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Health care contact prior to suicide attempts in older adults. A field study in Galicia, Spain

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Introduction. Older people have the highest suicide rates in the world. In turn, they have the lowest rates of suicide attempts. Many studies have found greater health contact, especially with general practitioner, prior to suicidal behaviour in this age group. Less information is availbale about prior contact with other health services.

Objective. The objective of the study is to know the characteristics of contact with all levels of health services, prior to a suicide attempt in people over 65 years of age in a defined population.

Material and methods. Along the period January 2015 to December 2017, all persons over 65 years of age admitted by suicide attempt to emergency room in the health area of Santiago de Compostela were interviewed. The interview included a psychiatric evaluation and the collrection of relevant clinical and sociodemographic variables, in particular, data on prior contact with health services.

Results. 80 suicide attempts were recorded, which represents an incidence of 35.3 / 100,000. The average age of our sample was 74.85 ± 7 years, the ratio between male: female was 2: 3. 61.3% had visited their general practitioner the month prior to the attempt, 72.5% had visited a health centre. On the other hand, 41.3% were not under the follow up of Mental Health services.

Conclusions. The facts hat two out of three people over 65 years who commit suicide attempt in our area visit their general practitioner the previous month and 90% visit a health service along the previous three months, raise the question of wheter preventive measures of suicide could take place beyond the scope of Primary Care.

Keywords: Suicide Attempt, Older Adults, Emergencies, Primary Care

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Contacto sanitario previo a intentos de suicidio en personas de edad avanzada. Un estudio de campo en Galicia, España

Introducción. Las personas de edad avanzada presentan las tasas más altas de suicidio en todo el mundo. A su vez, tienen las menores tasas de intentos de suicidio. Muchos estudios coinciden en señalar que en este grupo de edad existe un mayor contacto sanitario previo a las conductas suicidas, especialmente con Atención Primaria. El contacto previo con otros niveles asistenciales es menos conocido.

Objetivo. El objetivo del estudio es conocer las características del contacto con centros sanitarios, de todos los niveles asistenciales, previo a un intento de suicidio, en personas mayores de 65 años, en un área sanitaria bien delimitada.

Material y métodos. En el periodo de enero de 2015 a diciembre de 2017, todas las personas mayores de 65 años del área sanitaria de Santiago de Compostela atendidas en el servicio de urgencias por intentos de suicidio fueron entrevistadas. La entrevista incluyó una evaluación psiquiárica y la recogida de distintas variables clínicas y sociodemográficas, así como datos sobre el contacto previo con centros sanitarios.

Resultados. Se registraron 80 intentos de suicidio, lo que supone una incidencia de 35,3/100.000. La edad media de nuestra muestra fue de 74,85±7 años, la proporción entre hombre:mujer fue de 2:3. En las cuatro semanas previas a la tentativa, el 61,3% visitó a su médico de Atención Primaria y el 72,5% visitó algún centro sanitario. El 41,3% no estaba a seguimiento en servicios de Salud Mental.

Conclusiones. El hecho que dos de cada tres personas mayores de 65 años que cometen un intento de suicidio en nuestra área visitaron a su médico de Atención Primaria du-

rante el mes previo y el 90% hubieran visitado algún centro sanitario durante los tres meses previos, plantea la posibilidad de que las medidas preventivas del suicidio pudieran llevarse a cabo más allá del ámbito de la Atención Primaria.

Palabras clave: Intento de Suicidio, Adulto Mayor, Urgencias, Atención Primaria

INTRODUCTION

A powerful predictor of suicide is the presence of attempted suicides. A third of completed suicides have presented at least one previous attempt[1]. This circumstance increases the risk of suicide by up to 66% compared to that of the overall population[2]. The attempt rate decreases with age[3], but the risk of suicide is increased[4,5]. Without having the obviously tragic consequences of suicide, the attempts generate immense suffering, physical consequences, hospitalisations, and considerable social and health expenditure[6].

The prevalence of suicide attempts during a lifetime, worldwide and in the general population is estimated to be 2.7%[7]. In Spain, this figure drops to just over half, 1.5%[8]. As with completed suicide, the data on suicide attempts are heterogeneous between different countries, but it is assumed that attempts are more frequent in women than in men, and in adolescents more than in adults[9]. Suicidal behaviour is life-threatening in older adults, where the ratio of attempted to completed suicides is 4: 1[10], reaching 1:1 in some series[11,12], much higher than in the general population, where the ratio is 10-20:1, and 200:1 in the case of adolescents[7]. Self-injurious behaviours in the elderly represent 5% of the total[13]. According to the WHO, the incidence of self-injurious behaviour in those over 65 years is 61.4/100,000 inhabitants, this figure is halved in the Spanish population (Guipúzcoa, Euskadi[12]). Focusing on Galicia, a recent epidemiological study confirms that those over age 65 have 2.7 times more risk of having made a suicide attempt than younger adults (18-35 years old)[14].

