A Real-World Effectiveness Study Comparing a Priority Appointment, an Enhanced Contact Intervention, and a Psychotherapeutic Program Following Attempted Suicide

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ABSTRACT

Objective: To determine the comparative effectiveness of 3 real-practice preventive programs aimed at lowering the relapse risk following a suicide attempt: a single priority appointment with an outpatient psychiatrist, an enhanced contact intervention, and an individual psychotherapy program.

Methods: This observational study was conducted in a sample of 1,492 suicide attempters from 3 catchment areas in Madrid, Spain, between 2013 and 2017. Relapse was defined as an emergency department return after a new attempt within a 1-year follow-up. Kaplan-Meier survival functions were obtained by intervention, and Cox proportional hazard regression models were used to estimate unadjusted and adjusted risks of relapse by intervention. Sex- and age-stratified analyses were also conducted. Covariates were age, sex, history of suicide attempts, history of psychiatric disorders, main *ICD-10* psychiatric diagnostic groups, medical comorbidities, and family support.

Results: A total of 133 subjects (8.9%) relapsed. The psychotherapy group had a lower presence of known risk factors for suicide attempt. Individual psychotherapy and enhanced contact were more effective than a single priority appointment at reducing suicide reattempt, with a 40% lower relapse risk in adjusted models. Results did not differ after sex and age stratification.

Conclusions: In a naturalistic clinical setting, patients exposed to individual psychotherapy or an enhanced contact intervention had a similar, lower relapse risk than the single priority appointment group.

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Suicide, a global public health concern,[1] is the second leading cause of death among youth worldwide.[2] Attempted suicide, a much more frequent phenomenon with a rising incidence,[3] is considered the most faithful risk marker of future suicide, with an associated 25-fold risk increase compared to the general population.[4] Furthermore, self-inflicted harm itself entails relevant clinical and economic costs[5] and represents 1.5% of all loss of disability-adjusted life-years according to Global Burden of Disease 2000.[6] An attempted suicide entails a 5-year follow-up risk of relapse up to 35%, with most reattempts taking place during the first month after discharge.[7,8]

Prevention of suicidal behaviors can be exercised at several levels of intervention.[9] A number of population-level strategies, such as structurally limiting the access to suicide-by-jumping hotspots[10] or legally restricting the size of acetaminophen packs,[11] can reduce the incidence of suicide attempts. At the individual level, enhancing contact between high-risk subjects and mental health providers can reduce attempted and completed suicide.[12–14] As noted, discharge after an attempted suicide offers a critical opportunity for indicated tertiary prevention. Accordingly, postdischarge contact maintenance programs lower relapse risk.[15–19] Manualized psychotherapies, including problem-solving,[20] cognitive-behavioral,[21] dialectical behavior,[22,23] or psychodynamic therapy,[24] are also seemingly effective. However, psychotherapy for suicidal behaviors has been called into question when compared to more feasible programs aimed at simply favoring continuation of care after discharge.[25] In a recent meta-analysis of randomized controlled trials (RCTs), the World Health Organization (WHO) Brief Intervention and Contact (BIC), a program of 9 follow-up contacts, significantly lowered the odds of suicide after an attempt by 80%, whereas cognitive-behavioral therapy (CBT) was not significantly protective.[26] Thus, although contact-enhancing and psychotherapeutic approaches seem promising, the adequate components and recommended length of interventions for recurring suicide attempt risk remain unclear. Most evidence concerning suicide prevention strategies comes from either non-experimental epidemiologic designs or RCTs. In clinical research, however, there is a growing call for comparative effectiveness studies including data from the real clinical practice.[27]

Clinical Points

- Brief contact maintenance lowers the risk of relapse after a suicide attempt, but whether longer interventions, including telephone calls or psychotherapy, yield additional protective effects has heretofore been unclear.
- After a suicide attempt, prolonging contact maintenance and enhancing it with telephone calls or psychotherapy can lower the risk of a reattempt after hospital discharge.

This study compares 3 different interventions for suicide reattempt prevention in real-world settings. Compared programs following a suicide attempt include a single priority medical appointment within 7 days after discharge, a series of repeated in-person and telephone follow-up contacts, and an individual problem-solving psychotherapy intervention.

METHODS

Study Settings

In Spain, a National Health Service (NHS) funded by taxes provides universal access to medical care. The Community of Madrid's Health Council coordinates 25 health care catchment areas. Each area features a general hospital and includes a psychiatry department offering a range of inpatient and outpatient care resources to which general practitioners and other specialists refer patients with psychiatric needs.

