TONI - One for all? Participatory development of a transtheoretic and transdiagnostic online intervention for blended care

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ABSTRACT

Background: Internet-based interventions offer a way to meet the high demand for psychological support. However, this setting also has disadvantages, such as the lack of personal contact and the limited ability to respond to crises. Blended care combines Internet-based interventions with face-to-face psychotherapy and merges the benefits of both settings. To ensure the uptake of blended care in routine care, Internet-based interventions need to be suitable for different therapeutic approaches and mental disorders.

Objective: This paper describes the participatory development process of the Internet-based intervention "TONI" using a common therapeutic language and content on various transdiagnostic topics to be integrated into routine outpatient psychotherapy.

Methods: To develop this intervention in a participatory manner, we followed the Integrate, Design, Assess, and Share (IDEAS) framework. In a multilevel development process, we used a combination of interviews, focus groups, and proofreading to optimally tailor online modules to routine outpatient psychotherapy. Building on well-established cognitive-behavioral online content, we included expert interviews with psychodynamic ($n = 20$) and systemic psychotherapists ($n = 9$) as well as focus groups with psychotherapists of different approaches ($n = 10$) and persons with lived experience of mental illness (PWLE; n = 10).

Results: We describe the development process of TONI step-by-step, outlining the specific requirements that therapists from different therapeutic approaches as well as PWLE have and how we implemented them in our intervention. This includes the content and specific exercises in the online modules, aspects of data protection, language, design, and usability.

Conclusion: Internet-based interventions that use a common therapeutic language and address therapeutic principles across different approaches have the potential to advance digitalization in psychotherapy. Involving psychotherapists and PWLE in intervention development may positively impact acceptance and usage in practice. This study shows how participatory intervention development involving both psychotherapists and PWLE can be carried out.

1. Introduction

1.1. Health care situation

Mental disorders, including depression and anxiety disorders, occur just as frequently as other widespread diseases, such as high blood pressure or diabetes (Freeman, 2022). They have an impact on quality of life, social functioning, and even physical health and are among the most common causes of sick leave at work and early retirement (Henderson et al., 2011). The demand for psychotherapy already clearly exceeds treatment capacities, which has led to long waiting times. Furthermore, not all people benefit from psychotherapy to the same extent. Substantial improvements in symptoms can only be achieved for about 63 % of patients through psychotherapy (Altmann et al., 2016). Given the

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substantial personal and societal burden of mental illnesses (Vigo et al., 2016), there is an urgent need to optimize the effectiveness and provision of outpatient psychotherapy. The digitalization of mental health treatments may provide a promising route.

1.2. Internet-based interventions

Internet-based interventions (IBIs) encompass a range of different approaches. Some of these interventions include personal contact with a counselor; others are purely stand-alone. The most researched forms of IBIs are guided or unguided self-help programs for desktop computers. The vast majority of interventions are based on cognitive behavioral therapy (CBT). However, IBIs based on different theoretical models such as acceptance and commitment therapy (Brown et al., 2016), psychodynamic approaches (Lindegaard et al., 2020), interpersonal psychotherapy (Käll et al., 2021), mindfulness (Spijkerman et al., 2016), and programs based on physical activity (Rosenbaum et al., 2015), exist. In recent years, numerous meta-analyses have shown the effectiveness of IBIs in treating various mental illnesses such as depression, anxiety, eating disorders, and substance abuse (Taylor et al., 2021). Therefore, IBIs are one way to meet the high demand for psychological care. They are available even in remote areas and patients can work at their own pace and in anonymity.

Still, IBIs may also involve some disadvantages and risks. Negative effects such as frustration due to comprehension problems or time pressure may be associated with the Internet treatment format and could lead to low treatment adherence (Fenski et al., 2021; Titzler et al., 2018). Further drawbacks may include the lack of personal contact and the lack of individual adaptability of the treatment. Most of the IBIs offered have been developed for a specific diagnosis like panic disorder or mild depression. In routine care however, comorbidity of two or more diagnoses is the rule rather than the exception (Jacobi et al., 2014). To address comorbidity, transdiagnostic approaches that target shared mechanisms across different mental disorders have emerged. Transdiagnostic interventions are unified, broadband interventions with a linear, fixed sequence of modules ("one size fits all") or they can be adapted to individual needs by selecting specific modules and providing them in a personalized way ("my size fits me") (Schaeuffele et al., 2021). This modularity allows to move beyond emotional disorders with modules corresponding to processes and symptoms relevant for the whole spectrum of mental health (Schaeuffele et al., 2021). Although there is first evidence for transdiagnostic and tailored cognitive-behavioral IBIs to be effective (Păsărelu et al., 2017), the interventions are mainly focused on anxiety and depression. The limitations often lead to IBIs being regarded as low-threshold interventions for milder cases of mental disorders. In contrast, psychotherapy in the face-to-face (f2f) setting and pharmacotherapy are often viewed as treatments of choice for more severe symptoms (Erbe et al., 2017) and IBIs are, despite convincing evidence, often recommended as addition to more traditional treatment formats (Bandelow et al., 2021).

A more recent approach combines f2f-psychotherapy with Internet-based content to create an integrated treatment. This approach is usually referred to as "blended care" (BC) and attempts to maintain the positive aspects of both settings while mitigating the disadvantages.

1.3. Blended care

The term BC refers to the combination of f2f-psychotherapy with online resources, resulting in an intensified therapy setting. By supplementing f2f-sessions with independent self-study, patients can benefit from additional materials on relevant topics, enhancing the overall treatment. This method also allows psychotherapists the opportunity to delegate certain aspects of therapy to online resources, while maintaining a personalized relationship and flexibly adapting the treatment to the patient's needs. The content can be integrated into therapy in various different ways. It can be embedded as part of the therapy, used as a separate add-on, or as a preparation or aftercare to therapy.

Advantages of BC compared to classical f2f-psychotherapy include the increase of the treatment dose, promoting patient cooperation, and improving the transfer of learned contents into everyday life (Kooistra et al., 2016). Another frequently mentioned benefit is that BC could save clinicians time, whilst maintaining therapy outcomes and reducing drop-out rates (Erbe et al., 2017). Thus, BC could be more cost-effective than traditional psychotherapy and would contribute to making mental health care available for a larger number of people. With an IBI following the f2f-psychotherapy, BC might also help maintain and even increase effects. In a study using an online survey to assess experience with IBI and BC, Schuster et al. (2020) found that psychotherapists perceived disadvantages of IBI especially related to aspects of the therapeutic process (e.g., missing important information, increase in avoidance of difficult topics, and the lack of non-verbal signals), which could be mitigated in BC. Overall, psychotherapists considered BC to have fewer disadvantages than stand-alone IBIs.