METHODS

Study design

This is a descriptive, cross-sectional and retrospective study carried out on the general population of the health system that receives health care from the Emergency Department of the Complexo Hospitalario Universitario de Santiago de Compostela (CHUS).

Selection of the sample

All persons over age 65 who were attended by the psychiatry service in the emergency and psychiatric interconsultation service of CHUS for an attempted suicide, in the period from January 2015 to December 2017, were interviewed and evaluated. Both through the clinical interview itself and the Electronic Medical Record, through the IANUS computer support, different clinical and sociodemographic variables of interest were collected, and all the assistance in Primary Care, Mental Health, or other specialities, registered in the IANUS Electronic Medical Record of the Galician Healthcare Service (SERGAS), prior to the suicide attempt, was coded. Verbal consent was requested from all patients in order to use the variables under study in a completely anonymous way.

This emergency department receives all suicide attempts that take place in its reference health area, with a population of 384,852 inhabitants. It has a psychiatrist on call every day of the year and with general criteria, cases of suicide attempts receive a psychiatric evaluation.

The average of the population over age 65 during those three years was 75,538 people.

In total, the number of treatments for suicide attempt in those over 65 years in the period from 2015 to 2017 was n=80, corresponding to 78 individuals.

We understand as "suicide attempt" the self-injurious act with the intention (explicit or implicit) of causing death, with a non-fatal result. Suicidal behaviours have been included in the study, both with undetermined intent (unclear intent) type I (without injuries) and type II (with injuries), as well as suicide attempts type I (without injuries) and type II (with injuries) according to the revised nomenclature of Silverman et al.[23].

Statistical analysis

A descriptive analysis was performed for both the sociodemographic variables and the temporal variable of previous healthcare contact. For comparisons between genders, a significance level of $p < 0.05$ was established.

For statistical analysis of data, the computer program "IBM SPSS Statistics 20" for Macintosh was used.

RESULTS

Sociodemographic variables

Table 1 shows sociodemographic variables of suicide attempts that make up the study sample.

Previous contact with health services prior to suicide attempt

Last consultation in Primary Care (PC), Mental Health (MH) or other specialities

In Table 2 we can see the time elapsed between the last care received in a health centre and the suicide attempt. 61.3% of individuals had seen their PC doctor in the previous month, 82.5% had done so in the previous three months.

Regarding the last consultation in MH before the episode, there are statistically significant differences (p=0.005) between men and women.

Previous consultations with other specialists were similar between both genders (p=0.106).

Characteristics of the pre-attempt consultation in PC

In the last year, the total mean of consultations in PC was 12.48±10.50 similar for men (12.97±9.62) and women (12.12±11.18) (p=0.729).

The main reason for consultation in PC prior to the suicide attempt was due to physical problems, at 78.8%. 16.3% came for mental health problems. There was no statistically significant difference in terms of gender (p=0.167) (Table 3).

Characteristics of the pre-attempt consultation in Mental Health

In the last year, the mean number of consultations in MH services was 1.41±2.206, at 0.67±1.267 for men and 1.96±2.576 for women (p=0.010). By discarding individuals without a psychiatric history prior to the attempt (41.3% of the sample), a mean of 2.00±1.483 for men and 2.59±2.676 for women (p=0.493) was obtained.

The type of care device in which this monitoring was carried out most frequently was the Mental Health Units (MHU) with 42.6%. In the case of the Psychogeriatrics Unit at CHUS, the department monitored 27.7% of the individuals; 12.8% were monitored via a private network and 17% had no record of follow-up by any type of mental health unit.

Table 1 Socio-demographic variables of suicide attempts in people over 65 years in the health area of Santiago de Compostela from 2015 to 2017

		n=80	%
Sex	Male	33	41.3
	Female	47	58.8
	H: M	2:3	
Age	74.85 ± 7.104 (65-91) M:76.19±9.424 F:73.92±6.473		
Country of birth	Spain	77	96.3
	Brazil	1	1.3
	Portugal	2	2.5
Marital status	Single	4	5
	1st marriage	40	50
	Divorced	8	10
	Separated	4	5
	Widowed	23	28.7
	Unknown	1	1.3
Widowhood	Never	55	68.8
	Previous twelve months	3	3.8
	Over a year ago	18	22.5
	Six months before	2	2.5
	In the last month	1	1.3
	Unknown	1	1.3
Living situation	Live alone	17	21.3
	With childless couple	27	33.8
	With partner and children	13	16.3
	Only with children	17	21.3
	Living with parents	1	1.3
	With grandson	1	1.3
	Other family	2	2.5
	In institution	1	1.3
	Unknown	1	1.3
Level studies	Low	62	77.5
	Medium	7	8.8
	High	2	2.5
	Unknown	9	11.8
Employment status	Retired	80	100

