Evaluating the effectiveness of multimodal psychotherapy training program for medical students in China: study protocol for a randomized controlled trial

Tao Pei, Yinan Ding, Dan Han, Jinsong Tang, Yanhui Liao

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Tao Pei[1*] BA, PhD, Prof Dr; Yinan Ding[2*] BA; Dan Han[3*] BA, PhD; Jinsong Tang[3] BA, MA, PhD, Prof Dr; Yanhui Liao[3] BA, MA, PhD, Prof Dr

[1]Nanjing Normal University Nanjing CN
[2]Boston College Chestnut Hill US
[3]Zhejiang University School of Medicine Hangzhou CN
[*]these authors contributed equally

Corresponding Author:
Yanhui Liao BA, MA, PhD, Prof Dr
Zhejiang University School of Medicine
866 Yuhangtang Rd
Hangzhou
CN

Abstract

Background: Providing evidence-based, well-designed psychotherapy teaching for medical students and residents is urgently needed.

Objective: The aim of this project is to measure the effectiveness of a new multimodal psychotherapy teaching program for medical students and residents in China.

Methods: This study will be a two-arm randomized controlled trial (RCT). The intervention group will receive a two-day multimodal-based intensive educational intervention with 8 weeks follow-up (supervision-based online teaching). The wait-list control group will not receive the intervention until the end of the study. Both groups will be followed up for 8 weeks. This trial will be conducted at the Sir Run Run Shaw Hospital. This study aims to recruit about 160 medical students and residents, with approximately 80 in each group.

Results: The primary outcome measure is the changes in the Facilitative Interpersonal Skills task (FIS) scores. Secondary outcome measures include: training program acceptability; trainees' psychotherapy knowledge; utilization of psychotherapy; and self-reported self-efficacy and self-reported motivation for psychotherapy.

Conclusions: If this CBT-based brief and short-term psychotherapy skill training program is proven effective, the mental health impact of its nationwide expansion could be enormous.

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Original Manuscript

Evaluating the effectiveness of multimodal psychotherapy training program for medical students in China: study protocol for a randomized controlled trial

Tao Pei[1,2], Yinan Ding[3], Dan Han[2], Jinsong Tang[2], Yanhui Liao[2]*

1. Mental health center, Nanjing Normal University, Nanjing, P. R. China
2. Department of Psychiatry, Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China
3. Department of Psychology and Neuroscience, Boston College, Chestnut Hill, Massachusetts, United States

**Correspondence*:

Yanhui Liao, 3 East Qingchun Road, Hangzhou, Zhejiang, P. R. China (310016).

E-mail: liaoyanhui@zju.edu.cn

ABSTRACT

Background and aims Providing evidence-based, well-designed psychotherapy teaching for medical students and residents is urgently needed. The aim of this project is to measure the effectiveness of a new multimodal psychotherapy teaching program for medical students and residents in China.

Design This study will be a two-arm randomized controlled trial (RCT). The intervention group will receive a two-day multimodal-based intensive educational intervention with 8 weeks follow-up (supervision-based online teaching). The wait-list control group will not receive the intervention until the end of the study. Both groups will be followed up for 8 weeks.

Setting This trial will be conducted at the Sir Run Run Shaw Hospital.

Participants This study aims to recruit about 160 medical students and residents, with approximately 80 in each group.

Measurements The primary outcome measure is the changes in the Facilitative Interpersonal Skills task (FIS) scores. Secondary outcome measures include: training program acceptability; trainees' psychotherapy knowledge; utilization of psychotherapy; and self-reported self-efficacy and self-reported motivation for psychotherapy.

Comments If this CBT-based brief and short-term psychotherapy skill training program is proven effective, the mental health impact of its nationwide expansion could be enormous.

Keywords: Multimodal teaching; psychotherapy training; Chinese medical students; randomized controlled trial

Declaration of Competing Interest: No potential conflicts of interest to declare.

Brief Title: Multimodal psychotherapy training for Chinese medical students

INTRODUCTION

The delivery of psychosocial and psychotherapeutic interventions remains central to the treatment of many patients with psychiatric disorders (e.g., obsessive-compulsive disorder, panic disorder, major depression, eating disorders, and addictive behaviors) and psychosomatic disorders (e.g., hypertension, bronchial asthma, and rheumatoid arthritis) [1, 2].Several psychotherapy modalities, such as primarily behavior therapy (BT), cognitive behavioral therapy (CBT), and Interpersonal psychotherapy (IPT), have a strong evidence base and, alone or in combination with pharmacotherapy and transcranial magnetic stimulation (TMS) or other brain stimulation interventions for most mental disorders[3, 4]. Given that CBT has been recommended as a first-line intervention for both the acute treatment and relapse prevention of many mental illnesses, like major depressive disorder (MDD) and that most patients prefer psychological treatment to pharmacologic treatment[4], medical students with clinical rotation and residents who are working in psychiatric and psychosomatic departments should be required to develop competencies in psychotherapy[5].

