Original Article

The Effect of Active Treatment and Visit Compared to Conventional Treatment, on Preventing Recurrent Suicidal Attempts: A Randomized Controlled Clinical Trial

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Abstract

Background: Suicide is a major problem, and its prevention is a global priority. In many cases, suicide attempter attempts to do it again after the rescue. In current study we aimed to compare active visit and treatment of patients in a periodic manner with treatment as usual, in the prevention of recurrent suicidal attempts. **Materials and Methods:** This study was a randomized controlled clinical trial which was conducted in Isfahan Noor Hospital's Emergency Center on 60 patients in 2013-2014. The samples were selected using simple random sampling and they were assigned into two groups: The conventional treatment group (treatment as usual) (30 patients), and visit and active treatment (30 patients). In the intervention group, there were ten follow-ups by a face-to-face visit over 12 months, and six follow-ups by phone call in control group. Through the completion of the initial and follow-up questionnaire evaluation was performed. The data were analyzed using Cochran test, and repeated measure (ANOVA). **Results:** During the 12-month follow-up visit and active treatment, significant difference in reducing suicidal thoughts (P = 0.003) was observed and an increase in the life expectancy (P = 0.001), interest and motivation in life (P = 0.001) was found in the intervention group, and also nonsignificant reduction was found in the rate of suicidal attempts. **Conclusion:** Visit and active treatment is useful in suicide attempters and it can helps in preventing recurrent suicide attempt as a preventive program by increasing hope and reducing suicidal thoughts.

Keywords: *Follow-up, prevention, suicide, treatment*

Introduction

Suicide and suicide attempt is an essential problem and a global and health priority.[1,2] Suicide prevention was declared as a basic measure by WHO.[3,4] Proposer interventions can adjust or eliminate the frequency of suicide.[5,6] According to WHO estimates, every second a suicide attempt occurs and one dies of suicide every 40 sec.[7,8] One million people die on suicide annually, and suicide attempt is about 8 to 10 times the successful suicide.[9,10] About 1/3 of suicide attempts do it for the first time, and about 2/3 do it for the second time and more.[11-13] 10 to 37 percent of recurrent suicidal attempt occur during the first month, and 45% during the first 6 months.[14] The suicide rate in Iran has been announced lower than most countries of the world, especially in Western societies.[15-17] Previously attempted suicide is the most important predictor of death due to suicide. About 5 to 10% of attempters die by suicide during the first few years after their first suicide attempt.[18,19] Poor family relationships in Chinese adolescents[20,21] and communication problems and parental conflicts in Nicaragua were reported as the risk factors for suicidal thoughts and attempts.[22-24] Several factors such as age, sex, race, religion, marital status, occupation, mental illness, physical illness, substance abuse and personality disorders were considered as risk factors for suicide attempts in various research studies.[25-27] Some of the most common risk factors for suicide reported in studies include mental disorders and previous suicide attempts. Depressive disorder accounts for 80% out of 95% of diagnosed mental disorders in suicide attempters.[28-30] Suicidal thoughts and behavior of individuals are influenced by social and cultural conditions.[31-33] The majority of suicidal patients are discharged without assessment of the likelihood of continuation or recurrence of suicidal thoughts or desire to die and appropriate treatment and follow-up.[34,35] These patients

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receive only usual treatments for the underlying disease. Doing active intervention, that is, periodic and active visit to suicide attempters, it is attempted to evaluate current status of the patient and stabilize it to reduce stress and perform better treatment and to prevent suicide in these patients by improving harmful mental and environmental conditions as well as appropriate physician and psychologist and social worker visit. Some evidence suggests that it is possible that planning for follow-up in suicide attempter patients can be effective in the prevention of suicidal attempts. However, since few studies have been done in this regard, current study aims at investigating impact of active visit and treatment in the prevention of recurrent suicidal attempts (more than once) and its relationship with demographic characteristics of the patients. In summary, current study attempts to compare active visit and treatment of patients in a periodic manner with treatment as usual, in the prevention of recurrent suicidal attempts.

