“Relief”: A Behavioral Intervention for Depression and Chronic Pain

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Weill Cornell Medicine

Operations Manual
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BACKGROUND

Chronic pain and depression frequently co-exist in late and mid-life and contribute to increased disability, high health care costs, psychiatric comorbidity, and suicide. Older and middle-aged depressed-pain patients: a) are mainly treated in primary care practices; and b) are often prescribed medication, which increases the risk for addiction to opioids and benzodiazepines. Despite the need - and desire by the patients and providers - for primary care behavioral interventions, behavioral interventions are scarce in primary care. To address this need, we worked with primary care practices of the Weill Cornell Medical Associates (WCMA), and developed Relief, a 9-session behavioral intervention, designed to be administered by licensed social workers (LCSWs) and/or nurse practitioners (NP) in primary care practices.

Our conceptual model assumes that chronic pain and depression are characterized by an attentional bias assigning greater salience to interoceptive stimuli and to negative emotions along with difficulty shifting attention to goal-oriented/reward-driven state leading to inadequate engagement of the reward network. Accordingly, Relief aims to change the attentional bias of depressed-pain patients favoring interoceptive experiences (discomfort, negative feelings), and increase the salience of newly developed adaptive and rewarding behaviors. Relief also examines patients' expectations of pain treatment (which may be adversely affected by depression),and uses techniques to reduce negative emotions associated with pain treatment, modify unrealistic expectations and enhance the communication between the patient and primary care physician. To facilitate and enhance its delivery, Relief uses easy-to operate smartphone applications.

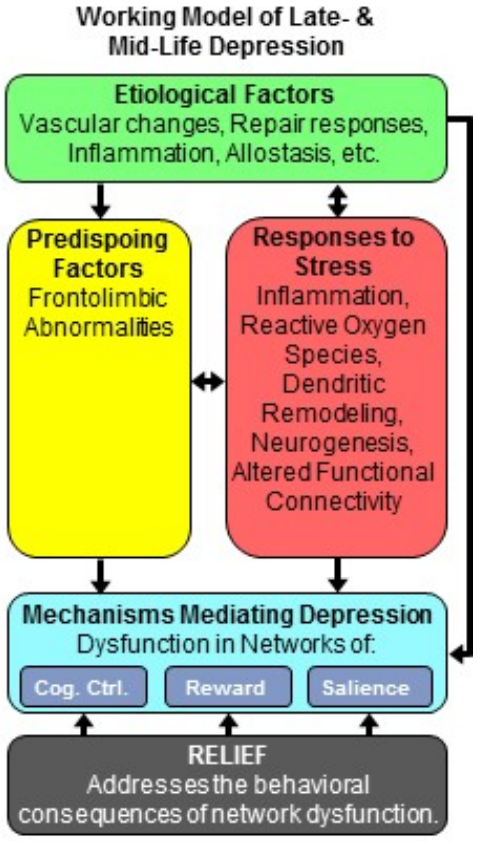
This project aims to meet the needs of financially, ethnically and socially diverse older and middle-aged primary care patients with chronic pain and depression, who are mostly treated in primary care and are at risk of adverse outcomes. Pharmacological pain interventions (e.g., antidepressants, opioids) and physical therapy are in common use, but offer inadequate relief, and increase the risk of abuse. Behavioral interventions for depression and chronic pain are scarce in primary care.

Consistent with the NIMH *Objective 3* for a person-centered approach using RDoC, Relief uses a neurobiological model to streamline and structure its interventions for use in primary care practices.

Relief uses targeted mobile technology applications to facilitate and enhance its delivery, i.e. reminders to participants to perform their treatment assignments, summaries of behavioral graphs to help therapists target their interventions, augmented assessment through passive sensing, and active entries.

If effective, Relief may reduce depression and pain-related disability, break the vicious cycle of inactivity, and improve quality of life for this large group of patients who suffer and have few viable treatment options. Relief has the potential for broad uptake and sustainability by large practices (e.g. Affordable Care Organizations or practices with large caseloads of adults with pain and depression who have limited access to psychiatrists or pain specialists) that may employ or engage LCSWs and NPs whose services are reimbursable by Medicare and other insurances.

STUDY AIMS



The goals of the study are:

MONTHS 1-3:

1. Finalize the Relief Manual and establish feasibility of therapist training: We will continue to work with the WCMA to finalize Relief (9 sessions) and train practice LCSWs and NPs. We will determine the success rate of training and number of hours needed to achieve Relief certification.

2. Develop Relief's Operations Manual: We will work with the WCMA's clinicians and managers and create an Operations Manual to guide the integration of Relief into the practice, i.e., procedures for screening, referral and hand-off to therapists and research team, communication with WCMA physicians and staff.

