

# Longer Single-Session Interventions May Not Be Better: Evidence From Two Randomized Controlled Trials With Online Workers Facing Mental-Health Struggles



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## Abstract

Online, self-guided single-session interventions (SSIs), which provide a complete mental-health intervention in one brief experience, promise to increase global access to evidence-based support. One way to expand current SSIs' reach is to shorten them, but doing so could also compromise their effectiveness. We conducted two randomized trials to test if shortening evidence-based SSIs reduces their efficacy among adult online workers facing mental-health struggles. In Study 1 ( $N=262$ ), the 8-min Overcoming Loneliness SSI reduced loneliness over 8 weeks more than a 23-min version of it ( $b=2.64$ ;  $d=0.22$ , 95% confidence interval =  $[0.02, 0.41]$ ;  $p=.03$ ). In Study 2 ( $N=1,145$ ), 15-min, 9-min, 5-min, and 3-min versions of the Action Brings Change SSI did not significantly differ in how much they affected depression 8 weeks later ( $ps>.14$ ). Our results suggest that longer digital SSIs are not necessarily more helpful than shorter ones.

## Keywords

Internet interventions, depression, loneliness, randomized controlled trials, cognitive therapy/CBT, open data, open materials, preregistered

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Globally, access to effective mental-health care is low and inequitable (Kazdin & Blase, 2011). Most people who could benefit from professional mental-health support cannot or choose not to access it. Online, self-guided single-session interventions (SSIs), structured programs that intentionally involve just one encounter (although one might choose to use an SSI multiple times), address a critical gap in existing care options (Schleider et al., 2025). SSIs exist in in-person, supporter-guided, and self-guided forms, but here, we use the term “SSI” to refer only to online, self-guided SSIs. SSIs, most of which last under 60 min, have a unique capacity for flexible reach, as evidenced by their implementation in diverse health-care, social media, and education settings (Dobias et al., 2022; Osborn et al., 2020).

Evidence-based SSIs aim to maximize impact within their brief duration by delivering specific intervention components. For example, the Action Brings Change (ABC) Project, a 15-min SSI based on behavioral activation, includes several active elements drawing from concepts of autonomy, competence, and relatedness from self-determination theory (Ryan & Deci, 2000): “psychoeducation” about mood-boosting activities’ power to reverse negative mood spirals, a “saying is believing” activity in which users offer advice to an

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imagined peer, and an “action plan” that helps users create a personalized plan to engage in a positive behavior soon (Schleider et al., 2019).

Loneliness and depression are globally prevalent psychological struggles that have been shown to respond well to manualized behavioral treatments, making them great candidates for SSIs (Cuijpers et al., 2023; Hickin et al., 2021). Trials evaluating the efficacy of SSIs for loneliness and depression have had mixed results. The one published trial of an SSI for loneliness in adults did not find it was more efficacious than an active control (about sharing feelings with close others); however, the SSI was also not found to be less efficacious than a three-session version of it delivered over 3 weeks (Kaveladze et al., 2025). Multiple trials of SSIs for depression in youths have demonstrated efficacy (Schleider, Burnette, et al., 2020; Schleider et al., 2022), but a trial of an SSI for depression in adults failed to show its efficacy (Lorenzo-Luaces & Howard, 2023). These studies’ methods vary considerably, and more research is needed to better understand which SSIs for loneliness and depression are efficacious and for whom. SSIs’ average effects tend to be small (Kaveladze et al., 2025; Lorenzo-Luaces & Howard, 2023; Schleider et al., 2022, 2025); however, even small effects can exert population-wide mental-health impact if they can manage to reach a substantial portion of the population (Funder & Ozer, 2019). Given this possibility, optimizing SSIs’ potential to scale without sacrificing their effectiveness is a valuable objective for the field.

### **Duration and Effectiveness: How Light a Touch Is Too Light?**

SSIs’ light-touch nature enables easier implementation and broader appeal than multisession interventions (Kaveladze et al., 2025; Odgers et al., 2022). Likewise, brevity is valuable within a single session. In naturalistic contexts (i.e., outside of trials in which participants are compensated), people are less likely to drop out of shorter SSIs and might be more willing to begin them (Cohen & Schleider, 2022; Dobias et al., 2022). Briefer SSIs are also easier to implement in real-world settings; for example, a social media platform might prefer to implement a shorter (e.g., 5-min) SSI over a longer (e.g., 20-min) SSI because the longer SSI might pull users’ attention away from their platform. In addition, shorter SSIs might enable more diverse approaches to maximizing impact within a single session (beyond the text-based formats of existing SSIs), such as 3-min TikToks or one-page infographics (McCashin & Murphy, 2023).

