Brief Video Intervention to Increase Treatment-Seeking Intention Among U.S. Health Care Workers: A Randomized Controlled Trial

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Objective: Many health care workers avoid seeking mental health care, despite COVID-19–related increases in risk of psychopathology. This study assessed the effects of two versions (distinguished by the race of the protagonist) of a brief social contact–based video on treatment-seeking intention and stigma toward mental health services among U.S. health care workers.

Methods: Participants (N=1,402) were randomly assigned to view a 3-minute video in which a Black or White female nurse described struggles with COVID-19–related anxiety and depression, barriers to care, and how therapy helped, or to view a control video unrelated to mental health. Half of the participants receiving the intervention watched the same video (i.e., booster) again 14 days later. Treatment-seeking intention and treatment-related stigma were assessed at baseline, postintervention, and 14- and 30-day follow-ups.

Results: Both intervention videos elicited an immediate increase in treatment-seeking intention in the intervention groups (p<0.001, effect size [ES]=21%), with similar effects among those who watched the booster video (p=0.016, ES=13%) and larger effects among those who had never sought treatment (p<0.001, ES=34%). The increased effects were not sustained 14 days after the initial video or at 30-day follow-up. The results showed an immediate reduction in stigma, but with no booster effect. The race of the protagonist did not influence outcomes.

Conclusions: This easily administered intervention could increase the likelihood of care seeking by proactively encouraging health care workers with mental health challenges to pursue treatment. Future studies should examine whether the inclusion of linkable referrals to mental health services helps to increase treatment-seeking behavior.

Psychiatric Services 2023; 74:119–126; doi: 10.1176/appi.ps.20220083

Health care workers, compared with the general population, have an elevated prevalence of anxiety and depression, which has intensified because of ongoing stress from the COVID-19 pandemic (1–8). Overstressed health care workers may experience burnout and lower motivation, reducing the quality of care they provide (9). Nevertheless, health care workers are often reluctant to seek help, and stigma toward treatment seeking creates a profound barrier to receiving mental health care (10, 11). Treatment-related stigma involves perceiving care seeking as weakness, anticipating negative attitudes from colleagues, and fearing discrimination from supervisors (12). Feasible interventions that promote help seeking and reduce treatment-related stigma may improve the health and well-being of health care workers and their delivery of care.

Social contact–based interventions are considered the most effective means of increasing treatment-seeking intention and reducing treatment-related stigma (13). Social contact involves interaction with a member of a stigmatized group who describes how, despite difficulties, he or she attains desired goals. People interacting with these individuals report lower prejudice and discrimination toward the

HIGHLIGHTS

- Brief video-based interventions decreased treatment-related stigma and increased treatment-seeking intention among 1,402 U.S. health care workers.

- The videos elicited an immediate increase in treatment-seeking intention in the intervention groups, particularly among health care workers who had never sought treatment.

- This easily administered intervention could create an opportunity to increase care seeking among U.S. health care workers in need of mental health services.

stigmatized group. For example, a person with lived experience of mental illness who describes their symptoms and how treatment helped them recover could reduce stigma and increase treatment-seeking intention among people interacting with that person. Recent studies have shown that social contact–based videos have comparable efficacy to in-person interventions in reducing stigma (14, 15). Greater efficacy was found for videos tailored to viewers' sociodemographic characteristics to enhance audience identification and emotional engagement (16–18). Moreover, unlike in-person interventions, video-based interventions can target large populations, offering the benefits of reduced cost, replicability, and ease of creation, revision, and dissemination (19).

In a pilot study, we recently demonstrated the efficacy of a 3-minute social contact–based video in increasing treatment-seeking intention among 350 health care workers (20). Participants were randomly assigned to view a brief video-based intervention at day 1 only (i.e., single video group), to view the video at day 1 and the same video 14 days later (i.e., booster video group), or to view a video unrelated to mental health (i.e., control group). In the intervention video, a White female nurse described difficulty coping with stress, her depressive and anxiety symptoms, obstacles to seeking care, and how receiving psychological treatment helped her. Treatment-seeking intention and treatment-related stigma were assessed at baseline, immediately post-intervention, and at 14- and 30-day follow-ups. The brief video-based intervention yielded greater immediate increases in treatment-seeking intention than the control video at the postintervention assessment. Gains were maintained in the booster video group at the 14-day follow-up but not at the 30-day follow-up. The proof-of-concept study was the first to employ such a brief social contact–based intervention and to demonstrate its effect on treatment-seeking intention among health care workers.

