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Suicide prevention via telemental health services: insights from a randomized control trial of crisis response plan and self-guided safety planning approaches

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Abstract

Background Although telemental health can make suicide prevention treatments more scalable and accessible, limited evidence demonstrates successful reductions in suicidality when interventions are administered through telehealth platforms. To address this limitation, the current work investigated the effects of two suicide prevention treatments – a clinician-guided *Crisis Response Plan* and a *self-guided Safety Planning* approach.

Methods After completing the screening process, 82 participants with high suicide ideation and/or a lifetime history of suicidal behavior were randomly assigned across the two groups. Trained research clinicians administered the interventions using a videoconferencing platform. After the intervention delivery was complete, participants reported the therapeutic alliance they experienced with their clinician using an online survey. Participants also reported their overall suicidality 45 days after receiving the intervention. In addition, participants' perceived usefulness of the received intervention and actual use of the plan were recorded. Linear and logistic regression models predicted how suicidality, perceived utility, and actual use of their intervention protocols varied depending on the high (Crisis Response Plan) versus low (self-guided Safety Planning) level of clinician-led collaboration the two treatments entailed.

Results Both Crisis Response Plan and self-guided Safety Planning were found to lower suicidality after receiving them via telehealth services. At the same time, those who received the Crisis Response Plan (the more collaborative

The current manuscript reports data that were collected as part of a larger Randomized Control Trial project. Only one publication has been reported from this project till now that had questions different from the current manuscript and was focused on the immediate impacts of the RCT on suicide ideation, which was recently published (Lohani et al., 2024). The research questions, data, analyses, and reported results in the current manuscript are unique and have not been published elsewhere.

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form of therapy) reported experiencing a stronger therapeutic alliance with the clinician, utilizing the plan more often and perceiving it as more useful. These findings demonstrate the additional benefits of adopting a more collaborative approach because of its effectiveness and perceived utility, which has implications for suicide-related distress reduction in the short and long term.

Conclusions Evidence from this randomized control trial suggests that Crisis Response Plan is a suitable candidate for delivering suicide prevention via telehealth platform because of its effectiveness in reducing suicidality and its collaborative approach to building a strong therapeutic alliance, perceived usefulness, and actual utility in everyday life.

Trial registration This paper was part of a registered RCT: https://clinicaltrials.gov/study/NCT04888845. Registration date: Date: 2021-04-22.

Keywords Telemental health intervention, Crisis Response Plan, Self-guided Safety Planning

Background

Every year approximately 700,000 individuals die due to suicide, but it can be prevented with timely and effective treatments [1]. Despite advancements in telehealth, mental health treatment for suicide is delivered primarily in person within clinical settings. Although telehealth can make suicide prevention treatments more scalable and accessible, limited studies show that suicide prevention treatment can be successfully implemented via telehealth [2]. To bridge this gap in understanding, the current work investigated the effects of two suicide prevention treatments delivered via telehealth services.

Advancements via telehealth

Telemental health utilizes telecommunications and videoconferencing platforms to boost the availability of professional mental health services [3]. Innovation in healthcare via telehealth has enabled the use of videoconferencing and mobile wireless sensors, giving patients more flexibility in receiving medical care [4]. An important obstacle that telehealth can help overcome is the geographic distance from healthcare and the issue of transportation and mobility. Indeed, telehealth has helped reduce costs and time investment related to in-person hospital visits [4, 5]. A good example is the rural and suburban population, where access to health care can often be limited [6]. Patients in rural areas no longer need to live close to healthcare providers to receive services [7]. Another huge application of telehealth was during the COVID-19 pandemic, when telehealth was the preferred medium for providing healthcare during outbreaks [8, 9]. Overall, telehealth has been a practical and cost-efficient way to provide support during the pandemic.