Thus, providing evidence-based, well-designed psychotherapy teaching to train them to get a basic understanding of psychotherapy and gain the required skills for clinical practice would be fundamental to medical students and residency[6]. Medical students and residents, therefore, should be given priority to learn the basic principles of psychotherapy. Despite the critical importance of learning psychotherapy skills in medical school and residency, research indicates that formally evaluated the methods and efficacy of teaching is lacking. Given the lack of access to psychotherapy, medical and psychological educators, program directors should design high-quality curricula for teaching medical students and residents the requisite psychotherapy knowledge and skills, and the curricula should be evaluated by well-conducted, methodologically strong, randomized, controlled trials[7]. However, to our knowledge, evidence of psychotherapy training programs for medical students in China is not available at present.

Aim and hypotheses

For evaluating the effectiveness of the multimodal psychotherapy training program for medical students in China, well-designed, randomized controlled trials of psychotherapy teaching programs are badly needed. The primary aim of this proposed project is to assess the effectiveness of a new multimodal psychotherapy teaching program for medical students and residents in China in order to improve their psychotherapeutic skills and ensure better work performance in entry-level clinical settings. The primary hypothesis is that compared with a control intervention, the intervention group with the psychotherapy teaching program would gain more knowledge about psychotherapy, thereby, their observer-rated performance on the

Facilitative Interpersonal Skills task (FIS)[8] will improve significantly after training; we also hypothesize that the program would increase the utilization of psychotherapy, and it will be associated with improvement in FIS. The third hypothesis is that trainees' self-reported self-efficacy and motivation to apply psychotherapy in clinical work will increase significantly.

METHODS

Patient and public involvement

Neither participants nor the public were involved in the design of the trial or the recruitment and conduct of this study.

Study design and participants

This study is a randomized, controlled trial of a two-day multimodal-based intensive educational intervention designed to increase Chinese medical students' and residents' clinical skills in psychotherapy. The trial features a wait-list control group, with 8 weeks follow-up for all participants. The detailed schedule of study procedures is summarized in Figure 1.

Study participants (n = 160) will mainly be medical students and residents, with other health care providers (HCPs) in China. There were no restrictions for participants, but most of them came from Zhejiang University School of Medicine. An overview of participant eligibility criteria is given in Table1.

Table1 study inclusion and exclusion criteria

Inclusion Criteria:
1. Medical student, residents, health care providers
2. 18 years of age or older
3. Expressing an interest in psychotherapy
4. Willingness to received randomization
5. Willing to provide informed consent to participate in the study
Exclusion Criteria:
1. Not health care providers
2. Below 18 years old
3. Unwilling to be randomized
4. Unable to provide informed consent

Sample size and power calculation

The sample size assessment and power calculations are mainly based on the primary outcome of

the Facilitative Interpersonal Skills task (FIS) [8, 9]. With the assumption that the FIS scores in the intervention and control group will increase by 30% and 5% at 8 weeks of follow-up, respectively. It is estimated that, for assessing the primary outcome, 118 participants (59 participants in each group) are required to achieve 80% power (1-beta=0.80), as significant at the 5% level (alpha=0.05), of an increase in the primary outcome measure from 5% in the control group to 30% in the intervention group. In this study, a final target sample size of 160 participants (80 in each arm) will have more than an 80% chance of detecting a significant difference.

Randomization and group allocation

This study aims to recruit about 160 participants, with approximately 80 in each group. The study's statistician will randomize participants within each study group using the random number generator (RNG) in R software with a 1:1 ratio, determining the allocation in which the experimental and control conditions will be delivered. Half of the participants from the intervention group will first receive the experimental condition (e.g., receive the psychotherapy training program after baseline assessment), while the other half of participants from the wait-list control group will receive the control condition (e.g., will receive the psychotherapy training program until the end of the study).

Recruitment

This study advertised the program online using the WeChat official account of the Department of Psychiatry, Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, to recruit potential participants. The link with program details was encouraged to deliver to any potential medical schools and hospitals. Potential participants would register their interest by sending messages and their identification to research assistants (by Zitang Zhou and Luyao Zou). Then, research assistants contacted respondents to assess their eligibility, explained the study to each participant, and informed them that they would be allocated to either the control group or to the intervention group where they could receive the psychotherapy training program.

Baseline and follow-up data collection

Prior to randomization, demographic information, and self-reported questionnaires will be obtained from all participants at baseline (assessed by Dr. Y Liao, Zitang Zhou, and Luyao Zou). Demographic information (gender, age, marital status, years of education, years of working experience, specialty or departments, etc.) and outcome measurements (Facilitative Interpersonal Skills task (FIS), trainees' psychotherapy knowledge, utilization of psychotherapy, self-reported self-efficacy and self-reported motivation, etc.) were collected from all participants at baseline.

Outcome measurements will also be measured at the end of 8 weeks follow-up (see Table 2). Data will be collected online by WenJuanXing, a Chinese online market research Web site that provides professional online questionnaire surveys or data collection for RCTs[10]. Data will be monitored by the data monitoring committee of the hospital. Personal data will be de-identified.

