism spectrum disorder	2 (1.3)
ADHD	2 (1.3)
PTSD	2 (1.3)
Gambling disorder	1 (0.7)
Somatisation disorder	1 (0.7)
Adjustment disorder	1 (0.7)
Sexual disorder	1 (0.7)
Intermittent explosive disorder	1 (0.7)
Dissociative identity disorder	1 (0.7)
Study design	
Open trial or case series	60 (39.5)
Narrative description	49 (32.2)
RCT	35 (23.0)
Single case study	21 (13.8)
Interview	11 (7.2)
Questionnaire	3 (2.0)
Focus group	3 (2.0)
Type of publication	
Journal article	147 (96.7)
Book chapter	4 (2.6)
Dissertation	1 (0.7)
Abstract	0 (0.0)

Some publications received more than one code for some categories.

ADHD, attention deficit hyperactivity disorder; EBPT, evidence-based psychological treatment; PTSD, post-traumatic stress disorder; RCT, randomised controlled trial.

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