Original Article

Effect of phone call versus face-to-face follow-up on recurrent suicide attempts prevention in individuals with a history of multiple suicide attempts

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Abstract

Background: To evaluate the efficacy of different ways of communications on prevention of suicidal reattempt, we compared the efficacy of phone call versus face-to-face follow-up in patients with previous attempt.

Materials and Methods: In a randomized controlled clinical trial, 55 suicide reattempters who were admitted to the poisoning emergency were divided into phone call (29 patients) and face-to-face (26 patients) groups randomly. They were followed at 8 occasions: 2nd and 4th weeks, and the 2nd, 3rd, 4th, 5th, 6th, and 8th months. The suicidal reattempt, suicidal thought, hope, and interest of the patients were assessed on each occasion, and the patients were guided to visit by a therapist, if needed. The findings were analyzed by Mann–Whitney, Chi-square, Cochran, Friedman, and independent *t*-tests using SPSS 20.

Results: The status of "hope" and "interest" improved in both groups, but it showed more significant difference in the face-to-face group. Suicidal thoughts in both groups decreased over time, and this was more significant in the face-to-face group. However, we did not found any significant difference in the frequency of the suicidal reattempts between two groups.

Conclusion: Face-to-face versus phone call follow-up of suicide attempters can significantly alleviate suicidal thoughts and improve hopes and interests.

Key Words: Face to face, follow-up, phone call, recurrent, suicide attempt

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INTRODUCTION

Suicide attempt is a serious problem in public health. Suicidal behavior causes a significant range of negative consequences including increased likelihood of suicide reattempt and death.[1,2] Suicide is one of the three leading causes of death between the ages of 15 and 34 years, and it is one of the five leading causes of death in adolescence.[3,4] The World Health Organization estimates that every year approximately one million people die by suicide worldwide, which represents an annual global mortality rate of 16 per 100,000.[5]

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During 1 year after the suicide, 12–15% of the patients repeat nonfatal suicidal behavior and about 0.8–2.6% of this attempts are fatal.[1,6] Repeated suicide attempt is a very important risk factor for future attempt, but it seems that intervention is one of the most important measures for suicide prevention in individuals with previous attempts. Many suicide attempts occur in patients with mood disorders and many of these patients often do not follow a proper treatment process and are not cooperative, which is one of the factors that increases the risk of suicide reattempt.[7-10] This has many causes, some of which may be due to problems such as long patient wait times for the visit, the patient admissions process, as well as the lack of proper rapport.[9]

While there is abundant information about the epidemiology of suicidal behavior, there is little evidence about reducing the risk of suicide reattempts, especially randomized controlled clinical trials (RCTs), and it is difficult to assess the effects of proposed intervention strategies to reduce the reattempt rate among suicide attempters.[11-13]

A promising intervention in adults has been focused on maintaining relationships with people who attempted suicide. Some interventions that have been suggested for the prevention of reattempts are phone call follow-up, cognitive therapy, and dynamic interpersonal psychotherapy.[8,14,15]

Fleischmann *et al*. performed an RTC including a brief intervention and continued communication in addition to treatments as usual for suicide attempters in Brazil, India, Sri Lanka, and Iran. Compared with the treatment as usual (TAU as a control group), the intervention results reported a significant reduction in suicide attempts. Also, Brown *et al*. concluded that in a follow-up period of 18 months, face-to-face meetings were effective in the reduction of suicidal attempts in adults.[15,16]

Chen *et al*. in 2012 showed that in a follow-up period of 6 months, the risk of suicide in the group that received face-to-face intervention was significantly lower than the control group.[17] However, Johannessen *et al*. in 2011 concluded that in 12 months follow-up, no difference was observed in the risk of fatal and nonfatal suicide reattempts in the control group receiving TAU versus the intervention group (receiving face-to-face follow-up and social support).[18]

In a study by Hvid *et al*. in 2009, it was demonstrated that in suicidal patients who received face-to-face interventions with rapid response as a follow-up, the suicide rates were lower compared with the control group.[19]

Hassanzadeh *et al*. after a 6-month follow-up of suicide attempters who received TAU and brief intervention and contact (BIC) did not find any differences in the prevention of further suicide reattempt between two groups, but the BIC group tended to communicate and get support more than the TAU group patients.[20]