Table 2 Schedule of enrolment and follow-up assessments

	baseline	8 weeks follow-up
Initial approach	√	
Informed consent	√	
Eligibility screen	√	
Randomization	√	
Intervention/control initiation	√	
Demographic characteristics	√	
FIS	√	√
Knowledge	√	√
Self-reported Self-efficacy	√	√
Self-reported Motivation	√	√
Utilization	√	√

Development of the psychotherapy training program

The psychotherapy training program was mainly developed by a well-experienced psychotherapist (Tao Pei) and MD-level psychiatrist (Yanhui Liao) with approximately 20 years of working experience. The details of the two-day psychotherapy training program are shown in **Table 3**. The program contained two-day intensive training and eight-week follow-ups with guides on applying psychotherapy in clinical settings.

Intervention

Control group

After consent was given, participants who were allocated to the waitlist control group would receive a message encouraging them to complete all questionnaires from baseline to the last follow-up at 8 weeks. They will receive messages via WeChat to thank them for being in the study and reminding them of the time until the completion of the study at 8 weeks follow-up. They will receive a digital booklet of the psychotherapy training program via the WeChat individual messaging platform at recruitment or a hard copy on request. After the trial ends, participants in the control arm will be able to receive the psychotherapy training program for

free.

Intervention group

All participants from the intervention group would receive the two-day psychotherapy training program. They received a hard copy booklet of the psychotherapy training program at recruitment. In addition, supervision-based group meetings will be held at weeks 1, 2, 4, and 8 during follow-ups, and each meeting will last for approximately two hours. At each follow-up meeting, the teachers, including psychotherapists and psychiatrists, will be prepared to answer any psychotherapy-related questions, encourage them to practice psychological interventions, and provide more information for participants' clinical application of psychotherapy.

Outcomes and outcome measures

Primary outcome:

Facilitative Interpersonal Skills task (FIS): FIS has eight dimensions: 1) verbal fluency, 2) hope and positive expectations, 3) persuasiveness; 4) emotional expression; 5) warmth, acceptance, and understanding; 6) empathy; 7) alliance-bond capacity; and 8) alliance rupture-repair responsiveness. The items are rated on a 5-point Likert scale ranging from 1 (i.e., skill deficit) to 5 (i.e., optimal presence of skill), with high inter-rater agreement and excellent internal consistency[11, 12]. Research indicates that FIS is a reliable measure to evaluate performance and psychotherapeutic outcomes in training and assessing therapists, high FIS indicates superior outcomes and better therapeutic processes[8, 9]. It measures therapists' demonstrated ability to convey psychotherapy's common factors, such as hopefulness, warmth, persuasiveness, and emotional engagement.

Secondary outcomes:

1. Training program acceptability: program acceptability will be measured for participants from the intervention group by questions for assessing program acceptability in **Table 4.**
2. Trainees' psychotherapy knowledge: Knowledge about psychotherapy before and after 8 weeks will be on a 5-point scale in **Table 5**.
3. Utilization of psychotherapy: the utilization rate of psychotherapy interventions for patients during 8 weeks follow-up will be measured by items from **Table 6**.
4. Self-reported self-efficacy and self-reported motivation: the self-efficacy and motivation will be measured by the visual analog scale (VAS) on a 10-cm line that represents a continuum between "no self-efficacy or motivation" and "the strongest self-efficacy or motivation."

Table 4 Questions for assessing the psychotherapy training program acceptability

Question	Rating
1. Overall rating of the program	Like very much Like somewhat Neutral Dislike somewhat Very dislike
2. Appraisal of program--likelihood of applying program for patients 3. Appraisal of program--likelihood of recommending program to other medical students or other HCPs	Very likely Somewhat likely Neutral Unlikely not at all likely
4. I would have been able to help patients to deal with mental problems with the program 5. The program made it easier to communicate and help patients during clinical work 6. The program disrupted my daily schedule 7. The program is easy to understand	Strongly agree Agree Neutral Disagree Strongly disagree
8. Frequency of using psychotherapy	Almost never Sometimes Always

Table 5 Knowledge about the psychotherapy training program before and after 8 weeks will be measured on a 10-point scale

Variables	Measures (0 to 10)
1. Overview of psychotherapy	
2. Supportive psychotherapy techniques	
3. Overview of CBT	
4. Beck's Cognitive Therapy	
5. Identify automatic thinking and do cognitive conceptualization	
6. Cognitive conceptualization	
7. Evaluation of automatic thinking	
8. Reconstruction techniques for automated thinking1: Socratic questioning	
9. Reconstruction techniques for automated thinking2: Pie charts, continuous spectrum, cost-benefit analysis, behavioral experiments	
10. Challenge automatic thinking	
11. Social skill training	

12. Problem solving
13. Behavioral therapy theory and behavioral conceptualization
14. Behavioral activation
15. Relaxation training
16. Exposure therapy
17. Competency structure of psychotherapist and the growth path of CBT therapists

