



Story, Science, and Self-Care in a Refugee Community:

Initial Impact of The Field Guide for Barefoot Psychology

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About *The Field Guide for Barefoot Psychology*

The *Field Guide for Barefoot Psychology* is an educational and psychosocial support program for communities affected by stress and trauma. *The Guide*, implemented through a participatory community engagement strategy, aims to clarify why and how adverse experiences can affect the brain, body, and social behavior, and to provide specific information and exercises to ameliorate the effects of stress and trauma, improve emotion regulation, and build resilience.

The Field Guide first uses storytelling, art, and accessible scientific explanations to explore various biological and psychological experiences associated with forced displacement, including trauma, stress, guilt, shame, hopelessness, resilience, and post-traumatic growth. These issues are not only commonly stigmatized, but affect a wide range of impulses, behaviors, and social interactions.

Second, *the Guide* features a library of self-care exercises with easy-to-use practices from various fields, including somatic experiencing, mindfulness, and cognitive behavior therapy specifically targeting emotion regulation as a key component of trauma recovery, resilience, and improved interpersonal behavioral health. Users of *the Guide* have access to all content via a membership-only online community and mobile app for Android and iOS devices.

The Field Guide's content was designed jointly by neuroscientists, trauma recovery professionals and refugees in Jordan. It was designed to be accessible and sensitive to the social, cultural, and religious context of the MENA region, using culturally-relevant metaphor, story, and exercises.

ABOUT BEYOND CONFLICT

For nearly 30 years, Beyond Conflict has created powerful and innovative frameworks to open pathways for progress in peace talks, transitions to democracy and national reconciliation in the aftermath of division and violence in over 75 countries. Building on this body of experience, we have partnered with cognitive and behavioral scientists to create a new framework at the intersection of behavioral sciences and real-world experience. Beyond Conflict aims to apply brain science to design and promote new tools that understand and address conflict in the United States and abroad. Beyond Conflict is a non-partisan, evidence-based, global non-profit focused on tackling an array of social challenges, including the impact of displacement on the psychological well-being of refugee populations.

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Acknowledgements

The Field Guide reflects a unique collaboration between Beyond Conflict and Questscope to address the emotional and psychological burdens associated with forced displacement, trauma, and violence.

Beyond Conflict would like to acknowledge the contribution of its many partners in making this impact assessment possible. As any global mental health initiative, this project would not have been possible without the leadership of local partners - including the men and women who drew from their own experiences as refugees and their first-hand knowledge of life in Za'atri to thoughtfully plan and coordinate data collection and recruitment efforts - Zakaria Al-Kareem, Abdulkareem Al-Hassan, Ahmad Abu Nimreh, Zaher Al-Deiri and Ziad Jazzazi; and to facilitate *The Field Guide* workshops - Abdallah Khasawneh, Mohanad Al-Hiraki, Mohammad Al-Rajabi, Mohamad Al-Ahmad, Shireen Al-Hiraki, Merfat Al-Hamad, Kafa Eweijan, and Zad Al-Kheir Al-Zoubi.

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Introduction

Many factors including exposure to war, violence, persecution, displacement and the stressful challenges of resettlement and integration place refugees at higher risk for poor mental health.¹ Refugees burdened by psychological distress often have significant functional impairments, worse health outcomes, and a reduced ability to care for or protect themselves.²⁻³ A systematic review of the prevalence of post-traumatic stress disorder (PTSD) and depression in refugees estimates rates for PTSD and depression at 30%⁴ -- nearly ten times higher than the overall global prevalence of PTSD and depression.⁵

This is an increasingly important problem as the United Nations High Commissioner for Refugees (UNHCR) recently reported that of the 70.8 million forcibly displaced people worldwide, 25.9 million of them are refugees.⁶ This number is projected to continue trending upwards, with the majority of refugees residing in developing countries often in proximity to or involved in armed conflicts. Further, the increase in the number of refugees worldwide has not been accompanied by a proportionate increase in available personnel and resources to tackle their mental health needs.

Therefore, there is a pressing need for mental health interventions designed for large-scale implementation in low-resource settings.⁷

There is emerging evidence in favor of psychoeducational interventions for refugees, such as the [World Health Organization's Self-Health Plus package \(SH+\)](#) which consists of pre-recorded sessions accompanied by a book that illustrates concepts with minimal text.⁸ SH+ is described as a low-intensity psychological intervention that reduces reliance on specialists, making it more easily-scalable. However, lack of access to care providers is not the only barrier to mental health care in refugees. As interventions shift towards models that rely more on participant's willingness to engage and interact with a given book or didactic material, attention must be given to additional factors that contribute to lack of engagement with mental health services. These include mental health stigma and attitudes towards dominant culturally-determined models of mental health.⁹ Self-paced or community-managed mental health interventions can only be successful if they address stigma as a barrier to care and are culturally relevant to their audience.¹⁰

The present document summarizes the design and main findings of a randomized controlled trial (RCT) for a novel intervention designed to address the need for scalable and culturally appropriate mental health interventions for forcibly displaced people called *The Field Guide for Barefoot Psychology (The Field Guide)*. The study was carried out in the Za'atri Refugee Camp in Jordan with a Syrian refugee population with a well-documented high degree of mental health stigma.¹¹⁻¹²

The Field Guide is a psychoeducation intervention that utilizes culturally relevant storytelling and metaphors to provide a basic and accessible curriculum on the psychological and biological impact of forced migration. The psychoeducation content is paired with self-taught, evidence-based exercises meant to improve emotion regulation skills. It has a series of innovative characteristics that make it uniquely equipped to function as either a standalone or complementary effective intervention and has the potential to normalize the experience of mental health symptoms and increase engagement in self-care and mental health-promoting activities.

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Example of visual storytelling present in *the Field Guide*
Illustration by Haya Halawah

***The Field Guide* is a unique model among existing global mental health interventions, insofar as:**

It complements rather than replaces existing narratives about mental health: *The Field Guide* does not challenge expressions of distress – culturally sanctioned or not – but instead provides the reader with a new narrative that can explain the origin of the distress and the many ways we express it.

The Field Guide taps into what is universal about psychology: opening with an introduction in which the reader learns how the brain is like an airport control tower that plans, coordinates and adapts to a myriad of changing circumstances. *The Field Guide's* curriculum walks the reader through the biological processes and structures that we all make use of to adapt to threatening situations and that contribute to mental illness under extreme stress.

It is accessible: *The Field Guide* uses carefully curated graphics, metaphors, and lay language to explain the biological concepts it introduces to its audiences in such a way that no prior knowledge of psychology or biology is required to learn from it.

We found that 90.7% of the RCT sample agrees or strongly agrees with the statement: "I feel I now have a better understanding of how the body and mind are affected after forced migration than I did before reading the Guide."

It is relatable: *The Field Guide* makes use of engaging storytelling inspired by the real-life experiences of representatives from the target audiences, tying the biological concepts it introduces to relevant aspects of the story narrative. This way, it avoids using a "textbook" or "lecture" tone, facilitating audience engagement.

We found that 86% of participants endorsed moderate to strong agreement with finding the characters relatable, an indicator that correlated, at 3-month follow-up, to lower mental health stigma, perceived utility of the intervention, continued reading, and engagement with the intervention materials after workshop ending, and to closeness to other Syrians.



It sets an empowering and optimistic tone:

Prior biologically-based psychoeducation interventions have had the unintended effect of creating the expectation of permanent pathology in their target audiences, increasing rather than decreasing psychological distress.¹³ *The Field Guide* is careful to maintain a tone that highlights brain plasticity and the possibility of recovery as well as a here-and-now approach to well-being through self-care exercises.