MONTHS 4-36:

3. Assess Relief's reach, feasibility and acceptability: We will assess across conditions:

a. Reach: Number of patients screened, and those who meet inclusion criteria;
b. Feasibility: Number of patients who initiate Relief or UC/RMH [referral (based on clinical indication) for mental health care] and research procedures (timely referrals, assessments);
c. Acceptability: Patient's treatment satisfaction at 6, 9, and 12 weeks.

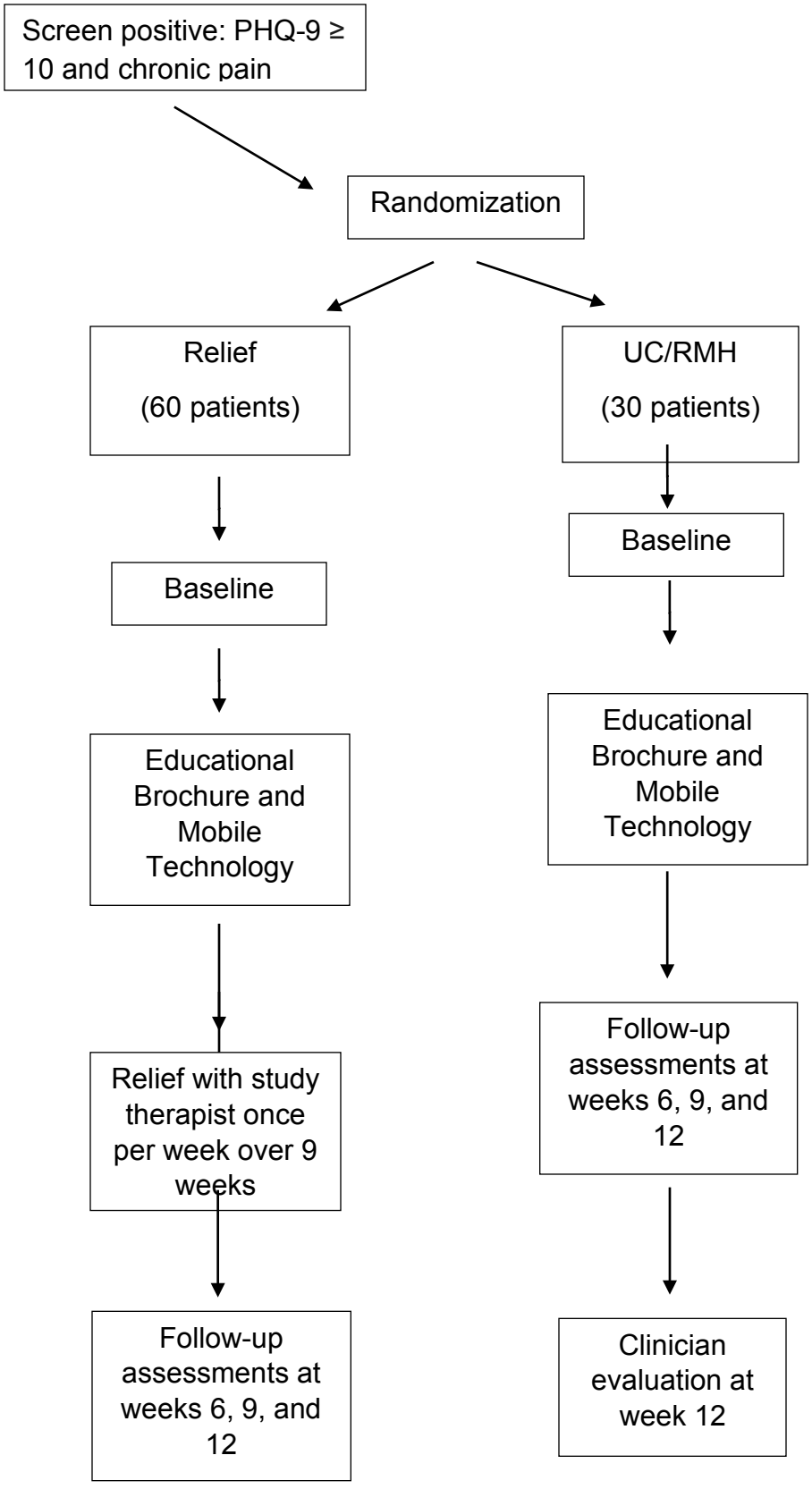
Benchmarks of the study progress: Feasibility: At least 75% of Relief participants will complete Relief. Acceptability: We will obtain treatment satisfaction score at the end of Relief treatment.