Although enhancing the general population's access to proper longitudinal, articulated psychiatric care decreases suicidal behaviors, directly addressing suicide offers an additional protective effect.[28] Madrid's Mental Health Strategy 2010–2014 deployed the Suicide Risk Attention Program (ARSUIC, by its Spanish acronym) as an addition to its community-based mental health care service. This program prioritizes psychiatric attention to suicide attempters. Every hospital in Madrid adopted this program in 2012. Its basic measure, a scheduled meeting with an outpatient psychiatrist within the first 7 days after every suicide attempt, lowered the risk of reattempt by 25%.[29] Some hospitals have added complementary features to their particular suicide prevention programs. In general terms, the additional measures seek to either foster further contact maintenance with mental health practitioners via programmed telephone calls during the follow-up or provide patients with specific individual or group psychotherapy. In this study, we examine 3 different prevention strategies corresponding to 3 general hospitals covering 3 catchment areas located in the south, north, and west of Madrid, respectively.

Study Design and Subjects

We conducted an observational study. We included all suicide attempters who, after discharge, had entered each center's suicide prevention program between January 1, 2013, and December 31, 2016, and followed them for 1 year. We considered a suicide attempt any self-injurious act committed with at least some intent to die as a result of the act. Thus, we excluded individuals with suicidal ideation but without suicidal behavior. The study protocol complies with the Declaration of Helsinki for Human Rights. Approval was obtained from the corresponding ethics committees in each catchment area. Data from patient records were anonymized before extraction of sociodemographic and clinical details.

Interventions

Participants from the northern catchment area received the strict ARSUIC intervention, a scheduled appointment with an ordinary psychiatrist at the corresponding Community Mental Healthcare Center (CMHC) within the first 7 days after hospital discharge. Thereafter, this intervention did not include further add-ons, nor did it have exclusion or inclusion criteria for participants, other than having been treated at the General Hospital due to an attempted suicide. As this program is widely implemented in Madrid, we considered it treatment as usual (TAU).

Participants from the southern catchment area received a modified ARSUIC intervention, adding individual psychotherapy. Inclusion criteria were to have attempted suicide, to be aged 18 years or older and not to have a concurrent ongoing therapeutic treatment at an outpatient clinic. The psychotherapy was administered at the general hospital. It included 2 months of weekly 30-minute individual, non–suicide-specific therapy sessions focused on problem-solving, stress reduction, and cognitive reformulation. Therapy sessions were conducted by trained clinical psychologists, under a general psychiatrist's supervision. Then, the patient was referred to a general practitioner or a CMHC. In case the participant failed to attend the sessions, reminder telephone calls were made from the hospital.

Participants from the western catchment area received an enhanced contact maintenance intervention framed within the greater "Código 100" (Code 100) Suicide Prevention Program, a strategy delivered in collaboration with Madrid's out-of-hospital emergency service to guarantee an appropriate continuity of care.[30] Inclusion criteria to Código 100 were to have attempted suicide, to be 18 years of age or older, and to sign an informed consent form. The intervention started with an appointment 3 days after discharge, followed by 6–12 months of an intensified frequency of outpatient visits depending upon the patient's severity and his or her personal preference, with a specifically devoted psychiatrist trained in suicide prevention. In addition, every patient received telephone calls from the hospital at follow-up months 1, 6, and 12. The content of these calls was explanatory and supportive, seeking to reassure patients, clarify their doubts regarding treatment, enhance their adherence to follow-up visits, and remind them of the available emergency treatment options in case of a new crisis. The intervention did not include a specific psychotherapeutic approach. Then, the patient continued usual treatment at a CMHC.