Several studies investigated the effectiveness of BC are based on CBT. In a systematic review, Erbe et al. (2017) concluded that studies suggest CBT-BC interventions to be feasible and comparable to the efficacy of stand-alone f2f-psychotherapy. Despite the promising data on BC efficacy, the uptake in routine care is limited. The focus on CBT does not reflect the therapeutic orientation of psychotherapists practicing in routine care in Germany. To ensure the uptake of a BC intervention, it seems necessary to think about specific requirements psychotherapists of all therapeutic approaches have for an IBI that they can optimally integrate into their practice. Results of a systematic review by Dech et al. (2022) showed that the incorporation of online content into routine psychotherapeutic care requires a restructuring of the way psychotherapists work and is often initially associated with an increased workload. They concluded that barriers for BC should be assessed and addressed, and psychotherapists should be involved in the implementation process to increase acceptability and feasibility. They also highlighted that BC should not be applied in a standardized way, but rather adapted to the individual patient to allow psychotherapists flexibility in their work.

1.4. Participatory development

To sum up, a BC intervention used in routine care needs to be applicable to the whole spectrum of mental disorders and suitable to be used for different therapeutic approaches. To achieve a transdiagnostic intervention, we follow a modular "my-size-fits-me"-approach (Schaeuffele et al., 2021), allowing psychotherapists to tailor the content to the needs of their individual patients. In routine care, most psychotherapists work integrative and use techniques or theoretical background from different approaches (Zarbo et al., 2015). Despite varying theoretical rationales of different therapeutic approaches, they lead to similar outcomes (Barth et al., 2013). This is in line with evidence for common factors of therapy such as alliance, expectations, and empathy, which are crucial for an effective therapy and not specific to a certain therapeutic approach (Wampold and Imel, 2015). To our knowledge, today there are no IBIs that are suitable for various therapeutic approaches. To generate a common language and develop content suitable for all therapeutic approaches, stakeholders with different therapeutic backgrounds need to be involved. Furthermore, involving people with lived experience of mental illness (PWLE) is viewed as crucial for improving mental health care and could increase engagement and inform best-practices (Schleider, 2022). A participatory research approach involving future users enables researchers to understand and take into account the diverse challenges and opportunities for the people whom the treatment aims to support and is especially important for our goal to develop a novel transdiagnostic modular intervention. The participatory research approach however, creates the challenge of deciding how and when to involve psychotherapists and PWLE in the development process.

To optimally incorporate theory-based strategies with a user-

centered approach we used a framework for a systematic intervention development. The Integrate, Design, Assess, and Share (IDEAS) framework by Mummah et al. (2016) entails guidelines for an iterative eHealth development and evaluation process. It emphasizes the importance of evidence-based implementation strategies, user-centered design, elements of design thinking, and evaluation. The framework encourages user-centered solutions that are based on an in-depth assessment of the actual needs and wishes of future users and is therefore well-suited for the development of an IBI for routine care. By including psychotherapists as well as PWLE in the process of the intervention's development, the requirements of psychotherapists using different therapeutic approaches as well as of patients with different needs can be met. In this paper, we explain our approach to developing a transtheoretical and transdiagnostic IBI for BC settings covering phases 1–8 of the IDEAS framework.

2. Materials and methods

2.1. Development process following the IDEAS framework

The data for this study was collected as part of the formative research phase of a larger project, which has the goal to increase the effectiveness of routine **psy**chotherapy through blended therapy with **t**ransdiagnostic **o**nline **m**odules (Schaeuffele et al., 2022a) (PsyTOM; trial registration: German Clinical Trials Register (DRKS) DRKS00028536. Registered on 07.06.2022.). The overall goal of the project is twofold: 1) To develop a transtheoretical and transdiagnostic IBI for BC settings (as described in this paper), and 2) To conduct a randomized controlled trial (RCT) that evaluates whether BC with this IBI benefits patients and psychotherapists (for more information see the study protocol of the ongoing RCT (Schaeuffele et al., 2022a)). The Research Ethics Committee of the Psychologische Hochschule Berlin approved the protocol (EK2021/21). The qualitative research was conducted following the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007) (COREQ; see Multimedia Appendix 1).