4. Preliminary Effectiveness: Over the course of 12 weeks, Relief participants, compared to participants in UC/RMH [referral (based on clinical indication) for mental health care], will have greater (effect size) and clinically significant reductions in depression, pain-related disability.

5. Preliminary Evidence of Target Engagement/Secondary: The differential effect of Relief vs. UC/RMH in reducing depression and pain-related disability will be independently mediated by reduction of interoceptive focus and positive and negative emotions.

OVERVIEW OF DESIGN

Figure 1.



PROTOCOL

1. Study staff reviews the Electronic Health Records (EHR) on Electronic Privacy Information Center (EPIC) and will identify patients with diagnoses of chronic pain, a DSM 5 diagnoses of depression and anxiety, as well as patients who are on psychotropic and/or pain medications.
2. Study staff will also attend meetings at each of the PCP practices every few months to present/review the study and ask the PCPs to write down the names of any patients they think may be appropriate.
3. Study staff will then contact potential participants via phone. If they meet preliminary eligibility criteria (based on administering the phone screen script) and are interested, they will be invited to come to our offices in White Plains or NYC, or to schedule a video or phone appointment, depending on the circumstances. During the appointment, the consenting process will take place first, and then if the patient consents, the research assistant will conduct the screening assessment (either in person or remotely).
4. RA will then discuss the results of the assessment with Dr. Kiosses.
5. If the patient is eligible, the RA will email the data manager with the patient information.
6. The data manager will randomize the patient to either Relief or UC/RMH.
7. The data manager will notify Dr. Kiosses and the supervising therapist (not administering the intervention) about the randomization.
8. The supervising therapist will contact the physician to let them know that the patient is part of the study and whether they are receiving Relief or UC/RMH.
9. The supervising therapist will notify the patient that they are receiving Relief or UC/RMH and will assign a therapist to the patient if randomized to Relief.
10. Both groups will receive (from the RA or via mail):
    - Educational (TCAP) booklet
    - Withings Watch with charger
    - iPhone 7 with charger (if patient does not have a smartphone or doesn't want to use their own)
    - W2H application downloaded to smartphone
    - Technology Manual

    In addition, patients randomized to Relief will receive a therapy participant guide from the study therapist.
11. Team weekly meetings:
    - Review recruitment (specifically the numbers of positive screen patients)
    - Referrals
    - Tracking of all patients; we will discuss:
        - The status of assessments
        - If in Relief, the status of therapy sessions
            - RAs will leave the room to protect randomization.
    - The data manager will generate charts with recruitment progress.

12. The RA will conduct assessments at follow up time points: 6, 9, and 12 weeks after the baseline assessment. The patient will receive $25 (cash, check or gift card) for each assessment.
13. The RA will periodically contact the subject to make sure he/she is using the phone app and Withings watch and to answer any questions they may have about the app.
14. At week 12 the therapist will determine whether their subjects in Relief are eligible for an additional $50 gift card based on the activities they have completed, and will distribute gift cards accordingly.
15. After the 12-week assessment, the patient in UC/RMH will receive an evaluation from a clinician.
16. All technology lent to patients will be returned to study staff.

RESEARCH ASSESSMENT

The research assistant will describe the study, ask potential participants to sign consent, and administer a screening assessment to evaluate eligibility. Once this is confirmed, the research assistant will administer a baseline assessment. At this assessment, the research assistant will explain that follow-up assessments will be administered at 6, 9, and 12 weeks. The research assistant will also explain that the participants will be compensated $25 for each completed assessment. The research assistant will then facilitate a referral to the data manager, who will identify the participant's group and notify Dr. Kiosses, who will notify the appropriate social worker to schedule a meeting.

Inclusion Criteria:

1. 50 years or older
2. PHQ-9 score ≥ 10
3. Chronic pain (most days over the past 3 months)
4. Capacity to consent

Exclusion Criteria:

1. DSM-5 Axis 1 diagnoses other than depression and anxiety disorders (by SCID)
2. Montreal Cognitive Assessment (MoCA) < 24
3. Active suicidal ideation (MADRS item 10≥4)
4. Severe or life-threatening medical illness

*Note: Patients on psychotropic medications, opioids or benzodiazepines will be included if they do not meet DSM-5 criteria for opioid, anxiolytics or other substance abuse disorders (Human Subjects).

