

# Enhancing Mental Health through Scalable Training for Peer Counselors

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## ABSTRACT

Given the prevalence of mental illness, it may be impossible for professionals to provide treatment to all affected individuals, let alone those at risk. This gap could be addressed through the use of laypeople to provide peer counseling interventions; however, training laypeople on a large scale poses its own challenges. We propose that non-professionals may be able to learn counseling skills through a scalable massive open online course (MOOC), and conducted a pilot trial of the MOOC content with 60 participants. The mutual peer counseling intervention showed preliminary efficacy in teaching non-professionals some, though not all, of the intended peer counseling skills, increasing the use of active listening behaviors.

### Author Keywords

Peer counseling; peer support; Web-based learning

### ACM Classification Keywords

J.3 Life and Medical Sciences: Health; J.4 Social and Behavioral Sciences: Psychology; K.3.1 Computer Uses in Education: Computer-assisted instruction

## INTRODUCTION

Widely disseminable prevention measures and interventions are needed to combat the global burden of mental illness and the vastness of unmet treatment need [5, 8]. Researchers have identified structural barriers to treatment such as cost and accessibility of providers, as well as attitudinal such as fear of stigma and desire for self-reliance [6, 9]. Given the prevalence of mental health problems, there may never be enough mental health professionals to treat each person who is suffering from a mental illness, let alone all of those who are at risk.

Fortunately, nonprofessional mental health practitioners appear to be effective at delivering simple treatments and

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may not perform any worse than professional caregivers [3, 11]. Additionally, although there is clearly some benefit for highly technical mental health interventions, simple supportive therapy does appear to reduce symptoms and can be comparable to more complex interventions for those with lower symptom severity [7]. Therefore, we propose that one strategy for alleviating the global burden of mental illness could be to train laypeople to deliver simple interventions to each other, circumventing structural barriers and alleviating attitudinal barriers to help-seeking.

However, the endeavor of training laypeople faces its own barriers. Just as therapists may have difficulty in reaching patients due to cost or limited availability, trainers may have difficulty reaching individuals who would like to learn counseling skills. A possible solution is to offer training through massive open online courses (MOOCs). Such courses would need to effectively teach the requisite skills while remaining engaging in order to motivate participation and engender adherence.

We report on the initial design of one such MOOC, which is intended to train pairs of peers to implement coping skills and apply supportive counseling with each other. This MOOC is the keystone of an intervention we call Crowdsourcing Mental Health (CMH) because it lowers the barriers for the general public to play a role in enhancing mental health. In CMH, two individuals who are already known to each other (e.g., friends, family) take the online course on their own. Then the two individuals take turns in both the provider and the client roles.

Though we eventually intend to release CMH to the public on a large scale, we conducted a small pilot trial so that we could closely observe and rigorously evaluate participants' use of the skills in video-recorded peer counseling interactions, and so that we could collect rich qualitative information on their perspectives on the course. This study focused on the efficacy of the course in teaching the necessary skills, which is a necessary precursor to future larger scale studies that examine impact of the peer counseling on participants' mental health.

## METHOD

### Participants

Thirty pairs (60 individuals) of friends, roommates, or family members were recruited "to learn ways to manage stress and feel closer to another person" via flyers, Web

advertisements, and listserv announcements in the geographic area surrounding the University of Massachusetts Amherst. Because there are several universities in the area, approximately two-thirds of the participants were college students.

### **Course Description**

The CMH course consists of 10 lessons, five lessons that teach “talking skills” (essentially problem solving or coping skills) and five lessons that teach “listening skills” or peer counseling skills. The present report examines the effectiveness of the course in teaching the listening skills.

The listening skills, which are drawn from the literature on supportive psychotherapy and social support, include listening quietly and attentively, taking a non-judgmental attitude, paraphrasing or restating the speaker's ideas, asking open-ended questions to deepen exploration, and refraining from “intervening” (that is, trying to influence the peer by providing advice or reassurance).

The CMH course is largely asynchronous, though it does involve approximately two hours of practice with a “mentor,” i.e., someone who has taken the course already. The course design draws on the principles of behavior modeling training, a well-supported method for learning behavioral skills [10]. Each skill is introduced with a rationale and an instructional video of slides and audio lecture, coupled with a written review exercise. Learners then watch videos of actors modeling the skill. Finally, participants practice engaging in the skill, then complete self-feedback questionnaires to evaluate whether they engaged in the necessary behaviors and reflect on what they wish to improve in their next practice. The types of practice increase in complexity in order to scaffold progress. Practice began with typed text-based exercises, followed by typed responses to video prompts, followed by audio-only telephone practice with a trained mentor, followed by in-person practice with one's peer. These telephone mentors are not professionals, but are simply individuals who have taken the course previously. Thus, the intervention is intended to scale by deploying existing CMH users as mentors for subsequent learners. In this study, undergraduate research assistants who had taken the course already served as mentors. Including all exercises, the course takes approximately 20-25 hours to complete.