The exploratory study had several limitations, which we rectified in the current study. First, the study presented a single video of a White woman, raising the following questions: Were the effects of the intervention specific to one charismatic presenter? Would presenters from other racial-ethnic backgrounds yield differential effects? Second, we lacked information about prior mental health treatment, which might have affected our findings, particularly in terms of treatment-seeking intention, our primary variable of interest. Third, the sample (N=350) may have been underpowered to detect changes in treatment-related stigma or a lasting effect of the intervention at the 30-day follow-up. Last, the sample was limited to the U.S. population of Amazon Mechanical Turk users who complete tasks, which differed demographically from the general population of health care workers, limiting generalizability of results.

To address these issues, we designed a randomized controlled trial (RCT) to test the efficacy of two versions of our brief video-based intervention for increasing treatment-seeking intention and reducing treatment-related stigma in a large sample of 1,402 U.S. health care workers. Participants

were randomly assigned to view the intervention video, with a Black female protagonist or with a White female protagonist, or to view a control video. The study design was similar to that of the pilot regarding use of the booster video, follow-up timing, and outcomes. Because the two intervention videos (one with a Black protagonist and one with a White protagonist) had identical content (i.e., scripts and emotional tone), we did not expect the race of the video's protagonist to be associated with any difference in outcomes. We hypothesized that the brief video-based intervention would have immediate and booster effects of increasing treatment-seeking intention and reducing treatment-related stigma compared with the control condition, that viewing the booster video would be associated with greater durability of effect than viewing the intervention video only once or viewing the control video, and that participants who had never sought treatment would experience a greater effect of the intervention.

METHODS

Participants and Recruitment
Participant recruitment was conducted by using Prolific, a crowdsourcing tool frequently used in medical and psychology research, including studies of treatment satisfaction and stigma-reduction interventions (21). Prolific has demonstrated validity across tasks and countries, making this online platform a quick, inexpensive method of acquiring reliable data (22). To enhance the validity of study results, we excluded participants who completed assessments more than once, added a timer to ensure participants devoted sufficient time to reading instructions (5 seconds minimum) and watching the video (180 seconds) before the "next" button appeared, and excluded participants who failed our attention verification questions (e.g., "In the following question, please choose the third answer").

Recruitment took place in August and September 2021. To be eligible, participants had to be English-speaking, U.S. health care workers ages 18–80. We defined "health care worker" to include various health-related occupations, including nurses, physicians, mental health professionals, health administrators, and emergency medical technicians. Participants were compensated $9 for study participation. The New York State Psychiatric Institute Institutional Review Board approved the project. Before study entry, participants reviewed an informed-consent form. Those agreeing to participate completed the study procedures via Qualtrics, a secure, online data-collection platform.

Procedure
Participants were randomly assigned to a group after completing the baseline assessment, including questionnaires about sociodemographic characteristics, treatment-seeking intention, and treatment-related stigma. The intervention groups watched a brief video of a Black or White nurse; the control group watched a video of the same length showing

horses and other depictions of nature, accompanied by relaxing music. The postintervention assessment, which immediately followed the intervention, repeated the baseline treatment-seeking and stigma-related assessments. Fourteen days later, half of each intervention group rewatched the same video, whereas the other half had no additional intervention. Assessments conducted at 14- and 30-day follow-ups repeated the baseline treatment-seeking and stigma-related assessments.

Intervention

Two versions of a 3-minute video told the story of a young female nurse in an intensive care unit, presented by either a White or a Black actress, with an identical script. The nurses directly described with great emotion their difficulty coping with life stressors, how they faced their anxious and depressive feelings ("I felt helpless. . . . I couldn't enjoy anything"), their prior mistaken assumptions about treatment ("I was worried people might think I'm crazy"), and how they overcame these challenges. They described benefiting from social support and psychotherapy and how that support helped them cope with COVID-19–related stressors. They concluded with a supportive, encouraging statement: "I'm really feeling like myself again." (Links to the two versions of the intervention video are available in the online supplement to this article.)