Wei *et al*. in a 12-month follow-up for people who had attempted suicide faced a lack of necessary cooperation in the cognitive therapy, and despite a little better cooperation in treatment in phone group, the intervention goals were not found, so researchers recommended further studies.[21]

Mousavi *et al*., after a 6-month period of phone call versus TAU follow-up after the last suicide attempt, did not find any difference in suicide reattempt between both groups, but there was clearly higher hope and lower suicidal thoughts in the intervention group, compared to the group with TAU.[22]

Berrouiguet *et al*. showed significantly reduced suicide risk in the intervention group compared to the control group after a period of continuous communication and sending short messages at regular intervals for 6 months. They concluded that this method cannot replace treatment but it can be counted as a complementary treatment beside other regimens, especially in patients that refuse treatment or do not want face-to-face visits or do not access treatment.[23]

Given the scattered above findings on the best ways to prevent the repetition of suicide attempts in various studies, lack of enough studies and interventions in our country patients and the importance of preventions in this cases, we performed a comparative study on the effects of phone call versus face-to-face communication on the prevention of suicide reattempt in patients with previous attempts.

MATERIALS AND METHODS

This study is a RCT with parallel sample of all men and women admitted to the poisoning emergency of the Noor Hospital (the university referral center of the province) in Isfahan, Iran, from January to May 2014. The study was approved by the Ethics Committee of the Research Department of the University and followed the declaration of Helsinki on Biomedical Research Involving Human Subjects. The inclusion criteria were:

- Men and women over 20 years
- Suicide attempts for at least 2 times
- Ability to understand the conditions of the study, ability to communicate, and informed consent to enter the study and signing the consent form

- The ability to communicate consistently at the places determined for follow-up
- Lack of dementia or severe cognitive impairment, based on DSMIV-TR criteria, that recognized during the initial interview by a psychiatry assistant
- Lack of threatening illness that requires prompts other medical interventions (such as emergency surgery).

The patients were excluded with:

- Change of address and telephone number and lack of new information
- Avoiding consecutive communications after the initial acceptance
- Death due to reasons other than suicide (based on the diagnosis of medical centers).

Randomized sampling performed. The sample size was 25 patients, based on the confidence level of 95%, $Z_1 = 1.96$, and $Z_2 = 80\%$, which means 0.84.

Intervention

At initial visit necessary information about study conditions, potential benefits, and hazards, and the method of follow-up and communication were explained to the participants and their companions by an assistant of psychiatry. Oral and written consent was received at the first meeting. A brief psychiatry and medical history was taken and the initial questionnaire was completed. The sample was randomly allocated into each of the two groups, i.e., "phone call" and "face to face" follow-up groups. Finally, 29 patients were in the phone call and 26 patients in the face-to-face group.[Figure 1]

The initial form included name, marital status, number of suicide attempts, job, education, suicidal thoughts, maps and plans, the most important current problems in life which caused suicide, likely psychiatric diagnosis, and the need for probable treatment, and/or intervention by psychiatric, psychologist, or social worker.

Each of the two groups received phone calls or face-to-face meetings by an assistant of psychiatry in the 2nd and 4th weeks and the 2nd, 3rd, 4th, 5th, 6th, and 8th months, so a total of 8 sessions were devoted to each individual. During each 20 min meeting, the patient's current mental status and warning signs such as suicidal thoughts, the last and new problems were appraised, the guides and ways to reduce stress were mentioned based on the patient's problems and his/her questions were answered. Then, the need to visit a therapist (a psychiatrist, psychologist, or social worker) was suggested if it was necessary, and the follow-up form was completed. The follow-up form included the patient's hope (as a spectrum), interest and motivation (as a spectrum), suicidal thought, plan and map, suicide reattempt between last session and now, the previous problems, new problems, results of visiting by recommended therapists–if had been done–and the need to refer to therapists again.