Measures

Our primary outcome was relapse after a suicide attempt, which we defined as being treated again at the reference hospital due to another suicide attempt after hospital

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Table 1. Baseline Clinical and Sociodemographic Covariates of the 1,492 Study Subjects, Overall and by Intervention

Variable	Overall	TAU	Psychotherapy	Enhanced Contact	χ^2/F	P^a
Total suicide attempters, n	1,492	788 (52.8% of overall)	523 (35.1% of overall)	181 (12.1% of overall)		
Age, mean (SD), y	40.9 (17.1)	41.0 (18.0)	40.3 (16.6)	42.6 (14.5)	1.25	.29
Female	1,040 (69.7)	540 (68.5)	360 (68.8)	140 (77.4)	5.77	.06
Personal history of a psychiatric disorder	976 (65.4)	554 (70.3)	255 (48.8)	166 (91.7)	0.00	.000
Main diagnosis at discharge						
No diagnosis	190 (12.7)	110 (14.0)	74 (14.2)	6 (3.3)	404.41	.000
Organic, including symptomatic, mental disorders[b]	11 (0.7)	6 (0.8)	5 (0.9)	0 (0.0)		
Mental and behavioral disorders due to psychoactive substance use[c]	172 (11.5)	94 (11.9)	68 (13.0)	10 (5.5)		
Schizophrenia, schizotypal, and delusional disorders[d]	28 (1.9)	15 (1.9)	12 (2.3)	1 (0.6)		
Mood (affective) disorders[e]	406 (27.2)	304 (38.6)	66 (12.6)	36 (19.9)		
Neurotic, stress-related, and somatoform disorders[f]	429 (28.8)	150 (19.0)	208 (39.8)	71 (39.2)		
Behavioral syndromes associated with physiologic disturbances and physical factors[g]	37 (2.5)	14 (1.8)	22 (4.2)	1 (0.6)		
Disorders of adult personality and behavior[h]	219 (14.7)	95 (12.1)	68 (13.0)	56 (30.9)		
Personal history of suicide attempts	583 (39.1)	272 (34.5)	145 (27.7)	85 (47.0)	246.21	.00
Concurrent alcohol or drug abuse	446 (29.9)	281 (35.7)	80 (15.3)	85 (47.0)	91.19	.00
Cohabiting	1,250 (83.7)	639 (81.1)	458 (87.4)	153 (84.5)	9.30	.01
Immigrant	483 (32.4)	132 (16.8)	200 (38.2)	151 (83.4)	322.47	.00
Comorbid medical conditions	551 (36.9)	481 (61.0)	39 (7.4)	31 (17.1)	422.87	.00

[a]P values are obtained from Pearson χ^2 test or Fisher exact test for qualitative covariates and Wilcoxon signed-rank test for quantitative covariates.
[b]ICD-10 F00–F09. [c]ICD-10 F10–F19. [d]ICD-10 F20–F29. [e]ICD-10 F30–F39. [f]ICD-10 F40–F48. [g]ICD-10 F50–F59. [h]ICD-10 F60–F69.
Abbreviation: TAU = treatment as usual.

discharge and during a 1-year follow-up. Time to relapse was obtained from the hospital's records. For subjects experiencing multiple relapses, we retained only the first one after entrance into the study.

Data on clinical and sociodemographic variables of prognostic interest were obtained from predischarge semistructured interviews, regularly performed by psychiatrists and stored in computer databases for clinical purposes. We selected the following sociodemographic variables: age (continuous variable), sex, immigrant status, and cohabitation status (binary variables). Clinical variables recorded as dichotomous included personal history of a diagnosed psychiatric disorder, personal history of suicide attempts, concurrent alcohol or drug consumption at the moment of the attempt, presence of comorbid medical conditions, and main diagnosis at discharge, encoded according to ICD-10, chapter V, F10–F69 diagnostic groups (mental and behavioral disorders due to psychoactive substance use; schizophrenia, schizotypal and delusional disorders; mood disorders; neurotic, stress-related, and somatoform disorders; behavioral syndromes associated with physiologic disturbances and physical factors; and disorders of adult personality and behavior).[31]

Data Analyses

Continuous variables were reported as mean (standard deviation) and categorical variables as proportions. To analyze baseline differences in clinical and sociodemographic variables between the intervention groups, we used Wilcoxon signed-rank, Pearson χ^2, and Fisher exact tests.