Table 2 Time of the last consultation before the suicide attempt in Primary Care, Mental Health and other specialists

		Man	Woman	Total (%)
Primary care	Last week	16 (48.5)	10 (21.3)	26 (32.5)
	2-4 weeks	10 (30.3)	13 (27.7)	23 (28.8)
	2-3 months	3 (9)	14 (29.8)	17 (21.3)
	4-6 months	1 (3)	5 (10.6)	6 (7.5)
	7-12 months	2 (6)	2 (4.3)	4 (5)
	+1 year	1 (3)	2 (4.3)	3 (3.8)
	private services	0	1 (2.1)	1(1.3)
				p=0.069
Mental Health	Never	22 (66.7)	11 (23.4)	33 (41.3)
	Last week	1 (3)	6 (12.8)	7 (8.8)
	2-4 weeks	2 (6)	6 (12.8)	8 (10)
	2-3 months	4 (12)	9 (19.1)	13 (16.3)
	4-6 months	1 (3)	4 (8.6)	5 (6.3)
	7-12 months	0 (0)	2 (4.3)	2 (2.5)
	1-5 year	1 (3)	4 (8.6)	5 (6.3)
	5-10 years	2 (6)	1 (2.1)	3 (3.8)
	+ 10 years	0 (0)	4 (8.6)	4 (5)
				p=0.005
Other specialties	None	3 (9)	0 (0)	3 (3.8)
	Last week	6 (18)	9 (19.1)	15 (18.8)
	2-4 weeks	8 (24.2)	8 (17)	16 (20)
	2-3 months	7 (21.2)	5 (10.6)	12 (15)
	4-6 months	2 (6)	8 (17)	10 (12.5)
	7-12 months	1 (3)	4 (8.6)	5 (6.3)
	+ 1 year	6 (18)	12 (25.5)	18 (22.5)
	Unknown	0 (0)	1 (2.1)	1 (1.3)
				p=0.106

The type of therapy in the MHU in individuals with psychiatric and/or psychological monitoring (n=47) is shown in Table 4. To simplify the analysis, we only consider psychotherapy specifically carried out by clinical psychologists. No individual received psychotherapy as the only therapy, and only 12.8% received combination therapy, all women.

Table 5 reflects the use of Psychomarmacological drugs up to the moment of the suicide attempt, whether they were under monitoring in PC or in MH. Statistically significant differences were found between the sexes in taking antidepressants (AD), benzodiazepines (BZD), and neuroleptics (NRLP). In the case of BZDs, 89.4% of women had them prescribed, while for men it was 54.5%.

Table 3 Main reason for last consultation in primary care prior to suicide attempt

		Man	Woman	Total
Main reason for last consultation in Primary Care	Physical problems	23	40	63 (78.8)
	Mental problems	7	6	13 (16.3)
	Physical and mental problems	1	0	1 (1.3)
	Social problems	1	0	1 (1.3)
	Physical, mental, and social problems	1	0	1 (1.3)
	Unknown	0	1	1 (1.3)
Total		33	47	80
				p=0.167

Table 4 Type of therapy received on Mental Health services

	Currently not attending n (%)	Psychopharmacology n (%)	Psychopharmacology and Psychotherapeutic n (%)	Total n (%)
Male	2 (4.3)	9 (19.2)	0 (0)	11 (23.4)
Female	4 (8.5)	26 (55.3)	6 (12.8)	36 (76.6)
Total	6 (12.8)	35 (74.5)	6 (12.8)	47 (100)
				p=0.165

Table 5 Psychofarmacological prescription until the time of attempted suicide

		H	M	Total	p
AD	NO	16	11	27 (33.8)	0.020
	YES	17	36	53 (66.3)	
BZD	NO	15	5	20 (25)	<0.001
	YES	18	42	60 (75)	
NRLP	NO	30	33	63 (78.8)	0.020
	YES	3	14	17 (21.3)	
Mood stabilizers	NO	32	47	79 (98.8)	0.180
	YES	1	0	1 (1.3)	

AD: antidepressants; BZD: benzodiazepines; NRLP: neuroleptics

Table 6 Time of the last consultation before the suicide attempt in any health center

		n	%
Last consultation at all care levels	Last week	36	45.0
	2-4 weeks	22	27.5
	2-3 months	14	17.5
	4-6 months	5	6.3
	7-12 months	2	2.5
	+1 year	1	1.3
	Total	80	100.0

Contact at any health centre prior to suicide attempt

Finally, an analysis of the consultations prior to the attempts was carried out globally, which is shown in Table 6 and Figure 1. 45% had visited a health centre in the previous week, while 72.5% had visited in the previous month; almost the total (90%) had contacted health centres in the last three months.