Although shorter SSIs have demonstrated potential for broader reach, it remains unclear whether reducing

SSI duration might decrease effectiveness consequently. As noted, SSIs’ average effects are already small, so compromising on their impact may not be worth the possible gains in reach.

### **Current Study**

We ran two randomized controlled trials to test if reducing SSIs’ duration affected their efficacy. In Study 1, we predicted that a 23-min cognitive-behavioral-therapy SSI would be more efficacious than an 8-min version in reducing loneliness from baseline to 8-week follow-up. In Study 2, we predicted that 15-min, 9-min, 5-min, and 3-min versions of a behavioral-activation SSI would differ in how much they affected participants’ depression over 8 weeks.

### **Transparency and Openness**

#### ***Preregistration***

We preregistered both Study 1 (<https://osf.io/8bth2>) and Study 2 (<https://osf.io/fu6yc>).

#### ***Data, materials, code, and online resources***

The study materials, data, and analysis code are available online (Study 1: <https://osf.io/5ujtc>; Study 2: <https://osf.io/nj498>).

#### ***Reporting***

We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study.

#### ***Ethical approval***

The procedures were approved by the University of California, Irvine Human Subjects Review Board (Protocol 1253) for Study 1 and the Northwestern University Social and Behavioral Sciences Review Board (Protocol STU00220591) for Study 2. The studies were carried out in accordance with the provisions of the World Medical Association Declaration of Helsinki.

#### ***Deviations from the preregistration***

We deviated from the preregistrations in several ways. First, we neglected to preregister the inclusion criteria of speaking English, being at least 18 years old, and living in the United States, and did not specify that

scores on the three-item version of the UCLA Loneliness Scale (ULS-3) needed to be 6 or above for inclusion in Study 1. Second, we accidentally referred to loneliness when we meant depression in one instance in the Study 2 preregistration. Third, we preregistered paying participants in Study 2 \$3.00 for completing the baseline session, but decided to pay \$4.00 before launching the study. Fourth, the SSI durations we preregistered were rough estimates made before having data on median duration; once we collected the study data, we found the median SSI durations in our sample differed slightly from the preregistered durations, so in the article, we report the durations we observed. Fifth, in Study 1, we decided not to follow one of our preregistered exclusion criteria: removing responses for responding fraudulently or mischievously or speeding past all content. We made this modification because we decided the criterion was problematic for our intent-to-treat strategy and left too much room for researcher discretion.

## Method

### Participants

Participants in both trials were recruited through CloudResearch Connect, a platform in which online workers complete studies in exchange for payment (Hartman et al., 2023). Participants were eligible for the study if they spoke fluent English, were at least 18 years old, lived in the United States, and met our criteria for struggling with loneliness in Study 1 and depression in Study 2 (for screening criteria, see the Measures section).

### Procedure

All study procedures took place online, and there were no synchronous interactions between participants and researchers. Both trials used Qualtrics (November 2022 version) to collect data, randomly assign participants, and deliver the SSI content. We recruited and compensated participants via CloudResearch Connect (Hartman et al., 2023). Across the screener, intervention, and follow-up, each participant was paid a total of \$7.25 in Study 1 and \$5.25 in Study 2.

In Study 1, participants were randomly assigned (1:1) to complete either a 23-min or 8-min version of the Overcoming Loneliness SSI. The SSI was adapted from a 9-week Internet cognitive-behavioral-therapy intervention targeting negative thinking, social skills, and exposure to social situations (Käll et al., 2020; Kaveladze et al., 2025). In Study 2, participants were randomly assigned (1:1:1:1) to the original 15-min ABC Project behavioral-activation SSI (modified slightly so that its examples were more relevant to adults than its

original target population, adolescents) or 9-min, 5-min, and 3-min versions of it (Schleider et al., 2019, 2022).

In developing the briefer versions of the SSIs in each study, we strove to retain the original SSI's core elements while shortening text and cutting time-intensive exercises. In the 8-min Overcoming Loneliness SSI, we cut the interactive writing exercises and focused on presenting the key messages: set a goal to regularly engage in social behaviors, challenge negative thought patterns, and work on communication skills. In all shortened versions of the ABC Project SSI, we aimed to retain the three hypothesized "active elements" of treatment: psychoeducation, testimonials/saying is believing exercises, and action plan (as detailed in the introduction). All versions of Overcoming Loneliness (Study 1) are available online at <https://osf.io/5ujtc>, and all versions of the ABC Project (Study 2) are available at <https://osf.io/nj498>.