From the Field Guide: "Suffering has been around much longer than medicine and psychologists, and people have found ways to survive. And when it comes to mental health and psychological well being, humans already possess many core abilities that help us confront the past and the present to chart a new, healthier course forward."

It is practical: *The Field Guide* offers an extensive menu of science-based and proven self-care exercises, carefully explained and modeled through video in which the instructors are representatives of the target audience.

At follow-up the majority of the sample continued to report engagement with the self-care exercises. Frequency of practice appeared to follow exercise complexity, with simple exercises like deep breathing or belly breathing being practiced daily by at least 46% of the sample.

It is easily scalable: *The Field Guide* content is delivered either in a group-format by Field Guide trained community facilitators or individually through written materials with illustrations and video clips modeling the exercises.

We found that from a group of 160 individuals only a small proportion (12%) withdrew from the study. Further, an incidental finding hints at the spread of the intervention by word of mouth from active participants to people in the study waitlist.

As an intervention, *The Field Guide* aims to increase scientific knowledge about mental health and self-care, resulting in a reduction of mental health stigma and an increased engagement with mental health-promoting activities. These outcomes combine over time in increased emotion regulation and decreased trauma-related distress symptoms. This **theory of change** is summarized below:



Based on this theory of change, a randomized controlled trial was conducted to gather evidence of the psychological impact of *The Field Guide* among users in Za'atri Refugee Camp. Like the intervention itself, the approach on the study design was innovative in that (1) *recruitment was not limited to the presence of a psychological diagnosis or symptoms of distress, and (2) the study was carried out in a naturalistic setting.*

First, the present study did not deliberately recruit participants with specific symptoms or illness as per standard psychiatric diagnostic frameworks. Recruitment was focused on offering a psychoeducational intervention for any interested community members who met eligibility criteria. This open enrollment approach increased generalizability of study findings, and increased the reach of the study to individuals with symptoms that do not meet the criteria for a formal diagnosis.

It also addressed the potential of stigma as a barrier to entry, inviting participation of those who, for various reasons, do not report existing symptoms. This decision was in close alignment with the Beyond Conflict mission to make scientific research widely accessible.

Second, this study evaluates *The Field Guide's* impact on refugee mental health within communities affected by the Syrian refugee crisis in a low-resource, low-control, non-Western setting that more appropriately represents the settings in which the majority of forcibly displaced people live, addressing gaps in the existing literature wherein mental health RCTs for refugees are often conducted in Western resettlement settings.¹⁴

Research Questions and Study Design



Between April and October 2019, a team of researchers from Beyond Conflict in partnership with Questscope, The New School for Social Research and the University of California, Berkeley carried out a randomized controlled trial of *The Field Guide* in Jordan's Za'atri Refugee Camp. The research sought to test the *Field Guide's* theory of change in a naturalistic, low-resource setting with reported high levels of conflict-related distress. The scope of the present report is to highlight the mental health impact of the intervention. Key research questions included, but were not limited to:

- 1** Is *The Field Guide for Barefoot Psychology* effective in reducing mental health stigma?
- 2** Is *The Field Guide for Barefoot Psychology* effective in increasing emotion regulation?
- 3** Is *The Field Guide for Barefoot Psychology* effective in reducing trauma-related symptoms and distress?
- 4** Are the effects of *The Field Guide* due to its method of delivery (group vs. individual), or to its design and content?

Summary of Study Design

SAMPLE

Recruited participants were 160 Syrians living in the Za'atri Refugee Camp in Jordan. There were no mental health symptom-specific exclusion criteria enforced during recruitment. Any person interested in enrolling in the intervention was invited to do so provided they were 18 years of age or older; able to speak, read and write in Arabic; had access to a smartphone, tablet or laptop; and were not pregnant at the time of recruitment. Before any analyses, 19 participants who officially withdrew from the study and 13 with less than 50% attendance to intervention activities were excluded from the sample. The final sample consisted of 128 participants (65 men and 63 women).

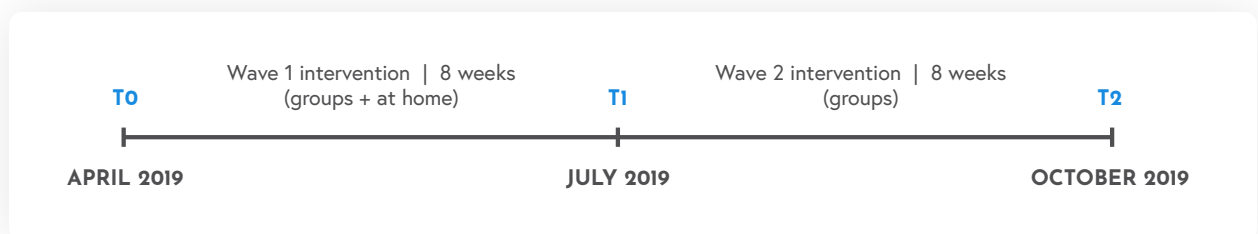
STUDY CONDITIONS

The evaluation consisted of a three-arm randomized controlled trial (RCT). Participants were randomized into the following groups: (i) self-directed, individual use of *The Field Guide* (Reading at Home condition), (ii) guided reading of *The Field Guide* in a facilitated group (Workshop condition), (iii) waitlist group that received the intervention as a workshop 8 weeks later than the other treatment groups (Waitlist + condition).

From the final sample, 43 participants were in the Reading at Home condition (46.5% female), 36 were in the Workshop condition (52.8% female), and 49 were in the Waitlist + condition (49% female).

ASSESSMENT SCHEDULE

All participants were assessed three times: at baseline before the intervention (T0), immediately post-intervention (T1), and in a follow-up three months after the conclusion of the intervention (T2). For individuals in the Waitlist + condition, the third assessment was their only post-intervention assessment.



MEASURED VARIABLE

- Demographic information
- Measures of stressors and trauma exposure: potential traumatic exposure (RTHC)¹⁵; ongoing stressors (Human Security Index)¹⁶
- Measures of mental health and emotion regulation: trauma-related symptoms, including Post-Traumatic Stress Disorder (PTSD) and Complex-PTSD (C-PTSD) (ITQ)¹⁷; psychological distress (Kessler-10)¹⁸; resilience (BRS)²⁰, emotional awareness and self-regulation (MAIA & DERS)²¹⁻²²
- Measure of stigma: mental health stigma (ISMI)²³
- Social measures: loneliness (Three-Item Loneliness Scale)¹⁹; closeness (IOS)²⁴

INTERVENTION PROCEDURE

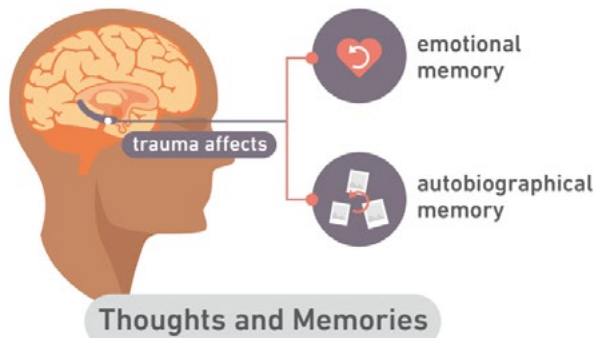
Workshop Group. The first treatment group consisted of 50 participants who received *the Field Guide* in a group format over (16) 120-minute sessions provided in the camp twice weekly for 8 weeks. Four sex-segregated groups were run of 12-14 members each and led by paired facilitators. The basic structure of the guided sessions included collective reading, Q&A, explanations of the major concepts, group discussion, and guided instruction of the self-care exercises.