INTERVENTION

Relief: Relief utilizes a structured, yet personalized, approach. The goals of Relief are to shift the attention of depressed-pain patients away from pain, discomfort and negative feelings, increase involvement in meaningful and pleasurable activities, use techniques to reduce negative emotions associated with pain, modify unrealistic expectations and enhance communication between the patient and primary care physician. The Relief therapist uses the following techniques: *attention-shift (e.g "distract and refocus" technique, shaping procedure to sustain attention), de-escalation (e.g. avoidance of situations that trigger negative emotions, modification of situations, changing perspective), reward exposure (through explicit action plans), planning (e.g., step by step division of task/action, preparatory steps for a task), and motivational techniques (e.g. use of notebooks, calendars)* to achieve its goals (Manual in Appendix). Relief also includes techniques to address negative emotions and views related to the treatment process and to reduce tension between patients and family members. Mobile technology is used to augment the Relief intervention. Finally, at the end of treatment Relief therapists provide to patients a personalized summary of treatment that highlights the problems that were addressed, and the successful techniques that had been used to solve them.

Comparison Condition: **UC/RMH Offered at WCMA:** UC/RMH is a strong comparison condition because routine care for depression in WCMA practices is superior to more than 80% of primary care practices. The practices do not have ongoing, standardized fidelity procedures to mental health treatments or guidelines. Our team will not interfere with these procedures but record treatment of study participants (percent referred, type of treatment received, frequency of sessions, attendance, referral to psychiatrist, and psychotropic prescriptions). In addition to the regular referral services, we will offer an educational booklet on chronic pain and depression.

FOLLOW UP ASSESSMENTS

Follow up assessments are conducted by the WCM research assistant at 6, 9, and 12 weeks after the baseline, and include measures of depression and anxiety symptoms, and pain. Subjects will receive $25 (cash, check or gift card) as compensation for completing each assessment.

WAY TO HEALTH APPLICATION

In conjunction with psychotherapy sessions, participants will be asked to download, activate, and use a smartphone application designed by *Way to Health*. If participants do not own a smartphone or do not want to use their own phone, we will provide them with a free smartphone to be used for the duration of the study. To maximize the use and benefits of the app, the RA and/or therapist will review its use, prepare written personalized instructions, ask patients for feedback, and repeat the instructions in subsequent sessions as needed

A smart phone and a Withings watch will be the vehicles for mobile technology interventions.

Augmentation of Relief among participants in the Relief intervention group consists of:

1) Daily ratings of mood, interest or pleasure in activities, stress, and pain. A text message sent by Way to Health prompts participants to rate these 4 items on a scale of 1 to 10.
2) Daily reminders to pursue preparatory steps and scheduled meaningful, rewarding activities as well as interventions for negative emotions.
3) Passive sensing of movement (steps) and sleep daily by the Withings watch. Participants are reminded to review their step count and deep and light sleep duration daily and receive and a weekly summary of both on Fridays.
4) Participants receive a text message asking them whether they practiced their negative emotions intervention and engaged in their planned rewarding activity and to rate the sense of pleasure (scale 1 to 10) and the sense of satisfaction (scale 1 to 10) they derived.
5) At the end of each week, participants receive a text message indicating to them the reward level they achieved. Based on studies of non-depressed older adults by U. Penn investigators, we are using an incentive plan based on behavioral economics.

Participants in the UC/RMH group will also receive a smart phone and Withings watch. They will receive text messages prompting daily ratings of mood, interest or pleasure in activities, stress, and pain

PROCEDURES FOR TREATMENT AFTER STUDY COMPLETION

Participants whose follow up assessments indicate a need for continued mental health services will be provided with mental health referrals. If participants are members of a senior center in the W-MH condition they will automatically receive a referral for mental health services.

DATA MANAGEMENT

Data will be collected by the study RA at baseline and at follow-up assessments. The RA will also be responsible for writing and presenting patient summaries to the PI. The clinician will complete updates on the progress of their therapy sessions. Brian Liles manages the Relief database and weekly reporting.

Research records will be kept confidential to the extent permitted by law. Subjects will be assigned ID numbers by the Relief study team and all identifying information will be removed from records that are submitted to Weill Cornell Medicine for data analysis. Paper research records will be kept in locked file cabinets. When necessary for purposes of auditing, the Cornell IRB, NIMH, and all Federal oversight agencies will be provided to these files. Computers will be password protected and all staff participating in the study are trained in protecting human subjects in research. Data will be published in aggregate form without unique identifiers. No analyses will be published in which it is possible to identify individuals based on data.

SUSTAINABILITY

Dr. Kiosses will train three LCSWs in Relief (or more if needed). Training will consist of a one-day workshop with didactics, role-play and review of previously audiotaped sessions. After the workshop, the therapist will administer 6 Relief sessions to 2 pilot participants during the first four months. To be certified in Relief, therapists must achieve a score of greater than or equal to 4 (very good) out of 5 on the Relief Adherence Scale.