Materials and Methods

Study design and participants

This study was a randomized, controlled clinical trial which was carried out on 2013-2014. The study followed the Declaration of Helsinki on Biomedical Research Involving Human Subjects and was approved by the Ethics Committee from the Isfahan University of Medical Sciences (No.: 392367.). All participants provided written informed consent.

Subjects were selected from hospitalized patients in Noor Hospital's Emergency Center (Isfahan, Iran). Inclusion criteria included: 1. Ability to communicate with the patient, 2. The patient's conscious acceptance for inclusion, 3. Lack of threatening condition that requires another immediate intervention (such as the urgent need for surgery), 4. Lack of developing dementia or severe cognitive impairment DSMIV-TR criteria that were detected during the initial interview. Exclusion criteria included: 1. Stopped cooperation and relationship after informed patient's acceptance, 2. Change in the address of the patient's location. 3. Death due to causes other than suicide (according to forensic detection).

A total of 77 individuals screened. Finally 60 subjects met all inclusion and no unmet criteria. Eligible subjects were allocated to two groups (intervention and control), with simple randomization by a third party physician using tables of random numbers [Figure 1].

Procedures and variables assessment

Two groups included the conventional treatment group (treatment as usual) (30 patients), and visit and active treatment (30 patients). In the first meeting, two groups completed demographic questionnaire containing following information and features: (Name, age, marital status, education level, employment status), number of previous

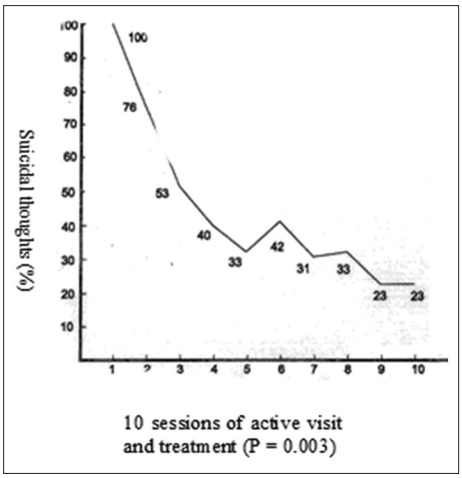


Figure 1: Status of suicidal thoughts in patients during 10 sessions of active visit and treatment (intervention group)

suicide attempts, economic, social, and family problems, examining the need for intervention by a psychologist, psychiatrist, social worker and hospital emergency. In control group, the patients were recommended to refer to psychiatry Emergency unit, in case there were suicidal thoughts so that they are referred to psychologist, psychiatrist, social worker and hospital emergency, if necessary. Second questionnaire which included information on the patient's previous problems, new potential problems, status of hope, desire and motivation to life, suicidal thoughts, plans, planning and their attempt for suicide was completed for them within 6 months in months 2, 4, 6, 8, 10 and 12 following their repeated suicide attempts via phone call. In the intervention group, there was ten face-to-face visit of the patients in weeks 2, 4, and months 2, 3, 4, 5, 6, 7, 8, 10, and 12 after the suicide attempt, and at each visit, they completed the second questionnaire. In this group, intervention was performed as correcting thinking, inefficient thought recognition (such as all or nothing thinking that blocks problem solving method), cognitive therapy techniques, expressing empathy for the patient, talking about desperate thoughts in dealing with problems and providing guides to improve hopefulness and self-confidence in patient, improving social communications, coping with problems, enjoying the life, acceptance of the problems, and attempt to change the patient's expectations in coping the problems (using the techniques of Acceptance and Commitment Technique), training distractibility in time of suicidal thoughts, and the patient was referred to a psychologist or social worker, if needed. In this group of patients, a psychiatric history, depending on existing psychiatric disorders was prepared and drug treatment program was started by the Assistant Executive, and in order to improve adherence to medication treatment of patients and treatment acceptance, measures were taken.