Table 6 The utilization rate of the psychotherapy training program for patients will be measured on a 10-point scale

Variables	Measures (0 to 10)
1. Supportive psychotherapy techniques	
2. Social skill	
3. Problem solving skill	
4. Behavioral activation	
5. Relaxation training	
6. Exposure therapy	

Procedures

The schedule of enrolment and follow-up assessments summarizes in **Figure 1** and **Table 2**. Participants will be assessed at baseline (0 week) and at week 8 follow-up after completing a two-day psychotherapy training program. Participants will be asked to keep a daily log of their utilization of the psychotherapy training program, such as providing emotional support for patients and teaching patients to practice breath techniques for stress relief. Reminders will be sent to participants who didn't complete the week 8 follow-up questions.

Withdrawal from the Program

All participants will feel free to withdraw from this trial at any time without any given reason. On the basis of the intention-to-treat (ITT) principle[13], participants who fail to respond to the 8-week follow-up assessment will be retained in the analysis according to the arm they were randomized to, irrespective of whether they received the intervention or not. Only withdrawal has been required by the study participants, then these participants will be excluded from the analysis, and reasons for withdrawal will be recorded if they are reported. Additionally, a complete case analysis will also be performed in which any participant who withdrew from the study at the follow-up point will be excluded.

Data analysis

All data is automatically collected via WenJuanXing through a WeChat based link. All data will be downloaded from WenJuanXing database with a user-specified Excel file. This study will have no interim analyses. Data will be analyzed when all of them have been obtained, and data will be blinded to intervention assignment by the trial statistician using R software (R Foundation for Statistical Computing, Vienna, Austria. https://www.r-project.org/) and SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.).

The primary hypothesis is that compared with a control intervention, the intervention group with the psychotherapy teaching program would gain more knowledge about psychotherapy, thereby, their observer-rated performance on the Facilitative Interpersonal Skills task (FIS)[8] will improve significantly after training; we also hypothesize that the program would increase the utilization of psychotherapy, and it will be associated with improvement in FIS. The third hypothesis is that trainees' self-reported self-efficacy and motivation to apply psychotherapy in clinical work will increase significantly.

Descriptive statistics will be applied for demographic and psychotherapy-related characteristics at baseline; two sample T-test or Mann-Whitney U test (for continuous variables) and $\chi 2$ test (for categorical variables) will be applied to compare the information at baseline between the two study groups. For assessing the primary outcome, determining if the psychotherapy training intervention group showed more knowledge about psychotherapy and performance better psychotherapy than the control group, two sample T-test or Mann-Whitney U test will first be applied to compare group differences in FIS. Then, analysis of covariance (ANCOVA) will be applied by controlling for demographic information (such as age, and years of education). In the ANCOVA model, the dependent variable will be the increase of FIS. The pre-intervention measure of the working experience will be controlled as a covariate, and intervention will be a fixed factor. This model will assess the differences in the post-intervention means after accounting for pre-intervention values. Pearson's correlations or regression analysis (linear and binary regression model) will be used to explore any factor that associated with FIS at baseline and increase the utilization of psychotherapy in the intervention group and in the control group. An intention-to-treat (ITT) basis will be applied in this study, all participants who complete the baseline questions will be retained in the analysis. The last-observation-carried-forward (LOCF) method will be applied to handle incomplete or missing data (assuming no increase in the utilization of psychotherapy). In addition, a complete case analysis will be performed in which any participant with missing information on the follow-up will be excluded. All tests will be 2-tailed. A two-sided $P<0.05$ will be used to determine statistical significance.

Safety and adverse events

Throughout the psychotherapy training program, adverse events will be monitored. Participants will be encouraged to communicate with us if they experience any psychotherapy-related issues or adverse events during their clinical work. We will ask each participant to report any experiences of adverse events at each group meeting. Participants can also report them at any time. If participants experience severe adverse events, they will be encouraged to see a psychologist or psychiatrist.

We do not anticipate any training-related serious adverse events (SAE, i.e., events that are life-threatening) in this trial. If this happens, we will document the SAE, record it on the SAE form, and send it to the ethics committee of Sir Run Run Shaw Hospital (principal investigator’s affiliation) within 24 hours.

Ethics approval and consent to participate

This study has been approved by the ethics committee of Sir Run Run Shaw Hospital, an affiliate

of Zhejiang University School of Medicine (2024 Ethics Approval File NO. 2024-0066). The trial will be carried out in accordance with the Declaration of Helsinki. Participants would be provided with informed consent prior to the baseline assessment. After they thoroughly read and fully understood the content of the consent, they would receive a link to electronically sign his or her name at the end of the informed consent form and submit it via WeChat. Each participant would be explained about the study purpose, procedures and measurements, potential risks and benefits of this trial before recruitment. Then, informed consent would be obtained from each participant. Participation would be completely voluntary, and they could withdraw from the study at any time point. Coordinating researchers' contact information of the study would be provided to all participants.