### Measures

In Study 1, we measured loneliness with the reliable and valid 20-item ULS (ULS-20), Version 3 (Russell, 1996). The measure asks participants how frequently they experience several feelings, such as "left out" or "close to people," on a scale from 1 (*never*) to 4 (*often*). Total scores range from 20 to 80, and a higher total score indicates greater feelings of loneliness. The ULS-20 had a Cronbach's  $\alpha$  of .93 at baseline in Study 1.

To screen participants for loneliness, we used the valid ULS-3 (Bottaro et al., 2023; Hughes et al., 2004). The measure includes three items from the 20-item version of the scale, which are rated from 1 (*hardly ever*) to 3 (*often*; total score range = 1–9). We also asked a single yes/no question of whether one's loneliness was causing one distress. If a participant's score on the ULS-3 was 6 or higher and they reported that their loneliness was causing them distress, they met our criteria for struggling with loneliness and were invited to participate in the study (Hughes et al., 2004; Käll et al., 2020).

In Study 2, we measured depression with the valid and reliable Patient Health Questionnaire–8 (PHQ-8; Kroenke et al., 2009). In this scale, participants rate how often they have been bothered by eight items over the past 2 weeks (e.g., poor appetite or overeating) on a scale from 0 (*not at all*) to 3 (*nearly every day*). The total score ranges from 0 to 24, and higher scores indicate more severe depression. The PHQ-8 had a Cronbach's  $\alpha$  of .74 at baseline in Study 2. We also used the PHQ-8 as an eligibility requirement for the study; participants were invited to participate in the study if they scored 10 or above.

In addition to the primary outcomes reported in this article, we collected several secondary outcomes in each

study. For full lists of these outcomes, see the Measured Variables section of the study preregistrations (Study 1: <https://osf.io/8bth2>; Study 2: <https://osf.io/fu6yc>).

## Analysis plan

The preregistered main analysis in each study compared change in the primary outcome (loneliness in Study 1 and depression in Study 2) from baseline to 8-week follow-up across conditions. We used a mixed-effects model with condition, measurement time point, and the two-way interaction between condition and measurement time point as independent variables and a participant identifier as a random intercept. We did not impute missing outcome data in the primary analyses because doing so does not improve the fit of longitudinal mixed-effects regression models with clinical-trial data (Chakraborty & Gu, 2009; Jakobsen et al., 2017). We did not transform the outcome variables because they were normally distributed (see Appendix in the Supplemental Material available online). We also compared secondary outcomes across conditions and reran the main analyses adjusting for demographic covariates (see supplemental document, <https://osf.io/czujx>).

Although we conducted a priori power analyses as described in our preregistrations, we identified issues with both studies' power analyses after conducting them, such that the analyses had substantially less statistical power than anticipated. In Study 1, using the "ANOVA repeated measures between-within" option in G\*Power, we calculated the sample size required to power the study to detect differences in change of at least Cohen's  $d=0.20$  across conditions with 80% power and  $\alpha=.05$  as 139 participants per group; however, after collecting the data, we realized that G\*Power's default setting (as of June 2023) for "within-between interactions" was not appropriate for this kind of analysis (Faul et al., 2007; Thibault et al., 2024). As a result, our sample size was sufficient to detect only an effect of  $d=0.30$  over time between conditions with 80% power (with the  $r=.74$  test-retest correlation in loneliness we observed between baseline and follow-up). In Study 2, we simulated data with the *simr* package and calculated that  $N=275$  in each condition would be sufficient to detect an effect of  $d=0.20$  (with 80% power,  $\alpha=.05$ , and test-retest correlation of .74, as found in Study 1) between any two conditions (Green & MacLeod, 2016). However, after collecting data, we observed that the main outcome's test-retest correlation was  $r=.51$ . Thus,  $N=275$  per condition was sufficient to detect only an effect of  $d=0.29$  between any two conditions with 80% power.

To clean, analyze, and visualize data, we used R (Version 4.3.1; R Core Team, 2015) and the packages

*lme4 v1.1-35.1* (Bates et al., 2015), *lmerTest v3.1-3* (Kuznetsova et al., 2017), and *tidyverse v2.0.0* (Wickham et al., 2019). To obtain Cohen's  $d$  estimates from  $\alpha$  in a mixed-effects model, we divided the predictor's regression coefficient by its standard deviation at baseline (Feingold, 2009). We used the  $p<.05$  criterion for statistical significance and the Kenward-Rogers method to calculate  $p$  values (Kenward & Roger, 1997). Analyses include all participants who were randomly assigned to a condition.