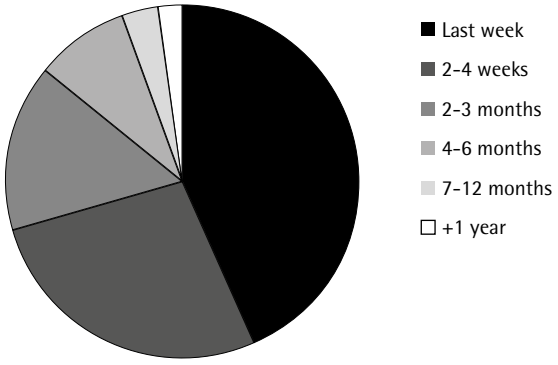

Figure 1 | *Time of the last consultation before the suicide attempt in any health center*

DISCUSSION

Sociodemographic profile

In relation to the sociodemographic data found in our study, they are similar to other results from our environment. Our mean age, 74.85±7.10, is practically identical to that of a large European study analysing 1734 attempts, 74.7±6.9[12] as well as that of other more recent studies, 77±7.9[24] or 78,6±7,94[25]. The 2:3 male to female ratio is in line with some[13,26,27], but it varies with respect to the percentage of 5:2 in Asian population[28].

Regarding the rates found in those over age 65 (35.3/100,000), it is in line with other centres in the state, such as Guipúzcoa (32.3/100,000), which in turn is lower than other rates in northern Europe, 116.9/100,000 in Stockholm, both from the same multicentre study[12] where the mean for all centres was 61.4/100,000 inhabitants. In Europe we find even lower figures, in Würzburg (Germany) they obtained a rate of 14/100,000[29].

Although it is not directly comparable with our study, it is worth mentioning that the incidence rate of suicide attempts in the general population, recorded for five years in the health area adjacent to ours, was 76.1/100,000, (n=285; mean 35±15 years old)[30]. As in the multicentre study by De Leo et al.[12], in Galicia, most attempts are concentrated in the youngest age group.

Due to the incidence of attempts, marital status, type of cohabitation, educational level and, probably -although not evaluated in this study- largely Catholic religious practices, our sample coincides with the differentiated subgroup that make up Würzburg (Germany) and the southern countries from Europe in the WHO/EURO sample[12]. For further details on both the sociodemographic profile and the clinical profile of the sample in this study, we refer the reader to another publication by the same author[31].

Previous contact with health services

Visits to PC before the episode

The results obtained in our healthcare area are in line with previous studies in other countries, although most studies on this aspect either analyse samples of completed suicides, or cover the whole range of adulthood, or have both characteristics, complicating the comparison with our study.

In our sample of elderly patients, one in three had visited their PC doctor the previous week and two out of three over the last month. Dennis et al.[24] obtained 29% for visits the previous week in a sample of suicide attempts in people older than 65 (n=76). Studies of attempts by the general adult population have found similar or somewhat lower figures: 30.4% in the study by Houston et al.[17] and 22.7% in the recent study by Younes et al.[32]. As stated, 61.3% had visited PC the previous month in our study, similar to 59%[24], 66.4%[17] or 59.3%[32] of the three mentioned studies. In contrast, in a study of the general Spanish population, only one third of recorded suicide attempts had visited PC the previous month[33].

In suicide studies in a population older than age 65, 65.7% had visited their PC doctor in the previous month in a sample of the New Zealand population (n=225)[34], or 43% in a sample of individuals from Manchester, in the United Kingdom (n=100)[35], that is, the previous healthcare contact of the population that commits suicide and those who do not complete suicide is similar. The study by Younes et al. found no difference in previous contact between suicide attempts and suicides[32].

It is striking how practically the entire sample of our study (96.3%) visited their PC doctor the previous year. In a suicide review, 77% of the geriatric population had seen a PC the previous year[16].

