



# VoluntariaMente: the impact of the individual social role on the improvement of mental health

Patrícia Tuna,<sup>1</sup> Sofia Almeida,<sup>1</sup> Ana Sara Ferreira,<sup>2</sup> Francisco Santos Coelho,<sup>3</sup> Pedro Couto,<sup>2</sup> Bárbara Teves Reis,<sup>4</sup> Ana Gonçalves<sup>5</sup>

## RESUMO

**Introduction:** Mental health problems are amongst the most common health issues seen worldwide. They are an important cause of morbidity and social isolation. This work aimed to implement an intervention project with people who suffer from anxiety and/or depressive disorder to improve their depression and anxiety scores.

**Methods:** Patients from a Portuguese Family Healthcare Unit medicated with anxiolytics and/or antidepressants, to treat their anxiety and/or depression disorders, were selected and integrated into a volunteering project that lasted a year. Anxiety symptoms were measured by the Hamilton Anxiety Scale, and depression scores were quantified by the Patient Health Questionnaire-9, both before and after the intervention.

**Results:** Thirty-three participants were selected, and 25 were included in the project. The majority were female, over 50 years old, and performed an average of 48 hours of volunteering. There was a statistically significant reduction in levels of anxiety and/or depression scores after the intervention, regardless of the number of volunteer hours performed.

**Conclusions:** It is suggested that qualified and accompanied volunteer work can help reduce anxiety and depression scores.

**Keywords:** Mental health; Anxiety; Depression; Volunteers; Primary health care.

## INTRODUCTION

**M**ental health problems are very common and represent a significant portion of health-seeking contacts in primary health care. Depression and anxiety disorders are among the most common mental health issues and constitute an important cause of morbidity on a personal and social level, contributing to social isolation, absenteeism, and premature mortality.<sup>1-2</sup> Given the prevalence and impact of mental health disorders, they

constitute a public health priority, increasingly demanding initiatives that promote social integration and well-being of these patients.<sup>3-4</sup> Primary health care professionals, due to their proximity and continuity of care, may have an important role in identifying these patients and guiding them to these initiatives. Local non-governmental organizations with volunteering necessities may be an essential community partner.

Studies have shown that volunteer work promotes not only mental health but also social inclusion and is related to lower anxiety and depression symptoms.<sup>5-6</sup> The PERMA model<sup>7</sup> proposes five pillars on which psychological well-being and happiness are based – Positive Emotions, Engagement, Relationships, Meaning, and Accomplishments. As there are studies suggesting an association between volunteering and these parameters of well-being,<sup>8-9</sup> our work aimed to implement an intervention project with people who suffer from

1. Médica Interna de Medicina Geral e Familiar. USF Valongo, ULS São João. Valongo, Portugal.

2. Médica Assistente de Medicina Geral e Familiar. USF Valongo, ULS São João. Valongo, Portugal.

3. Médico Assistente de Medicina Geral e Familiar. USF Tâmega, ULS Tâmega e Sousa. Marco de Canaveses, Portugal.

4. Médica Assistente Graduada em Medicina Geral e Familiar. USF Valongo, ULS São João. Valongo, Portugal.

5. Gestora de Projeto. Pista Mágica – Associação. Rio Tinto, Portugal.



properly diagnosed anxiety and/or depression disorder to improve their depression and anxiety scores and foster psychological well-being, happiness, sense of accomplishment, and belonging.

## METHODS

### Participants and procedure

Participants were selected opportunistically among a sample of patients from the Family Healthcare Unit of Valongo (USF Valongo), with ages between 18 and 64 years old, classified with the International Classification of Primary Care (2nd edition; ICPC-2) P74 – Anxiety disorder/anxiety state and/or P76 – Depressive disorder codes and medicated with anxiolytics and/or antidepressants. They were selected during medical appointments at USF Valongo. Patients who met the criteria described and agreed to participate in the project were included.