Registration

The study has been registered at ClinicalTrials.gov (Identifier: NCT06258460, website: httpsregister.clinicaltrials.gov)

RESULTS

This studyrecruited 160 participants from January 4th to January 12th, 2024, or until the recruitment process was complete. The two-day training program was held on February 3rd and February 4th. The follow-up will be completed on April 1st, 2024. We expect all trial results to be available by the end of May 2024. The results will be published in peer-reviewed journals. If effective, the psychotherapy training program and the booklet of the program will be freely available to the public by the end of the trial.

DISCUSSION

To our knowledge, this will be the first RCT to evaluate the efficacy of a multimodal psychotherapy training program for medical students in China.

The strength of this study is that this is a theoretical framework guided (mainly cognitive behavioral theory) large sample size RCT to evaluate the efficacy of the psychotherapy training program by multi-model teaching methods in China. If this multimodal psychotherapy training program is proven to be effective, it opens up its potential application nationwide at the population level, the health impact of its expansion nationwide could be enormous, helping healthcare providers to gain skills in psychotherapy to manage psychological problems for patients.

There are some limitations in this study. First, the teaching effect and learning quality are

affected by many factors, such as the opportunity to implement psychotherapy practice, the intensity of clinical work in the follow-up stage (such as the influence of holidays), and the availability of continuing learning resources, etc., which cannot be adequately controlled in this study. Second, the two-day teaching will be conducted at the Sir Run Run Shaw Hospital, which may discourage participants from other parts of China from attending this training program. Third, there are only two main teachers (Psychiatrist Yanhui Liao and Psychologist Tao Pei) in this training program. Although both teachers have almost twenty years of teaching and clinical experience, their styles and characteristics may still have an impact on the teaching effect. Fourth,
this 8-week teaching program is expected to help improve the acquisition of therapeutic skills, but enhancing skill development in psychotherapy would be a relatively long-term process. Last, we submitted this protocol to the journal during the time of recruiting.

In conclusion, this is the first RCT to evaluate the efficacy of a multimodal psychotherapy training program for medical students in China. If this educational program, a brief and short-term psychotherapy skill training, is proven effective, the health impact of its expansion nationwide could be enormous. It provides evidence-based psychotherapy (mainly CBT) training programs for medical students needed, and its dissemination will help healthcare providers manage any mental problems, like stress and depression.

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Author Contribution
YLiao designed the study. YLiao and TPei developed the program. YDing and Dhan verified the analytical methods. JTang supervised the design of this work and revised the manuscript. All authors discussed and approved to the final manuscript.

REFERENCES

1. Chaimowitz G, Weerasekera P, Ravitz P. Psychotherapy in Psychiatry. **Can J Psychiatry 2021**, 66(11)**:** 999-1004.

2. Craighead WE, Craighead LW. The role of psychotherapy in treating psychiatric disorders. **Med Clin North Am 2001**, 85(3)**:** 617-629.
3. Rosson S, de Filippis R, Croatto G, Collantoni E, Pallottino S, Guinart D, *et al.* Brain stimulation and other biological non-pharmacological interventions in mental disorders: An umbrella review. **Neurosci Biobehav Rev 2022**, 139**:** 104743.
4. McHugh RK, Whitton SW, Peckham AD, Welge JA, Otto MW. Patient preference for psychological vs pharmacologic treatment of psychiatric disorders: a meta-analytic review. **J Clin Psychiatry 2013**, 74(6)**:** 595-602.
5. Fefergrad M, Mulsant BH. Psychotherapy Training in a Competency-Based Medical Education Psychiatry Residency: A Proposal for a Practical and Socially Responsible Model. **Can J Psychiatry 2022**, 67(6)**:** 423-427.
6. Truong A, Wu P, Diez-Barroso R, Coverdale J. What Is the Efficacy of Teaching Psychotherapy to Psychiatry Residents and Medical Students? **Acad Psychiatry 2015**, 39(5)**:** 575-579.
7. Coverdale JH, Balon R, Beresin EV, Louie AK, Tait GR, Roberts LW. An argument for conducting methodologically strong, randomized, controlled trials in educational research. **Acad Psychiatry 2013**, 37(3)**:** 145-149.
8. Allen JJ, Parker A, Ogles BM. A review of the facilitative interpersonal skills performance task and rating method. **Clinical Psychology: Science and Practice 2023**.
9. Anderson T, McClintock AS, Himawan L, Song X, Patterson CL. A prospective study of therapist facilitative interpersonal skills as a predictor of treatment outcome. **J Consult Clin Psychol 2016**, 84(1)**:** 57-66.
10. Tang J, Wang L, Luo T, Wu S, Wu Z, Chen J, *et al.* Effectiveness of a Brief Mindfulness-Based Intervention of "STOP touching your face" During the COVID-19 Pandemic: a Randomized Controlled Trial. **Mindfulness (N Y) 2022**, 13(12)**:** 3123-3133.
11. Anderson T, Crowley ME, Himawan L, Holmberg JK, Uhlin BD. Therapist facilitative interpersonal skills and training status: A randomized clinical trial on alliance and outcome. **Psychother Res 2016**, 26(5)**:** 511-529.
12. Zech JM, Steele R, Foley VK, Hull TD. Automatic rating of therapist facilitative interpersonal skills in text: A natural language processing application. **Front Digit Health 2022**, 4**:** 917918.
13. Montori VM, Guyatt GH. Intention-to-treat principle. **Cmaj 2001**, 165(10)**:** 1339-1341.