In a multilevel development process following phases 1–8 of the IDEAS framework (Mummah et al., 2016), we used a participatory and iterative design approach to develop a **t**herapeutic **on**line **i**ntervention (TONI) optimally designed for future users in practice. The IDEAS framework suggests 10 phases of intervention development: (1) empathize with target users, (2) specify target behavior, (3) ground in behavioral theory, (4) ideate creative implementation strategies, (5)
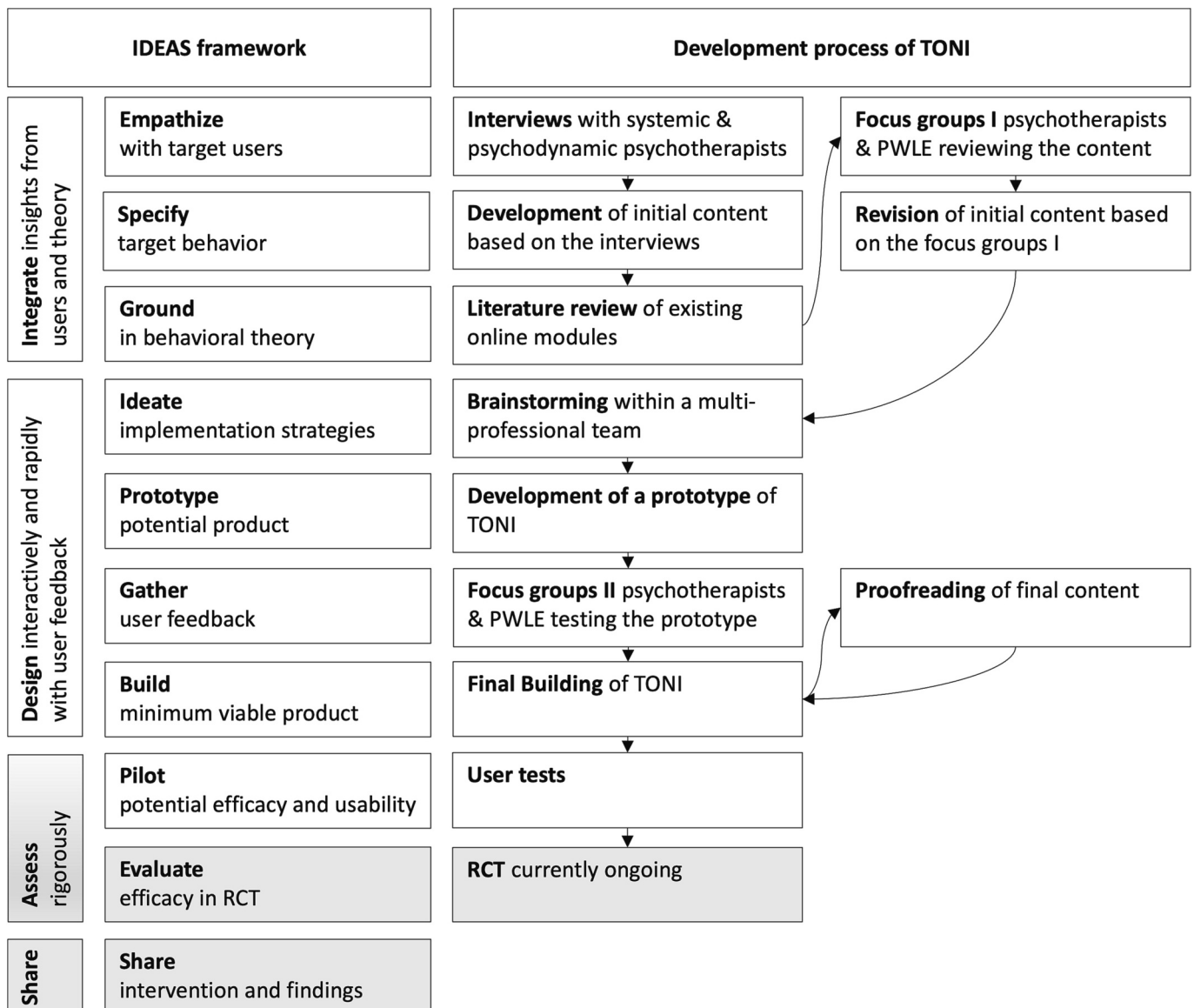

Fig. 1. Development process of TONI based on the IDEAS framework.

prototype potential products, (6) gather user feedback, (7) build a minimum viable product (MVP, i.e., the first fully-functioning version of the program that includes all core features), (8) pilot test, (9) evaluate efficacy, and (10) share widely. The phases are thereby intended to be recurring and interwoven. By involving PWLE with different psychological diagnoses and psychotherapists with different therapeutic approaches, we wanted to ensure that our theoretical concept (step 3) corresponds to the actual conditions of psychotherapeutic practice. For an overview of our process according to the framework, see Fig. 1. The data collection period was from February 2021 to March 2022 and proceeded through interviews, focus groups, and final proofreading. A total of $N = 41$ psychotherapists of different therapeutic approaches, $N = 12$ PWLE, and one diversity expert participated. Detailed information about the research team and participant selection can be found in Multimedia Appendix 2.

2.2. Interviews

Our intervention ought to be both transdiagnostic and suitable for use across different therapeutic approaches. While there is research on BC treatments based on CBT, little is known for other therapeutic approaches. As psychodynamic and systemic psychotherapy are, next to CBT, the largest evidence-based approaches in Germany, our interviews focused on psychodynamic and systemic psychotherapists' requirements for online content that they would integrate into their outpatient psychotherapy (Phase 1a, see Fig. 1). The overall aim of the interviews was to gain knowledge about a common therapeutic language and joint content requirements that would help to develop the initial version of the intervention's content.

2.2.1. Participants

We interviewed $n = 9$ systemic and $n = 20$ psychodynamic psychotherapists. We planned for a sample size of $n = 10$ systemic and $n = 20$ psychodynamic psychotherapists. Due to a lower than expected response rate during the recruitment process, only nine systemic psychotherapists were included in our interview study. The planned sample sizes are based on empirical results that show that most new information in a data set is obtained in the first five to six interviews, that 92 % data saturation occurs after 10 interviews and negligible new information is obtained after 20 interviews at the latest (Guest et al., 2020).

Data collection was conducted from February 2021 to August 2021. We recruited participants via mailing lists of different systemic and psychodynamic training institutes as well as systemic associations in Germany and through personal contacts. Apart from being a licensed and practicing psychotherapist in either the systemic or psychodynamic approach, there were no other inclusion or exclusion criteria. At this stage, no attempt was made to get a variety of respondents in terms of any sociodemographic characteristics. The mean age was 49.5 years ($SD = 14.0$) for psychodynamic psychotherapists and 49.0 years ($SD = 13.0$) for systemic psychotherapists. The majority of participants were female (74 % of the psychodynamic psychotherapists and 67 % of the systemic psychotherapists). Systemic therapists on average practiced psychotherapy for 12.5 years ($SD = 11.6$, range 2 to 32 years). One therapist was still in training and two therapists did not provide this information. Psychodynamic therapists on average practiced psychotherapy for 12.7 years ($SD = 13.8$, range 1 to 44 years).

2.2.2. Topics

We conducted semi-structured interviews via video-conferencing that lasted 25–40 min. All interviewees were informed beforehand and signed informed consent. In addition to open-ended questions about the use of materials or exercises in their outpatient work ("As part of your therapy, do you already use exercises that you want your patients to do outside of the therapy session? If yes, what do these look like? If no, what is the reason for this?"), we showed psychotherapists a list of ten typical transdiagnostic online modules we have used in previous studies.

These included mindfulness, understanding emotions, cognitive flexibility, and countering emotional avoidance (Schaeuffele et al., 2022b) as well as behavioral activation and cognitive restructuring (Zagorscak et al., 2018). Based on these modules, we asked the interviewees to describe possible module content that they would find useful, focusing on its psychodynamic or respectively systemic significance. The complete interview schedules can be found in Multimedia Appendix 3 (see also Fenski et al. (2023), for a more detailed analysis of the interviews with psychodynamic psychotherapists).

