

Title: Assessing the Status Quo of Research on Translational Psychological Treatment

Pre-registration based on ['AsPredicted' Template](#).

1) Data collection - Have any data been collected for this study already?

- Yes, we already collected the data.
- No, no data have been collected for this study yet.
- It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid preregistration nevertheless.

2) Hypothesis - What's the main question being asked or hypothesis being tested in this study?

The overarching question is:

What is the status quo of the research on translational psychological treatment?

RQ1: What basic research is being translated into psychological interventions?

RQ2: What is the temporal delay between the different stages of translation?

RQ3: What is the progress of translational research in psychology?

3) Dependent variable - Describe the key dependent variable(s) specifying how they will be measured.

RQ1: Stage of Translation - Based on the framework for translational research in clinical psychology (steps 1-6) proposed by Ehrling et al. (2022), we categorize the previously mapped dataset (Bittermann et al., 2023) to identify the exact translational stage of each publication by inspecting the object of translation, the targeted disorder and the proposed intervention. By identifying the precise translational step of each publication, we discern where each publication stands within the translational continuum. This granular categorization will provide insights into the journey from fundamental research to application. The 6 translational steps (TS) are:

1. **TS 1 - Identification of processes:** This step involves identifying the processes associated with the development and maintenance of psychopathology, conducting correlational studies linking psychological or biological processes to continuous measures of psychopathology, studies comparing clinical and non-clinical control

groups with regard to certain processes, and selecting processes based on theory, exploratory findings, and phenomenological observations.

2. **TS 2 - Establishing causality of the process:** After identifying processes associated with psychopathology, the focus shifts to determining causality through Experimental Psychopathology (EPP) Research. This involves manipulating the identified psychological process (independent variable) and observing its effect on psychopathological symptoms (dependent variable). Causality is established when the manipulated process leads to the expected psychopathological outcomes.
3. **TS 3 - Developing/refining intervention strategies to modify the process:** Once a process is causally linked to psychopathology, it becomes a promising treatment target. In this iterative step, interventions (now the independent variable) are developed and refined to modify the identified process (now the dependent variable).
4. **TS 4 - Clinical Trials Efficacy:** Based on results from TS 3, on theoretical ideas regarding mechanisms and principles of change, as well as on clinical expertise, novel or improved interventions are developed and tested for efficacy using clinical trial methodology (e.g. randomized control trials). The goal is to determine the effectiveness of interventions on psychopathological outcomes and identify mediators and mechanisms of change. Researchers also explore factors that influence treatment response, dropout rates, and tailoring interventions to specific patient groups.
5. **TS 5 - Clinical Guidelines:** Effective interventions identified in TS 4 are compiled into clinical guidelines. These guidelines offer recommendations for evidence-based interventions to be used in clinical settings.
6. **TS 6 - Dissemination and Implementation:** Interventions supported by clinical guidelines are disseminated to clinicians and implemented in clinical practice. This step involves widespread distribution of empirically-supported interventions and their integration into routine clinical practice.

Translational research is characterized by fluid transitions or overlaps between its various stages, making it challenging to neatly distinguish between them. In such cases, we begin by determining the direction of translation: when the knowledge transfer is from basic science to implementation then assign the highest step, and when the movement is towards basic principles assign the lowest one. Additionally, we categorize the dataset into three distinctive stages: “pre-clinical trials, clinical trials and implementation” and subsequently, we compare it to the categorization based on Ehring’s model.

RQ1: Direction of Translation - Translational research is inherently bidirectional, with basic research findings or intervention principles informing the development of new treatments, then the working mechanisms of such treatments in a clinical context feeding back into further theoretical development and further basic research. The direction can be from bench to bedside (TS 1 -> TS 6) or from any further stage back to a previous one (TS 6 -> TS 1). We impute the direction of translation on the basis of this continuum. If the starting point is a basic science principle (e.g. extinction learning) and the target is the development of an

intervention (e.g. exposure therapy), then the direction of translation is the more common 'from bench to bedside'. If on the other hand the starting point is an intervention (e.g. acceptance and commitment therapy) whose underlying basic principles (e.g. relational frame theory) are examined, then the direction of translation is 'back to basics'.

RQ2: Temporal delay (based on TS) - To gain a comprehensive understanding of the temporal dynamics involved in translating basic science into psychological interventions, we analyze the time lapse between translational steps. By identifying temporal hiccups and delays, we can pinpoint areas that need attention to accelerate the translational timeline. We measure the time difference between the publication date of the cited paper containing the basic construct, theory, model or concept being translated and the publication date of the citing paper. This is then mapped onto the translational steps in order to see if there are any differences between them and identify trends.