## Results

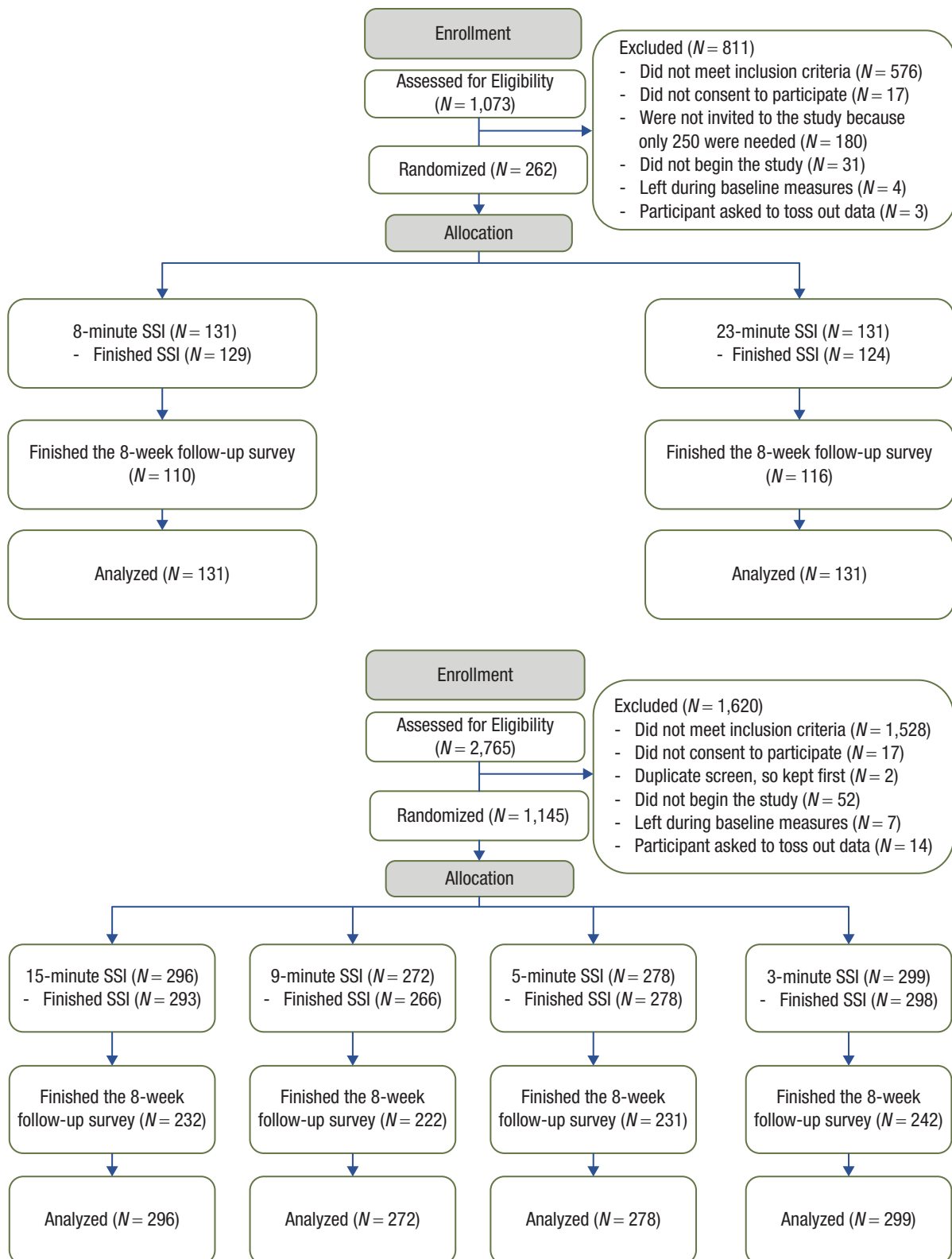
We collected data from June 26, 2023, to August 22, 2023, in Study 1 and from March 18, 2024, to May 22, 2024, in Study 2. The trials' CONSORT diagrams are shown in Figure 1.

In Study 1, the mean participant age was 37.6 years ( $SD=12.2$ ); 46.6% of the sample identified as a man, and 53.4% identified as a woman; 75.6% of the sample identified as White, 9.5% identified as Black or African American, 6.9% identified as Asian, and 5.0% identified as a different race. The loneliness SSIs' median durations were 22.7 min (interquartile range [IQR] = 15.3–32.5) and 7.5 min (IQR = 4.6–11.1). Of the sample, 46.2% had a bachelor's degree, 18.3% finished some college, 11.1% completed high school, 10.3% had a master's degree, and 9.9% had an associate's degree.