In the study by Houston et al.[17] in the general population, and only in patients who had their last consultation in the previous month, 36.1% sought care for physical problems in the last consultation, while 54.2% did so for mental health problems. This contrasts with our sample of elderly patients, where one month before the suicide attempt, 69.4% sought care for physical problems, and only 24.5% did so for mental health problems. With suicide in the pop-

ulation over age 60, more than half of the individuals sought care for physical problems[36], getting much closer to the reality of our study. In the suicide study by Cheung et al.[34] it was observed that these percentages varied within the subgroups of age over 65, increasing consultation for physical problems as the age increases, and vice versa, with respect to consultation for mental health problems (p=0.009), but in our study we found no differences in this analysis. These differences may be due to worse perception and mental health stigma in older generations compared to younger populations[37, 38], but also to the greater presence of somatisation in relation to depressive syndromes in the elderly group[39]. All of this only confirms the difficulty of the PC physician to detect suicide risk and, therefore, the need for specific training in the detection of depressive disorders in the elderly[40].

Visits to MH before the episode

58.70% of the individuals had a history of previous contact with MH units; more than double in women (76.6%) than in men (33.3%).In Draper's review[41] studies were between 30-54%. More recently, 43% of the sample by Dennis et al.[24] had a history of previous contact, while 21% were in monitoring. In our study, 51.3% of individuals were in monitoring at the time of the attempt, similar to 51.9% of individuals with attempted follow-up in MH (in public or private network) found in a study of the general Catalan population.[42] These figures are reduced to 17% in the study by Hawton et al. of the general population[27].

In our sample, 8.8% visited their psychiatrist or psychologist the previous week. We are not aware of previous data to be able to compare with other studies for this period of time. Compared to the previous month, this number was 18.8%, in line with others, 16%[43], or in samples of suicide in people older than 55, 8-14%[16], and in people over 65, 14%[35].

We found significant differences in the last visits to MH between men and women who came to consultations (p<0.01). While 25.5% of women had the last consultation in the last four weeks, it was only 9% in the case of men.

Type of therapy during MH monitoring

We found a low percentage of people in MH monitoring who received psychotherapy in a regulated manner (12.8%). And always combined with pharmacotherapy. A recent meta-analysis concludes that psychotherapy is effective in reducing suicide attempts, both in people with and without a history of suicidal behaviour[44]. It is worth noting that only 20% of patients with previous attempts received psychotherapy. 4 of 6 individuals receiving psychotherapy had previous attempts. That is, the majority of individuals receiving psychotherapy have had previous attempts, but the majority of people with previous attempts (n=20) do not receive psychotherapy.

Psychofarmacological prescription at the time of the attempt

Taking psychotropic drugs clearly reflects how the individuals in our study suffered from some mental disorder: 66.3% had prescribed AD, a percentage similar to the study by Dennis et al.[24], but greater than that of the 25% in the study by Cattell et al. in a geriatric sample with completed suicides. BZD's prescription was 78.8%. The intake of neuroleptics (NLPs) was 21.3% and only one individual took mood stabilizers for a Bipolar Disorder.

Of the individuals who were monitored in MH, 100% had an AD prescribed, and 98.8% at least a BZD. Of the 17 individuals taking NLPs only two were prescribed by their PC physician. Of the people who were only monitored in PC, 34.1% had an AD prescribed and 53.7% one or more BZD.

In our sample, all individuals without prior monitoring in MH received a new clinical psychiatric diagnosis in their evaluation at the emergency department. In addition, an AD was prescribed to 65.9% of individuals who did not already take it. We believe that these data suggest a possible underdiagnosis and under-treatment of depressive symptoms in PC, which would be in line with a study that concludes that the greater use of BZD in the elderly (+75 years), only hides a poor identification of depressive syndromes and, accordingly, under-treatment with AD[45].

There are significant differences between taking AD, BZD, and NLPs by gender, but these differences disappear when we analyse only individuals with no monitoring in MH, since, as we described, women have a longer monitoring in MH, where AD and BZD prescriptions reach 100%.

The high prescription and consumption of BZD in Spain is well known, surpassing neighbouring countries, as is its prevalence in women and the elderly[46]. The prescription of BZD (78.8%) in our sample quadruples the taking of anxiolytics or hypnotics in the general Spanish population over age 65 (16%)[47].

Visits to other specialists before the episode

We have not found data regarding contact prior to suicide attempts with other medical specialities. In our study, the figures are lower than those found in PC, but higher than MH. These figures are not negligible at all. Up to 28.8% visited a specialist in the previous month and only 3 individ-

uals had no prior contact. Despite accounting for almost a third of the sample, the high clinical specificity of these services suggests poor efficiency in "indicated" type interventions, with perhaps "selective" preventive measures being the most suitable to carry out in these specialized health units.