Reading at Home Group. In the second separate treatment group, 50 participants were provided with *The Field Guide* text and accompanying exercise instruction video materials to review on their own at home on a weekly basis. Participants in the reading at home group also received twice-weekly SMS text reminders about engaging with content and coming to the research site to collect the next week's materials.

Waitlist + Group. The third group consisted of 60 participants in the Waitlist + condition who did not receive any study intervention within the first 8 weeks and then received the in-person workshop utilizing the same procedures as described above.

ASSESSMENT PROCEDURE

Participants were matched with same-sex enumerators who collected in-person data at each scheduled interval in a specifically designated area. Enumerators were undergraduate or graduate-level students studying psychology or related disciplines recruited via local university partnerships.



Scientific illustration present in the Field Guide

The primary aim of the research was to test the hypothesis that participating in *The Field Guide* for Barefoot Psychology intervention results in a reduction of mental health stigma, an increase in emotion regulation, and a decrease in trauma related symptoms. We hypothesized that these effects would be due to the contents of the intervention and engagement with the self care exercises and not a secondary benefit to group interaction in the workshop conditions.

Data Analysis

We set out to compare short and medium-term intervention impact on three study conditions: intervention delivered individually, intervention delivered as workshops and the Waitlist + group. However, for workshop delivery participants were separated into four facilitator groups. In order to control for potential facilitator group effects, wherein positive outcomes might be due to one

particularly effective facilitator group instead of the shared aspects of the intervention, we used two partially nested mixed linear models (MLM) in our analysis. The MLM were set with Compound Symmetry covariance structure for the random effects of group and participants and an autoregressive AR(1) structure for the repeated measurements of participant or participant within groups.

Main outcome MLM: our primary model was used to determine if the intervention resulted in statistically significant changes in outcome measures. For this model, a significant time x condition interaction indicated that scores for participants were significantly different from baseline to post-intervention or follow up (time effect) and that these changes were significantly different by study condition (Workshop group vs. Reading group vs. Waitlist + group). Bonferroni comparisons were used to detail the direction of these changes in outcome score for each study condition.

Replication MLM: in addition, we compared the first Workshop group to the second Workshop group. For this model, a significant effect of time but not of condition would indicate that the intervention had an impact on participants (time effect) and that the impact was the same on both workshops (no condition effect). Pearson's correlations and T-tests are reported to further detail trends in the data.

Findings

1 The Field Guide for Barefoot Psychology is effective in reducing mental health stigma.

At the time of the follow-up assessment, all study participants had received the intervention either on the first Workshop, the reading at home condition, or the second Workshop. As a whole, *The Field Guide for Barefoot Psychology* intervention resulted in a decrease in the perceptions of mental health stigma. In line with the intervention's theory of change, the decrease in stigma was related to improvements in mental health, specifically to improvements in Complex PTSD, and improvements in emotion regulation. Consistent with the decrease in stigma, after the intervention the majority of participants endorsed an increased likelihood of speaking to family or doctors about their mental health.

1 - How was mental health stigma measured?

Seven statements adapted from the "Stereotype Endorsement" subscale of the Internalized Stigma of Mental Illness Scale (ISMI) were used to assess mental health stigma. Participants reported their degree of agreement with the statements using a four-point Likert scale and sum scores were calculated. Sum scores could range from 7 (strong disagreement with every statement) to 28 (strong agreement with every statement). Internal consistency of the instrument was deemed acceptable (T0 $\alpha = .66$; T1 $\alpha = .70$; T2 $\alpha = .77$.)

2 - How did stigma relate to other measured variables at baseline?

At baseline, the sample's mean mental health stigma score was 16.1 (SD = 2.9), indicative of moderate levels of stigma, and there were no significant differences among treatment groups ($F [2, 120] = .449, p = .639$). There were no gender or age-related differences in baseline scores. Mental health stigma scores at baseline were positively correlated with the Negative Self Concept subscale of the ITQ, $r(123) = .180, p = .046$ and negatively correlated to reported closeness to family members $r(123) = -.212, p = .019$. These correlations suggest that participants with higher mental health stigma tended to endorse negative views about themselves (e.g., "I feel like a failure) more strongly, and to feel more distant from their families. The table below summarizes participants' responses at baseline:

STEREOTYPICAL STATEMENT	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
Mentally ill people tend to be violent.	14 (11%)	41 (32%)	63 (49%)	9 (7%)
Mentally ill people shouldn't get married.	23 (18%)	71 (55.5%)	28 (22%)	5 (3.9%)
People with mental illness cannot live a good, rewarding life.	17 (13%)	64 (50%)	40 (31%)	6 (4.7%)
People can tell that somebody has a mental illness by the way they look.	25 (20%)	64 (50%)	35 (27%)	3 (2%)
People with mental illness need others to make most decisions for them.	9 (7%)	36 (28%)	66 (52%)	16 (13%)
People with mental illness can't contribute anything to society.	30 (23%)	78 (61%)	15 (12%)	4 (3%)
Stereotypes about the mentally ill apply to people I know.	11 (9%)	53 (41%)	59 (46%)	4 (3%)
RESPONSE FREQUENCY	129	407	306	47

3 - What evidence is there of the intervention's impact on stigma?

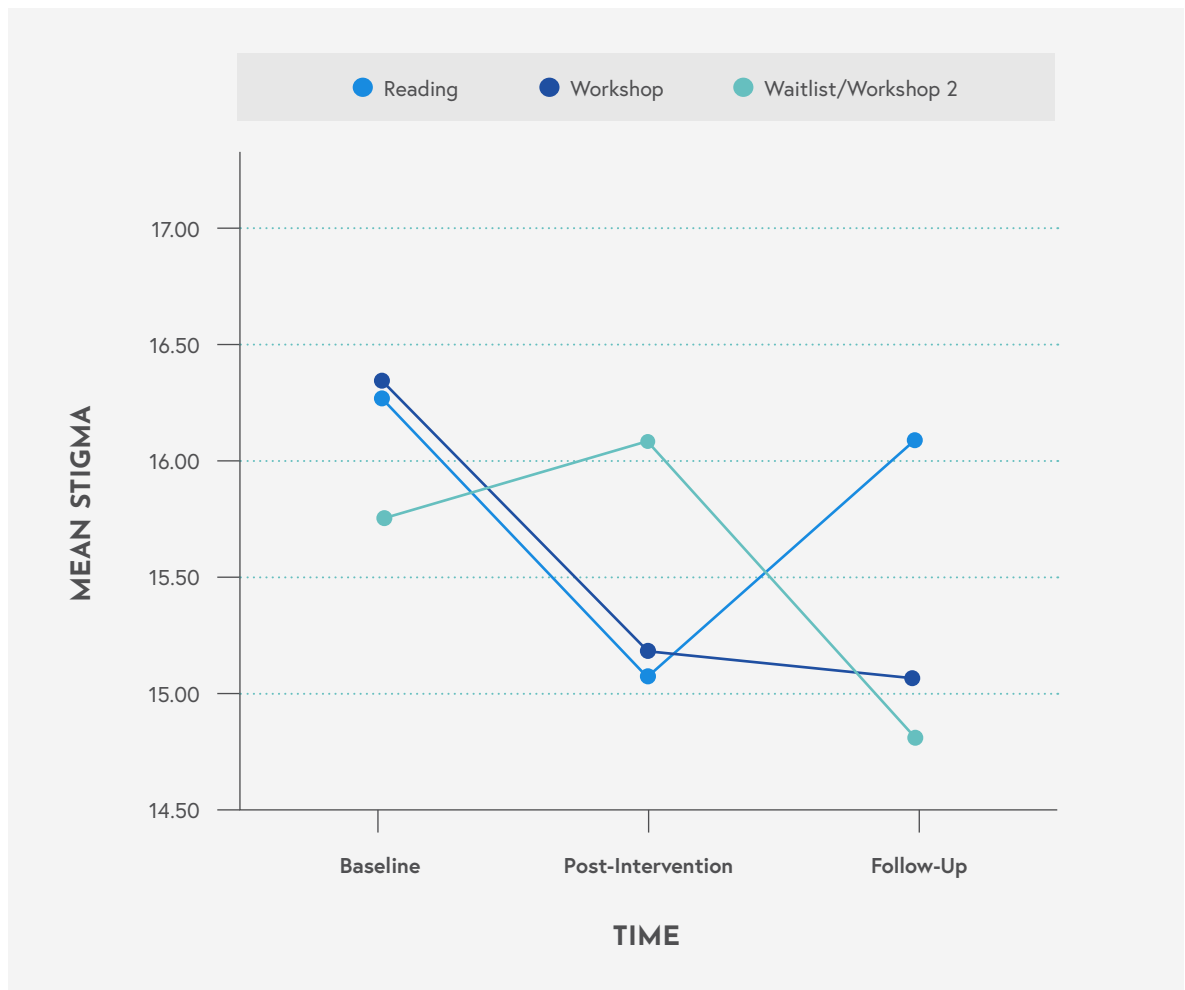
3.1 - MLM yielded a significant time x condition interaction ($F [4, 184.5] = 3.4, p = .018$) indicating that the intervention had a significant impact on stigma scores. Specifically:

- A) The **Reading group had significant short-term improvements** in stigma from T0 to T1 ($M_{diff} = 1.07, p = .03, d = 0.32$) that lost their statistical significance at T2.

B) The **Workshop group had significant long-term improvements**. Their stigma score improved between T0 and T1 without reaching statistical significance, a trend which was maintained and reached statistical significance at T2 ($M_{diff} = 1.14$, $p = .034$, $d = 0.39$).

C) As expected, The *Waitlist + group* showed no significant changes between T0 and T1. Once they received the intervention, **the second workshop group replicated the intervention findings**, as indicated by the significant effect of time ($F [1, 80.7] = 9.76$, $p = .002$) and lack of condition effect ($F [1, 0.46] = 0.30$, $p = .743$).

D) In addition to MLM findings supporting the intervention's favorable impact on stigma, we found that the sample's mean stigma score *across treatment conditions* at the time of the last assessment was significantly lower than it was at baseline ($M_{diff} = - .772$, $p = .001$, $d = 0.26$). When focusing only on participants with relatively high stigma at baseline (N = 58 participants above the baseline mean), the effect size of this comparison increases considerably ($M_{diff} = - 1.9$, $p < .001$, $d = 0.86$).



3.2 - The fact that trends towards a lower stigma score only began after the intervention for participants in the Waitlist + condition stands as evidence that the decrease in stigma was due to the intervention and not an effect of time.

3.3 - At follow-up assessment:

Percentage of participants agreed or strongly agreed with the statement:



— 4 - How was the decrease in stigma related to other outcome variables?

Across treatment conditions, the decrease in mental health stigma between baseline and last assessment was moderately correlated to decreases in Complex PTSD symptoms, $r(122) = .25, p = .004$ and increases in emotion regulation, $r(117) = -.31, p = .005$.

— 5 - Was any key intervention component associated with stigma improvement?

For participant's with relatively high stigma at baseline (N = 58 participants with baseline scores above the mean), decrease in mental health stigma between baseline and last assessment was correlated to how much participants felt they could relate to the characters in *The Field Guide's* stories $r(54) = -.38, p = .004$.

2 **The Field Guide for Barefoot Psychology is effective in increasing emotion regulation.**

The Field Guide for Barefoot Psychology intervention resulted in an increase in emotion regulation - the ability to manage unpleasant or intense emotions by refocusing attention. In line with the intervention's theory of change, the increase was related to improvements in mental health, specifically, in C-PTSD, loneliness and psychological distress and improvements in stigma.

1 - **How was emotion regulation measured?**

The emotion regulation scale from the Multidimensional Assessment of Interoceptive Awareness Version 2 (MAIA) was used to assess interoceptive skills related to emotion regulation (4 items; e.g., "I can use my breath to reduce tension). The MAIA uses 6 scale points for symptom endorsement ranging from 0- "never" to 5- "always". Mean scores were calculated. Internal consistency was acceptable (T0 $\alpha = .80$, T1 $\alpha = .80$, T2 $\alpha = .91$).

2 - **How did emotion regulation relate to other measured variables at baseline?**

There were no significant differences at baseline among treatment groups ($F [2, 123] = 1.46, p = .236$). Baseline scores were positively correlated with closeness to others ($r = .19, p = .038$) and resilience ($r = .36, p < .001$) and negatively correlated to Lack of Emotional Awareness (DERS; $r = -.24, p = .007$); psychological distress (K-10; $r = -.37, p < .001$); and Complex PTSD ($r = -.27, p = .003$). These correlations suggest that participants with lower emotion regulation reported feeling less close to others and less resilient as well as having higher psychological distress, C-PTSD symptoms and difficulties with emotional awareness.

3 - **What evidence is there of the intervention's impact on emotion regulation?**

3.1 - MLM yielded a significant time x condition interaction ($F [3, 180.05] = 6.93, p < .001$) indicating that the intervention had a significant impact on MAIA emotion regulation scores. Specifically:

A) **The Reading group had a significant short-term increase in emotion regulation** between T0 and T1 ($M_{diff} = -.387, p = .049, d = .4$) that lost its statistical significance at T2.

B) **The Workshop group had significant short and long-term increases in emotion regulation** when comparing T0 to T1 ($M_{diff} = -1.026, p < .001, d = .91$) and T2 ($M_{diff} = -.813, p < .001, d = .68$).

C) As expected, The Waitlist + group showed no significant changes between T0 and T1. Once they received the intervention, **the second workshop group replicated the intervention findings**, as indicated by the significant effect of time ($F [1, 81.71] = 24.8, p < .001$) and lack of condition effect ($F [1, 7.06] = 0.351, p = .572$).

D) In addition to MLM findings supporting the intervention's favorable impact on emotion regulation, we found that the sample's mean score *across treatment conditions* at the time of the last assessment was significantly higher than it was at baseline ($M_{diff} = -.445, p < .001, d = 0.41$).



3.2 - The fact that gains in emotion regulation were significant on the Waitlist + group only after the intervention stands as evidence that the decrease in emotion regulation was due to the intervention and not an effect of time.

4 - How was the increase in emotion regulation related to other outcome variables?

When looking at change scores from baseline to last assessment, the sample's increase in emotion regulation score across treatment conditions was correlated to increases in resilience ($r(111) = .37, p < .001$) as well as decreases in mental health stigma, $r(117) = -.32, p < .001$; C-PTSD, $r(119) = -.29, p = .002$; loneliness, $r(114) = -.19, p = .038$, and psychological distress, $r(118) = -.23, p = .001$.

5 - Was any key intervention component associated with emotion regulation gains?

At follow-up assessment, those participants who reported higher frequency of engagement with *The Field Guide's* self-care exercises also reported higher emotion regulation scores, $r(128) = .41, p < .001$.

Additionally, across conditions, *including controls*, there was a trend towards higher emotion regulation between baseline and post-intervention assessments. While the increase seen in the control group was small and not statistically significant, it is important to highlight that for participants in the control condition emotion-regulation scores at the post-intervention assessment were significantly correlated to *how much they reported having heard about the intervention while on the waitlist*, $r(49) = .35, p = .014$. This incidental finding hints at the possible spread of *The Field Guide* by word of mouth within the refugee camp setting.