The intervention was carried out by Pista Mágica, a Portuguese non-governmental organization for development, focused on the participants' empowerment through training sessions on self-development, empathy, volunteering and psychoeducation; group volunteering activities accompanied by a volunteering professional, such as organizing and sorting donations, supporting the elderly and people with different types of disabilities, distributing meals to the homeless, providing care to ownerless animals, etc.; definition of individual happiness projects; and individual volunteering activities aligned with each participant's needs, dreams and objectives. This was a pilot project, so there was no previous experience involving volunteers with the mentioned characteristics.

The project lasted for a year, with participants attending weekly sessions.

Participants were informed about the study procedures and aims. They were notified that the participation was voluntary. Informed consent was obtained, and confidentiality of data was ensured.

### Instruments

Validated questionnaires for the Portuguese population were applied at the beginning and at the end of the intervention to screen for anxiety and/or depression symptoms.

The Hamilton Anxiety Scale (HAM-A) was used to screen for anxiety symptoms. This scale is composed of

14 items whose total score indicates if the patient has mild (<17), moderate (18-24), or severe anxiety (>24 points)<sup>10-11</sup> – Attachment 1.

The Portuguese version of the 9-item Patient Health Questionnaire (PHQ-9) was used to screen for depression symptoms.<sup>12-13</sup> The questionnaire is composed of nine questions and objectifies the grade of depressive symptoms in mild (<10), moderate (10-14), moderate to severe (15-20), or severe (>20) depressive symptoms – Attachment 2.

At the end of the study, a questionnaire created by the researchers was applied to the volunteers to assess the perception of the project's impact on each participant. The questionnaire consisted of eight subjective statements with a 6-point Likert scale ranging from 0 (Not applied) to 5 (Totally agree) – Attachment 3.

### Statistical analysis

Data analysis was conducted using IBM Statistics SPSS®, v. 29. Descriptive statistics were used to summarize sample characteristics, as gender (male/female) and age group (age 18-29, 30-49 or above), time on project and volunteer hours, as well as the number of participants in each level of anxiety/depression according to the HAM-A and PHQ-9 scales. Since the data was not normally distributed, nonparametric tests, namely the Wilcoxon Signed Ranks and Mann-Whitney U, were conducted to identify any significant improvement in anxiety and depression between T0 (pre-intervention) and Tf (post-intervention). The results of the scale assessments at T0 and Tf were presented using the median [min-max]. A *p*-value of <0.05 was considered statistically significant.

## RESULTS

### Group description

According to the inclusion criteria, 33 participants joined the project. Of these, eight were lost during follow-up and, therefore, excluded from the project, for a total of 25 participants (*n*=25).

Most participants were 50 years of age or older (*n*=16) and female (*n*=22) – Table 1.

### Project lead times

The project lasted a total of 12 months, but only 10 participants attended the whole period; seven

**TABELA 1. Number of participants by age, gender, time on project and volunteer hours**

Variable	No. of Volunteers
<b>Age (years)</b>	
18 – 29	3
30 – 49	6
>49	16
<b>Gender</b>	
Male	3
Female	22
<b>Time on Project</b>	
12 months	10
5 – 8 months	7
≤3 months	8
<b>Volunteer Hours</b>	
<30	11
30 – 100	11
100 – 300	2
>300	1

participants took part in the project for five to eight months, and the rest for three months or less (Table 1).

All volunteers initially completed five to eight hours of training sessions on self-knowledge, empathy, volunteering, and psychoeducation.

Among the 25 participants, 11 completed less than 30 hours of volunteering; 11 completed 30 to 100 hours; two performed 100 to 300 hours, and one performed more than 300 hours – Table 1. On average, participants completed approximately 48 hours of volunteering.

## Scales

### Anxiety (HAM-A)

#### Total group

At the beginning of the study (T0), according to the scale HAM-A, three participants presented mild anxiety levels, eight moderate anxiety, and 14 severe anxiety. After intervention (Tf), only six of them remained with severe anxiety.

The median of the scale scores between the two as-

sessments decreased from 28 to 17, with statistically significant differences ( $p<0.001$ ).

#### Group with $\geq 30$ h of volunteering

Highlighting the group of participants who volunteered  $\geq 30$  hours ( $n=14$ ), seven participants had severe anxiety at the beginning of the study, while only four had this level of anxiety after the intervention.