Telehealth is becoming a useful tool for receiving mental health services specifically [10]. Despite the convenience of receiving treatment virtually, originally designed for in-person implementation may not be effective via telehealth. Focusing specifically on suicide interventions, it is possible that the comfort of receiving treatment in-person does not necessarily transfer to telehealth services. Additional research is therefore warranted to assess the effectiveness of suicide prevention treatments delivered via telehealth. We particularly focus on videoconferencing platforms to deliver interventions.

Suicide prevention approaches

Among suicide prevention protocols, promising candidates for telemental health services are those treatments that can be delivered promptly during acute moments when a crisis may be emerging, thereby lowering the suicidality of individuals. Safety planning type interventions are designed to address acute triggers of emotional distress that could unfold into a suicide crisis [11, 12]. Their efficacy in reducing suicide-related distress is attributed to reducing cognitive load, focusing away from personal triggers toward building connections with support systems, and facilitating autonomy and competence, thereby reducing impulsivity and suicidal behaviors [11]. Although preliminary evidence suggests safety planning type interventions may reduce suicidal behaviors [12], the overall quality of supporting evidence is low [13], highlighting the need for further research. In the current study, we focus on two types of utilized interventions – self-guided Safety Planning [14] and Crisis Response Planning (CRP) [15].

Self-guided safety planning (SP; [14]) is a structured tool that is modeled on the Safety Planning Intervention [16], a commonly used safety planning type intervention, but it is self-administered by the participant. Indeed, two forms of SPI exist, with one being more collaborative and the other being self-guided by the patient. The *self-led Safety Planning Intervention* uses a templated, fill-in-the-blank form to help patients identify early warning signs of a suicidal crisis, relevant coping strategies, sources of social support, professional and crisis services, and strategies for limiting access to possible suicide attempt methods [16]. A self-administered web-based digitized version of SPI has been developed to reduce mental health professionals' time and improve the standardization of the protocol [17]. Preliminary research with the self-directed,

web-based version of SPI found the intervention to be feasible and acceptable as "an adjunct to clinical contact" [17]. Given that self-guided SP has been adapted in a web-based version with support for its effectiveness when self-directed by the patient, it is a good intervention to test for implementing suicide prevention support via telehealth and was thus selected in the current study. Indeed, self-guided safety plan templates are commonly utilized in real-world settings, such as emergency departments, when collaborative and time-consuming treatments are not logistically possible. Self-guided safety plans are utilized because they have been found to reduce suicide attempts among emergency department patients with suicide ideation [18]. The current study used the same approach as modeled in past work [14, 17]. Note that we also selected the self-guided safety plan approach based on clinician descriptions of how they actually implement the intervention in their clinical work.

In contrast to self-administered interventions, Crisis Response Planning (CRP) [15] involves a more collaborative approach wherein a clinician and patient work together to create a customized plan for identifying and effectively responding to periods of heightened vulnerability to suicide. The plan is typically written on an index card that can be easily accessed by the patient when needed. CRP includes several key components: (1) personal warning signs indicative of a potential suicidal crisis; (2) self-regulation strategies to manage or distract from emotional distress (e.g., distraction or calming); (3) thinking of personal reasons to live; (4) ways to seek support from others; and (5) access to professional and crisis services. Multiple randomized clinical trials support the effectiveness of CRP in reducing suicidal ideation and suicide attempts [19–21]. Randomized clinical trials using CRP-like approaches (e.g., "crisis cards" or "coping cards") have shown similar reductions in suicide attempts (e.g [22]). A recent randomized control trial testing the effectiveness of CRP delivered via telehealth found that, on average, CRP reduced suicide ideation during the two weeks after receiving therapy, thereby providing the first evidence supporting the effectiveness of a telehealth version of CRP [21].

A core difference between CRP and self-directed SP is the level of clinician-led collaboration that is available to the client. Collaborative approaches are suggested to provide the support needed for suicidal individuals to develop effective ways to handle their warning signs and avert suicidal crises [23]. Another element of clinician-led collaboration is nurturing the therapeutic alliance being built with the patient. Based on established psychotherapy research, a clinician-patient alliance could be a key determinant of desirable therapy outcomes (for a review, see [24]). A positive working alliance with the clinician can act as a buffer for high-risk individuals, which may in turn help reduce suicide ideation and attempts [24, 25]. Thus, interventions specifically focused on developing clinician-patient collaboration may be more effective in treating suicidality.