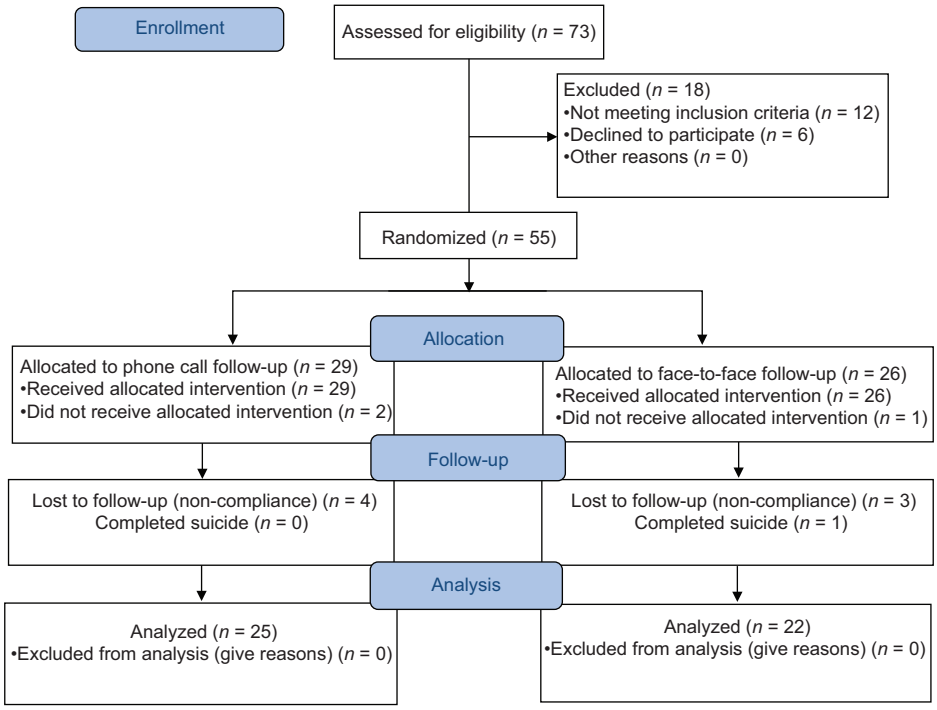

Figure 1: Consort statement

If there were any risks such as suicidal thoughts, necessary advice and guidance was offered to the patients and their families. In the face-to-face group, the follow-up sessions were arranged in the public health centers of the Isfahan province based on previous coordination with patients.

Statistics

The demographic properties of the patients were evaluated using descriptive statistics, and the frequency of suicide reattempts was compared in 8 months in the two groups. We used the independent *t*-test, Mann–Whitney, Chi-square (for the comparison of the suicide reattempts between the two groups), Cochran (for comparing two state variables measured at multiple sessions, the suicidal attempts, thoughts and map), and Friedman (for comparing multiple rating of the time-related measures of the "interest and hope"). The collected data were analyzed using SPSS 20 software (SPSS Inc., Chicago, Illinois, USA), and a significant level was considered as $P < 0.05$.

The ethical issues of the study were approved by the Medical Ethics Committee of Isfahan University of Medical Sciences, and the study was registered by the IRCT code of 2014110419806 N1 in the Iranian Registry of Clinical Trials.

RESULTS

We followed 55 patients with previous suicide history, in two groups, i.e., phone call (29 patients) and face-to-face (26 patients) group during 8 months. Table 1 shows the demographic properties and the past suicide history of the studied patients. There was no significant difference between the two groups in terms of age, gender, marital status, employment, education as well as economic, social, family factors. Furthermore, there was no significant difference between past suicide attempt records, the psychiatry problems, and the need to refer to a psychologist, psychiatrist, or social worker between the two groups ($P > 0.05$).

After 8-month follow-up, the last problems in both groups remitted significantly as time passed ($P \leq 0.001$), but the difference between the two groups was not significant ($P > 0.05$). In other words, the two methods were equally effective in alleviation of the patient's previous problems. In both groups, the trends of previous problems had no statistically significant difference ($P > 0.05$), but in terms of the status of new problems, the face-to-face follow-up group had recorded lesser new problems compared with the phone call follow-up group ($P = 0.030$) [Table 2].