There are statistically significant differences between the median scores of pre- and post-intervention assessments ( $p=0.026$ ).

#### Group with $< 30$ h of volunteering

Regarding the group of participants who volunteered  $< 30$  hours ( $n=11$ ), seven participants had severe anxiety at the beginning of the study, while only two showed this level of anxiety after the intervention.

There are statistically significant differences between the median scores of the pre- and post-intervention assessments ( $p=0.006$ ).

The results described above are labelled in Table 2.

## Depression (PHQ-9)

### Total Group

According to the PHQ-9 scale, at the beginning of the study, 11 participants had moderate depressive symptoms, seven had moderate to severe symptoms, and three had severe symptoms. After the intervention, 22 volunteers presented mild depressive symptoms and three presented moderate symptoms; no one presented moderate to severe or severe depressive symptoms.

The median of the scale scores between the two assessments decreased from 12 to five, with statistically significant differences ( $p<0.001$ ).

#### Group with $\geq 30$ h of volunteering

Highlighting the group of volunteers who volunteered  $\geq 30$  hours ( $n=14$ ), 12 participants had mild depressive symptoms at the end of the study, and two presented moderate symptoms; no one presented severe depressive symptoms. There are statistically significant differences between the median scores of the pre- and post-intervention assessments ( $p<0.001$ ).

#### Group with $< 30$ h of volunteering

Regarding the group of participants who volunteered


**TABELA 2. No. of participants by levels of intensity of anxiety symptoms. Median HAM-A scale scores**

Variable	Anxiety (HAM-A scale)				
	Mild Anxiety (n)	Moderate Anxiety (n)	Severe Anxiety (n)	Mean scores	p-value*
Total group					
T0	3	8	14	28	p<0.001
Tf	12	7	6	17	
≥30h of volunteering					
T0	2	5	7	25	p=0.026
Tf	5	5	4	22.5	
<30h of volunteering					
T0	1	3	7	29	p=0.006
Tf	7	2	2	13	

\*p-value = Wilcoxon Signed Ranks Test. T0 = Beginning of the study; Tf = After intervention.

**TABELA 3. No. of participants by levels of intensity of depressive symptoms. Median PHQ-9 scale scores**

Variable	Depression (PHQ-9 scale)					Mean scores	p-value*
	Mild depression symptoms (n)	Moderate depression symptoms (n)	Moderate to severe depression symptoms (n)	Severe depression symptoms (n)			
Total group							
T0	4	11	7	3	12	p<0.001	
Tf	22	3	0	0	5		
≥30h of volunteering							
T0	2	6	3	3	13	p<0.001	
Tf	12	2	0	0	5		
<30h of volunteering							
T0	2	5	4	0	12	p=0.003	
Tf	10	1	0	0	5		

\*p-value = Wilcoxon Signed Ranks Test. T0 = Beginning of the study; Tf = After intervention.

<30 hours (n=11), 10 participants had mild depressive symptoms at the end of the study, and one presented moderate symptoms; no one presented severe depressive symptoms.

There are statistically significant differences between the median scores of the pre- and post-intervention assessments (p=0.003).

The results regarding depression evaluation are described in Table 3.

### Group with ≥30h of volunteering vs Group with <30h of volunteering

The differences between the two groups, at T0 and Tf, were not statistically significant for anxiety (p=0.366) or depression (p=0.739).

### Subjective questionnaire

More than 65% of participants marked «agree» or «completely agree» in all statements present in the


**TABLE 4. Number of volunteers by statement in the final subjective questionnaire**

Statement	Totally agree	Agree	I neither agree nor disagree	Disagree	Totally disagree	Not applied
Participating in the project brought me well-being	13	11	1	0	0	0
I had the opportunity to discover more things about myself	13	9	1	1	1	0
When I volunteer, I feel less need to take SOS medication (for anxiety or depression)	6	6	3	2	1	7
The project makes me feel accomplished	12	11	2	0	0	0
Volunteering gives me the feeling of "mission accomplished"	15	7	3	0	0	0
I have felt greater interest and/or pleasure in activities I carry out daily	10	9	4	0	1	1
When I carry out volunteer activities, I tend to feel less anxious and tense	16	5	2	0	1	1
During the project I met people who became close to me	12	5	3	2	2	1

subjective questionnaire, applied at the end of the intervention (Table 4).