Presumably, safety planning-type interventions may be more effective when patients perceive their established plan (either clinician-guided or self-guided) to be useful in managing distress and may actually use it in their everyday lives when warning signs appear. Taking the example of a CRP study, 80% of individuals still had their plan with them 6-months after receiving the interventions [19], suggesting that at-risk patients perceived some value in having their plan with them to deal with suicidal urges. Furthermore, more frequent use of CRP is associated with significantly reduced suicide ideation [19], demonstrating that patients must perceive it to be useful. However, it remains to be understood if the level of collaboration while developing the plan may significantly affect the use of safety planning-type interventions. Given that CRP is more collaborative, it is possible that patients may perceive it to be more useful than self-guided plans like SPI. However, no previous study has directly compared patients' perceptions of therapeutic alliance or treatment usefulness across safety planning-type interventions, which was addressed in the current study.

The current study

The current project was conducted with the goal of making suicide prevention interventions accessible to a national sample via telemental health approaches. A completely virtual platform was used to administer this study, with participants receiving all assessment and treatment via videoconferencing platforms and internet-based surveys. Notably, there are several ways of implementing safety planning-type interventions, including self-guided vs. clinician-facilitated, as reported in multiple studies [12, 26, 27]. This was the motivation to investigate how self-guided compared to clinician-led interventions effectively reduce suicidality.

Specifically, the current study aimed to further findings from the past study [21] and address two goals. First, compare the therapeutic alliance experienced by clients undergoing CRP vs. self-guided SP. The strength of a working alliance may be an inherent mechanistic difference between the two safety planning interventions that remains to be directly tested. Given the collaborative nature of CRP [19, 20], it was predicted to have a higher clinician-based therapeutic alliance. Second, to compare the effectiveness of telehealth-based suicide prevention treatments in reducing suicidality after 45 days of receiving the interventions. Our hypothesis was that similar to the effects demonstrated in face-to-face interventions [14–16], both treatments would be effective in lowering

suicidal symptoms when received via telehealth services. Given the collaborative nature of CRP treatment with a clinician-guided approach to devising a mitigation plan for dealing with warning signs, we expected it to be perceived as more useful than self-guided SP by the participants.

Methods

Participants

This study recruited a national sample from the United States. Participants were recruited nationally by advertising this study on electronic postings on online public bulletin boards and newsgroups (e.g., Redditt, Facebook, etc.). The consort diagram (Fig. 1) presents the screening process for potential participants before 82 participants were eligible and interested in participating in this completely online intervention study. Participants received compensation of a $20 Amazon gift card for completing the 45-day follow-up after receiving the intervention. All study procedures were in accordance with the protocol approved by the Institutional Review Board at the University of Utah. All participants read and digitally signed the consent form to provide their consent to participate in the study voluntarily.

Eligibility criteria

The eligibility criteria included adults between the ages of 18 and 50 who were able to communicate in English. In addition, to be eligible, individuals should have reported suicidal ideation in the preceding week (Scale for Suicidal Ideation; [28]) and as well as or, they may have a lifetime history of suicidal behavior, assessed with the Self-Injurious Thoughts and Behaviors Interview-Revised (SITBI-R; [29]). The study's exclusion criteria included the