3 **The Field Guide for Barefoot Psychology is effective in reducing trauma-related symptoms.**

As expected given the studied population, the sample reported significant exposure to potentially traumatic events (PTE) and contextual stressors. Exposure to potentially traumatic events was related to PTSD, and in the subset of the sample with high PTE, the intervention resulted in significant symptom improvement in both PTSD and C-PTSD. Contextual stressors were related to C-PTSD and controlled for in the analysis.

1 - How were trauma, stress and mental health symptoms measured?

The present study did not focus on the effects of *The Field Guide* on a specific clinical sample and did not recruit for symptoms. However, given the high potential for **trauma exposure** and **contextual stressors** inherent to the experience of forced displacement, we expected to encounter sufficient clinical subgroups in our study sample of 160 refugees, through which to gather preliminary information about the intervention's impact on specific clinical groups. We assessed for psychological trauma, stress, and mental health symptoms through the following self-report measures:

1.1 - Potential trauma exposure (PTE): A modified 12-item version of the Refugee Trauma History Checklist (RTHC) was used to measure potential trauma history. The modified measure consists of 6 items. The original RTHC comprises eight items, however the torture and sexual violence items were intentionally omitted in this study for administrative reasons.

1.2 - Contextual stressors: In order to quantify current stressors experienced in a refugee camp, we used 7 items from a 10-item measure constructed by Ziadni et al. (2004) to measure levels of human insecurity in post-war situations. Responses range from 1 (least insecure) to 5 (most insecure) resulting in a maximum potential

total score of 35. Throughout the study, internal consistency of the Human Security Index (HSI) was acceptable (T0 $\alpha = .76$, T1 $\alpha = .81$, T2 $\alpha = .83$).

1.3 - Trauma-related symptoms: The *International Trauma Questionnaire* was used to assess for trauma-related symptoms as conceptualized in the ICD-11. ICD-11 distinguishes classic post-traumatic stress disorder (PTSD) (symptoms of re-experiencing, avoidance, and sense of threat following a traumatic event) from Complex PTSD (**symptoms of affective dysregulation, negative self-concept, and disturbed relationships in addition to classic PTSD symptoms following repeated exposure to traumatic events**). Internal consistency for the scale was acceptable (T0 $\alpha = .82$; T1 $\alpha = .82$; T2 $\alpha = .85$). Classic PTSD symptoms are generally caused by acute traumatic experiences; C-PTSD symptoms, however, are generally caused by pervasive or accumulated stressors and trauma instead of acute, isolated incidents.

Studies on refugee samples tend to use only measures of classic PTSD, which can fall short of properly documenting the consequences of the sustained periods of stress that are typical of the refugee experience.

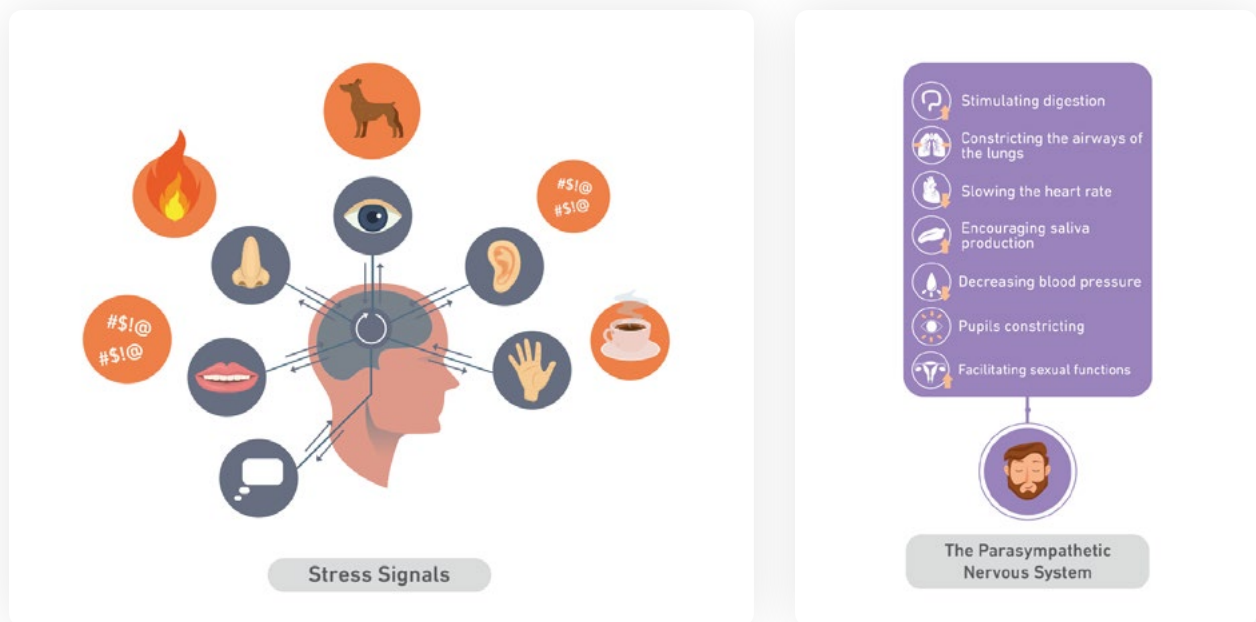
— **2 - How did trauma, stress, and trauma-related symptoms relate to other measured variables at baseline?**

2.1 - Potential trauma exposure: There were no significant differences in PTE exposure among study groups. Baseline trauma exposure scores were positively correlated with total PTSD symptoms, $r(123) = .23, p = .009$; and perceived contextual stressors, $r(126) = .18, p = .045$. Trauma exposure was negatively correlated to closeness to others, $r(122) = -.20, p = .029$. Trauma exposure was controlled for in MLM for all study outcomes.

REFUGEE TRAUMA HISTORY CHECKLIST	STUDY CONDITION			
	ENTIRE SAMPLE	READING	WORKSHOP	WAITLIST+
Number of people in the sample endorsing experience (%)				
War at close quarters	106 (82.8%)	37 (86%)	29 (80%)	40 (81.6%)
Forced separation from family and friends	93 (72.7%)	28 (65.1%)	31 (86.1%)	34 (69.4%)
Loss or disappearance of family or loved one	74 (57.8%)	21 (48.8%)	26 (72.2%)	27 (45.1%)
Physical violence or assault	12 (9.4%)	5 (11.6%)	3 (8.3%)	4 (8.2%)
Witnessing physical violence or assault	41 (32%)	17 (39.5%)	11 (30.6%)	13 (26.5%)
Other frightening / life-threatening situation	104 (81.3%)	36 (83.7%)	28 (77.8%)	40 (81.6%)
Mean number of endorse experiences (SD)				
TOTAL PTE EXPOSURE	5.8 (2.5%)	5.7 (2.7%)	6.3 (2.3%)	5.4 (2.3%)

2.2 - Contextual stressors: There were no significant differences in perceived contextual stressors among study groups at baseline. In addition to PTE, HSI was positively correlated to total Complex PTSD symptoms, $r(125) = .29, p = .001$; Lack of emotional clarity, $r(125) = .41, p < .001$; psychological distress (K-10), $r(122) = .50, p < .001$; and loneliness, $r(119) = .33$. It was negatively correlated to resilience, $r(123) = -0.32, p < .001$; and closeness to others, $r(120) = -.204, p = .025$. HSI was controlled for in MLM for all study outcomes.