Table 1: Demographic features and the suicide history of the two groups

Factors	Telephonic	Face to face	*P*
Age	27.07±7.79	29.69±7.73	0.21
Sex			
Male	2 (7)	5 (19)	0.236
Female	27 (93)	21 (81)	
Marital status			
Single	10 (35)	6 (23)	0.592
Married	15 (52)	17 (65)	
Divorced	4 (14)	3 (12)	
Job			
Worker	0 (0)	1 (4)	0.950
Employed	2 (7)	2 (8)	
Student	4 (14)	5 (19)	
Homemaker	13 (45)	9 (35)	
Unemployed	4 (14)	3 (12)	
Other job	6 (21)	6 (23)	
Education			
Elementary	2 (7)	6 (23)	0.185
High school	23 (79)	15 (58)	
License	4 (14)	4 (15)	
Higher	0 (0)	1 (4)	
Past suicide attempts			
Twice	22 (76)	14 (54)	0.189
2-5	6 (21)	11 (42)	
More than 5	1 (3)	1 (4)	
Suicide thought			
Yes	14 (48)	11 (42)	0.657
No	15 (52)	15 (58)	
Suicide map			
Yes	3 (10)	0 (0)	0.238
No	26 (90)	26 (100)	
Problems*			
Economic	7 (24)	3 (12)	0.317
Marital	13 (45)	13 (50)	
Family	8 (28)	4 (15)	
Other social	8 (28)	8 (31)	
Psychiatry	2 (7)	6 (23)	

*Some individuals in the study had several problems at the same time

The "hope" and "interest" of the patients were increased over 8 months of follow-up in both groups ($P < 0.001$). On the other hand, the step-by-step comparison between the two groups of hope and interest revealed that these two factors did not show a significant difference between the two groups in the 2nd week and 1st month ($P > 0.05$), but after the 2nd month, the difference became significant ($P < 0.05$), so that the status of hope in the face-to-face patients showed significantly higher than in the phone call patients. Furthermore, the "interest" in subsequent sessions showed more improvement in face-to-face group patients than the phone call group patients and the difference was significant ($P < 0.05$). A significant higher degree of "hope" and "interest" was found

in the face-to-face group than in the phone call group ($P < 0.05$) [Table 3].

Finally, evaluating the status of changes in suicidal thoughts and suicide reattempts over an 8-month follow-up period showed that the suicidal thoughts in each of the two groups improved over time so that these people had fewer cases of such thoughts and over time the improvement was statistically significant ($P < 0.001$). Comparing the two groups, suicidal thoughts in the face-to-face intervention group were significantly lower than the phone call group ($P = 0.038$), so we can say that it has been more successful in relieving suicidal thoughts.

In terms of suicide reattempts, there was one attempt in the phone call group in the 5th month, but in the face-to-face group there was one case of attempt in the

Table 2: Previous and new problems in the two groups

Last problem	Telephonic			Face to Face			*P**
	Improve	Resonant	No change	Improve	Resonant	No change	
Week 2	5 (17)	2 (7)	22 (76)	2 (8)	0 (0)	24 (92)	0.569
Month 1	10 (35)	1 (3)	18 (62)	9 (35)	1 (4)	16 (62)	
Month 2	17 (59)	2 (7)	10 (35)	11 (42)	4 (15)	11 (42)	
Month 3	14 (48)	1 (3)	14 (48)	13 (50)	4 (15)	9 (35)	
Month 4	15 (52)	3 (10)	11 (38)	16 (62)	4 (15)	3 (12)	
Month 5	12 (41)	5 (17)	10 (35)	13 (50)	1 (4)	9 (35)	
Month 6	13 (45)	4 (14)	8 (28)	13 (50)	3 (12)	6 (23)	
Month 8	19 (66)	3 (10)	3 (10)	13 (50)	3 (12)	6 (23)	
*P***		0.001			<0.001		
New problem	**Yes**		**No**	**Yes**		**No**	***P****
Week 2	3 (10)		26 (90)	3 (12)		23 (89)	0.030
Month 1	5 (17)		24 (83)	3 (12)		23 (89)	
Month 2	10 (35)		19 (66)	4 (15)		22 (85)	
Month 3	2 (7)		27 (93)	4 (15)		22 (85)	
Month 4	7 (24)		22 (76)	4 (15)		19 (73)	
Month 5	6 (21)		21 (72)	3 (12)		20 (77)	
Month 6	3 (10)		22 (76)	2 (8)		20 (77)	
Month 8	1 (3)		24 (83)	3 (12)		19 (73)	
*P***		0.130			0.868		