2.3. Focus groups

Based on the collection of transdiagnostic online modules and the interviews, we developed an initial version of TONI's content, including ideas about possible functionalities. In addition to transdiagnostic modules such as understanding and coping with emotions, we included content on communication, sexuality, and strengths. We presented these ideas to participants in four focus groups, two with psychotherapists and two with PWLE in summer of 2021 (Phase 1b, see Fig. 1). Based on these focus groups, we adapted the intervention's content and included various functionalities according to users' needs. A prototype was developed which we then tested within a second round of the same participants in autumn 2021 (Phase 6a, see Fig. 1).

2.3.1. Participants

We recruited $N = 10$ psychotherapists of different therapeutic approaches through mailing lists of professional organizations and chambers of psychotherapists. All psychotherapists who took part in the interviews were also asked to take part in the focus groups. One psychodynamic and one systemic psychotherapist agreed to participate. $N = 10$ PWLE were recruited through diverse mailing lists of patients' associations and patients' online forums. Participants were informed about study goals and data security regulations and gave written informed consent. They completed an online questionnaire on age, gender, and living situation. PWLE also indicated their diagnosis and time since the last psychotherapy. Psychotherapists stated their therapeutic approach. An overview of participants' sociodemographics can be found in Table 1. We reimbursed all participants financially for their time with 200€ each.

2.3.2. Topics

We conducted semi-structured and audio-recorded focus groups via video-conferencing with $n = 5$ participants each. All focus group sessions were 4 h long. In summer 2021, the first round of focus groups was used to gather feedback on general "dos and don'ts" of IBIs for BC as well as specific feedback on the content we already compiled. We also presented participants with a mock-up of one specific content module to discuss general ideas about the design and functionality. An additional focus for psychotherapists was placed on their view of the content with regard to the respective therapeutic approach and their requirements on usability. PWLE were asked to talk about the intervention's content in terms of comprehensibility and usability. Based on the first focus groups, we adapted the content, and a TONI prototype was developed. This prototype was discussed with the same participants in autumn 2021. We first presented the participants with the prototype by the interviewer via shared screen. The prototype included the onboarding and introduction session of TONI for psychotherapists in which users receive information on the intervention, answer screening questionnaires, create an account, and invite patients. PWLE's view of the prototype included the onboarding and introduction session of TONI as well as an overview of specific functions, like tracking of symptoms or a diary function. After discussing the process, participants had the opportunity to test the interactive prototype. Lastly, we collected user experience through the German version of the System Usability Scale (SUS) by Gao et al. (2020). The SUS measures the subjective usability of products and systems, with each of the 10 items scoring from "strongly disagree" to "strongly

Table 1
Sociodemographic characteristics of the focus groups.

	Psychotherapists (*N* = 10)	PWLE (*N* = 10)
Female gender	90 %	70 %
Age		
<25	–	–
25–40	30 %	50 %
41–65	60 %	50 %
>65	10 %	–
Years since practicing (M)	10.8	
Residency		
≤ 20.000 inhabitants	10 %	20 %
20.000–100.00 inhabitants	30 %	20 %
> 100.000 inhabitants	60 %	60 %
Therapeutic approach[a]		
Systemic	2	
Cognitive-behavioral	5	
Psychodynamic	4	
Years practicing as psychotherapist		
<5	3	
5–10	3	
11–20	1	
>20	3	
Time since last psychotherapy		
Currently in psychotherapy		30 %
≤five years		50 %
>five years		20 %
Diagnosis[a]		
Depressive disorders		7
Anxiety disorders		5
Eating disorders		1
Reactions to severe traumatic stresses adjustment disorders		5
Somatoform disorders		2
Sleep disorders		1

[a] Multiple answers possible.

agree". The SUS score ranges from 0 to 100, with higher scores showing a higher subjective usability of the product rated. The focus group schedules can be found in Multimedia Appendix 4.

2.4. Analyses

We recorded, anonymized, and transcribed all interviews and focus groups in line with the transcription rules for content semantic transcription according to Dresing and Pehl (2018). Using a combination of inductive and deductive qualitative content analysis (Mayring, 2020) we analyzed participants' responses to the open-ended questions using MAXQDA 2020.

We calculated inter-rater reliability in MAXQDA through reciprocally re-coding approx. 22 % of the already coded focus groups and the longest interview with a psychodynamic and systemic psychotherapist, respectively. Criterion was the occurrence or absence of a code in the material. We calculated kappa according to Brennan and Prediger and achieved very good inter-rater reliabilities (κ = 0.91–0.98).

2.5. Proofreading

Following the focus groups, we adjusted the modules according to the general feedback. We tailored the content to the needs of psychotherapists and PWLE and finalized the texts. Whilst in previous steps we targeted the intervention's development in general, we used proofreading to gather specific feedback on all texts and exercises (Phase 6b, see Fig. 1).

2.5.1. Participants

The final texts for the intervention were proofread by three psychotherapists of different therapeutic approaches, two PWLE with different educational backgrounds and gender, and one diversity expert.

Whilst we recruited psychotherapists and PWLE initially interested in participating in the focus groups directly by email, we reached for the diversity expert through a mailing list of an association for LGBTQIA+ rights. We reimbursed all participants financially for their time with 500€ each.

2.5.2. Topics

We gave the participants a test account to the platform as well as individual evaluation sheets via email. All participants provided written feedback on the general comprehensibility of the texts of each module (Are the texts too long or too short, full of technical terms, incomprehensible, etc.?). We also asked psychotherapists for feedback on the respective modules' contents from the point of view of their individual therapeutic approach (Are there certain "NoGos" with regard to language or content?). Moreover, we asked PWLE for feedback on the comprehensibility of the exercises (Are the instructions appropriate, would you know what to do, and could you imagine doing the exercises on your own?). We asked the diversity expert for feedback on three modules with especially sensitive content (e.g. sexuality) as well as case examples we provide within the intervention.

After we incorporated all feedback, various people within our network tested TONI (Phase 8, see Fig. 1). Through extensive testing, we ensured that not only all texts were understandable, but that there were no bugs within our application potentially reducing user experience.