We then conducted a survival analysis. Subjects who had not relapsed within 1 year of follow-up were censored. We obtained Kaplan-Meier estimates of the survival function by treatment group. We tested the difference using log rank tests. To control for potential confounders, we conducted Cox proportional hazards regressions and obtained crude and adjusted risk estimates (hazard ratios [HRs]) for the different groups. For the multivariate model, we retained those covariates remaining significant to the $P < .10$ level, utilizing a non-automatic method for their introduction, as well as those variables considered to be clinically relevant according to prior knowledge. We followed widely accepted schemes for the adjustments.[32] Proportional hazards assumption fulfillment was ascertained both through graphic methods and using the Schoenfeld test. Finally, we obtained number needed to treat (NNT) estimates for both interventions compared to TAU using an accepted method for studies in which the outcome of interest is the time to an event.[33]

Sex and age-group differences exist in suicide and self-harm rates, and recent research shows that the young women stratum is becoming increasingly more affected.[34,35] Accordingly, we conducted sex- and age group–stratified Cox proportional hazards regressions seeking for differences between programs across subgroups. We defined 3 different subgroups: female and ≤ 35 years old, female and > 35 years old, and male. To keep reasonable statistical power for comparisons, we did not differentiate age groups within males. Analyses were carried on Stata v13 software.[36]

RESULTS

Clinical and Demographic Characteristics

We included data from 1,492 patients who had attempted suicide and subsequently entered the suicide prevention program at 1 of the 3 hospitals between January 1, 2013, and December 31, 2016. Table 1 summarizes baseline characteristics of the study subjects, both globally and per intervention group.

Figure 1. Kaplan-Meier Survival Function Estimates by Intervention

A. Unadjusted

B. After Adjustment[a]
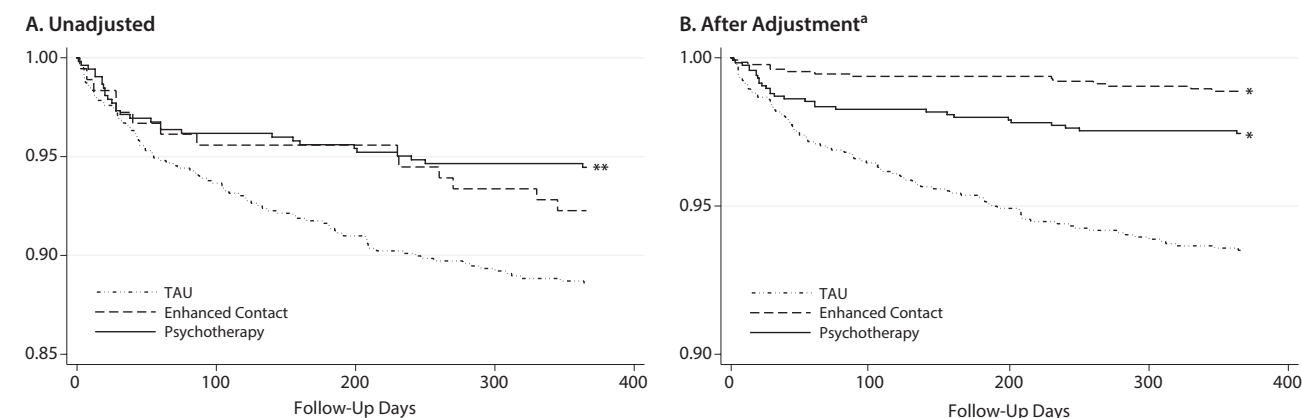
[a]Adjusted by sex, concurrent alcohol or drug abuse, personal history of suicide attempts, presence of a mood disorder diagnosis, and presence of a personality disorder diagnosis
*P < .05 (log rank test) vs TAU.
**P < .01 (log rank test) vs TAU.
Abbreviation: TAU = treatment as usual.

Intervention Group Baseline Differences

Baseline covariates showed comparable intergroup age distribution and a higher percentage of females in the enhanced contact group, along with several differences regarding clinical and social covariables. Subjects receiving TAU (the majority of the study participants) had proportions of psychiatric history (70.3%), previous suicide attempts (34.5%), and concurrent alcohol or drug abuse (35.7%) that fall roughly halfway between that of the other two treatment groups, suggesting that this cohort had an intermediate level of clinical severity. As for social correlates, subjects receiving TAU had the lowest levels of both immigration and household cohabitation. The sample receiving psychotherapy, formed by one-third of the subjects, had the lowest prevalence of the aforementioned clinical covariables, intermediate levels of immigration, and relatively high levels of cohabitation. Participants receiving enhanced contact, the smallest group, had the highest prevalence of previous psychiatric conditions, immigration, and previous suicide attempts and drug or alcohol abuse. Regarding main diagnoses at discharge, the psychotherapy and enhanced contact groups had similar rates of neurotic, stress-related, and somatoform disorders, and the latter also showed a high presence of disorders of adult personality and behavior, while TAU participants were more frequently diagnosed as having mood disorders. These findings, suggesting the psychotherapy group included a less severely ill sample, make sense as this intervention included only subjects who did not have an ongoing outpatient therapeutic treatment.