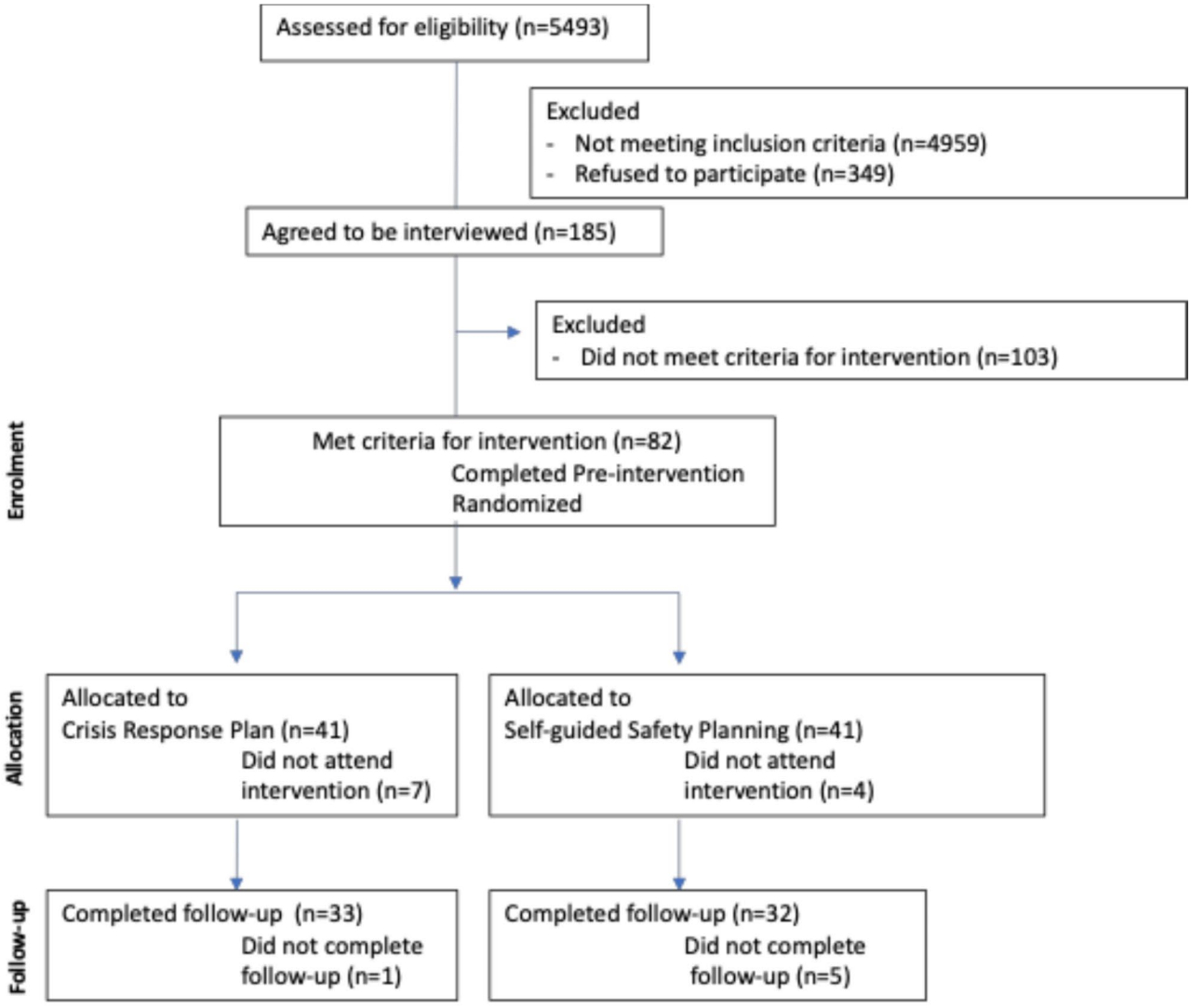

Fig. 1 A consort diagram describes the details of the randomized control trial, which randomly assigned a high-suicidality national sample to the two interventions

existence of any medical condition that would limit individuals' ability to give informed consent. Furthermore, if individuals were receiving alternative therapies to suicide prevention, they were not eligible.