Instruments

Treatment-seeking intention and treatment-related stigma. Treatment-seeking intention, the primary outcome measure, was measured with the three items assessing "openness to treatment seeking" from the Attitudes Toward Seeking Professional Psychological Help Scale–Short Form (ATSPPH-SF), a widely used assessment (23, 24): "I might want to have psychological counseling in the future," "I would want to get psychological help if I were worried or upset for a long period of time," and "A person with an emotional problem is not likely to solve it alone; he or she is more likely to solve it with professional help." Response choices ranged from 1, disagree, to 4, agree, yielding a total score of 3–12, with higher scores indicating greater treatment-seeking intention. In our study, Cronbach's α was 0.82.

Treatment-related stigma was measured with the ultra-brief Self-Stigma of Seeking Help scale (SSOSH-3) (25). Items included "I would feel inadequate if I went to a therapist for psychological help," "It would make me feel inferior to ask a therapist for help," and "If I went to a therapist, I would be less satisfied with myself." Response choices ranged from 1, strongly disagree, to 5, strongly agree. Total scores ranged from 3 to 15, with higher scores indicating greater stigma (α=0.87) (25).

COVID-19 experiences and prior mental health treatment. We assessed COVID-19 experiences and previous treatment. Three items were used to examine whether participants had tested positive, had been exposed at work, or had relatives or friends who were diagnosed as having COVID-19. We also requested participants' COVID-19 vaccination status and asked whether they had ever sought psychological counseling.

Data Analysis

We used Pearson's chi-square and one-way analysis of variance (ANOVA) to compare sociodemographic and COVID-19–related characteristics across the three randomly assigned groups (Black nurse protagonist, White nurse protagonist, and control video viewers). Intervention effects were examined by using generalized estimating equations (GEE) (26, 27), as recommended for RCTs (28). The GEE approach represents correlated repeated-measures analysis and calculates missing data via estimated marginal means that are based on the whole sample. It includes all randomly assigned participants who provided data at least at one time point. To account for within-subject dependencies in the models, we specified an unstructured correlation matrix. We applied a full factorial model across the four time points (baseline, immediately post-intervention, and 14- and 30-day follow-ups) for the ATSPPH-SF and the SSOSH-3. We first examined whether protagonist race was associated with a differential effect; finding no association, we combined the two intervention cohorts. Our hypotheses predicting an immediate intervention effect (intervention video vs. control video) and booster effect were tested with time × group interaction terms. Contrasts were formed from the GEE model to test a 14-day video effect (booster video vs. single video vs. control video), in order to address our hypothesis about durability of effects. To test our hypothesis that participants who had never sought treatment would experience a greater effect of the intervention, we conducted a one-way ANOVA examining whether baseline mean ATSPPH-SF and SSOSH-3 scores for each participant subgroup (reporting prior therapy, current therapy, or no prior or current therapy) significantly differed. We then conducted the same GEE analysis separately for each subgroup. When appropriate, effect sizes were reported by using Cohen's d, obtained by calculating mean differences between treatment groups and dividing by the standard deviation of the measure across all groups at baseline. All statistical tests were two-sided, with α<0.05.

RESULTS

Sample Characteristics

After we excluded 115 (8%) individuals who failed validity tests, our final sample consisted of 1,402 health care workers who completed the baseline and postintervention evaluations. Of those, 1,171 (84%) participants completed the 14-day follow-up assessment, and 1,000 (71%) completed the 30-day follow-up assessment (see the online supplement). Baseline characteristics did not differ between completers and noncompleters, and sociodemographic and COVID-19–related characteristics did not differ across study groups. Mean±SD participant age was 28.9±9.1 years (range 18–66), and most respondents were female (N=1,152, 82%). Table 1 presents the sample's race-ethnicities, health care occupations,

TABLE 1. Demographic and COVID-19–related characteristics of U.S. health care workers in this study (N=1,402)