Table 3 The details of the two-day psychotherapy training program

DAY 1					
Time	**Structure**	**Title**	**Main contents**	**Description and notes**	**Duration**
8:00-8:05	Leading-in	Introduction	Welcome, greetings, and introduction	Sign an informed consent form for ethics and group rules in advance. Short greetings and welcome, self-introduction for the teacher, and explaining the content, format, objectives, and requirements of the course.	5 min
8:05-8:20	Module 1 Supportive Psychotherapy	Q1	What clinical contexts can supportive psychotherapy be used in? What techniques does supportive psychotherapy require to master?	Divide participants into 10 small groups in advance and discuss within groups, paying attention to recording. Make self-introductions in group to familiarize with each other. Choose a representative each time to record the discussion processes and results. Make each group have equal opportunities to speak. Group 1 to 5 discuss Question 1, and Group 1 answers Group 6 to 10 discuss Question 2, and Group 6 answers	15 min
8:20-8:40		Lecture 1	Overview of psychotherapy and supportive psychotherapy techniques	The importance and irreplaceability of psychotherapy. Highlighting the importance of therapeutic relationships, the characteristic and operational components of therapeutic relationships. Select some participatory technologies to highlight their supportive role.	20 min
8:40-9:15		Demonstration 1	Supportive psychotherapy for a case of depression	The teacher and assistant play the roles of therapist and patient respectively. Prepare a case of mild-to-moderate depression. Introduce main information of the case before the demonstration, and remind students to pay attention to what techniques and content they have seen. Practice establishing therapeutic relationships and providing support during collecting information. Give feedback and ask questions after the demonstration.	35 min
9:15-9:50		Exercise 1	Supportive Psychotherapy	Role playing settings. Students work in pairs, playing the roles of therapist and patient respectively. Aim at exercising techniques rather than solving the problems of the case. Choose cases with moderate rather than high difficulty, and try not to use oneself as a case. Personality disorders are not going to be options. Give feedback in two-person group practice after the demonstration. Small groups feedback and questioning.	35 min
9:50-10:05	Coffee Break				15 min