Joint analysis of visits to health services

By grouping all recent visits to health services, we found some interesting results in order to design preventive strategies. Almost half of the individuals visited some type of health centre in the previous week, three quarters of the individuals did so in the previous month, and practically the entire sample (90%) during the last three months. We have not found studies analysing this type of variable.

What seems most interesting about these results is that practically all individuals with suicide attempts visit a health unit during the previous three months. This suggests the possibility that, apart from the "indicated" or "selective" preventive strategies that can be organized in specific settings such as PC, the involvement of all levels of care related to treatment of the elderly should be considered, as previously indicated.

Strengths and limitations of the study

In terms of limitations of the study, it is worth mentioning that the measurements were carried out in the context of emergency care by several evaluators, as well as the retrospective nature of the study. Likewise, in our sample we did not manage to include individuals from residencies for the elderly, possibly due to the intervention of the professionals of these centres.

As strengths of our study, it should be noted that all suicide attempts that take place in our health area are attended by the psychiatry service of Santiago de Compostela, which has a psychiatrist on call with physical presence in the emergency department. Although it cannot be ruled out that some individuals could be cared for in the private network or, as we mentioned, in residencies, it is estimated that their number would be of little significance, so that our results can not only be considered highly representative of what happens in one of the largest health areas in Galicia, but can probably be applied to the whole of the Autonomous Community of Galicia. The IANUS electronic medical record system of Galician Health Service (SERGAS), which records all kinds of health contacts throughout the Galician Community, guaranteed a totally reliable collection of all the healthcare-related variables (retrospective in nature) relevant to this study.

CONCLUSIONS

We can conclude that the majority of people over 65 who made a suicide attempt in our health area visited their PC doctor in the last four weeks, but in this last consultation, the main health request of the majority was physical problems.

The analysis of the psychopharmacological treatment of the cases in our study **suggests** underdiagnosis and under-treatment of depressive symptoms in PC in people over 65 who end up carrying out a suicide attempt. This deserves a specific study and, if confirmed, would be subject to some type of training intervention at said level of care. On the other hand, the vast majority of people over 65 who carry out a suicide attempt and are being monitored in MH do not receive psychotherapy from clinical psychology services, not even people with previous attempts, which is an important wake-up call for this type of health units.

Regarding possible preventive measures, PC consultations can be a good way to apply these measures in our setting as well. Furthermore, we believe, with the data extracted, that health centres at all levels of care could be suitable spaces to develop preventive strategies.

All these results reinforce, if possible, the need for a community model of organization of the Mental Health service network, with greater coordination of these services with Primary Care Services, primarily, but also with the other levels of care.

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CONFLICT OF INTERESTS

There is no conflict of interest to declare.

REFERENCES

1. Isometsa ET. Psychological autopsy studies--a review. Eur Psychiatry. 2001 Nov;16(7):379-85.
2. Hawton K, Zahl D, Weatherall R. Suicide following deliberate self-harm: long-term follow-up of patients who presented to a general hospital. Br J Psychiatry. 2003 Jun;182:537-42.
3. Draper BM. Suicidal behaviour and suicide prevention in later life. Maturitas. 2014 Oct;79(2):179-83.
4. Goni-Sarries A, Blanco M, Azcarate L, Peinado R, Lopez-Goni JJ. Are previous suicide attempts a risk factor for completed suicide? Psicothema. 2018 Feb;30(1):33-8.
5. Parra-Uribe I, Blasco-Fontecilla H, Garcia-Pares G, Martinez-