Characteristic	Video intervention (N=1,117)		Control (N=285)		Total (N=1,402)		Test statistic	df	p
	N	%	N	%	N	%			
Age (M±SD years)	28.9±9.2		28.8±8.6		28.9±9.1		F=1.30	1, 2280	.27
Female gender	918	82	234	82	1,152	82	χ^2=5.09	8	.75
Race-ethnicity							χ^2=9.80	10	.46
Hispanic	131	12	31	11	162	12			
Non-Hispanic White	816	73	212	74	1,028	73			
Non-Hispanic Black	70	6	18	7	88	6			
Non-Hispanic Asian	73	7	15	5	88	6			
Non-Hispanic Native American/Pacific Islander	9	1	2	1	11	1			
Non-Hispanic other[a]	18	2	7	2	25	2			
Occupation							χ^2=9.58	16	.89
Nurse	365	33	82	29	447	32			
Health administrator	229	21	57	20	286	20			
Mental health professional	155	14	41	14	196	14			
Lab/pharmacy technician	117	10	30	11	147	11			
Physician/physician assistant	70	6	26	9	96	7			
Health care paraprofessional[b]	73	7	21	7	94	7			
Emergency medical technician	11	1	4	1	15	1			
Other	97	9	24	8	121	9			
Tested positive for COVID-19	212	19	63	22	275	20	χ^2=10.20	6	.12
Relative/friend tested positive for COVID-19	885	79	209	73	1,094	78	χ^2=10.60	6	.10
Exposed to COVID-19 at work	762	68	188	66	950	68	χ^2=5.13	4	.27
Received the COVID-19 vaccine	946	85	238	84	1,184	85	χ^2=2.72	4	.61
Sought psychological counseling	639	57	165	58	804	57	χ^2=9.28	6	.16

[a] Multiracial, N=23; Middle Eastern, N=2.
[b] Physical therapists, respiratory therapists, occupational therapists, speech-language pathologists, optometrists, and chiropractors.

and COVID-19–related characteristics. Figure 1 illustrates participants' geographic distribution.

Intervention Effects

As expected, the two versions of the intervention video (distinguished by the race of the protagonist) showed a similar effect in increasing treatment-seeking intention and decreasing stigma. We therefore combined the video intervention groups and used GEE models to compare immediate effects between the intervention video and control video groups and to compare the booster effect, 14-day effect, and 30-day effect across the intervention (booster video, single video) and control video groups.

We found both immediate and booster effects of the intervention in increasing treatment-seeking intention (Figure 2). Baseline mean ATSPPH-SF scores did not differ across study groups. Analyses showed a group × time interaction (χ^2=28.4, df=1, p<0.001; effect size [ES]=21%) for the immediate effect (baseline to postintervention change=0.39, 95% CI=0.25–0.54), and a group × time interaction (χ^2=5.8, df=1, p=0.016; ES=13%) for the booster effect (baseline to 14-day follow-up change=0.25, 95% CI=0.05–0.46). We found no significant difference between the immediate and booster effects. We also found no lasting effect at the 14-day follow-up for the single video group or at 30-day follow-up for the booster video group. Hence, viewing a booster video had no significantly greater durability of effect compared with viewing the intervention video only once.

We repeated the above-described GEE analysis separately on the basis of participants' answer to the question, "Have you sought psychological counseling?" (prior therapy, current therapy, or no prior or current therapy) (Figure 2). Baseline mean ATSPPH-SF scores differed significantly across the three groups (no prior or current therapy: mean=9.0 points, 95% CI=8.9–9.2; prior therapy: mean=10.3 points, 95% CI=10.2–10.4; current therapy: mean=11.2 points, 95% CI=11.1–11.3; one-way ANOVA: F=164.2; df=2, 1399; p<0.001). Participants without prior or current therapy showed a group × time interaction (χ^2=23.5, df=1, p<0.001; ES=34%) for immediate effect (baseline to postintervention change=0.64 points, 95% CI=0.38–0.89), and a group × time interaction (χ^2=7.6, df=1, p=0.006; ES=27%) for the booster effect (baseline to 14-day follow-up change=0.52 points, 95% CI=0.15–0.88). Participants reporting prior therapy showed no intervention effects for immediate change (baseline to postintervention) and a group × time interaction (χ^2=7.7, df=1, p=0.006; ES=22%) for booster effect (baseline to 14-day follow-up change=0.42 points, 95% CI=0.12–0.72). Unsurprisingly, participants who reported currently receiving therapy showed no immediate or follow-up intervention effects.