In Study 2, the mean participant age was 35.9 years ( $SD=11.2$ ); 45.9% of the sample identified as a man, and 54.1% identified as a woman; 73.5% of the sample identified as White, 11.0% identified as Black or African American, 8.2% identified as Asian, and 7.3% identified as a different race. The depression SSIs' median durations were 14.5 min (IQR = 11.2–19.6), 9.3 min (IQR = 6.9–12.8), 5.4 min (IQR = 3.6–8.1), and 2.6 min (IQR = 1.7–3.6). Of the sample, 40.1% had a bachelor's degree, 22.5% finished some college, 12.7% completed high school, 10.5% had a master's degree, and 9.7% had an associate's degree.

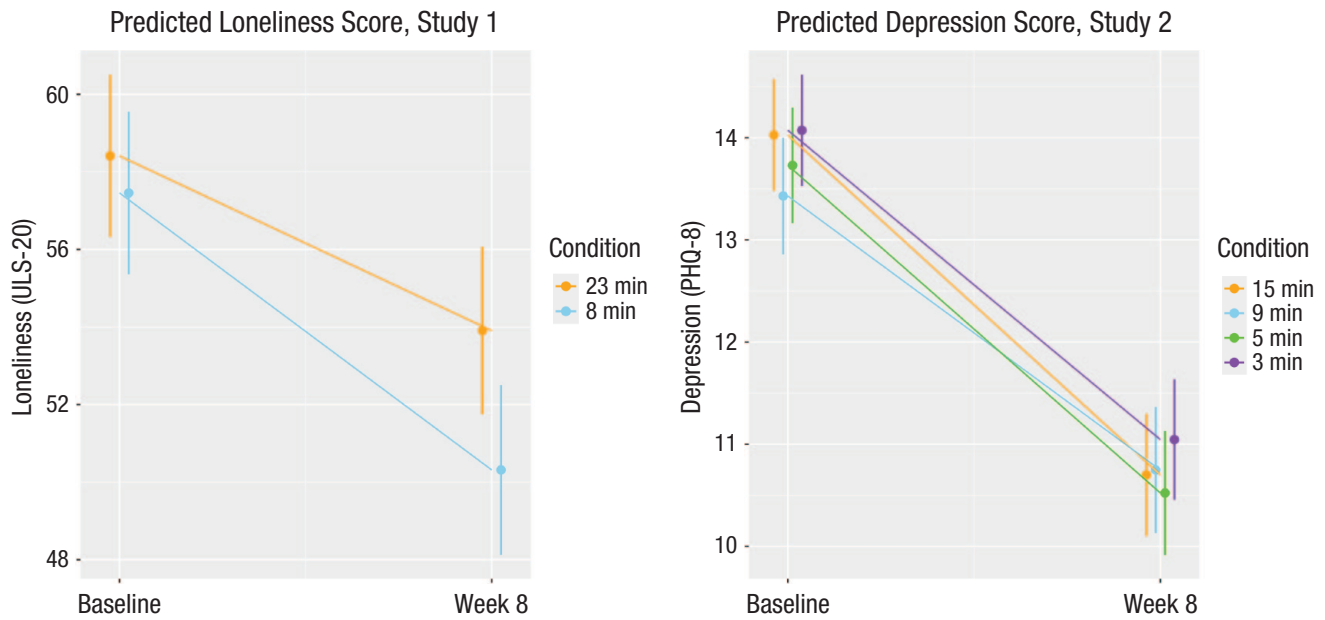
## Change in primary outcome across conditions

In each study, the primary outcome did not significantly differ across conditions at baseline (loneliness in Study 1:  $p=.53$ ; depression in Study 2:  $p=.24$ ), indicating successful random assignment. Moreover, participants who did not complete the follow-up survey were not significantly more or less lonely (Study 1:  $p=.18$ ) or depressed (Study 2:  $p=.14$ ) at baseline, nor were they significantly more likely to have been randomly assigned to any condition (Study 1:  $p=.37$ ; Study 2:  $p=.54$ ).



**Fig. 1.** Study 1 and Study 2 CONSORT diagrams. The number of participants who participated in each part of each study.





**Fig. 2.** Change over time. The points reflect estimates from the study's primary model, and the error bars show 95% confidence intervals.

Ignoring experimental condition, on average, loneliness decreased from baseline to Week 8 in Study 1 ( $b = -5.79$ ;  $d = -0.47$ , 95% confidence interval [CI] =  $[-0.57, -0.37]$ ;  $p < .001$ ; intraclass correlation [ICC] = .71), and depression decreased from baseline to Week 8 in Study 2 ( $b = -3.07$ ;  $d = -0.64$ , 95% CI =  $[-0.70, -0.57]$ ;  $p < .001$ ; ICC = .49). Loneliness at baseline correlated with loneliness at Week 8 with Pearson's  $r = .74$ , and depression at baseline correlated with depression at Week 8 with  $r = .51$ .