Measures

Scale for suicide ideation (SSI)

The SSI [28] is a 19-item measure that is used to assess the suicidality of individuals based on their wish to live, the intensity of suicide ideation, and suicidal behavior in the previous week. Participants are asked to rate their experiences on a 3-point Likert scale. A composite of the items is created, and the higher the score, the higher the intensity of suicidality. For the baseline SSI measurement, the range of values ranged between 3 and 28 with good Cronbach's alpha=0.902. For the 45-day follow-up assessment, SSI ranged from 0 to 26 (descriptive in the Results section); Cronbach's alpha=0.868.

Working alliance

Participants were given the Working Alliance Inventory—Short Form, a 12-item survey rated by the patient to assess the strength of the therapeutic alliance between the participant and the clinician [30]. The sum of all items is used to create a composite score, and the higher the score, the better the therapeutic alliance. The range of values was between 22 and 60 (M=46.47, SD=9.52) and had excellent reliability (Cronbach's alpha=0.927).

Remembered the plan

All participants were also asked, "When you met with the therapist, you had worked on a plan that you could follow when a crisis may be developing. Do you remember that plan?" Participants reported "Yes" or "No" to the question. This question was adopted from past work [19].

Adopted the plan

Adapted from past work [19], all participants were asked, "Have you used that plan at all since you met with the therapist?" Participants reported "Yes" or "No" to the question.

Perceived treatment usefulness

At the 45-day follow-up, we also asked participants to rate how useful the intervention they received was for themselves. Adapted from past work [31], participants were asked, "How useful would you say this plan was (0=not at all useful, 10=extremely useful)?"

Randomization

This study used stratified randomization to control for confounding effects of biological sex and lifetime history of suicide attempts due to their known effect on suicidality. Accordingly, participants were randomized to the intervention after balancing for biological sex (female or male) and lifetime history of suicide attempts (none, one, or two plus). The first author randomized the participants and did not have any contact with or information about participants to avoid biases.

Interventions

Crisis response plan

The CRP [15] includes a collaborative effort between the clinician and the participant. First, the clinician explained the purpose of CRP intervention and provided an overview of the handwritten plan. Next, the clinician invited the participant to make a collaborative plan to identify personal warning signs and strategies to deal with moments of crisis. The clinician plays an active role in guiding the participant in coming up with relevant options during each stage of the plan development. After completing the plan, the participant and clinician reviewed the plan to check for unrecognized barriers to accomplishing the plan. The study clinician concluded the session by encouraging the participant to utilize the plan frequently.

Self-guided safety planning

This intervention involved the clinician giving the participants a digital copy of the self-guided SP [14, 17] created using a Qualtrics platform and providing an overview of the plan. Given that this plan is self-guided, the clinician requested participants to complete the digital form themselves but ask if any questions came up. After the participant had completed the plan, the clinician reviewed it to ensure its suitability for accomplishing the goals of self-guided SP. The clinician wrapped up the session after encouraging the participant to utilize the plan frequently.

Clinicians

All clinicians in the study were thoroughly trained in both therapies. Research clinicians included a licensed clinical social worker (who conducted 14 self-guided SP and 10 CRP interventions), an unlicensed clinical social worker (who was in training to become a licensed clinical social worker and conducted 5 SP and 4 CRP interventions), a PhD student of counseling psychology (who performed 21 SP and 26 CRP interventions), and a postdoc counseling psychologist (who conducted 1 SP and 1 CRP interventions). To ensure reliable interventions across research clinicians, fidelity monitoring was performed by a senior licensed clinician (JB) who reviewed the interventions for all research clinicians. In addition, the research clinicians met each week for case consultation, fidelity monitoring, and supervision.