3. Results

3.1. Interviews

3.1.1. Psychodynamic requirements

Psychotherapists were asked whether they work with exercises or materials that they want their patients to do or use outside of the therapy session. Qualitative content analysis showed that some psychodynamic psychotherapists already use exercises (*n* = 9) or materials (*n* = 5) that could be transferred into the online format, like mindfulness, relaxation and imagination exercises, questionnaires, diaries, weekly plans, skills, and psychoeducation. In addition, two main categories emerged: *psychodynamic requirements* and *psychodynamic field of application*. All categories, subcategories, and number of psychotherapists that mentioned the subcategories (frequencies) can be found in Table 2.

The category *psychodynamic requirements* summarizes statements made by the interviewees in which wishes and needs for the content of the online modules to be used in combination with f2f-psychodynamic psychotherapy became clear. Five subcategories were formed. First of all, patients' autonomy should be promoted by encouraging them to work independently within the intervention (subcategory: *autonomy*). Therefore, two subcategories showed that individual modules should be *easy to handle* while having a *playful character*. The online treatment should also present a range of different content types (subcategory: *variation*). Moreover, the use of a common therapeutic language was important for the psychotherapists, not only relying on typical cognitive-behavioral vocabulary (subcategory: *language*).

Next, it became clear under what circumstances online modules would be integrated into psychodynamic psychotherapy, forming the category *psychodynamic field of application*. Within this category, four subcategories emerged. The interviewees emphasized the importance of not merely using IBIs but rather thinking about how to integrate the online material into f2f-psychotherapy (subcategory: *integration with f2f-sessions*). Psychotherapists thought about suitable time points within the f2f-psychotherapy where online modules could be usefully applied (subcategory: *timing*). It also became clear that the interviewees felt it was essential to keep asking themselves why they felt the need to use online modules with certain patients and why they might not with others (subcategory: *reflecting usage*). Lastly, the subcategory called *patient groups* illustrates that psychodynamic psychotherapists would rather include online modules with patients of certain characteristics than

Table 2
Categories and subcategories: Psychodynamic requirements and field of application.

Categories	Subcategories	Frequencies	Statements
Psychodynamic Requirements	Autonomy	n = 7	"So more in the sense of encouraging independence and kind of taking responsibility for the therapy." (PT12)
	Easy handling	n = 6	"So it has to be short, it has to be quick to understand." (PT15)
	Playful Character	n = 5	„If you could perhaps play in a small film sequence, which then really only works via such a medium, I think I would find that quite interesting." (PT1)
	Variation	n = 6	"That you can somehow, in the sense of a cookbook, provide quite a lot of content, as heterogeneous as possible, what people have already found helpful." (PT12)
	Language	n = 6	"Psychodynamics and the word 'training' somehow don't go together." (PT13)
Psychodynamic Field of Application	Integration with f2f-sessions	n = 4	"If that runs in parallel, so that when those processes start in therapy, patients can then continue to practice them at home if they want." (PT4)
	Timing	n = 9	"Well, I could imagine using it more in situations of crisis, when one works in a more direct, stabilizing, and strength-oriented way." (PT5)
	Reflecting Usage	n = 4	"I think I would use it very mindfully and moderately, like everything in psychodynamic therapy, and always ask what it's like to still use that, so to always include it in therapy or not and also to consider it as part of therapy and relationship building." (PT20)
	Patient Groups	n = 10	"It totally depends on the patients, so for patients with a low structural level, who need a lot of structure anyway, I can imagine that it might be helpful." (PT14)

others.

3.1.2. Systemic requirements

Findings from the interviews with systemic psychotherapists showed an overall open attitude toward using online content. All nine interviewed systemic psychotherapists use exercises in between sessions regularly - such as behavioral experiments, worksheets, or finding symbols or artistic expression for specific issues. One main category emerged: *systemic requirements*. Within the category *systemic requirements*, nine subcategories were formed. All subcategories and numbers of psychotherapists that mentioned the subcategories (frequencies) can be found in Table 3.

The subcategory *strengths-based* included statements from therapists who wished for the content to be geared toward finding and enhancing individual strengths. Autonomy (subcategory: *autonomy*) should be

promoted, for example, through transparent communication about the purpose of the modules and the freedom to decide what content patients want to work on. From a systemic point of view, the content should reflect a diversity of perspectives (subcategory: *constructivism*) and thus attributions to diagnostic systems and one-sided descriptions should be avoided. In addition, the promotion of the expression through symbolism and imagery should be encouraged (subcategory: *symbols*). To include systemic interventions, exercises containing scaling and paradoxical interventions should be implemented (subcategories: *scaling and paradoxical interventions*), and a focus on social interaction should be promoted (subcategory: *interaction*). Overall, the intervention should contain a language that is strengths-based, nonjudgmental, and encouraging (subcategory: *language*). Systemic psychotherapists wanted an adaptable intervention to meet the individuality of patients, their systems, and their life situations and to promote new experiences (subcategory: *experiencing*). The systemic psychotherapists advocated a simple and playful design for the intervention which could promote a positive emotional experience for the patients (subcategory: *positive emotions*). Main findings of psychodynamic and systemic interviews can be found in Textbox 1.

3.2. Focus groups

3.2.1. Psychotherapist perspective

Across both groups and rounds of focus groups with psychotherapists, we deductively formed three main categories based on our focus group guidelines: specific barriers and facilitators according to the therapeutic approach, general barriers and facilitators, and user experience. For all main categories, several subcategories emerged inductively.

3.2.1.1. Specific barriers and facilitators according to the therapeutic approach. As psychotherapists from different therapeutic approaches were part of the focus groups, specific barriers and facilitators according to their respective approach became visible. In three subcategories, psychodynamic psychotherapists emphasized how BC will affect the *therapeutic relationship*, the importance to keep in mind the *personality functioning* of the patients as well as the opportunity to use the *structured procedure* of the intervention for f2f-sessions. Two subcategories emerged for systemic requirements: the urgency to consider the *social context* of patients as well as the wish to keep a *strengths-based focus*. For cognitive-behavioral psychotherapists, two subcategories were formed: the wish for content that is grounded on cognitive-behavioral theories (subcategory: *theoretical categorization*) and that the intervention might help patients to *change their behavior*. Table 4 shows barriers and facilitators from psychotherapists with different therapeutic approaches.