In Study 1, contrary to our hypothesis, participants assigned to the 8-min loneliness SSI showed greater reductions in loneliness from baseline to Week 8 than participants assigned to the 23-min loneliness SSI ( $b = 2.64$ ;  $d = 0.22$ , 95% CI =  $[0.02, 0.41]$ ;  $p = .03$ ; ICC = .71).

In Study 2, against our hypothesis, participants assigned to the 9-min SSI, 5-min, or 3-min SSI did not significantly differ from participants assigned to the 15-min SSI in how much their depression changed from baseline to Week 8 (9-min:  $b = 0.64$ ;  $d = 0.13$ , 95% CI =  $[-0.05, 0.32]$ ;  $p = .15$ ; 5-min:  $b = 0.12$ ;  $d = 0.02$ , 95% CI =  $[-0.15, 0.20]$ ;  $p = .79$ ; 3-min:  $b = 0.30$ ;  $d = 0.06$ , 95% CI =  $[-0.12, 0.24]$ ;  $p = .49$ ), nor did those conditions significantly differ from one another ( $ps > .24$ ; ICC = .49).

Figure 2 visualizes differences across conditions and Figure 3 shows outcome distributions at baseline and follow-up. For the analyses' full regression output, see Tables 1 and 2. For differences in secondary outcomes across conditions and demographic covariate-adjusted models, see the supplemental document (<https://osf.io/czujx>).

## Discussion

SSIs hold promise to expand access to evidence-based support radically. To make SSIs more helpful for more people, researchers should aim to optimize their reach without sacrificing their effectiveness. In Study 1, participants assigned to an 8-min cognitive-behavioral-therapy SSI reported greater reductions in loneliness over 8 weeks than participants assigned to a 23-min SSI. In Study 2, participants assigned to 15-min, 9-min, 5-min, and 3-min behavioral-activation SSIs did not significantly differ in how much their self-rated depression changed over 8 weeks. These studies suggest that reducing the amount of content in SSIs (while retaining their core elements) does not necessarily decrease their efficacy. This finding might inform implementations aiming to optimize SSIs' impact at scale.

## Interpreting the findings

Our finding that an 8-min loneliness SSI outperformed the 23-min SSI on which it was based runs counter to common notions of how self-guided psychological interventions work. Participants may have found the 8-min SSI more memorable and less cognitively demanding than the 23-min version. Regardless, a result as surprising as this one warrants both further exploration and replication (Ioannidis, 2008).

The finding in Study 2 that an SSI that took under 3 min, on average, to complete was not significantly less efficacious than the 15-min SSI on which it was based (or its 5- or 9-min versions) was also unexpected. It may be that there are meaningful differences in the SSIs'

**Table 1.** Mixed-Effects Model Predicting Change in Loneliness

Predictors	Estimates	95% confidence interval	<i>p</i>	<i>df</i>
(Intercept)	57.46	[55.35, 59.56]	< <b>.001</b>	338.38
Condition (23 min)	0.95	[-2.02, 3.93]	.529	338.37
Time (Week 8)	-7.14	[-8.87, -5.42]	< <b>.001</b>	238.21
Condition (23 min) × Time (Week 8)	2.64	[0.23, 5.05]	<b>.032</b>	236.82
Random effects				
$\sigma^2$		42.74		
$\tau_{00}$ Participant		106.00		
Intraclass correlation		.71		
$N_{\text{Participant}}$		262		
Observations		488		
Marginal $R^2$ / conditional $R^2$		.063 / .731		

Bold *p*-values indicate statistical significance at *p* < .05.

efficacy, but our study lacked sufficient statistical power to detect them. Although the study had sufficient power to detect a difference between two groups of at least  $d=0.29$  80% of the time, the true difference between groups may be smaller but meaningful. Overall, we interpret the findings from these studies as providing some but not conclusive evidence that shorter SSIs are not less efficacious than longer ones.

### Strengths and limitations

These studies had several strengths, including being randomized controlled trials, being preregistered, and having low attrition. Thus, we were able to test our hypotheses fairly cleanly. The studies also had similar

intervention formats, samples, and experimental designs, allowing for easy comparison.