### **Procedure**

The study utilized a pre-post waitlist design. Pairs were randomly assigned to an immediate training group or a waitlist group. The immediate training group completed a 30-minute mock counseling session in the laboratory. Participants were asked to take turns discussing a stressor in the way they ordinarily would. They then took the online course over a period of 4 to 8 weeks, before returning to the lab to complete a 45-minute mock counseling session in

which they were asked to take turns using the skills they learned in the course. The waitlist group was included to account for the possibility of changes due to repeated testing, and so completed two 30-minute “pre-training” mock counseling sessions spaced approximately 4 weeks apart. (The waitlist participants also completed a third session after taking the course, but those data are not included in the present analyses.)

### **Data Analysis**

Transcripts of the sessions were coded by a team of 10 trained research assistants who are blind to group and time point. Each sentence is placed in one of the following categories: minimal encourager, restatement, open-ended question, closed-ended question, self-disclosure, miscellaneous sympathetic utterance, or other. In addition to its main category, any sentence can also be marked as “intervention,” meaning that it included an attempt to influence the speaker (e.g., through advice-giving or reassurance). Two research assistants coded each session and resolved any disagreements through discussion with each other and, if necessary, with the larger group of coders. At present, about 85% of the sessions have been coded.

Because listeners are likely to vary in verbosity from session to session, and because participants were allocated more time for the post-training session, the primary outcome variables of interest are the proportion of sentences in each category rather than the absolute number. The outcome variables, then, include proportions of sentences in the following categories: restatement, open-ended question, closed-ended question, self-disclosure, miscellaneous sympathetic utterance, other, and intervention. We also examine the total number of sentences uttered. Minimal encouragers (i.e., short, content-free interjections such as “uh-huh” or “wow”) are ignored in all analyses.

We report here on preliminary analyses using the data available so far. We examined whether the trained and untrained groups differed in their change in the proportion of sentences in each category from visit 1 to visit 2. For each outcome variable, we fit a linear mixed model using the R package lme4 [2] under restricted maximum likelihood estimation, which produces unbiased estimates if data are missing at random. In this model, we could not estimate both random intercepts and slopes because there were only two time points for each participant. Because random-intercepts-only models inflate the Type I error rate [1], we followed the recommendation to model random slopes for individuals within dyads. Because participants were randomly assigned to groups, we included group only as a predictor of the slope, not of the intercept. Time was coded as -0.5 for visit 1 and 0.5 for visit 2, and group was coded as 0 for the waitlist and 1 for the immediate

Variable	Visit 1 M (SD)	Visit 1 SEM	Visit 2 M (SD)	Visit 2 SEM	Difference M (SD)	SE difference
Trained Group (Visit 1 <i>n</i> = 29, Visit 2 <i>n</i> = 18)						
No. sentences	147.1 (81.2)	15.1	30.9 (29.8)	7.0	-127.8 (80.3)	19.5
Intervention	0.331 (0.170)	0.032	0.119 (0.138)	0.032	-0.235 (0.151)	0.037
Restatement	0.035 (0.043)	0.008	0.309 (0.253)	0.060	0.273 (0.261)	0.063
Open question	0.030 (0.021)	0.004	0.053 (0.062)	0.015	0.029 (0.062)	0.015
Closed question	0.162 (0.096)	0.018	0.140 (0.127)	0.030	-0.008 (0.123)	0.030
Self-disclosure	0.160 (0.132)	0.025	0.037 (0.089)	0.021	-0.135 (0.153)	0.037
Misc. sympathy	0.154 (0.116)	0.022	0.170 (0.145)	0.034	0.025 (0.109)	0.026
Other	0.459 (0.121)	0.022	0.292 (0.185)	0.044	-0.184 (0.219)	0.053
Waitlist Group (Visit 1 <i>n</i> = 30, Visit 2 <i>n</i> = 26)						
No. sentences	178.7 (101.6)	16.8	177.3 (85.9)	7.9	-7.3 (74.6)	14.6
Intervention	0.442 (0.206)	0.038	0.421 (0.166)	0.033	-0.036 (0.191)	0.037
Restatement	0.039 (0.039)	0.007	0.026 (0.045)	0.009	-0.014 (0.054)	0.011
Open question	0.021 (0.024)	0.004	0.035 (0.039)	0.008	0.015 (0.039)	0.008
Closed question	0.090 (0.056)	0.010	0.107 (0.072)	0.014	0.016 (0.074)	0.015
Self-disclosure	0.180 (0.129)	0.024	0.197 (0.152)	0.030	0.024 (0.129)	0.025
Misc. sympathy	0.130 (0.113)	0.021	0.124 (0.089)	0.017	-0.007 (0.068)	0.013
Other	0.540 (0.166)	0.030	0.511 (0.174)	0.034	-0.034 (0.123)	0.024

**Table 1: Number of sentences and proportion of sentences in each category. Means, standard deviations (SD), and standard errors of the mean (SEM) are organized by visit as well as within-person change between visits.**

training group, so that the main effect of time represents total change for the waitlist group and the group-by-time interaction represents any additional change experienced by the trained group. This statistical model constitutes an oversimplification. For future analyses with complete data, we plan to use a Bayesian model that more accurately reflects the structure of the data. We will also incorporate the waitlist group's post-training data to establish more precise estimates of the training effect.