Procedure

The study was conducted between May to December of 2021. All study procedures were conducted using telemental health-based methods, including videoconferencing and internet-based surveys. Those who were interested in the study were given an online screening survey to assess preliminary eligibility to be considered for the study. See the consort diagram for details. Among those who agreed to participate in the study and did not have any exclusion criteria, their suicidality in the preceding week was assessed using the SSI [28]. The eligible participants completed the approved consenting process. They were randomized between the two interventions – Crisis Response Plan and Safety Plan Intervention. Participants received the intervention about two weeks after being eligible to participate in the study. The interventions were received completely online via video conferencing format. Right after the participants received the intervention, they were sent a survey link to fill out the Working Alliance Inventory [30]. In order to assess the possible prolonged effect of the intervention received, participants were assessed 45 days after receiving the intervention. Follow-up suicidality was assessed again using SSI (that was experienced by participants during the preceding week). At the completion of the study, all participants received supplementary mental health resources for additional support. All surveys were conducted online via the Qualtrics platform.

Table 1 Baseline demographic and sample characteristics ($N=82$)

	Self-guided Safety Planning ($n=41$)	Crisis Response Plan ($n=41$)
Sex, n (%)		
Male	12 (30)	12 (29.3)
Female	28 (70)	29 (70.7)
Gender, n (%)		
Male	12 (30)	10 (24.4)
Female	25 (62.5)	25 (61)
Transgender	1 (2.5)	3 (7.3)
Genderqueer / Nonbinary	2 (5)	1 (2.4)
Other	1 (2.5)	2 (4.9)
Sexual Orientation, n (%)		
Straight / Heterosexual	21 (52.5)	17 (41.5)
Gay / Lesbian	0 (0)	2 (4.9)
Bisexual	13 (32.5)	13 (31.7)
Queer	2 (5)	3 (7.3)
Other	1 (2.5)	3 (7.3)
I don't know	2 (5)	0 (0)
Race, n (%)		
White	21 (52.5)	24(58.5)
Black	8 (20)	7 (17.1)
Asian	3 (7.5)	5 (12.2)
American Indian / Alaskan	3 (7.5)	0 (0)
Multiracial	1 (2.5)	4 (9.8)
Other	4 (10)	1 (2.4)
Attempter Group, n (%)		
0	8 (19.51)	12 (29.27)
1	12 (29.27)	12 (29.27)
2+	19 (46.34)	17 (41.46)
Age, M (SD)	32.48 (8.512)	30.88 (9.296)

Data analysis plan

The analysis plan accounted for the experimental design, and the type of outcome measure was assessed (i.e., continuous or binary). Suicide ideation (a continuous outcome scale) was assessed at baseline and follow-up (a repeated measure factor), while the intervention was always a between-subjects factor. Thus, a mixed ANOVA was conducted. Another outcome, the therapeutic alliance assessment was collected once right after the intervention, and it was on a continuous scale, so a one-way between-subjects ANOVA was run to examine the effect of the intervention. The perceived usefulness was assessed 45 days after the intervention, and the outcome was continuous, so one-way between-subjects ANOVA was conducted. However, the plan recollection and treatment adoption outcomes were assessed 45 days after the intervention. Because they both were binary outcomes, logistic regression models were run. RStudio was used to conduct all analyses.

Results

Table 1 presents the demographic and sample characteristics of participants randomized to CRP vs. self-guided SP. The intent-to-treat approach was utilized, and analyses were conducted using all available data regardless of dropout.

A comparison of the effect of CRP vs. self-guided SP on suicidality

The Scale of Suicide Ideation; SSI [28] was assessed at the baseline and the follow-up to compare the effect of the intervention. Thus, to examine the effect of intervention over time, a mixed ANOVA was run with time (2: baseline and follow-up) as the within-subject factor and treatment (2: CRP vs. self-guided SP) as the between-subjects factor with SSI scores as the outcome. A main effect of time was found, $F(1, 56)=10.21$, $p=.002$, $\eta_p^2 = 0.154$. The two treatments had no significant difference, $F(1, 56)=0.141$, $p=.708$, $\eta_p^2 = 0.003$. The time x treatment interaction was not significant, $F(1, 56)=0.098$, $p=.755$, $\eta_p^2 = 0.002$. This implied that for both treatments combined, the suicidality (via SSI scores) reduced from pre-treatment (CRP: $M=16.966$, $SE=1.135$; self-guided SP: $M=17.793$, $SE=1.135$) to follow-up (CRP: $M=13.793$,

SE=1.253; self-guided SP: *M*=13.931, *SE*=1.253) after receiving treatment.