Figure 3 presents GEE model results for the SSOSH-3 scores. Baseline mean scores did not differ significantly

FIGURE 1. Geographic distribution of U.S. health care workers recruited by using Prolific, August–September 2021 (N=1,402)
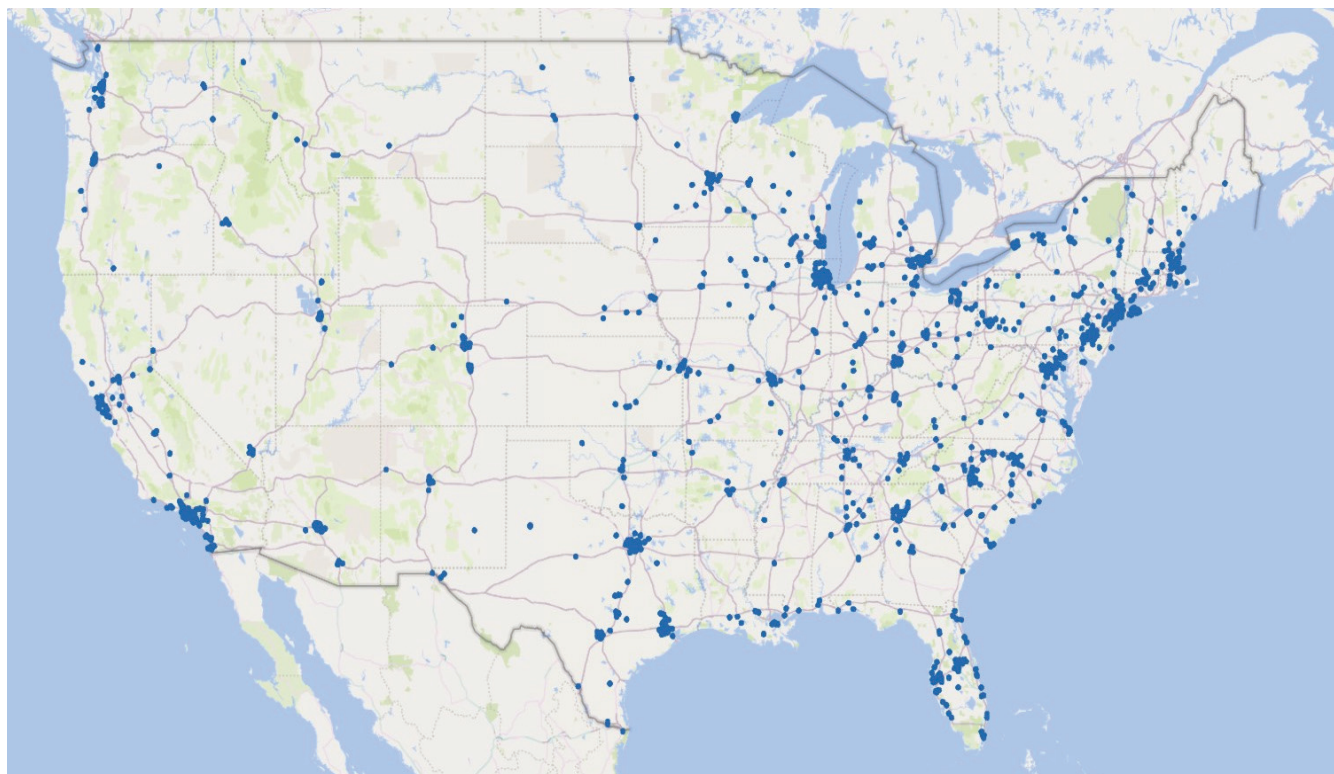
across groups. Analyses showed a group × time interaction (χ^2=18.1, df=1, p<0.001) for the immediate effect (baseline to postintervention change=0.33 points, 95% CI=0.18–0.48; ES=14%). We did not find a group × time interaction for the booster effect or lasting effects at the 14-day follow-up for the single video group or at 30-day follow-up for the booster video group.

DISCUSSION

Our RCT tested the efficacy of two versions (distinguished by the race of the protagonist) of a brief video intervention to increase treatment-seeking intention and reduce treatment-related stigma among 1,402 health care workers. In a 3-minute video, a Black or a White nurse described her struggles during the COVID-19 pandemic and how psychotherapy helped her to cope. As we hypothesized, both versions demonstrated immediate increases in reported treatment-seeking intention and decreases in treatment-related stigma compared with the control condition. A similar immediate increase in treatment-seeking intention occurred in the booster group 14 days later. These findings replicated the results of our exploratory study (20). We found no effect for the race of the protagonist in the intervention video. To explore the impact of race-ethnicity on intervention effects, future studies should compare two videos, one featuring a generic script without specific reference to racial-ethnic identity and one highlighting

intersectional racial-ethnic elements of the protagonist's identity (29, 30).