3.2.1.2. General barriers and facilitators. The category *general barriers and facilitators* combines general requirements regarding a BC intervention across therapeutic approaches and consists of six subcategories, which can be found in Table 5. Psychotherapists of all therapeutic approaches wished for the intervention to be transparent in terms of use and data protection (subcategory: *transparency*). It should be scientifically sound (subcategory: *scientific background*) and reduce psychotherapists' workload, instead of increasing it (subcategory: *workload*). The intervention should help patients cope with emotional distress when working on the online modules by themselves (subcategory: *dealing with emotional stress*). However, TONI should not be used as a stand-alone tool (subcategory: *psychotherapeutic support*), but rather support f2f-psychotherapy. Moreover, psychotherapists should not be able to see everything patients work on within the application (subcategory: *access to patient data*).

3.2.1.3. User experience. For patients to smoothly use TONI, psychotherapists named the importance that processing the online modules

Table 3
Categories and subcategories: Systemic requirements for implementation.

Categories	Subcategories	Frequencies	Statements
Systemic requirements	Strengths-based	n = 8	"I would ask: Where do you want to go? (…) I would not focus on the problem, but the goal. And via the goal, I would get to the strengths." (PT5)
	Autonomy	n = 8	"As for the effect, the client should feel that it helps her." (PT2)
	Constructivism	n = 5	"The more different perspectives there are on a topic, a problem, a diagnosis, the more helpful it is." (PT1)
	Symbols	n = 6	"In a systemic therapy we work a lot with symbols, with substitutes, with representatives, with genograms." (PT1)
	Scaling and paradoxical interventions	n = 3	"For example, by creating a paradoxical guide. 10 things I need to do or how I can contribute to the chronicity of my problem." (PT6)
	Interaction	n = 5	"So I have no idea what kind of tools there might be. But from my point of view, they would certainly have a lot to do with perspective taking, i.e. in the sense of circular questions and mentalizing." (PT6)
	Language	n = 7	"I wouldn't use the term homework, but in systemic therapy we would rather say a suggestion, are you interested in a suggestion?" (PT1)
	Experiencing	n = 9	"And if I then see myself as something like a waiter, so to speak, who offers possibilities on a tray, it is then exciting to see which glass (…) the client (…) reaches for - why not have some online modules on there as well?" (PT2)
	Positive Emotions	n = 3	"It should invite, inspire and encourage. And indeed, the possibilities of such online modules are fascinatingly vast. So using visual material or using sensory…. so image and sound and things like that to inspire and stimulate." (PT2)

Textbox 1
Main findings of psychodynamic and systemic interviews.

- TONI should use a common therapeutic language and exercises
- TONI should be playful and interactive
- TONI should be transparent about which data can be viewed by the therapists in order to promote patient autonomy
- TONI should offer connections to the face-to-face sessions
- There should be no indication of how the online content should be used in psychotherapy

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Table 4
Barriers and facilitators from psychotherapists with different therapeutic approaches.

Categories	Subcategories	Statements
Psychodynamic barriers and facilitators	Therapeutic relationship and process	"I wonder how I can connect TONI to the therapy session?" (PT4.2)
	Personality functioning	"So if there was another module in there (…) where assistance is given - what do I actually have to pay attention to in contact with others, in relation to my own self-awareness?" (PT4.2)
	Structured procedure	"The older I get, the more I realize how important it is, even as a psychodynamic psychotherapist, to work in a structured way. And this is excellent for that." (PT4.1)
Systemic barriers and facilitators	Social context	"So, from a systemic perspective, it's even a must [to involve relatives]." (PT2.2)
	Strengths-based focus	"When it comes to making problems conscious and immersing ourselves in them, that's something we don't want to do from a systemic perspective. Because then we are immediately caught in this problem-trance again." (PT2.2)
Cognitive-behavioral barriers and facilitators	Theoretical categorization	"Such classics, where I, as a behavioral therapist, at least think that when I see the headline, I already know what it's about." (PT3.1)
	Behavior change	"That the patient somehow sets (…) concrete goals for the day." (PT3.1)

should not be too cognitively demanding, e.g. by using simple language and a small amount of text (subcategory: *comprehension*). The design should be engaging, making TONI fun to use (subcategory: *design*). At the same time, TONI should be easy to handle (subcategory: *usability*) and flexible to use on different devices (subcategory: *compatibility*). While aiming at a diverse target group by offering a broad range of content (subcategory: *diversity*), psychotherapists wished for TONI to be customizable so that patients could choose different options regarding content as well as functionality (subcategory: *customization*). Using the SUS (Gao et al., 2020) the practicability and usability of an early TONI prototype achieved excellent results (85,2 of a total score of 100 points). All subcategories with matching statements can be found in Table 5.

3.2.2. PWLE perspective
Across both groups and rounds of focus groups with PWLE, we formed two main categories: barriers and facilitators and user experience (see Table 6 for an overview of categories, subcategories, and corresponding statements).

3.2.2.1. General barriers and facilitators. PWLE highlighted the importance of having f2f-support by psychotherapists in combination with the use of TONI (subcategory: *psychotherapeutic support*). Transparent data management and security were named as crucial to feeling engaged and safe to share intimate thoughts (subcategory: *transparency*). Participants favored a high level of autonomy (subcategory: *autonomy*) and personalization realized by choosing modules oneself or in agreement with one's psychotherapists and through the possibility to upload personal content (subcategory: *customization*). Participants wished for an emergency tool to use TONI in crisis situations (subcategory: *crisis management*). Overall PWLE wanted an intervention that focuses on a mindful and compassionate approach renouncing pressure for self-optimization (subcategory: *pressure to perform*).

Table 5
General barriers and facilitators shared by psychotherapists and user experience.

Categories	Subcategories	Statements
General barriers and facilitators	Transparency	"That means I don't have to worry about privacy, that it's 100 % waterproof. That would be important for me." (PT1.1)
	Scientific background	"That would be super important to me. So, a scientific foundation and a quick insight, that you really know what's in there." (PT3.1)
	Workload	"So, it's just a matter of knowing what I'm kind of recommending to patients (…). And that I know that without it costing me another 3 or 4 or 5 h of work." (PT3.1)
	Dealing with emotional stress	"Emergency tool, three steps to calm down quickly." (PT1.1)
	Psychotherapeutic support	"That's what makes this program so attractive to me, that I don't leave my patient alone with anything, but that I can accompany them therapeutically the whole time, can debrief them, can give explanations. And I would use that individually. "(PT5.1)
	Access to patient data	"I would actually prefer it if the patient could somehow enable me to look at his data. Just as I unlock his module, he can unlock his tracker for me." (PT3.2)
User experience	Comprehension	"I think [the language] is way too technical, so if we look at my patients, I'd say half would be put off by it, and a third simply wouldn't understand it." (PT1.2)
	Design	"The whole thing needs to be much lighter and playful overall. These pages kill me." (PT1.2)
	Usability	"That the installation of the app is possible at all, especially for patients with less technically sophisticated know-how. In other words, to make it low-threshold." (PT2.2)
	Compatibility	"That it is really compatible with cheap phones and simple systems and not only runs on the newest and fanciest devices." (PT2.1)
	Diversity	"Now if you could kind of use the same thing directly again, and just have the same thing again in English, it would also be super convenient." (PT3.1)
	Customization	"So agree on the language with the help of alternating dialogs. Simple language, more sophisticated language, …, and you could also decide whether you wanted less text or more depth." (PT1.2)

Table 6
General barriers and facilitators shared by PWLE and user experience.