The questionnaires were constructed by the responsible author in collaboration with the professors from Department of Psychiatry, and then the validity was confirmed by a

number of professors of psychiatry (N = 10). In order to verify reliability, 20 questionnaires were completed within 20 days and it was confirmed using Cronbach's alpha at 93%.

Statistical analysis

The data were analyzed by Chi-square test, Fisher's exact test, and independent *t*-test for demographic and clinical differences between two groups. We used Cochran test (for variables such as suicidal thoughts, plans and planning to commit suicide, recurrent suicidal attempts) and repeated measure (ANOVA) (for variables such as hope and desire and motivation to life). The data were analyzed using Statistical Package for the Social Sciences version 20.0 (SPSS Inc., Chicago, Illinois, USA) and a $P < 0.05$ considered as statistically significant.

Results

Sixty patients were randomized into two groups of suicide attempters divided into control and intervention groups. There is no difference between the two groups in terms of demographic and clinical characteristics [Table 1]. In the intervention group, 2 cases of attempted suicide (in months 4 ad 6 after the initial attempt) was observed, while 6 cases of attempted By 2 people were happened in control group in month 4, 2 people in month 6, and 2 people in month 8 were observed. But this difference was not statistically significant ($P = 0.16$) (using Cochran test).

At the end of 12-month follow-up, 19 patients in control group and only 7 patients in intervention group had suicidal thoughts, which was statistically and clinically significant difference ($P = 0.006$) [Figure 1]. The life expectancy and hope in the intervention group was significantly higher than the control group. ($P = 0.001$) [Figure 2]. The interest and motivation to life in the intervention group was significantly higher than the control group ($P = 0.001$) [Figure 3]. Characteristics of patients attempting suicide during the 12-month follow-up in both intervention and control groups are shown in Table 2. As observed, most of the suicide attempters are male, single or divorced, and in the age range 25–36 years, college-educated, unemployed, with a history

Table 1: Comparison of demographic and clinical characteristics of intervention and control groups before inclusion in the study

Variables	Group Number (%)		*P* value
	Case	Control	
Sex			
Female	20 (66.7)	22 (73.3)	0.57
Male	10 (33.3)	8 (26.8)	
Marital status			
Single	9 (31.2)	9 (31.2)	0.71
Married	13 (43.3)	12 (42.3)	
Widow or divorced	8 (26.8)	9 (31.2)	
Education			
Under diploma	20 (66.7)	17 (55.2)	0.58
Diploma and AD	5 (17.2)	6 (18.1)	
MA and more	5 (17.2)	7 (19.2)	
Age			
15-25 years	5 (17.2)	5 (17.2)	0.48
26-35 years	15 (50)	17 (55.2)	
More than 35 years	10 (33.3)	8 (26.8)	
Job			
Unemployment	7 (19.2)	6 (18.1)	0.71
Labour, clerck, farmer	6 (18.1)	2 (6.7)	
House wife	13 (43.3)	17 (55.2)	
Student or university student	4 (13.3)	5 (17.2)	
Previous suicide attempt			
1 time	10 (33.3)	13 (43.3)	0.12
2 times	9 (31.2)	8 (26.8)	
2-5 times	9 (31.2)	8 (26.8)	
More than 5 times	2 (6.7)	1 (5.4)	
Patients problem types			
Social problems	10 (65)	12 (42.3)	0.36
Economic problems	15 (50)	14 (46.7)	0.4
Mental problems	20 (66.7)	18 (65.3)	0.17

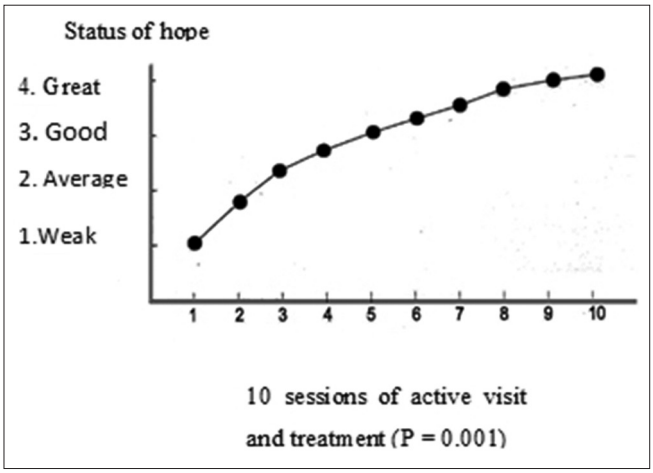


Figure 2: Status of hope in patients during 10 sessions of active visit and treatment (intervention group)