RQ3: Progress of Translation - We measure progress by highest translational step reached, operationalized as share of each TS:

- in the entire dataset - What is the highest translational step reached by each basic construct, theory, model or concept?
- sorted by psychological subfield - Which subfields receive most of the attention and which are neglected?
- sorted by disorders grouped according to the main DSM 5-TR categories (Section II: Diagnostic Criteria and Codes) - Which disorders are most/least targeted?

Finally we compile a list of basic constructs, theories, models and concepts for which the foundational work has been done, meaning that they have been identified as potential candidates for further translation. Additionally, we observe which interventions are being developed or refined as an indication of progress. Our analysis aims to uncover potential facilitators that can aid in overcoming these obstacles by summarizing barriers acknowledged and addressed in the discussion section of each document, thus paving the way for smoother and more effective translational processes.

4) Conditions - How many and which conditions will participants be assigned to?

N/A

5) Analyses - Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The importance of examining the full text of publications becomes clear when considering the complex landscape of translational psychological treatments. The mercurial nature of translationality, combined with the inconsistent terminology characteristic of the field, makes it difficult to assess not only the eligibility but also the thematic cohesion of the publications.

The analyses of the previous work (Bittermann et al., in review) considered the title, abstract and metadata (e.g. APA classification, key concept, methodology, subject heading) available on PsycInfo and PSYINDEX for each record. However detailed the metadata may be, it does not contain important contextual information that is crucial for mapping the publications to the translational framework. It is therefore imperative to consult the full text.

All studies will be manually reviewed and coded to create a thematic map of the literature. First, based on the full-text content analysis we identify the main object of translation, i.e. a basic research finding or an intervention principle (e.g. extinction learning). We then identify the targeted disorder (e.g. phobias and anxiety disorders) and the proposed intervention (exposure therapy). The direction of translation is then imputed as explained above. Based on these factors we assign one of the 6 translational steps to each document. Note that due to the bidirectionality of the translational process any basic science construct, intervention or treatment along the translational pathway can be the object of translation.

The following data are extracted from all 682 primary data sources and compiled into a matrix or spreadsheet:

- Basic psychological construct, theory, model or concept
- Psychological treatment, training, or intervention
- Targeted disorder
- Insights into barriers and weaknesses
- Methodology

All basic science constructs will be categorized according to their psychological subfields as listed by the American Psychological Association (APA) in order to clearly map the source of translation.

We will also identify the methodology of each study to gain further insight into the methods and study types used for each translational step, as measured by the frequency and/or proportions of specific methods (e.g. literature review, randomized controlled trial, theoretical study etc.).

In order to assess the status quo of the translational psychological treatment research we determine absolute and relative frequencies of the translational steps (TS 1-6), direction of translation, psychological subfields and methodology. For the temporal delay (measured in years) we determine measures of central tendency (mean, median and mode) and dispersion (standard deviation and range). To further explore RQ3, we will compile a list of possible barriers summarized from the discussion section of each document. For exploratory purposes we compare the methodology assigned by the databases with the one assigned manually.

6) Outliers and Exclusions - Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

There will be no exclusions. We will use all available records from the dataset. For the publications where full text is not available the data will be extracted from the abstracts and database metadata available.

7) Sample Size - How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The dataset will consist of 682 publications and is the result of a previous study. It will contain the full text of papers that were identified as pertaining to the field of translational psychological treatment research.

8) Other - Anything else you would like to pre-register?(e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

In the previous study, we bibliometrically analyzed publication data that was retrieved from databases (i.e., titles, abstracts, keywords, and metadata such as publication year and author affiliation). No full-texts were retrieved and analyzed w.r.t. the stage of translation, which will be the aim of the current study.

9) Name - Give a title for this AsPredicted pre-registration Suggestion: use the name of the project, followed by study description.

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10) Type of study - Other:

Literature Review

11) Data source - Other:

Previously published study (preprint):

Bittermann, A., Petrule, C., Ritter, V., Haberkamp, A., Hofmann, S.G., Rief, W., the PsyChange Network (2023). *Translational Psychological Treatment: An Impactful Field of Research with Unrealized Potential*. PsychArchives.

<http://dx.doi.org/10.23668/psycharchives.13261>