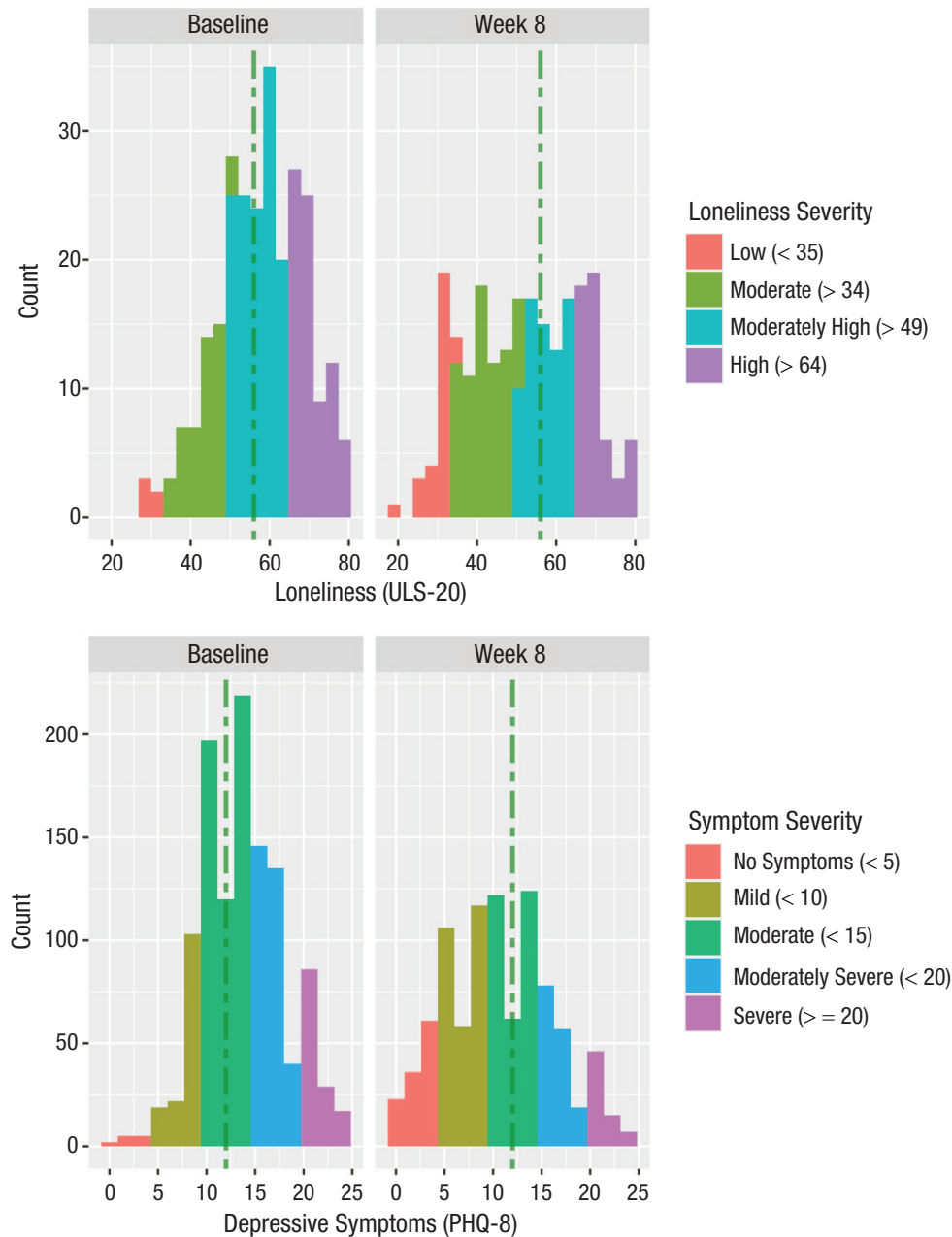
Both studies had several limitations. First, they differed in intervention targets and primary outcomes: One study targeted loneliness within an unspecified time frame, and the other targeted depression over the past 2 weeks. In addition, findings from these studies may not generalize to other SSIs, especially human-guided SSIs, those delivered in person, and those well beyond the 18-min duration of the longest SSIs we examined (e.g., school interventions that last 6–7 hr). Future studies can examine if longer SSIs might be more helpful in other contexts.