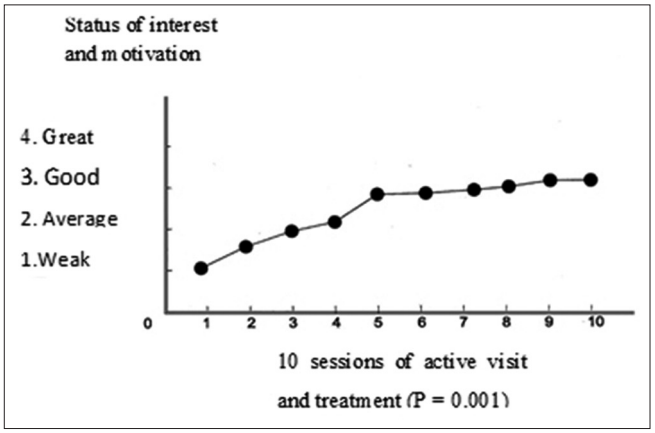


Figure 3: Status of interest and motivation in patients during 10 sessions of active visit and treatment (intervention group)

Table 2: Clinical characteristics of recurrent suicide attempters during 12-month follow-up in intervention and control groups

Variables	Group	
	Case (2 peoples)	Control (6 peoples)
Sex		
Female	-	1
Male	2	5
Marital status		
Single	-	1
divorced	1	2
Education		
Under diploma	2	4
Higher than diploma	-	2
Age		
15-25 years	1	2
26-35 years	1	4
More than 35 years	-	-
Job		
Unemployment	2	4
Labour, clerck,	-	1
Houdewife	-	1
Previous suicide attempt		
1	1	1
2	1	4
<2	-	1
Disease		
Chronic mental disease	1	5
Under Psychological treatment		
Yes	1	3
No	-	3

of chronic psychiatric disorders, and the history of two previous attempts have committed suicide. The intervention group showed a significant difference between the rates of suicidal thoughts before and after study ($P = 0.003$) (using Cochran test). And significant difference between the rates of hope before and after study ($P = 0.001$) and between the rates of interest and motivation to life before and after the study ($P = 0.001$) and between rates was observed [Flow chart 1].