Categories	Subcategories	Statements
General barriers and facilitators	Data Security and Transparency	"While we're on the subject of information, I might also ask myself: What information do I share with my therapist? Or where does that information go? Or does it really just stay with me." (P5.2)
	Autonomy	„I find it problematic if only the therapist chooses that. So, I find that a little bit not at eye level, simply. (P3.2)"
	Psychotherapeutic Support	"So, that's more what I would see the therapist giving me feedback on that directly and motivating me even further to work on it in certain ways." (P1.2)
	Crisis Management	"For example, if I'm feeling bad now or I'm pretty desperate at the moment. That maybe there are suggestions of what I can do." (P1.2)
	Pressure to Perform	"I find it difficult when it's too focused on this, on functioning. Because then you quickly find yourself under pressure to perform. (…) That the app rather asks you to be positive with yourself. Like mindful, loving, tender rather than to build pressure." (P3.2)
	Customization	"That you can simply upload a picture that you saw by chance on the Internet or a beautiful scene that you captured on your cell phone that triggered something meaningful in you. That you can upload it and then say: 'I would like to discuss this with my therapist in the next session'." (P4.1)
User experience	Usability	"First of all, it would be important to me that this application is easy to use. That is sometimes a bit tricky" (P2.2)
	Comprehension	"Yes, well, I think it's okay, but I also think that for some it would be better shorter. And maybe to go over that extra again in simple language. That it's kept simple." (P3.2)
	Design	"And this is just white and dark blue. It doesn't look so pleasant. But it looks more like as if you logically built it. But not kind of a space where my personal room is and I want to put my most intimate thoughts in." (P5.2)
	Implementation	"I really like the two-pronged nature of the explanations. So both in writing and with the video. With this, one should actually be able to address all those who can find their way around the program in ways that are appropriate." (P2.2)
	Diversity	"And I noticed that there were no people of color. And that there were only standard-looking, very slim people. There would be a bit of diversity or maybe someone in a wheelchair or something. I think it would be nice to represent all people." (P2.1)

3.2.2.2. User experience. The suggestions and wishes from the first focus groups were considered in building a prototype of TONI, which was presented in the second focus groups. The focus of the second session was on specific functions and content as well as a suitable implementation of TONI into practice. Feedback was overall positive. PWLE found the prototype largely intuitive and comprehensible. It was positively noted that the content was conveyed through both text, video, and audio as this appeals to individuals with different preferences (subcategory: *implementation*). The design was viewed as rather clinical, and most participants were in favor of warm or pastel colors (subcategory: *design*). Some texts were perceived as too long or too complex (subcategory: *comprehension*). PWLE mentioned that a broad variety of people should feel addressed by using inclusive images as well as by accessibility concerning different languages and impairments (subcategory: *diversity*). PWLE named a smooth and intuitive technical realization as

an important factor for regularly using the intervention (subcategory: *usability*). Using the SUS (Gao et al., 2020), participants also evaluated an early TONI prototype according to its practicability and usability. The prototype achieved excellent results (83,3 of a total score of 100 points). Main findings of the focus groups with psychotherapists and PWLE can

be found in Textbox 2.

3.3. Proofreading

According to the psychotherapists, we succeeded in using a common therapeutic language and addressing principles that overlap in different therapeutic approaches. Shared principles included factors such as fostering the therapeutic alliance, promoting self-efficacy and self-management, and a strengths-based approach. They gave us some specific requests for changes to individual phrases and instructions. PWLE noted that, overall, the texts were easy to understand and fit well into outpatient psychotherapy. The diversity expert gave us feedback on more sensitive language, such as gender (e.g., "trans*" instead of "transgender"). In addition, our case examples seemed too hetero-normative, a person with disabilities was missing, and the fact that some people are denied opportunities because of their background was only vaguely addressed. We incorporated all comments into the final version of TONI.

4. Discussion

4.1. Principal results

The aim of this study was to determine the requirements of psychotherapists and PWLE on an IBI to be used in BC in German routine care. Previous studies emphasized the involvement of users in the development of IBIs (DeSmet et al., 2016). We followed the IDEAS framework (Mummah et al., 2016) to develop our intervention in a participatory manner. This was especially important for our undertaking, as the planned intervention was not only supposed to be suitable for all mental disorders but also use a common language of psychotherapy. Whilst there are studies about barriers and facilitators for psychotherapists in the implementation of BC, to our knowledge, this is the first study to analyze the requirements of PWLE as well as psychotherapists of cognitive-behavioral, systemic, and psychodynamic approaches alike.

Integrating the results of the qualitative data of all steps of the development process including interviews, focus groups, proofreading, and user tests pointed to important considerations on required content and practical implementation of the intervention. We then merged our results with the existing research evidence and clinical guidelines to identify components to optimally shape our intervention.

Interviews and focus groups with psychotherapists revealed implications for developing transtheoretical content compatible with different therapeutic approaches. Unsurprisingly, depending on psychotherapists' therapeutic approach, they placed particular emphasis on key elements of their respective approach. Psychodynamic psychotherapists emphasized the role of the therapeutic relationship and the need to ask oneself with what kind of patients and in what way they would use the intervention. Systemic psychotherapists especially mentioned the importance of patients' social contexts as well as a rather strengths- than deficit-oriented approach. Lastly, cognitive-behavioral psychotherapists identified the theoretical background of the intervention as important and the need to support behavior change in their patients.