Variable	Time (95% CI)	Time x Group (95% CI)
Sentences	-7.1 (-56.3, 42.1)	-85.9 (-158.9, -13.0)
Intervention	-0.03 (-0.14, 0.07)	-0.13 (-0.28, 0.03)
Restatement	0.00 (-0.09, 0.08)	0.02 (0.11, 0.35)
Open quest	0.02 (0.00, 0.04)	0.01 (-0.02, 0.03)
Closed quest	0.02 (-0.03, 0.07)	-0.06 (-0.13, 0.01)
Self-disc	0.01 (-0.06, 0.08)	-0.11 (-0.22, -0.01)
Misc. symp	0.00 (-0.07, 0.06)	0.01 (-0.08, 0.10)
Other	-0.04 (-0.13, 0.05)	-0.09 (-0.23, 0.05)

**Table 2: Fixed effects and 95% confidence intervals for pre-post change for the waitlist group (Time) and for any additional change in the trained group beyond that observed in the waitlist (Time x Group).**

### Hypotheses

If the course is successful in teaching the requisite skills for the CMH intervention, we expect restatements (also known

as paraphrases, summaries, or reflections) and open-ended questions to increase more in the training group than in the waitlist group. Interventions should also decrease because these are discouraged. We expect the total number of sentences to decrease due to training because listeners are taught to be silently attentive. The other categories (closed-ended question, self-disclosure, miscellaneous sympathetic utterance, or other) are neither prescribed nor discouraged in the course, so we did not have any strong hypotheses about change; however, because they are not specifically taught, we expected them to decrease as well.

### RESULTS

Forty-three females and 17 males participated in the study. Four pairs dropped out from the immediate training group, primarily because one member of each pair was too busy to complete the course. At this time, data are available from 58 participants at time 1 and 44 participants at time 2.

Summary statistics for each outcome variable appear in Table 1. Coefficients and 95% confidence intervals for the fixed effects (following the recommendation not to report *p* values for these models [2]) appear in Table 2. As hypothesized, the course appears to have caused a significant decrease in the number of sentences uttered (i.e., confidence interval excludes zero) and an increase in the proportion of restatements. Self-disclosure (the listener talking about him or herself) decreased. There is also some suggestion that training led to a decrease in the categories of "intervention" and "other" statements, but the confidence

intervals are wide and include zero. There is no evidence of an effect of training on open- or closed-ended questions or miscellaneous sympathetic utterances. There is also no evidence of change between visits for the waitlist group, which did not receive training, in any variable.

## CONCLUSIONS

This study suggests that a 20-25 hour MOOC can have substantial effects on behavior in peer counseling sessions. In particular, participants learned to listen attentively and to restate (i.e., paraphrase/summarize/reflect) the speaker's ideas. There was some weak evidence that they also learned to avoid common but discouraged behaviors such as providing advice or reassurance. However, participants did not appear to increase their use of open-ended questions. More thorough analyses of this data set when coding of sessions is complete will be needed to confirm these results. The course can then be revised to better teach any skills that were not learned to the desired degree.

Though this study provides "proof of concept" that nonprofessionals can learn at least some counseling skills through a scalable MOOC, such interventions will need to motivate participation and adherence in order to become widespread. Initial market surveys were used to inform the development of this prototype and suggested that public interest in CMH is high [4]. Data from the present study on participants' direct experiences with the course can be applied to further refine the course to make it more appealing, user-centered, and frictionless.

Additionally, the use of a fairly educated sample from a single geographic area represents a major limitation of the study. To meet the global need for mental health care, peer counseling MOOCs will need to be effective in training individuals with diverse educational, socioeconomic, and cultural backgrounds. Follow-up studies will be needed to test the efficacy of the CMH course with other groups and to tailor the course to those groups' needs.

Finally, though supportive treatments do have some effect, the addition of more active interventions may increase the potency of peer counseling. It remains to be seen whether more complex psychotherapeutic skills can be taught through a MOOC.

## ACKNOWLEDGMENTS

This research was supported by funding from the National Institutes of Mental Health (F31MH103927), the Society for the Advancement of Psychotherapy (APA Division 29), the Society for Psychotherapy Research, the American Psychological Association, and the University of Massachusetts Amherst.

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