Data are shown as *n* (%). *Significant level between the two groups in general, **Significant levels over time

Table 3: "Hope and interest" of two groups during follow-up

Factors	Times	Telephonic				Face to face				*P**	*P***
		Weak	Average	Good	Excellent	Weak	Average	Good	Excellent		
Hopefulness	Week 2	21 (72)	7 (24)	1 (3)	0 (0)	22 (85)	3 (12)	1 (4)	0 (0)	0.069	0.014
	Month 1	17 (59)	6 (21)	6 (21)	0 (0)	17 (65)	4 (15)	5 (19)	0 (0)	0.246	
	Month 2	8 (28)	13 (45)	8 (28)	0 (0)	13 (50)	9 (35)	4 (15)	0 (0)	0.003	
	Month 3	6 (21)	16 (55)	7 (24)	0 (0)	11 (42)	9 (35)	4 (15)	0 (0)	<0.001	
	Month 4	4 (14)	16 (55)	7 (24)	0 (0)	7 (27)	8 (31)	8 (31)	0 (0)	0.032	
	Month 5	2 (7)	18 (62)	7 (24)	0 (0)	6 (23)	10 (39)	6 (23)	1 (4)	0.027	
	Month 6	4 (14)	7 (24)	13 (45)	1 (3)	4 (15)	9 (35)	6 (23)	3 (12)	0.001	
	Month 8	6 (21)	3 (10)	12 (41)	4 (14)	3 (12)	8 (31)	7 (27)	4 (15)	0.019	
	*P****		<0.001				<0.001				
Interest	Week 2	21 (72)	7 (24)	1 (3)	0 (0)	22 (85)	2 (8)	2 (8)	0 (0)	0.025	<0.001
	Month 1	16 (55)	8 (28)	5 (17)	0 (0)	17 (65)	6 (23)	3 (12)	0 (0)	0.038	
	Month 2	7 (24)	14 (48)	8 (28)	0 (0)	14 (54)	8 (31)	4 (15)	0 (0)	<0.001	
	Month 3	5 (17)	17 (59)	7 (24)	0 (0)	12 (46)	8 (31)	4 (15)	0 (0)	<0.001	
	Month 4	4 (14)	15 (52)	8 (28)	0 (0)	8 (31)	8 (31)	7 (27)	0 (0)	0.024	
	Month 5	2 (7)	17 (59)	8 (28)	0 (0)	6 (23)	11 (42)	5 (19)	1 (4)	0.005	
	Month 6	4 (14)	7 (24)	13 (45)	1 (3)	4 (15)	11 (42)	4 (15)	3 (12)	0.029	
	Month 8	6 (21)	3 (10)	12 (41)	4 (14)	3 (12)	8 (31)	7 (27)	4 (15)	0.010	
	*P****		<0.001				<0.001				

Data are shown as *n* (%). *The significant level between the two groups at each session, **The significant level between the two groups in general, ***The significant level after the passage of time

4th month and another patient attempted three times in the 2nd, 4th, and 6th months (2 cases totally).

Unfortunately in the second case, the suicide led to death in the third attempt. Despite these differences in the number of attempters over time, no statistically significant difference was found between the two groups ($P > 0.05$), and there was also no difference between the two groups in terms of the number of attempts ($P = 0.144$).

It should be noted that during the follow-up period in telephone call group, 2 patients in the 5th month, and 2 patients in the 3rd month declared unwillingness to continue participating in the study. This range in face-to-face group was 2 patients in the 2nd month and 1 patient in the 3rd month. The difference between two groups for the omission was not statistically significant ($P = 0.802$) [Table 4].

DISCUSSION

The aim of this study was to assess the effect of the two methods of phone call and face-to-face communication in the reduction of recurrent suicide attempts in previous attempters. The results showed that the two procedures had no significant difference in preventing the repetition of suicidal attempts in the number and frequency among the attempters.

Despite these findings, the hope and interest increased in both groups, although it showed more improvement in the face-to-face group compared to the phone call group. Also, suicidal thoughts in both groups decreased over time, but again, the reduction was more significant in the face-to-face group.