HUMAN SECURITY INDEX	STUDY CONDITION			
	ENTIRE SAMPLE	READING	WORKSHOP	WAITLIST+
In the past month how often did you fear for yourself in your daily life?	3.1 (1.3)	3.2 (1.4)	3.0 (1.3)	3.2 (1.2)
In the past month how often did you fear for your family in your daily life?	3.8 (1.2)	3.8 (1.2)	3.8 (1.2)	3.9 (1.3)
In the past month how often did you fear not being able to provide your family with daily necessities?	3.2 (1.4)	3.0 (1.1)	3.5 (1.5)	3.2 (1.5)
In the past month how often did you worry about losing your source of income or your family's source of income?	3.2 (1.3)	3.0 (1.3)	3.4 (1.3)	3.3 (1.4)
In the past month how often did you worry about losing your house?	2.3 (1.5)	2.2 (1.4)	2.6 (1.6)	2.3 (1.5)
In the past month how often did you fear displacement or uprooting?	2.9 (1.5)	2.4 (1.4)	3.4 (1.4)	3.0 (1.6)
In the past month how often did you worry for your future or your family's future?	4.0 (1.3)	3.7 (1.4)	4.0 (1.3)	4.4 (1.0)
SUM SCORE	15.9 (6.3)	14.6 (6.3)	16.8 (6.6)	16.5 (5.9)



Scientific illustrations present in the Field Guide

2.3 - Trauma-related symptoms: There were no significant baseline differences among treatment groups in baseline C-PTSD ($F [2, 123] = 0.623, p = .538$) or PTSD ($F [2, 22.8] = 1.179, p = .311$). From the entire sample 10 participants met established criteria for C-PTSD and 39 for PTSD at baseline.

- In regards to relation with other variables, at baseline C-PTSD was positively correlated to psychological distress, $r = .51, p < .001$; and negatively correlated to resilience, $r = -.365, p < .001$. This was also the case for PTSD (K-10, $r = .271, p = .003$; Resilience, $r = -.182, p = .047$).
- Complex PTSD, which includes a component of relationship difficulties and blunted affect, fittingly correlated with measures of emotional dysregulation (MAIA Emotional Self-Regulation, $r = -.279, p = .002$; DERS Lack of Emotional Clarity, $r = .300, p = .001$) and loneliness ($r = .275, p = .002$). For its part, PTSD's correlation to MAIA Noticing ($r = .222, p = .016$) is fitting given that this scale measures awareness of negative body sensations such as tension or discomfort typical of the hyperarousal seen in PTSD. The different correlations obtained with each subscale **gives validity to the use of this diagnostic distinction when intervening on mental health with Syrian refugees.**
- As expected, PTSD was correlated with trauma exposure ($r = .187, p = .038$). C-PTSD was positively correlated with the Human Insecurity Index ($r = .288, p = .001$), but not with trauma exposure as measured by the RHTC. This baseline finding **gives validity to the conceptual distinction between C-PTSD and PTSD in general, and the importance of using measures that accurately capture the breadth and duration of distress refugees face.**

3 - What evidence is there of the intervention's impact on trauma-related symptoms?

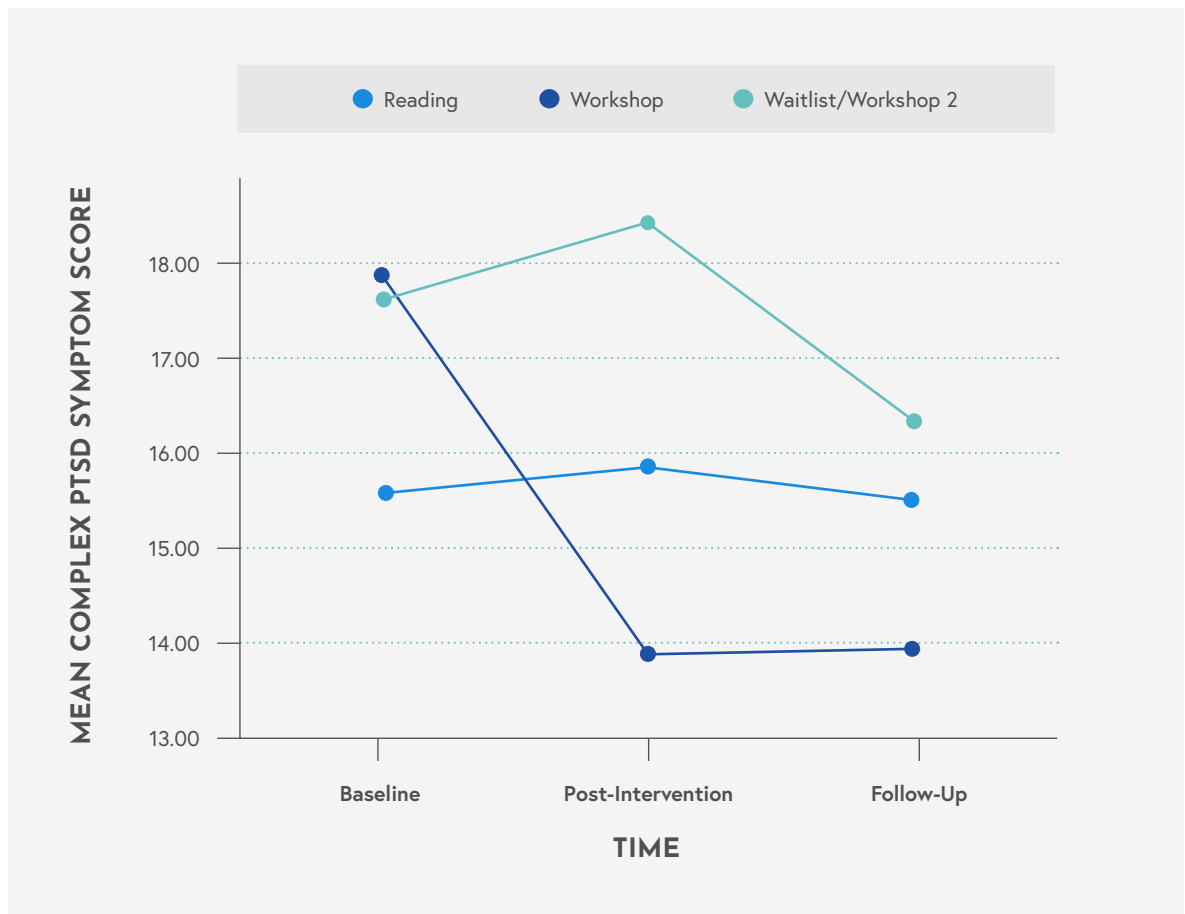
In order to assess the intervention's impact in a clinically relevant group, we focused the MLM analysis on participants with high trauma exposure ($n = 92$ participants endorsing three or more types of trauma on the RTHC screener).

3.1 - MLM yielded a significant condition x time interaction for C-PTSD ($F [3, 143.0] = 3.3, p = .020$) and PTSD ($F [3, 137.6] = 3.54, p = .016$) **indicating that the intervention had a significant impact on PTSD and CPTSD scores.** The Workshop condition drove this effect, as their score changes were the only ones to reach statistical significance. Specifically, for C-PTSD:

A) The Reading group had no significant change in C-PTSD from T0 to T1 ($M_{diff} = .44$) or T0 to T2 ($M_{diff} = -.06$).

B) The Workshop group had statistically significant short and long term improvement in C-PTSD when comparing T0 to T1 ($M_{diff} = 3.44, p = .014, d = 0.33$) or T1 to T2 ($M_{diff} = 4.96, p = .002, d = 0.47$).

C) As expected, The Waitlist + group showed no significant changes between T0 and T1. Once they received the intervention, **the second workshop group replicated the intervention findings**, as indicated by the significant effect of time ($F [1, 57.61] = 11.84, p = .001$) and lack of condition effect ($F [1, 7.06] = 0.351, p = .572$).