Follow-Up and Relapse

A total of 133 subjects (8.9%) experienced a relapse during follow-up. TAU had twice the crude incidence of the psychotherapy group, while the enhanced contact group had an intermediate figure. Mean (95% CI) days of follow-up were TAU: 335.8 (329.7–341.9), enhanced contact: 347.4

(337.2–357.6), and psychotherapy: 349.6 (343.8–355.3) for global: 342.0 (338.0–346.1).

Curves obtained from Kaplan-Meier survival probability function estimates per intervention group and multivariate adjusted survivor functions are presented in Figure 1. Differences between TAU and both psychotherapy and enhanced contact groups in Kaplan-Meier estimates are statistically significant (log rank test P = .001).

Table 2 displays results arising from Cox proportional hazards models, including unadjusted and adjusted estimates. Univariate regressions showed an association between a higher risk of relapse and several measured risk factors: a personal history of suicide attempts, concurrent alcohol or drug abuse, and a comorbid condition. Among psychiatric conditions diagnosed, mood and personality disorders stood out as risk factors, and adjustment and stress disorders behaved as protective factors. Immigration also showed a protective effect. On the other hand, female sex did not achieve statistical significance and neither did cohabitation or age in years. We fitted a subsequent multivariate regression by following a non-automatic method and delivered an adjusted model. We controlled for age, sex, previous suicide attempts, alcohol or drug abuse, and mood (affective) and personality disorders. The fulfillment of the proportional hazards assumption was checked: Schoenfeld residuals test P values of .26 and .13 were found for the univariate and multivariate models, respectively. Using the adjusted regression, we estimated the NNT (95% CI) for each intervention compared to TAU, resulting in 6.7 (3.3–100.0) for psychotherapy and 5.3 (2.6–1,000.0) for enhanced contact. An alternative multivariate model including the more general personal history of a psychiatric disorder instead of specific diagnoses resulted in similar estimates and served as a sensitivity analysis (Supplementary Table 1).

We obtained age- and sex-stratified multivariate estimates (Table 3). Although the smaller resulting sample of subjects

Table 2. Risk of Relapse During Follow-Up[a]

Variable	Unadjusted HR (95% CI)	Adjusted HR (95% CI)
Relapsed during follow-up		
TAU: n=90 (11.4)	1	1
Psychotherapy: n=29 (5.5)	0.47 (0.31–0.72)**	0.62 (0.40–0.97)*
Enhanced contact: n=14 (7.7)	0.66 (0.38–1.16)	0.56 (0.32–1·00)*
Age	0.99 (0.98–1.00)	0.99 (0.98–1.00)
Female	1.27 (0.86–1.87)	1.32 (0.88–1.98)
Immigrant	0.68 (0.46–1.00)*	…
Cohabiting	1.10 (0.68–1.77)	…
Personal history of a psychiatric disorder	1.86 (1.24–2.80)**	…
Diagnosis at discharge		
No diagnosis	0.67 (0.37–1.21)	…
Mental and behavioral disorders due to psychoactive substance use[b]	1.38 (0.86–2.22)	…
Mood (affective) disorders[c]	1.70 (1.20–2.42)**	1.60 (1.10–2.32)**
Neurotic, stress-related, and somatoform disorders[d]	0.35 (0.21–0.58)**	…
Disorders of adult personality and behavior[e]	1.52 (1.00–2.32)*	1.82 (1.14–2.91)**
Personal history of suicide attempts	1.89 (1.34–2.65)**	1.63 (1.15–2.31)**
Concurrent alcohol or drug abuse	1.77 (1.35–2.67)**	1.64 (1.13–2.38)**
Comorbid medical condition	1.73 (1.23–2.43)**	…

[a]Hazard ratio (HR) values were derived from a Cox proportional hazards model that included time to relapse as the outcome and the clinical and sociodemographic covariates as predictors. Treatment as usual (TAU) is the reference. The multivariate model is age- and sex-adjusted and includes variables significant at the $P \le .05$ level following a non-automatic adjustment method.
[b]ICD-10 F10–F19. [c]ICD-10 F30–F39. [d]ICD-10 F40–F48. [e]ICD-10 F60–F69.
*$P \le .05$. **$P \le .01$.