Naval L, Valero-Coppin O, Cebria-Meca A, et al. Risk of re-attempts and suicide death after a suicide attempt: A survival analysis. BMC Psychiatry. 2017 May 4;17(1):163.
6. Shepard DS, Gurewich D, Lwin AK, Reed GA, Jr., Silverman MM. Suicide and Suicidal Attempts in the United States: Costs and Policy Implications. Suicide Life Threat Behav. 2016 Jun;46(3):352-62.
7. Nock MK, Borges G, Bromet EJ, Cha CB, Kessler RC, Lee S. Suicide and suicidal behavior. Epidemiologic reviews. 2008;30:133-54.
8. Gabilondo A, Alonso J, Pinto-Meza A, Vilagut G, Fernandez A, Serrano-Blanco A, et al. Prevalence and risk factors for suicide ideation, plans and attempts in the Spanish general population. Results from the ESEMeD study. Med Clin (Barc). 2007 Oct 13;129(13):494-500.
9. WHO. Preventing Suicide - A Global Imperative. Avaliable in: http://wwwwhoint/mental_health/suicide-prevention/world_report_2014/es/. 2014.
10. McIntosh JL. Epidemiology of suicide in the elderly. Suicide Life Threat Behav. 1992 Spring;22(1):15-35.
11. Frierson RL. Suicide attempts by the old and the very old. Arch Intern Med. 1991 Jan;151(1):141-4.
12. De Leo D, Padoani W, Scocco P, Lie D, Bille-Brahe U, Arensman E, et al. Attempted and completed suicide in older subjects: results from the WHO/EURO Multicentre Study of Suicidal Behaviour. Int J Geriatr Psychiatry. 2001 Mar;16(3):300-10.
13. Lawrence D, Almeida OP, Hulse GK, Jablensky AV, Holman CD. Suicide and attempted suicide among older adults in Western Australia. Psychol Med. 2000 Jul;30(4):813-21.
14. Mateos R, Gómez-Beneyto M, Domínguez MD, Haro JM, Montero I, PE M. Prevalencia dos Trastornos Mentais en Galicia. Informe del Estudio de Epidemiología Psiquiátrica sobre Prevalencia de Trastornos Mentales en Galicia, encargado por el Servicio Galego de Saúde (SERGAS) a la Sociedad Española de Epidemiología Psiquiátrica (SEEP). Available in: https://librariaxuntagal/sites/default/files/downloads/publicacion/prevalencia_dos_trastornos_mentais_galego_def2pdf 2017.
15. Conwell Y, Lyness JM, Duberstein P, Cox C, Seidlitz L, DiGiorgio A, et al. Completed suicide among older patients in primary care practices: a controlled study. J Am Geriatr Soc. 2000 Jan;48(1):23-9.
16. Luoma JB, Martin CE, Pearson JL. Contact with mental health and primary care providers before suicide: a review of the evidence. Am J Psychiatry. 2002 Jun;159(6):909-16.
17. Houston K, Haw C, Townsend E, Hawton K. General practitioner contacts with patients before and after deliberate self harm. Br J Gen Pract. 2003 May;53(490):365-70.
18. Raue PJ, Ghesquiere AR, Bruce ML. Suicide risk in primary care: identification and management in older adults. Curr Psychiatry Rep. 2014 Sep;16(9):466.
19. Preville M, Boyer R, Hebert R, Bravo G, Seguin M. Correlates of suicide in the older adult population in Quebec. Suicide Life Threat Behav. 2005 Feb;35(1):91-105.
20. Conwell Y, Van Orden K, Caine ED. Suicide in older adults. Psychiatr Clin North Am. 2011 Jun;34(2):451-68.
21. Lapierre S, Erlangsen A, Waern M, De Leo D, Oyama H, Scocco P, et al. A systematic review of elderly suicide prevention programs. Crisis. 2011;32(2):88-98.
22. Callahan CM, Hendrie HC, Nienaber NA, Tierney WM. Suicidal ideation among older primary care patients. J Am Geriatr Soc. 1996 Oct;44(10):1205-9.
23. Silverman MM, Berman AL, Sanddal ND, O'Carroll P W, Joiner TE. Rebuilding the tower of Babel: a revised nomenclature for the study of suicide and suicidal behaviors. Part 1: Background, rationale, and methodology. Suicide Life Threat Behav. 2007 Jun;37(3):248-63.
24. Dennis MS, Wakefield P, Molloy C, Andrews H, Friedman T. A study of self-harm in older people: mental disorder, social factors and motives. Aging Ment Health. 2007 Sep;11(5):520-5.
25. Liu IC, Chiu CH. Case-control study of suicide attempts in the elderly. Int Psychogeriatr. 2009 Oct;21(5):896-902.
26. De Leo D, Padoani W, Lonnqvist J, Kerkhof AJ, Bille-Brahe U, Michel K, et al. Repetition of suicidal behaviour in elderly Europeans: a prospective longitudinal study. J Affect Disord. 2002 Dec;72(3):291-5.
27. Hawton K, Fagg J, Simkin S. Deliberate self-poisoning and self-injury in children and adolescents under 16 years of age in Oxford, 1976-1993. Br J Psychiatry. 1996 Aug;169(2):202-8.
28. Chan J, Draper B, Banerjee S. Deliberate self-harm in older adults: a review of the literature from 1995 to 2004. Int J Geriatr Psychiatry. 2007 Aug;22(8):720-32.
29. DeLeo D, Bille-Braha U, Bjerke T, Crepet P, Haring C, Kerkhof A, et al. Parasuicide in the elderly: Results from the WHOiEURO Multicentre study, 1989-1993. A short report. IPA Bull. 1994; 11:15-7.
30. Vázquez Lima MJ, Álvarez Rodríguez C, López-Rivadulla Lamas M, Cruz Landeira A, Abellás Álvarez C. Análisis de los aspectos epidemiológicos de las tentativas de suicidio en un área sanitaria desde la perspectiva de un servicio de urgencias. Emergencias. 2012;24:121-5.
31. Soriano-Barcelo J, Portes-Cruz J, Portela-Traba B, Cornes-Iglesias J, Brenlla-Gonzalez JRM. Perfil de los intentos de suicidio en personas mayores de 65 años del área sanitaria de Santiago de Compostela en el periodo de 2015 a 2017. Informaciones Psiquiátricas. 2019 (235):89-108.
32. Younes N, Melchior M, Turbelin C, Blanchon T, Hanslik T, Chee CC. Attempted and completed suicide in primary care: not what we expected? J Affect Disord. 2015 Jan 1;170:150-4.
33. Madoz-Gurpide A, Baca-Garcia E, Diaz-Sastre C, Ceverino A, Guerro D, Saiz J. Attempted suicide and previous contact with health system. Actas Esp Psiquiatr. 1999 Sep-Oct;27(5):329-33.
34. Cheung G, Merry S, Sundram F. Do suicide characteristics differ by age in older people? Int Psychogeriatr. 2017 Jul 13:1-8.
35. Cattell H, Jolley DJ. One hundred cases of suicide in elderly people. Br J Psychiatry. 1995 Apr;166(4):451-7.
36. Harwood DM, Hawton K, Hope T, Jacoby R. Suicide in older people: mode of death, demographic factors, and medical contact before death. Int J Geriatr Psychiatry. 2000 Aug;15(8):736-43.
37. ten Have M, de Graaf R, Ormel J, Vilagut G, Kovess V, Alonso J, et al. Are attitudes towards mental health help-seeking associated with service use? Results from the European Study of Epidemiology of Mental Disorders. Soc Psychiatry Psychiatr Epidemiol. 2010 Feb;45(2):153-63.
38. Robb C, Haley WE, Becker MA, Polivka LA, Chwa HJ. Attitudes towards mental health care in younger and older adults: similarities and differences. Aging Ment Health. 2003 Mar; 7(2):142-52.
39. Smith M, Haedtke C, Shibley D. Late-life depression detection. J Gerontol Nurs. 2015 Feb;41(2):18-25.
40. Rothera I, Jones R, Gordon C. An examination of the attitudes and practice of general practitioners in the diagnosis and treatment of depression in older people. Int J Geriatr Psychiatry. 2002 Apr;17(4):354-8.
41. Draper B. Attempted Suicide in Old Age. Int J Geriatr Psychiatry. 1996;11(7):577-87.
42. Parra Uribe I, Blasco-Fontecilla H, Garcia-Pares G, Giro Batalla M, Llorens Capdevila M, Cebria Meca A, et al. Attempted and completed suicide: not what we expected? J Affect Disord. 2013 Sep 25;150(3):840-6.