A comparison of the effect of CRP vs. self-guided SP on building therapeutic alliance via Telehealth

The two interventions were compared for their effect on building therapeutic alliance (measured via the Working Alliance Inventory [30]). A one-way ANOVA was conducted with treatment (2: CRP vs. self-guided SP) as the predictor and working alliance score as the outcome. Those participants who received CRP (*M*=51.32, *SE*=1.74) reported significantly higher scores on the Working Alliance Inventory than the self-guided SP group (*M*=43.45, *SE*=1.62), F (1, 52)=10.934, p=.002, η^2=0.174.

A comparison of the effect of CRP vs. self-guided SP on recollection of the received treatment

A logistic regression model was also run to compare the effect of interventions on recollection of the received treatment plan. The logistic regression model with treatment as the predictor was not statistically significant, $\chi^2(1)=0.439$, p=.508. Both groups remembered the plan they developed during the intervention. For CRP, 83.87%, while for self-guided SP, 89.65% remembered the plan they had developed with their therapist.

A comparison of the effect of CRP vs. self-guided SP on adoption of treatment

Logistic regression was also run to determine if participants had adopted their treatment plan after receiving the intervention. The logistic regression model was statistically significant, $\chi^2(1)=4.408$, p=.036. A significant effect of treatment type was found, *B*(*SE*)=1.163(0.568), Wald=4.194, p=.041. The odds of using the CRP approach were 3.20 times higher than for self-guided SP. For CRP, 77.42% of participants reported using the plan in the 45-day period. However, 51.72% of participants used the plan for the self-guided SP condition.

A comparison of the effect of CRP vs. self-guided SP on the perceived usefulness rating of the treatment

To compare how useful the participants found the plan across the two interventions, a one-way between-subjects ANOVA with treatment (CRP vs. self-guided SP) as the predictor was significant, F (1, 58)=5.962, p=.018, η^2=0.093. The CRP plan was rated as significantly more useful (*M*=6.87, *SE*=0.526) than the self-guided SP (*M*=5.07, *SE*=0.516).

Discussion

Evidence-based telemental health options for suicide prevention can provide access to lifesaving mental health services in a timely manner. The current work evaluated the effectiveness of two common safety planning therapies, CRP versus self-guided SP, when administered through a telemental health platform. Both CRP and self-guided SP were found to lower suicidality (assessed by the standardized and commonly adopted Scale for Suicide Ideation [28]) after receiving safety plan interventions via telehealth. At the same time, those who received CRP (the more collaborative form of therapy) reported experiencing a stronger therapeutic alliance with the clinician, utilizing the plan more often and perceiving it as more useful. These findings demonstrate the additional benefits of adopting a more collaborative approach because of its effectiveness and perceived utility, which has implications for suicidality reduction in the short and long term.

In a recently published study [21], it was found that both CRP and self-led SPI were effective in reducing suicide ideation. Follow-up data were collected 45 days from participants receiving these therapies to examine their effects beyond immediate impacts. To interpret the impact of collaborative vs. self-guided efforts, a comparison of participants' perceptions and use of their suicide prevention plan across the two safety planning-type interventions was made. It was found that participants who developed the clinician-guided Crisis Response Plan utilized it about 3 times more than those who developed a self-guided Safety Plan Intervention. An explanation for this could be the perceived higher perceived use of the CRP relative to self-directed SP. Furthermore, in line with our hypothesis, participants rated a higher therapeutic alliance with their telehealth clinician when they received CRP than the self-guided SP. A stronger therapeutic alliance early in therapy can have a robust effect on at-risk individuals. For instance, previous work has found therapeutic alliances with clinicians to reduce suicide ideation and attempts [19, 24, 25, 31]. Collaborative interventions may ease the cognitive load and distribute tasks as well as feel psychological support, all of which are found to improve psychological outcomes [19]. In the current study, no significant differences in suicidality were found across CRP vs. self-guided SP after 45 days of follow-up; however, it is possible that the benefits of CRP that led to a higher therapeutic alliance may be experienced immediately after receiving the intervention, or in the short-term, as well as longer-term impact (than assessed in the current work). Based on these results, additional research focused on understanding how various approaches to safety planning-type interventions (such as collaborative Safety Planning Interventions) can impact results is warranted. Further work is also needed to systematically and dynamically track the short and long-term effects post-intervention to learn about the potential benefits of more collaborative interventions like CRP.