Table 3. Risk of Relapse During the Follow-Up by Patient Sex and Age Groups[a]

Variable	Male (n=452, 30.3% of Overall)	Female ≤35 y (n=452, 30.3% of Overall)	Female >35 y (n=588, 39.4% of Overall)
Intervention			
TAU	1	1	1
Psychotherapy	0.62 (0.37–1.04)	0.57 (0.27–1.20)	0.65 (0.32–1.34)
Enhanced contact	0.57 (0.31–1.08)	0.66 (0.22–1.96)	0.54 (0.25–1-19)
Mood (affective) disorders[b]	1.54 (0.96–2.32)	1.61 (0.75–3.43)	1.54 (0.83–2.85)
Disorders of adult personality and behavior[c]	2.09 (1.25–3.51)	1.91 (0.75–3.43)	2.29 (1.11–4.70)*
Personal history of suicide attempts	1.73 (1.16–2.59)**	1.48 (0.79–2.77)	1.93 (1.13–3.29)*
Concurrent alcohol or drug abuse	1.73 (0.98–2.32)	1.96 (0.45–2.02)	1.64 (1.14–3.35)*

[a]Values are shown as hazard ratio (95% CI). The multivariate model is derived from an age- and sex-adjusted Cox proportional hazard multivariate model, with time to relapse as the outcome and treatment as usual (TAU) as the reference, and includes the same covariates as the multivariate model in Table 2.
[b]ICD-10 F30–F39.
[c]ICD-10 F60–F69.
*$P \le .05$.
**$P \le .01$.

per stratum made the confidence intervals wider, the effect estimates of both interventions were not altered across sex groups or between younger and older females. Mood (affective) and personality disorders, previous suicide attempts, and concurrent alcohol or drug abuse also had comparable effect sizes with wider confidence intervals across groups.

DISCUSSION

In this observational study, 2 programs—a 2-month weekly problem-solving psychotherapy intervention followed by scheduled telephone calls (psychotherapy) and an early appointment followed by a 6- to 12-month schedule of in-person visits and telephone calls (enhanced contact)—lowered the risk of relapse after an attempted suicide by 38%

and 44% during a 1-year follow-up, respectively, compared to a single priority outpatient psychiatry appointment within 7 days (TAU). The NNT estimates were 6.7 (psychotherapy) and 5.3 (enhanced contact). Building on the tradition of natural experiments including real-world clinical settings,[27] our study contributes to the identified need of head-to-head comparative effectiveness studies between detailed suicide prevention programs to develop a means for a better understanding of the underlying mechanisms of different interventions.[37]

The period following discharge after a suicide attempt is a time of extremely high relapse risk.[38] In this cohort, 8.9% of the subjects relapsed during a 12-month follow-up, a somewhat lower figure than reported during longer follow-ups in comparable settings.[39] This difference is probably because contact maintenance with suicide attempters

can reduce repetition of suicidal behaviors.[37] Our control intervention, an early follow-up after self-harm, has shown effectiveness in reducing recurrence both in our setting[27] and in others.[40] Also, we did not include subsequent relapses, hence excluding attempts conducted by heavy repeaters.

In keeping with the literature,[16,41,42] our results suggest that repeated scheduled telephone calls lower postdischarge relapse risk. Some psychotherapeutic approaches have proved useful in lowering suicide risk among certain subtypes of patients.[21–23] However, in our study, the group receiving individual problem-solving psychotherapy did not significantly differ from those only receiving intensive contact maintenance. This finding is unsurprising: RCTs and systematic reviews have found no benefits in adding psychotherapy to conventional treatments for unselected suicidal subjects.[25,43,44]