However, although these different emphases became apparent, most of the barriers and facilitators cited by psychotherapists were independent of their therapeutic approach. In the interviews, a variety of exercises and materials were mentioned that both psychodynamic and systemic psychotherapists already use in outpatient practice, and which could be transferred to the online format, such as mindfulness, imagination, or relaxation exercises. Although the use of exercises or homework is usually considered a distinguishing feature between behavioral therapy and systemic therapy on the one hand and psychodynamic approaches on the other hand, the majority of psychodynamic psychotherapists reported that they encourage their patients to perform certain tasks between sessions as well. This is consistent with general findings from the literature, showing that similar techniques and exercises might be used in different therapeutic approaches although the specific language and the theoretical embedding might differ (Kazantzis et al., 2005; Cuijpers et al., 2019; Banon et al., 2013). Through interviews and focus groups, possibilities to offer content used by all therapeutic approaches became visible as well as the need for a common language.

Psychotherapists and PWLE seemed to be on the same page, as both groups shared views on important barriers and facilitators. The barriers and facilitators are also in line with findings from the literature, such as concerns about data security and potential difficulties with technical implementation if users are not tech-savvy (Titzler et al., 2018; Borcsa et al., 2021). Both PWLE and psychotherapists emphasized that TONI should promote patient autonomy. Shared requirements also included the possibility to individualize treatment according to the needs of the patients, offering a diverse space for the patients to customize with the possibility to use a crisis kit and get in touch with the psychotherapist if necessary. In addition to the greatest possible individuality and flexibility, all participants wished for the intervention to be as short, simple, and playful as possible.

4.2. Translating our findings into practice: The intervention "TONI"

The development of the intervention "TONI" resulted in 12 trans-diagnostic modules and additional functions like a diary, a crisis kit, and trackers to protocol one's mood. A list of all the modules can be found in the study protocol of the RCT (Schaeuffele et al., 2022a). We used a common therapeutic language, avoiding technical terms and terms specific to one of the therapeutic approaches, resulting in a language close to the patients' perspective. We kept the texts as simple and short as possible. Much of the content was conveyed through other media such as videos, audios, or interactive exercises. The interactive exercises also added value compared to other resources like worksheets or self-help books. We included seven testimonials with different symptoms and living conditions that help users with completing the exercises. Concerning the testimonials and the illustrations within TONI, we wanted every person to feel addressed and paid attention to diversity in terms of ethnicity, sexual orientation, age, and educational background. Within the intervention, references to the f2f-sessions are made repeatedly, e.g. with reflective questions at the end of each chapter and suggestions to observe things in session, to integrate the online content with the f2f-session closely.

Textbox 2
Main findings from focus groups.

- TONI should ensure data privacy and security
- TONI should be flexible and customizable for different patients' needs
- A warm yet professional design promotes sharing one's thoughts in TONI
- Patients should be able to choose modules in TONI
- TONI should have a simple and inclusive language
- TONI should address people of all characteristics and with different (dis-)abilities.

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4.3. Limitations

A number of limitations should be mentioned. First, our recruitment is likely subject to a selection bias. In the context of recruitment, three psychotherapists refused to take part in the study due to the fact that they rejected IBIs in psychotherapy on principle. Thus, we have to assume that we recruited therapists as well as PWLE with a mostly positive general attitude toward IBIs. As there are more licensed psychodynamic and cognitive-behavioral psychotherapists in Germany than systemic psychotherapists, the recruitment of systemic psychotherapists proved to be more difficult. We therefore believe that the systemic perspective could have been given greater consideration overall. Furthermore, there are limitations inherent to qualitative methodology. Within the focus groups, aspects were mentioned that did not necessarily reflect the opinion of all participants. We must assume that not all non-agreements to the presented ideas were expressed. Moreover, psychotherapists and PWLE at times expressed opposing opinions and wishes and it was then left to our decision which aspects to focus on. However, the qualitative approach is also a strength of our study, as it allowed us to gain in-depth insights and understand the nuanced perspectives and experiences of both PLWE and psychotherapists, which are essential for tailoring the intervention to effectively meet their specific needs and preferences. While we were not able to implement all the ideas mentioned, we tried to find a balance between customizability and usability. We presented an early prototype, which was helpful in gathering user feedback early on. Although associated members of the research and developer team have tested the intervention for usability, we have not collected feedback on the final product through extensive usability testing or a pilot study with future users. We only involved two PWLE, three psychotherapists, and one diversity expert to offer their opinions on the final content. Notwithstanding the named limitations, we consider it a strength of our study, that we included future users early on and continuously throughout the process and achieved an in-depth insight into their needs and wishes through the interviews and focus groups. This helped us to adapt our intervention according to the feedback gathered. Later feedback through proofreading also allowed us to check whether we had implemented the requirements well.

Based on the literature and the participatory development, we propose a comprehensive approach for organizing transdiagnostic content into modules that balances the practical requirements for ease of use and time savings of clinicians with the possibility for more granular tailoring at the chapter level. However, it is an open question of how exactly the relevant modules or chapters should be selected. In our routine care project, the focus is on clinician judgment and shared decision-making with patients based on their requests for modules. Beyond that, other tailoring strategies (Hornstein et al., 2023) could be explored in future studies and applications, such as basing the tailoring decisions on the strengths and weaknesses in the transdiagnostic processes to which the modules correspond (Cheavens et al., 2012; Sauer-Zavala et al., 2022), or on AI algorithms.

4.4. Conclusions

The results offer direct implications for the development of a trans-theoretical and transdiagnostic IBI for use in outpatient psychotherapeutic care. Based on the literature, interviews, and focus groups, we developed various transdiagnostic modules such as mindfulness and understanding of emotions, which were discussed and adopted by psychotherapists with different theoretical approaches. The psychotherapists identified common factors such as fostering the therapeutic alliance, promoting self-efficacy and self-management as well as a strength-based approach as particularly important for such an intervention. Common requirements of psychotherapists and PWLE also included the ability to individualize treatment according to patients' needs and to promote their autonomy by allowing them to work on content independently. This is an important step in advancing the

development of interventions for various therapeutic approaches in routine care. Following steps nine to ten of the IDEAS framework, analyses of the currently ongoing RCT (Mummah et al., 2016) will show to what extent the intervention will be accepted and used by psychotherapists and patients in practice and if the use of TONI in addition to f2f-sessions is beneficial.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.invent.2024.100723.

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