An important limitation of these studies is that they lacked a no-treatment control condition. Thus, we

**Table 2.** Mixed-Effects Model Predicting Change in Depression

Predictors	Estimates	95% confidence interval	<i>p</i>	<i>df</i>
(Intercept)	14.03	[13.48, 14.58]	< <b>.001</b>	1,725.59
Condition (9 min)	-0.60	[-1.39, 0.20]	.140	1,725.58
Condition (5 min)	-0.30	[-1.08, 0.49]	.460	1,725.57
Condition (3 min)	0.05	[-0.73, 0.82]	.906	1,725.58
Time (Week 8)	-3.33	[-3.94, -2.72]	< <b>.001</b>	1,035.84
Condition (9 min) × Time (Week 8)	0.64	[-0.23, 1.52]	.148	1,029.04
Condition (5 min) × Time (Week 8)	0.12	[-0.75, 0.98]	.786	1,025.02
Condition (3 min) × time (Week 8)	0.30	[-0.55, 1.15]	.492	1,029.38
Random effects				
$\sigma^2$		11.82		
$\tau_{00}$ Participant		11.21		
Intraclass correlation		.49		
$N_{\text{Participant}}$		1,145		
Observations		2,076		
Marginal $R^2$ / conditional $R^2$		.094/.535		

Bold *p*-values indicate statistical significance at *p* < .05.



**Fig. 3.** Outcome distributions across time points for each study.

cannot conclude from these studies alone that any of the SSIs we evaluated were more efficacious than receiving no intervention among the populations we sampled. We chose to omit a no-treatment control condition because of evidence from well-powered studies supporting the efficacy of digital SSIs for depression against passive and active controls (Schleider, Dobias et al., 2020; Schleider, et al., 2022, 2025). However, recent studies have found that SSIs for depression and anxiety did not improve outcomes at multiweek follow-ups in adult samples (Lorenzo-Luaces et al., 2024;

Lorenzo-Luaces & Howard, 2023). Future controlled trials can address this limitation, providing better estimates of the effects of SSIs by comparing them with a no-treatment control condition.

Finally, our decision to recruit participants from CloudResearch Connect had advantages and disadvantages. We chose this sample because it made recruiting many legitimate participants relatively easy and ensured that most participants would complete their assigned SSI and return for follow-up measurement (Chapkovski et al., 2024). In addition, online workers are an



underserved population with notably high rates of depression (Ophir et al., 2020). Yet including only online workers limits the results' generalizability because the online workers in our sample may differ in important ways from other help-seekers who might be expected to use these SSIs once disseminated. For one, they were paid to participate, so they may have been more motivated to complete the intervention and perhaps less inclined to implement lifestyle changes after an intervention compared with individuals who encounter an intervention while actively seeking mental-health support. Relatedly, many participants in these trials had moderate levels of loneliness and depression at baseline (see Appendix in the Supplemental Material), limiting generalizability to populations with greater clinical severity and individuals with subclinical symptoms.

## Conclusions

Our findings challenge the assumption that more content necessarily yields more benefit—even within already-brief interventions. Instead, they suggest that in some implementations, shorter SSIs may be a better choice for broad impact. Future research should investigate the relationship between SSI length and effectiveness in larger, real-world samples, ideally including no-treatment control conditions.

## Transparency

*Action Editor:* Pim Cuijpers

*Editor:* Jennifer L. Tackett

*Author Contributions*

**Benjamin Kaveladze:** Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Visualization; Writing – original draft; Writing – review & editing.

**Arka Ghosh:** Conceptualization; Methodology; Writing – review & editing.

**Carter J. Funkhouser:** Conceptualization; Methodology; Writing – review & editing.

**Stephen M. Schueller:** Conceptualization; Funding acquisition; Methodology; Supervision; Writing – review & editing.

**Jessica L. Schleider:** Conceptualization, Methodology, Supervision, Writing – review & editing.

*Declaration of Conflicting Interests*

S. M. Schueller serves on the Scientific Advisory Board for Headspace, for which he receives compensation, and has received consulting payments from Boehringer Ingelheim and Otsuka Pharmaceuticals for unrelated work. J. L. Schleider serves on the Scientific Advisory Board for Walden Wise and the Clinical Advisory Board for Koko, has received consulting fees from United Health and Woebot, and receives book royalties from New Harbinger, Oxford University Press, and Little, Brown Book Group. She is cofounder and chief

scientific advisor for Mindly. No Mindly products were used or are referenced in the present article.

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## Open Practices

This article has received the badge for Open Data, Open Materials, and Preregistered. More information about the Open Practices badges can be found at <http://www.psychologicalscience.org/publications/badges>.



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## Acknowledgments

We preregistered both Study 1 (<https://osf.io/8bth2>) and Study 2 (<https://osf.io/fu6yc>). The study materials, data, and analysis code are available online (Study 1: <https://osf.io/5ujtc>; Study 2: <https://osf.io/nj498>). The data in this article have not been published and are not currently under review for publication elsewhere.

## Supplemental Material

Additional supporting information can be found at <http://journals.sagepub.com/doi/suppl/10.1177/21677026251358836>

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