The current study confirmed and extended our pilot findings in important ways. First, we tested two brief videos, altering the race of the video's protagonist, thus increasing both internal and external validity. Second, a subgroup of participants who had never sought or received treatment showed the most significant change in treatment-seeking intention, suggesting a greater need for intervention in this group. Third, recruiting a larger cohort (N=1,402 vs. 350 participants) allowed us to find an immediate effect not only in treatment-seeking intention but also in treatment-related stigma. Last, we used a different online method to recruit participants, thus increasing generalizability.

What is the meaning of changing treatment-seeking intention? We found small to medium effect sizes for increasing treatment-seeking intention and reducing treatment-related stigma. A previous meta-analysis (31) showed a partial correlation between changes in intention and behavior; specifically, a medium-to-large change in intention led to a small-to-medium change in behavior. However, research on treatment seeking has thus far been restricted mostly to intention and has mostly not examined behavior. It is possible that increasing treatment-seeking intention and decreasing treatment-related stigma may open a window of opportunity, even if briefly, to facilitate treatment-seeking behavior. There is a crucial difference between

FIGURE 2. Effect of a brief video intervention on treatment-seeking intention over time, by experimental group[a]
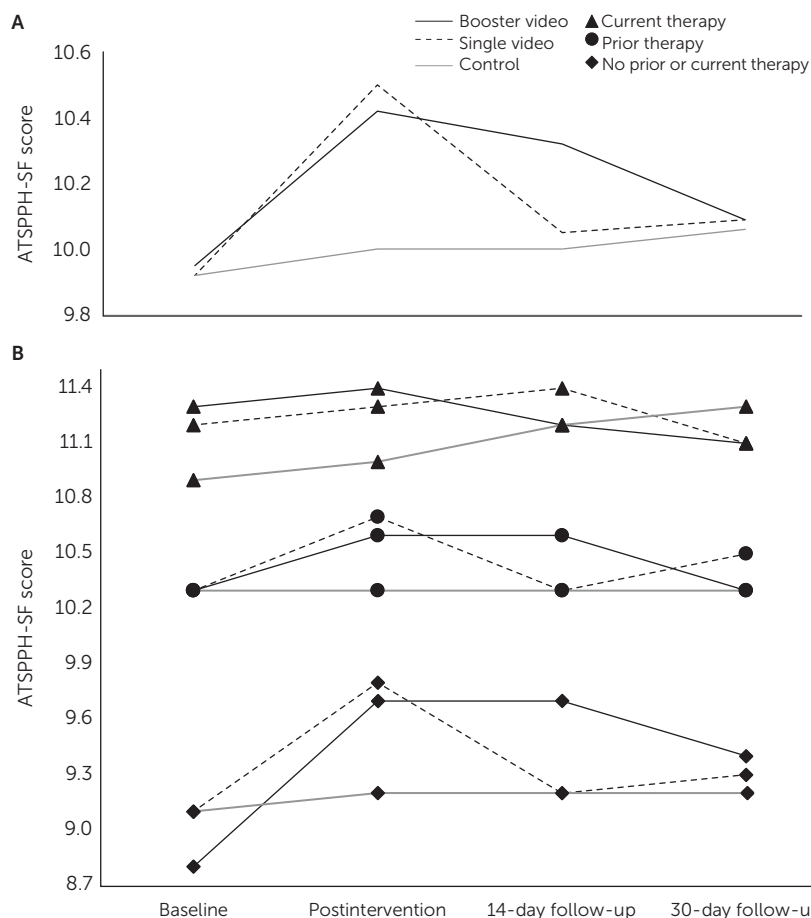
[a] A: baseline, postintervention, and follow-up scores on the Attitudes Toward Seeking Professional Psychological Help Scale–Short Form (ATSPPH-SF). B: baseline, postintervention, and follow-up ATSPPH-SF scores by response to the question, "Have you sought psychological counseling?" Total scores range from 3 to 12, with higher scores indicating higher treatment-seeking intention (3, disagree; 6, partly disagree; 7.5, neutral; 9, partly agree; 12, agree).

treatment-seeking intention and treatment-seeking behavior, and no study has yet assessed the effect of brief video-based interventions on treatment-seeking behavior among health care workers. To examine the meaning of change in intention, future studies should provide a measurable link to treatment referrals.