Discussion

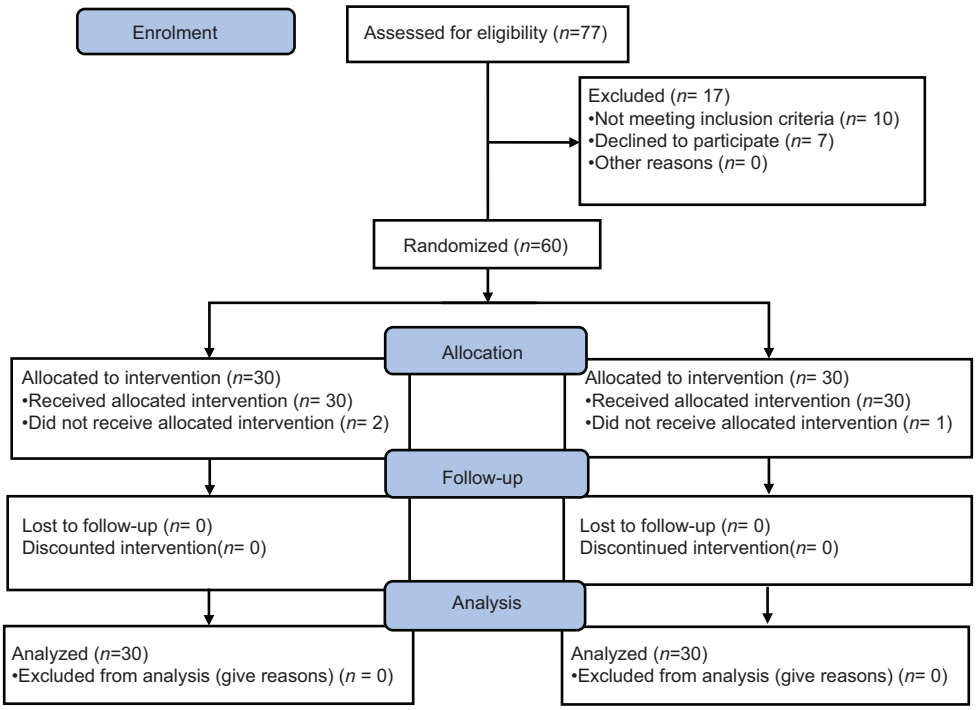
The purpose of this study was to assess the impact of active visit and treatment of patients with recurrent suicide attempts on prevention of recurrent suicidal attempts. Findings in the current work showed recurrent suicide attempters are significantly lower in intervention group following inclusion in the study (2 vs. 6). Although these findings were not found to be significant, they are somehow consistent with findings by Motto and Bostrom[36] and De Leo *et al*.[37] and Fleischmann *et al*.,[38] which indicate that the face-to-face meeting and follow-up in suicidal patients could somehow be useful in recurrent suicide attempt. On the other hand, nonsignificant findings in our work and the study by Hassanzadehn *et al*.[39] indicate that although findings were not significant in both works, since no repeated attempt was observed in second 6 months of the year in our work, and considering findings in previous studies[36,37,39] and reduced repeated attempt in active visit and treatment group in the current study, it is assumed that such difference may get significant in longer follow-up. Various techniques of psychotherapy such as supportive cognitive therapy, learning the correct way to solve a problem and how to correct thinking, technique of acceptance of problems rather than trying to change them (Commitment and Acceptance Technique) were trained in the intervention group which was effective in the prevention of suicidal attempts[40-43] and it was consistent with studies by Nordentoft *et al*.[41] (that used the dialectic behavioral therapy). In that study included in intervention group (66.7%) and 22 patients included in control group (73.3%) were females, and such difference in terms of sex was statistically significant ($P = 0.001$). In the study conducted by Cederke *et al*.[12] and Suominen *et al*.[14] the number of women was more than men. Perhaps the reason for higher willingness of women to participate in the study and follow-up is their higher need to get the surveillance than men. In our study, most of suicide attempters were female, single or divorced, the college-educated, unemployed and with a history of chronic psychiatric disorders. In the study conducted by Kapur *et al*.[4] and Cederke *et al*.[12] the majority of recurrent suicide attempters had a history of chronic psychiatric disorders. Thus, it may supports that recurrent suicide attempts occur in people with low social support.[24] Hence, supportive psychotherapy and referral to social worker may be useful in reducing recurrent suicide attempt.

Limitations

One limitation in the current study was its one-year period. It is recommended to consider longer periodes for follow-up and active treatment in recurrent suicide attempters. The other limitation was identical intervention performer and evaluator. Although it was due to establishing a better medical relationship, it is suggested to select two separate people in the future works for enhancing reliability of the results. Lack of precise discrimination of various psychotic disorders underlying suicide was the other limitation in this work. Their precise discrimination may provide more detailed results.

Conclusion

In summary, findings in the current work show that active visit and treatment in patients with recurrent suicide attempt may significantly reduce suicidal thoughts and increase life expectancy and hope and decrease recurrent suicide attempt. Considering no recurrent suicide attempt was observed in patients since month 6 after active visit and treatment, it is necessary to consider longer period for follow-up and evaluation



Flow Chart 1: Consort statement

to assess impact of active visit and treatment in effective prevention of recurrent suicide attempt.

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Conflicts of interest

There are no conflicts of interest.

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