Both treatments are recommended strategies for managing suicidality (e.g [11]). The current findings show the effectiveness and utility of CRP and given its rapid reduction in suicidality, its applicability to telemental health services. These findings are particularly relevant to communities that do not have access to reliable health services, such as diverse, underserved, and vulnerable populations [5]. Rural communities are quite receptive to telehealth to receive mental health services but still face challenges in receiving proper care [6, 32, 33]. Therefore, further work is needed to overcome barriers to making suicide interventions available more broadly via telehealth.

The current findings should be interpreted with the following limitations and future directions in mind. First, additional information about the frequency of urges or warning signs would be helpful in understanding the real-world utility of safety plans. Second, the current study utilized adults with a cutoff of 50 years old to ensure that the participants were comfortable with a videoconferencing platform to receive therapy (to avoid it as a confounding variable). Therefore, the findings cannot be used to make inferences across the lifespan, and future work should extend this work to other age groups, such as adolescents and individuals from historically marginalized backgrounds, for whom suicide is a major cause of mortality [1, 34]. Similarly, a larger representative sample would increase the generalizability and reliability of these findings. Third, it is possible that having different clinicians provide different interventions could vary from one another, especially when building a working alliance with the participant. However, fidelity monitoring was conducted to ensure the quality of the interventions was consistent. Fourth, the current findings and past work recommends using a collaborative instead of a self-guided approach. However, implementation of safety planning has been found to vary widely across clinicians and healthcare settings, and this study considered only two of potentially multiple clinical approaches. Thus, further work is needed to examine other suicide prevention approaches. Finally, to make suicide prevention interventions via telehealth accessible and acceptable, awareness and engagement at the community level are integral to overcoming the stigma around suicide and mental health support in general [4].

Together, the current findings are encouraging and suggest that both CRP and self-guided SP can be effectively transported to telemental health technology. At the same time, CRP showed additional benefits as indexed by a higher therapeutic alliance, adoption, and perceived use of their suicide mitigation plan. Given the advancements in telepsychiatry interventions, this is a promising finding suggesting that CRP can be delivered via telehealth, making suicide prevention efforts more scalable, cost-effective, and more easily accessible. Furthermore, the results highlight the importance of collaboration and building a therapeutic alliance with the clinician to effectively manage moments of emotional crisis, thereby lowering suicidality and improving everyday wellbeing.

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Consent to participate
All participants provided their informed consent to participate in the study voluntarily, in accordance with the approval protocol by the Institutional Review Board at the University of Utah.

Authors' contributions
ML and CJB were involved in conceptualization. ML, JCB, and SAL were involved in getting funding for this work. ML, JCB, JSE, SD, and SPF were involved in the investigation, methodology, project administration, and supervision. JCB did the fidelity monitoring. ML wrote the original draft. CJB, SPF, and AD reviewed it.

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Data availability
Data will be made available on request.

Declarations

Ethics approval and consent to participate
Ethics approval was received from the Institutional Review Board at the University of Utah in accordance with the Declaration of Helsinki. Consent obtained from all of the participants was informed.

Consent for publication
Not applicable.

Competing interests
Scott Langenecker has an interest in Secondary Triad, Inc. All other authors declare that they have no conflicts of interest.

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