We found no extended effect of the brief intervention: effects did not last at the 14-day follow-up in the single video group or at the 30-day follow-up in the booster video group. These findings are consistent with those of other intervention studies (32–34) among health care workers, which mainly tested educational programs and showed no lasting effects. How might these effects be improved? First, personalizing the video to the viewer (i.e., matching sociodemographic characteristics) might heighten the viewer's identification with the protagonist and emotional engagement. Previous studies (16, 20, 35), including our own, showed that shared characteristics (e.g., gender, race-ethnicity, occupation) between viewers and video protagonist increased the

intervention effect. For example, we previously found greater effects among nurses who watched a nurse protagonist. Second, the short-term increase in treatment-seeking intention creates an opportunity to link health care workers to mental health services. Perhaps interventions should focus on facilitating an immediate change in treatment-seeking behavior rather than on the durability of the video's effect on intention (e.g., by adding online access to a referral to crisis counselors). Analysis of short-video marketing (36) has shown that short-video platforms that introduce a mechanism to actualize the desired change in intention (e.g., a linkable shopping cart on commercial advertisements) significantly increase video efficacy compared with the same video without such a mechanism.

Although the brief video intervention yielded immediate and booster effects for treatment-seeking intention, it had an immediate effect only after the first viewing for treatment-related stigma, not after the booster. One explanation lies in wording differences in the two scales. The ATSPPH-SF items use third-person subjects and pronouns (e.g., "a person") or the modal verb "might," thus presenting mental health issues as merely theoretical (e.g., "A person with an emotional problem is not likely to solve it alone" and "I might want to have psychological counseling in the future"). In contrast, SSOSH-3 items use first-person pronouns and describe negative aspects of a presumed existing problem (e.g., "It would make me feel inferior to ask a therapist for help"), thus creating an emotional burden that may hinder engagement and attitudinal change.

This study had several limitations. First, crowdsourcing platforms are limited by their populations, which might differ in terms of sociodemographics from the total U.S. health care worker population, thus limiting generalizability. For example, 12% of participants described themselves as Hispanic, 73% as non-Hispanic White, 6% as non-Hispanic Black, and 6% as non-Hispanic Asian, all of which diverge from percentages in the overall U.S. 2020 census population (16% Hispanic, 64% non-Hispanic White, 12% non-Hispanic Black, and 5% non-Hispanic Asian). Second, we assessed treatment-seeking intention, a measure possibly subject to social desirability (37). Unfortunately, no research to date, including our own, has measured effects on treatment-seeking behavior. Finally, our study found transient immediate and booster effects; future studies should clarify and attempt to enhance the durability of effects. Nonetheless, it is promising that a very brief

intervention can modify treatment intention and treatment-related stigma.

CONCLUSIONS

This RCT replicated and extended our pilot findings, showing effects of two versions of a brief social contact–based video intervention on treatment-seeking intention. A 3-minute online video effectively increased immediate treatment-seeking intention and reduced treatment-related stigma, albeit without lasting effects, especially among health care workers who had never sought treatment. Educators, employers, and employee assistance programs should consider using such easily administered interventions to proactively encourage health care workers to seek help and should provide mental health treatment resources to those who need them. Future studies should examine whether these brief interventions, when linked to referrals, can foster immediate behavioral change.

FIGURE 3. Effect of a brief video intervention on treatment-related stigma over time, by experimental group[a]
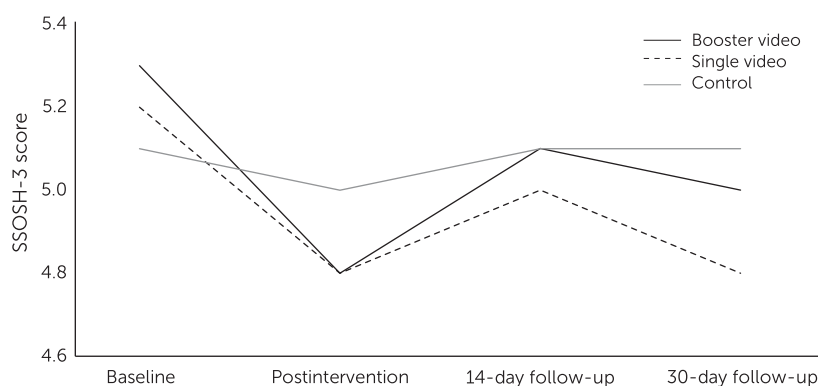
[a] Total scores on the ultra-brief Self-Stigma of Seeking Help scale (SSOSH-3) ranged from 3 to 15, with higher scores indicating greater stigma.

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