

Accelerating the development of effective psychological interventions

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Using a new method, psychologists can develop new treatments more quickly, with the most effective options able to leapfrog ahead of the others. Credit: RUB, Kramer

Researchers at Ruhr University Bochum, Germany, have started

investigating whether there might be faster and more efficient ways to develop and improve mental health interventions.

In the journal *Psychological Medicine*, they present the "leapfrog design" as a means to efficiently test new interventions without having to conduct several [clinical trials](#) one after the other.

"Clinical trials tend to be time-consuming and inefficient," says Blackwell from the Mental Health Research and Treatment Center at Ruhr University.

"They can take years and require hundreds of participants—and at the end of all that, it may turn out that the intervention that's being tested is not effective after all. And even if the new intervention was effective, we'd probably soon want to improve it, for example because of new research that had been published in the meantime. This, in turn, means that we'd have to plan and conduct another clinical trial—on an even bigger scale and requiring even more time."

In order to find an alternative to traditional psychological treatment research, the team of psychologists adapted methods from [cancer research](#). In their leapfrog design, interventions that prove ineffective are abandoned at an early stage and replaced directly with new interventions. In addition, new findings from basic research can be seamlessly integrated into an ongoing clinical trial so that they can be tested for their clinical utility straight away.

Another important aspect of the leapfrog design is that an effective [intervention](#) is not only more quickly identified—it is also then set as the new benchmark for other interventions to beat. This leapfrog process allows continuous and systematic optimization of new and existing interventions.

Non-effective interventions are quickly discarded

In the current publication, the researchers showed that the method is feasible. They compared different versions of an online training for people who feel depressed. The severity of depressive symptoms was assessed at different timepoints using questionnaires. As part of the online training, participants practiced imagining positive everyday situations. A total of 188 participants took part and four different versions of the training were tested. At the end, the researchers identified one training version that was the most effective at alleviating symptoms. The training focused in particular on reducing the anhedonic symptoms of depression, i.e. the loss of the ability to look forward to and enjoy activities. These are precisely the symptoms that are a key target for new interventions, as they often do not respond to currently available interventions.

"We were able to quickly identify which training versions were less effective than others and replace them with new training versions while the study was still ongoing," explains Simon Blackwell, who received the 2022 Early Career Scientist-Practitioner Award from the European Association for Behavioral and Cognitive Therapies. "Compared to a study using a classic trial design, the leapfrog method required significantly fewer participants to identify the most effective training version."

The researchers have published all materials for the implementation of the leapfrog design—from planning to data analysis—in an open-access format. "We hope that other researchers will use the design to develop the psychological interventions we urgently need at a faster pace than before," concludes the Bochum researcher. "Something has to change in the way we research [mental health interventions](#). We believe that the leapfrog design provides a promising way forwards."

More information: Simon E. Blackwell et al, Demonstration of a 'leapfrog' randomized controlled trial as a method to accelerate the development and optimization of psychological interventions, *Psychological Medicine* (2022). [DOI: 10.1017/S0033291722003294](https://doi.org/10.1017/S0033291722003294)

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