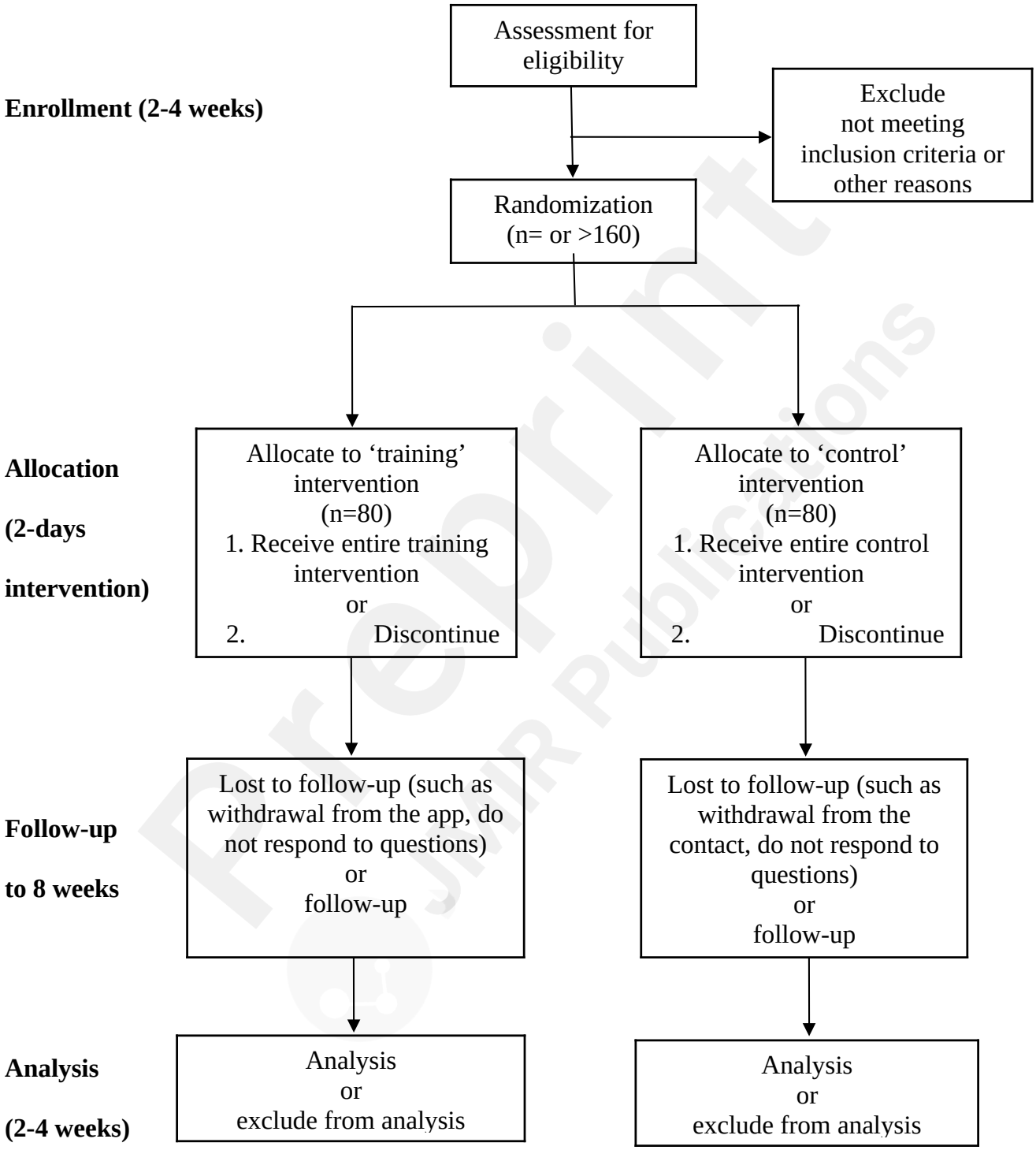
10:05-10:20	Module2 Overview of CBT and Beck's Cognitive Therapy	Q2	What kind of psychotherapy do we need? How to deal with cognition problems in the occurrence and development of mental disorders?	Group 1-5 discuss question 2, and Group 2 answers. Group 6-10 discuss question 1, and Group 7 answers.	15 min
10:20-11:00		Lecture 2	Overview of CBT	Introduction: limitations of only providing supportive treatment. Introduce the development background of CBT (horizontal and vertical). Definition of CBT and its core elements. Wide range of indications, definite therapeutic effects, and specialized disease manuals. History and development of CBT. Five advantages and ten characteristics.	20 min
			Beck's Cognitive Therapy	In basic concepts, emphasize the explanation of automatic thinking. Introduce the horizontal model. Highlighting the core role of automatic thinking in symptom changes. How to make treatment structured?	20 min
11:00-11:30		Demonstration 2	Leading in CBT	Use the case in Demonstration section. Based on the specific situation of the case，explain the basic theoretical concepts of CBT, introduce the treatment methods and overview, then demonstrate how to do psychoeducation, and infuse hope.	30 min
11:30-12:00		Exercise 2	Leading in CBT	Choose depression and adaptive disorders.	30 min
12:00-13:30	Lunch Break				90 min
13:30-13:45	Module3 Identify automatic thinking and do cognitive conceptualization	Q3	What cognitive content do different patients have? Why do different patients have different cognition?	Group 1-5 discuss question 1, and Group 3 answers. Group 6-10 discuss question 2, and Group 8 answers.	15 min
13:45-14:05		Lecture 3	Identify automatic thinking and do cognitive conceptualization	Distinguish between automatic thinking, situation, and emotion. Common methods for identifying automatic thinking. Arrow down technique for identifying beliefs. Demonstration of cognitive conceptualization diagram. Use DTR tables to record automatic thinking.	20 min
14:05-14:35		Demonstration 3	Identify automatic thinking and do cognitive conceptualization	Take GAD as a case. Lock in specific situations, confirm thoughts and emotional responses at the time, and score. Identify beliefs, trace early experiences, form preliminary conceptualization and share. Assign DTR homework.	30 min
14:35-15:05		Exercise 3	Cognitive conceptualization	Do not choose cases with fewer cognitive symptoms.	30 min
15:05-15:20	Coffee break				15 min
15:20-15:35	Module4 Evaluation and	Q4	What are the typical characteristics of patient cognition? What are the methods to change	Group 1-5 discuss question 2, and Group 4 answers. Group 6-10 discuss question 1, and Group 9 answers.	15 min