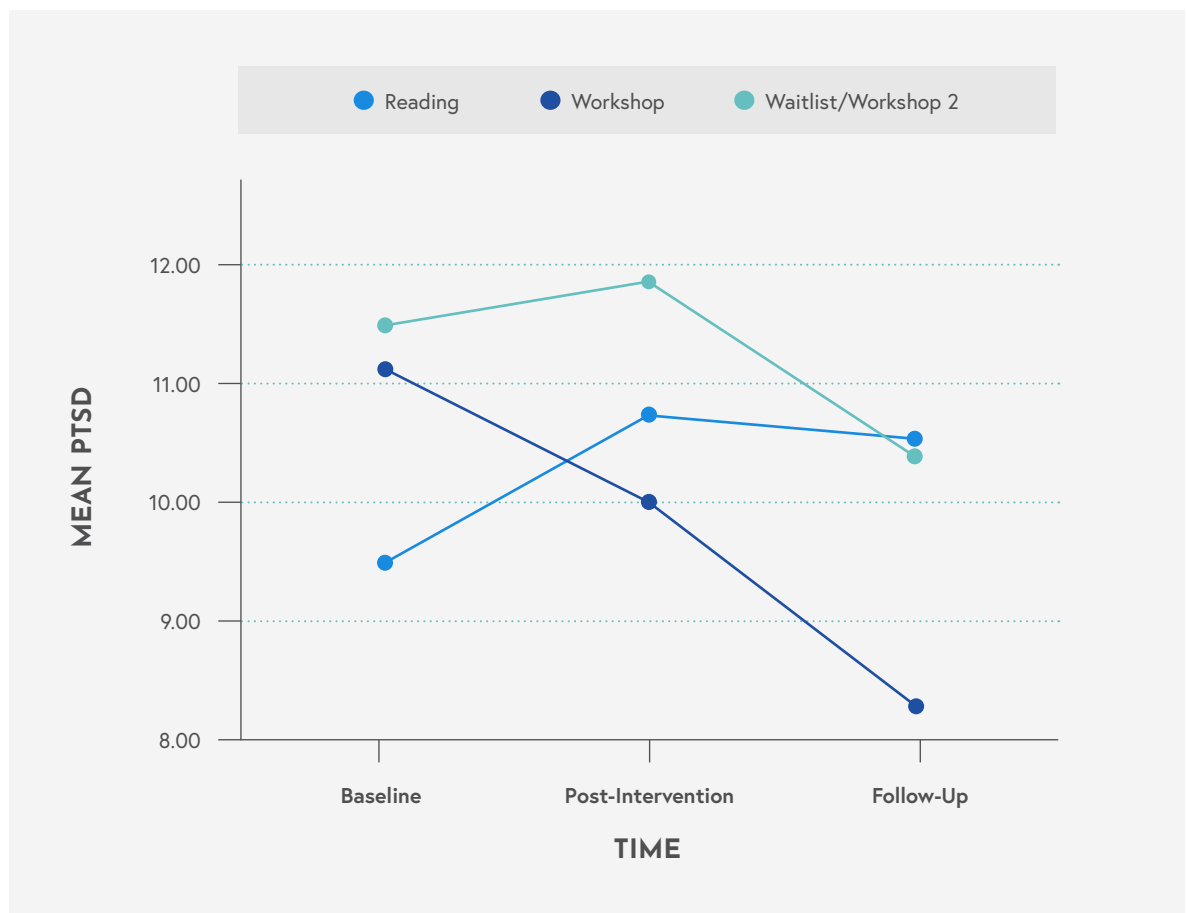


In comparison, for PTSD:

A) The Reading group had no significant change in PTSD from T0 to T1 ($M_{diff} = -1.11$) or T0 to T2 ($M_{diff} = -1.03$).

B) *The Workshop group only had statistically significant long-term - not short term- improvements in PTSD* ($M_{diff} = -1.98$, $p = .033$, $d = 0.58$). *This finding suggests a delayed effect of the intervention on PTSD, but not C-PTSD symptom reduction.*

C) As expected, The Waitlist + group showed no significant changes between T0 and T1. Once they received the intervention, **the second workshop group replicated the intervention findings**, as indicated by the lack of significant effect of both, time ($F [1, 60.02] = 3.33$, $p = .073$) and condition ($F [1, 60.65] = 0.140$, $p = .710$).



In addition to MLM findings on key sample members, overall and regardless of prior trauma exposure or baseline symptom level, the study sample presented a significant decrease between baseline and last assessment on both C-PTSD symptoms ($M_{diff} = -2.37$, $p < .001$, $d = 0.3$) and PTSD symptoms ($M_{diff} = -1.25$, $p = .003$, $d = .28$).

3.2 - The fact that trends towards a lower C-PTSD or PTSD scores only began after the intervention stands as evidence of changes being due to the intervention and not an effect of time.

— **4 - How was the improvement in trauma-related symptoms related to other outcome variables?**

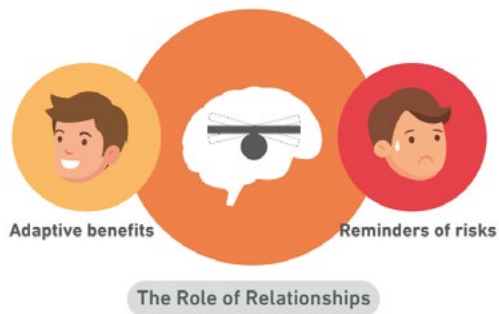
- The sample's decrease in C-PTSD symptom score across treatment conditions was correlated to decreases in stigma $r(127) = .198, p = .026$; loneliness, $r(120) = .234, p = .010$; and psychological distress, $r(123) = .404, p < .001$; as well as increases in emotional awareness, $r(120) = -.193, p < .034$; emotion regulation, $r(119) = -.287, p < .002$; and resilience, $r(117) = -.268, p = .003$.
- The sample's decrease in PTSD symptom score across treatment conditions was correlated to decreases in psychological distress, $r(120) = .187, p = .040$ and increases in emotional awareness, $r(116) = -.197, p = .034$.

— **5 - Was any key intervention component associated with ITQ symptom improvement?**

Improvement on C-PTSD symptoms was related to how much participants reported enjoying reading the chapters, $r(62) = .374, p = .003$; whereas improvement in PTSD was related to chapter enjoyment, $r(63) = .421, p = .001$ as well as exercise engagement frequency at follow-up, $r(63) = .271, p = .032$.

The different ways in which the intervention affected C-PTSD and PTSD were aligned with intervention components and its theory of change:

By participating in the intervention, we expect individuals to have the opportunity to increase their knowledge about mental health consequences of forced displacement and also to relate to the story's characters in a validating way. This experience can have an immediate impact on attitudes towards mental health, meaning-making, and sense of isolation - which can be reflected in decreased scores on mental health stigma measures as well as Complex PTSD subscales such as negative self-concept and disturbances in relationships. We would not, however, expect acquired knowledge to have an immediate impact on the classic PTSD symptoms of sense of threat, re-experiencing, and avoidance. That said, continued engagement with self-care exercises can have a long term effect in classic PTSD symptom reduction.



Scientific illustration present in the Field Guide

4 The effects of *The Field Guide* are due to its design and content, not to its method of delivery.

This report has detailed only key findings from a comprehensive list of outcome variables. It also makes sense to question whether the effects of *The Field Guide* are due to its method of delivery (group vs. individual) or due to its design and content. Appendix A summarizes mean differences obtained in each group from baseline to post-intervention and final assessment.