Table 4: Suicidal thoughts, suicide maps, and suicide attempts in both groups

Factors	Times	Telephonic		Face to face		*P**
		Yes	No	Yes	No	
Suicidal thought	Week 2	11 (38)	18 (62)	13 (50)	13 (50)	0.038
	Month 1	11 (38)	18 (62)	13 (50)	13 (50)	
	Month 2	7 (24)	22 (76)	6 (23)	20 (77)	
	Month 3	5 (17)	24 (83)	4 (15)	20 (77)	
	Month 4	2 (7)	25 (86)	4 (15)	18 (69)	
	Month 5	2 (7)	25 (86)	3 (12)	20 (77)	
	Month 6	3 (10)	22 (76)	2 (8)	20 (77)	
	Month 8	2 (7)	23 (79)	1 (4)	21 (81)	
	*P***	<0.001		<0.001		
Suicide attempt	Week 2	0 (0)	29 (100)	0 (0)	26 (100)	0.132
	Month 1	0 (0)	29 (100)	0 (0)	26 (100)	
	Month 2	0 (0)	29 (100)	1 (3.8)	25 (96.2)	
	Month 3	0 (0)	29 (100)	0 (0)	26 (100)	
	Month 4	0 (0)	29 (100)	2 (8.7)	21 (91.3)	
	Month 5	1 (3.7)	26 (96.3)	0 (0)	23 (100)	
	Month 6	0 (0)	25 (100)	1 (4.5)	21 (95.5)	
	Month 8	0 (0)	25 (100)	0 (0)	22 (100)	
	*P****	0.652		0.426		

The data are shown as *n* (%), *The significant level between the two groups in general, **Significant levels over time, ***Significant levels over time

The problems mentioned as the current suicide attempt causes by the participants significantly decreased over time, but this improvement was not significant, comparing the two groups.

The incidence of new problems during the intervention in the face-to-face group was lower than the phone call group.

Likewise, in the authors' and colleagues' previous study,[22] there was no significant difference in the reduction of suicide reattempts between "phone call communication," compared with the "treatment as usual" group during 6 months follow-up, but the "phone call" group patients showed an increased hope and decreased suicidal thoughts compared with the "treatment as usual" group patients. In this study, we evaluated the "phone call" versus "face to face" follow-up, but in previous study there was not face-to-face communication, and the control group was allowed to treat as they choose.

Our finding is consistent with both of our studies, and the Hassanzadeh *et al*. results[20] showed similarities in reduction of suicidal thoughts and improvement of hope in intervention groups. These results show the more close the relationship with suicidal patient, the more hope will arise, and the less suicidal thoughts will remain. But, in our study, there was no significant difference in reducing suicide reattempts between the two groups of phone call intervention and face-to-face intervention. This between groups indifference of suicidal reattempt in the presence of the improvement of hope and reduction of suicidal thoughts may be caused due to the equal effect of the two methods (i.e., phone call and face-to-face communication), or the short-term duration of follow-up (8 months).

The study of Vaiva *et al*. in a 12-month follow-up of phone call support versus TAU revealed that phone call is effective in preventing suicide reattempt, supports the impact of the duration time of the intervention on the results.[14] Furthermore, Fleischmann *et al*. added BIC to the TAU and showed fewer suicide reattempts in the intervention group compared with TAU alone (as a control group) during 18 months.[16]

Limitations and suggestions

This study had several limitations. One was the 8-month period follow-up, which must be lengthened

in future works. The second limitation may be mere phone or face-to-face contact, empathy, and guidance. Surely different approaches of the psychologist/psychiatrist/social worker (suggested therapists) have some effects on the therapeutic responses, and these may somehow confound the results. However, our logic in this study was an evaluation of mere phone versus face-to-face contact. We suggest matching the referred therapists approaches with the responses in future studies. Also, the sample can be taken from different centers that admit patients attempting suicide in different ways, with more focus on the impact of each suicidal attempts way.

CONCLUSION

Comparing the two methods of "phone call follow-up" and "face to face" follow-up in prevention of suicide reattempt, there was tangible, significant reduction in suicidal thoughts and improvement of the interest and hope in the face-to-face group compared to the phone call group, despite the lack of significant differences between the two groups in suicidal reattempt in 8 months follow-up. Also, less new problems were perceived by the patients in face-to-face communication during the follow-up.

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Conflicts of interest
There are no conflicts of interest.

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