	Reconstruction of Automatic Thinking		cognition?		
15:35-15:55		Lecture 4	Evaluation of automatic thinking	Treatment sequence and basis. Present common types of cognitive distortions, giving examples. Invite students to share common examples of cognitive distortions.	10 min
			Reconstruction techniques for automated thinking1：Socratic questioning	Guided discovery, and Socratic questioning. Positive and negative evidence method, role-play.	10 min
15:55-16:10		Demonstration 4	Socratic questioning	Present an anxiety case with the main complaint of "my illness cannot be cured." Use positive and negative evidence and role-playing to challenge automatic thinking.	15 min
16:10-16:25		Lecture5	Reconstruction techniques for automated thinking2：Pie charts, continuous spectrum, cost-benefit analysis, behavioral experiments	Pie charts, continuous spectrum, cost-benefit analysis, behavioral experiments. Indications and usage, operating procedures, combine case into explanation.	15 min
16:25-16:50		Demonstration 5	Pie charts, continuous spectrum, cost-benefit analysis, behavioral experiments	Self-accusation with the expression of "It's all my fault that the kid failed the exam." Depression with the expression of "I am a failed person." Eating disorders with the expression of "Should I go on a diet?" Body image disorder with the expression of "Others will think I look strange."	25 min
16:50-17:20		Exercise 4	Challenge automatic thinking	Pick the right automatic thought. Use a variety of techniques to try to challenge and replace negative automatic thinking.	30 min
17:20-17:30		Lecture 6	End the treatment	When and how beliefs change. Preparation for the end of treatment. Relapse prevention and balanced life.	10 min
18:30-19:30	Bonus	Evening lecture	Social skill training	Indications and usage, design content, operation method, take social anxiety as an example.	60 min
			Problem Solving	Indications and usage, operating procedures. Take the convalescent schizophrenics as an example.	
DAY 2					
Time	**Structure**	**Title**	**Main contents**	**Description and notes**	**Duration**
8:00-8:15	Module5 Behavioral theory and micro functional behavioral analysis	Q5	What is the role of behavior in the occurrence and development of mental disorders? What are the different behavioral symptoms that different patients may have? What kinds of factors will affect behavior?	Groups 1-3 discuss question 1, and Group 1 answers. Groups 4-7 discuss question 2, and Group 5 answers. Groups 8-10 discuss question 3, and Group 10 answers.	15 min
8:15-8:45		Lecture 7	Behavioral therapy theory and behavioral conceptualization	Overview of behavioral therapy. Three behavioral theories. Type of problem behavior.	30 min

				SRC model and corresponding technology of each part.	
8:45-9:15		Demonstration 6	SRC	Take phobias as an example	30 min
9:15-9:45		Exercise 5	SRC	Select cases with prominent behavioral symptoms.	30 min
9:45-10:00	Coffee Break				15 min
10:00-10:15	Module6 Behavior therapy technique1	Q6	Why would you want to lie flat? (no measure blood pressure?) What happens if you stay flat all the time？	Groups 1-5 discuss question 2 and Group 2 answers. Groups 6-10 discuss question 1. Groups 6 and 8 answers.	15 min
10:15-10:40		Lecture 8	Behavioral activation	Three models: reinforcement principle, rising and falling spirals, and equilibrium model. Arrange and make plans.	25 min
10:40-11:10		Demonstration 7	Behavioral activation	Take depression as an example.	30 min
11:10-11:40		Exercise 6	Behavioral activation	Select cases with reduced behavior and make action plans.	30 min
11:40-12:00		Lecture 9	Relaxation training	Introduce principles and common methods. Live audio experience.	20 min
12:00-13:30	Lunch Break				90 min
13:30-13:45	Module7 Behavior therapy technique2	Q7	Why do we run away? How do you view "escape is shameful, but useful"?	Groups 1-5 discuss question 1. Groups 3 and 5 answer. Groups 6-10 discuss question 2 and Group 7 answer.	15 min
13:45-14:15		Lecture 10	Exposure therapy	The principle and application of exposure. Procedure and precautions.	30 min
14:15-14:45		Demonstration 8		Use "panic attack" as an example, discuss exposure levels.	30 min
14:45-15:15		Exercise 7		Select the case with "avoidance" symptoms and set the exposure level.	30 min
15:15-15:30	Coffee Break				15 min
15:30-15:45	Module8 Psychotherapist competency development	Q8	What does a competent psychotherapist need? How to develop your competence?	Groups 1-5 discuss question 2 and Group 4 answer. Groups 6-10 discuss question 1. Groups 9 and 10 answer.	15 min
15:45-16:00		Lecture 11	Competency structure of psychotherapist The Growth path of CBT therapists	Competency components: knowledge, skills, values. Growth path: reading, training, practice, supervision. Introduce 8-week follow-ups training period.	15 min
16:00-17:00	Feedback and summary	Feedback	Feelings on teaching mode and content	Briefly introduce several teaching modes used in the course, and students' feedback.	60 min
17:00-17:15		Post-test	questionnaire survey	Complete the evaluation on the effectiveness of teaching.	15 min

Note for learning methods: 1) Question 1-8 will use problem-based learning (PBL) and team-based learning (TBL); 2) Lecture 1-11: lecture--based learning (LBL); 3) Teachers' presentation 1-8: Case-based learning (CBL) and experiential learning (Role-play learning); 4) Exercise: 1-7 experiential learning (Role-play learning)
DTR: Dysfunctional Thought Record; CBT: cognitive behavioral therapy; GAD: generalized anxiety disorder; SRC: stimulus-response compatibility

Figure 1 Flowchart study design



Supplementary Files

Untitled.
URL: http://asset.jmir.pub/assets/66c1c4c6425c527907e400c0f00279e4.docx