Our study has limitations we would be remiss not to report. To have enough power to detect differences between groups, we chose suicide reattempt as our outcome of interest and did not include information concerning death by suicide, an important but infrequent event. As we have mentioned, there is a close association between suicide attempt and death by suicide.[4,45] For example, Finkelstein et al[46] reported that first-time self-poisoning survivors had a completed suicide HR of 41.96 when compared to controls. Nonetheless, differences between suicide attempters and completers have been reported elsewhere.[38,47] Thus, we can focus only on the programs' protective role against attempted suicide. As this was a real-world study, we did not randomly assign the interventions. Instead, each center had different criteria for inclusion. As a matter of fact, baseline characteristics showed differences across groups. Accordingly, we fitted 2 different multivariate models and obtained similar estimates across models, suggesting robust results. Nevertheless, we cannot rule out residual confounding or selection bias due to unmeasured correlates such as lethality, suicide attempt method, or family history of suicide, and therefore the effect estimates should be carefully considered. A comparison with historical controls from each catchment area might provide useful additional effect estimates. Also, there is a possibility that certain relapses were evaluated at a different hospital during follow-up. In our context, this possibility is unlikely. First, as other authors from comparable areas of the same health care system have previously published, treated suicide attempters are systematically referred to the subject's catchment area's general hospital.[8] Second, Madrid's population shows high residential stability through time: per official data from 2017,[48] only 3.49% of the people living in 1 of the 3 studied catchment areas moved to a different district. All in all, this possibility does not differentially affect our studied catchment areas; thus, we consider our comparative effectiveness estimates internally valid. Lastly, it has been suggested that, just as in most complex phenomena, risk factors for suicide and suicidal behaviors act not only at the individual level but also at overarching ecological levels.[9,45,49,50] For example, the frequency of suicide ideation and attempts shows remarkable differences across countries.[50] However, the 3 intervention groups are contemporary and belong to comparable catchment areas of the same city, so we consider differences in such factors unlikely.

The strictly naturalistic enrollment of the study yields results that can be considered directly applicable. Most clinical guidelines prioritize evidence arising from RCTs. However, although strict inclusion criteria, randomization, and close follow-up provide highly internally valid efficacy estimates, their ability to also produce clinically generalizable effectiveness estimates has been called into question.[27] In line with this similarity, effectiveness estimates from clinical settings are progressively becoming a valuable source, sought after by decision makers.[51] This real-world approach most likely captures an intervention's actual impact in the management of most psychiatric conditions, deeply shaped by interactions with the environment (such as suicide risk or schizophrenia).[52] As previously mentioned, the results are in line with most published research on suicide attempters regarding both the sample's characteristics (a mean age of around 40 years, a higher percentage of females, frequent co-occurrence of alcohol or drug consumption, and main diagnoses of mood, adjustment, and personality disorders[8,12,53]) and the effect estimates of the implemented measures. Hence, we consider these estimates as widely generalizable, especially to contexts where, as in ours, a catchment area–based public system provides universal coverage to the population. Besides, patients were enrolled right before discharge from the general hospital, mostly at the emergency department. Our study therefore supports recent studies' recommendation of a focus toward suicide prevention at such settings because of the concentration of subjects with high suicide risk and low adherence to outpatient resources.[54]

Suicide behaviors are a growing, critical public health issue: in the United States, 1.1 million persons attempt suicide every year.[55] Even though several preventive strategies have proved useful at lowering such behaviors, selecting and promoting measures that entail an additional staff burden require both political will and adequate evidence. Because RCTs of interventions designed to prevent suicide attempts often have ethical limitations,[56] pragmatic designs using real-world data offer an advantageous approach. Nonetheless, the question of if psychotherapy adds value to contact maintenance for suicidal behavior prevention remains partially unanswered.

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Supplementary Material

List of Supplementary Material for the article

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This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Supplementary Table 1: Risk of relapse during the follow-up, derived from a Cox proportional hazard model including time to relapse as the outcome and the clinical and sociodemographic covariates as predictors. Treatment as usual (TAU) is the reference. This alternative multivariate model is age and gender-adjusted and includes personal history of a psychiatric disorder, instead of specific diagnostic groups. (* $p \leq 0.05$; ** $p \leq 0.01$)

	Unadjusted HR (95% CI)	Adjusted HR (95% CI)
TAU	1	1
Psychotherapy	0.47 (0.31-0.72) **	0.56 (0.37-0.87)**
Enhanced Contact	0.66 (0.38-1.16)	0.56 (0.31-0.98)*
Age in years	0.99 (0.98-1.00)	0.99 (0.98-1.00)
Female	1.27 (0.86-1.87)	1.35 (0.90-2.01)
Immigrant	0.68 (0.46-1.00) *	-
Cohabitation	1.10 (0.68-1.77)	-
Personal history of a psychiatric disorder	1.86 (1.24-2.80) **	1.42 (0.92-2.19)
Personal history of suicide attempts	1.89 (1.34-2.65) **	1.56 (1.09-2.23)**
Concurrent alcohol/ drug abuse	1.77 (1.35-2.67) **	1.54 (1.06-2.22)*
Comorbid medical condition	1.73 (1.23-2.43) **	-