43. Suominen K, Isometsa E, Lonnqvist J. Elderly suicide attempters with depression are often diagnosed only after the attempt. Int J Geriatr Psychiatry. 2004 Jan;19(1):35-40.
44. Calati R, Courtet P. Is psychotherapy effective for reducing suicide attempt and non-suicidal self-injury rates? Meta-analysis and meta-regression of literature data. J Psychiatr Res. 2016 Aug;79:8-20.
45. Assem-Hilger E, Jungwirth S, Weissgram S, Kirchmeyr W, Fischer P, Barnas C. Benzodiazepine use in the elderly: an indicator for inappropriately treated geriatric depression? Int J Geriatr Psychiatry. 2009 Jun;24(6):563-9.
46. Huerta C, Abbing-Karahagopian V, Requena G, Oliva B, Alvarez Y, Gardarsdottir H, et al. Exposure to benzodiazepines (anxiolytics, hypnotics and related drugs) in seven European electronic healthcare databases: a cross-national descriptive study from the PROTECT-EU Project. Pharmacoepidemiol Drug Saf. 2016 Mar;25 (Suppl 1):56-65.
47. Tellez-Lapeira JM, Lopez-Torres Hidalgo J, Galvez-Alcaraz L, Parraga-Martinez I, Boix-Gras C, Garcia-Ruiz A. [Determining factors for the use of anxiolytic and hypnotic drugs in the elderly]. Rev Esp Geriatr Gerontol. 2017 Jan-Feb;52(1):31-4.