The choice to deliver *The Field Guide* as both a group workshop and individual reading at home was to assess the unique roles of context versus content in driving positive outcomes. The table above highlights how ***the Workshop condition yielded significant results on more outcome measures than the Reading at Home condition, and furthermore results in the Workshop condition often had larger effect size and were longer-lasting.*** The present findings suggest that while the impacts were greater in the workshop condition, the intervention and not group proximity itself led to the observed gains. This is evidenced by the fact that while the group had some effect, we saw no increases in closeness or decreases in loneliness in the workshop groups even after participation.

The larger impact of the Workshop condition might be due to intervention dosage effects, that is, higher experimental control over how much of the intervention content's participants received as measured by their attendance to the group sessions. For participants in the reading at home condition, experimenters could only control participant's picking up of intervention contents at designated times, which does not allow for accurate conclusions about how much of the material was read and practiced to be drawn. Estimates of exercise engagement or chapters read were assessed entirely through self report, a question that was potentially highly susceptible to social desirability effects, as people are unlikely to want to report not having engaged in the intervention. The trend towards lower effect sizes and smaller change magnitude at follow up is also evidence of dosage effect, as are the reported correlations between continued self-care exercises after intervention completion and long-term symptom improvement.



Discussion

The increase in displaced persons across countries in the Middle East presents a challenge to mental health professionals, not only due to the elevated mental health symptom burden but also the substantial stigma around mental illness within these communities and its potential long term effects on social cohesion and conflict. Individual-level interventions may be efficacious in reducing symptoms, but they are often not scalable due to the shortage of mental health professions in refugee settings and the extreme level of need. Additionally, pervasive mental health stigma may affect willingness to engage with materials in non-clinical community programs.

The presented study consisted of a randomized controlled trial (RCT) of a psychoeducational tool, *The Field Guide for Barefoot Psychology*, with 160 adult Syrian refugees residing in the Za'atri Refugee Camp in Jordan. *The Field Guide* is novel in that it incorporates personal stories from Syrian refugees and grounds the psychological effects of forced migration in accessible neurobiological language throughout the text to reduce mental health stigma and promote engagement with a menu of self-care exercises. Syrian refugees randomized to receive *The Field Guide* in a workshop format were compared with another group who received the materials to read at home, while a third group were initially on a waitlist (and then received the group intervention eight weeks later).

The results of our statistical analysis of outcome measures confirmed that *The Field Guide* intervention resulted in a reduction of mental health stigma and trauma-related symptoms, as well as increased emotional awareness and regulation for individuals who attended the workshops. Improvements were also seen on some measures for individuals reading from home. Analysis further showed that intervention gains were due *The Field Guides'* use of an optimistic tone, relatable narratives, and both psychosocial and neurobiological explanations for mental health symptoms along with provision of self-care exercises and not due to the effect of being in contact with peers during workshops.

Given that this RCT was carried out in a naturalistic setting (the Za'atri Refugee Camp) where the sample was exposed to ongoing stressors with limited possibility for experimental control, the evidence of statistically significant gains in stigma reduction, emotion regulation, emotion noticing, PTSD and CPTSD support *The Field Guide's* potential to favorably impact a wide range of targeted populations.

While we attempted to control for ongoing sources of stress by using the Human Insecurity Measure, it was difficult to isolate how news from Syria (e.g., the United States pulling their troops at the time of the third assessment round; inflation of the Syrian Pound) might have heightened anxiety among residents of Za'atri Camp and affected the outcome variables under study. However, we are not discouraged by this lack of experimental control, and instead consider that the findings obtained despite these limitations speak to the effectiveness of the intervention when implemented in the complex environment where it is needed most: the refugee camp.

The Field Guide intervention resulted in a reduction of mental health stigma and trauma-related symptoms, as well as increased emotional awareness and regulation for individuals who attended the workshops.

Limitations & Future Directions



Moving the material towards digital platforms will further our understanding and ability to provide effective resources.

There was insufficient data on participants' engagement with the materials (e.g., attentiveness to the assigned chapter readings), particularly in the Reading at Home group. Future studies could utilize cutting-edge strategies to monitor ongoing engagement with *The Field Guide*. ***Moving the material towards digital platforms such as smartphone apps or websites might enable the tracking of when a participant uses the material and why, furthering our understanding and ability to provide effective resources.***

Only participant's intention to speak to doctors about their mental health was measured. In order to track actual help-seeking behaviors, ***future work should measure utilization of specialized mental health care at follow-up intervals.***

The present study only did an 8 week follow-up on the intervention sample. ***Longer-term follow-ups (e.g. six months post-intervention), would allow for continued assessment of engagement with the distributed material, which could highlight the cost-effectiveness of this scalable intervention.***

The present study did not assess the individual impact of distinct intervention components on outcomes. ***Follow up studies should have a dismantling component, where aspects of the intervention are presented in isolation in order to evaluate their individual impact.*** As an example, presenting *The Field Guide's* self-care exercises with and without the psychoeducation component would enable researchers to test the hypothesis that deeper knowledge of the scientific evidence in favor of specific self-care exercises leads to more favorable ratings of their effectiveness and increased exercise engagement, which would ultimately result in symptom improvement.

Conclusion



— This research highlights key findings obtained from a randomized controlled trial of *The Field Guide for Barefoot Psychology* in a refugee camp. The Field Guide was designed with the guiding principle that individuals and communities that have been affected by stress and trauma have a right to the most recent scientific knowledge on how their experiences impact their mental health and bodies, and with increased understanding, people are better equipped to explore steps towards caring for themselves and others in their community. The intervention sought to use storytelling and accessible language to deliver a scientific curriculum on the psychobiological consequences of stress and trauma with the intention to normalize these experiences and highlight the body's resourcefulness and innate coping mechanisms meant to facilitate healing.

The study hypothesis was that the accessible delivery of the curriculum and choice of optimistic, non-clinical tone would result in a decreased mental health stigma and increased engagement with self-care exercises offered in *The Field Guide*. Results showed that the intervention was successful in achieving its aims: across intervention modalities (workshop vs. reading at home) and regardless of initial symptom burden or trauma experiences, the entire sample's average mental health stigma decreased, as did trauma related symptoms. Emotion regulation - the aspired outcome of engagement with the self-care exercises - also improved.

The results highlight how *The Field Guide for Barefoot Psychology* can be an effective mental-health intervention in a high-stress setting with a population that has been documented to have high-stigma towards mental illness. The findings suggest that *The Field Guide* offers a promising way forward to inspire self-help and community-led mental health interventions in low-resource settings. Furthermore, the results lay the foundation for future iterations of *The Field Guide*, where the stories and examples are adapted to deliver the content to other populations in need. As the population assessed in this study grows around the world, the need for scalable interventions that offer accessible information and self-care informed by research is more important than ever.

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Appendix A

VARIABLE	Mean differences in study variables on post-intervention and follow-up by group				
	READING		WORKSHOP		WORKSHOP 2
	T0 - T1	T0 - T2	T0 - T1	T0 - T2	T1 - T2
Stigma	1.07	0.195	.911	1.11	1.02
C-PTSD	1.023	1.74	2.85	3.72	1.48
PTSD	-0.26	0.146	1.14	2.2	1.93
Emotion Regulation	-.353	0.012	-1.02	-.812	-.575
Emotion Noticing	-.298	-.426	-.515	-.303	-.395
Emotional Awareness	-0.185	0.029	-.3	0.034	-.106
Kessler 10	0.023	0.428	2.38	0.314	0.553
Resilience	0.019	0.036	-.185	-.058	0.038
Loneliness	-0.976	0	0.117	0	0.446
Closeness	0.47	1.3	-1	1.3	-.11

LEGEND

- = Change in hypothesized direction. Not statistically significant.
- = Statistically significant change in hypothesized direction.
- = Change not in hypothesized direction. Not statistically significant.
- = Statistically significant change, not in hypothesized direction.