The statements "Participating in the project brought me well-being" and "The project makes me feel accomplished" presented more than 95% agreement responses.

Furthermore, 85% of participants agreed that they felt less tense and anxious when volunteering and more than 75% of participants increased their interest and pleasure in day-to-day activities. For 68% of participants, the project increased the network of people close to them.

## DISCUSSION

To the best of our knowledge, there are no studies yet published regarding the impact of volunteer work on the mental health of people who suffer from anxiety and/or depression disorder in the Portuguese population. Our data suggests that these initiatives may contribute to increasing the well-being and mental health of these patients, which corroborates previous studies regarding other populations.<sup>14</sup>

In our sample, there was a significant reduction in the anxiety and depression scores, which is in line with ex-

tensive previous literature.<sup>15-16</sup> However, this considerable reduction was observed regardless of the number of hours spent volunteering, unlike preceding studies indicate.<sup>17</sup> This might suggest the importance of being engaged in a meaningful activity like volunteering, and that the engagement by itself can have a quick effect on these patients' well-being.

We found with the subjective questionnaire that our patients felt that the volunteering program increased their sense of belonging and accomplishment, their well-being and the pleasure they felt with daily activities. In addition, the results show that our patients' self-perceived levels of anxiety or tension decreased while performing volunteer activities.

The limitations of this paper mainly concern the project's design since it does not allow the determination of causality between the qualified and accompanied volunteer work and the reduction of anxiety and depression scores observed. Also, the lack of random assignment led to confounding variables that were not controlled by the investigators, such as changes in medication, psychological support, concomitant personality disorders, and social aspects that normally



coexist with anxiety/depression, making it difficult to determine causality. Furthermore, the sample size and its lack of representativeness limit the possibility of generalizing the results. Given the different periods of project participation, standardizing the intervention becomes difficult.

Besides the limitations, the reduction in anxiety/depression scores is statistically significant in this sample, which aligns with the results of the subjective questionnaire, suggesting that volunteer work can play a role in the patients' well-being, which is consistent with the literature.

For future research, it would be important to study this question through a clinical trial or at least standardize the intervention period and obtain a larger and more representative sample of the adult population in terms of age range, unlike this study, where the vast majority of participants were aged 50 or over. In this study, only adults up to the age of 64 were included, to contribute to the integration of patients on sick leave or unemployed people into society. However, the literature also indicates greater benefits of volunteering on the mental health of the elderly,<sup>15-16</sup> which highlights the importance of extending the project to older ages in the future.

Although the benefits found were independent of the number of volunteering hours, more studies will be needed to understand whether this will be a determining variable. A possible confounding factor is that all participants had attended training sessions before volunteering, which may have influenced the results (e.g., improving participants' self-esteem). Therefore, we cannot assume that volunteering without these sessions will have the same impact.

Even so, we consider the previous training sessions to be, in fact, a crucial part of the volunteering process, especially for people suffering from mental health disorders, promoting a more self-conscious and adequate volunteering.

In subsequent studies, it would be relevant to evaluate other variables that may influence the results, such as changes in medication, life-changing events, seasonality, comorbidities that limit the participation in volunteering activities (acute diseases, surgeries, hospital stays...), support network *vs* loneliness, concomitant psychological support, social aspects that normal-

ly coexist with anxiety/depression as poverty, unemployment, domestic violence, burnout, pathological grief, among others.

## CONCLUSION

This study suggests that volunteering managed by a qualified mental health professional, following a specific methodology that includes training on self-knowledge, empathy, volunteering, and psychoeducation, can help lower the anxiety and depression scores and increase the patients' self-perception of accomplishment and well-being.

It seems that an intervention (training and accompanied volunteering) based on the PERMA model, that creates opportunities to feel positive emotions, engage with the community, build relationships based on empathy, find meaning and sum accomplishments, may truly contribute to psychological well-being and impact anxiety/depression patients' quality of life through personal empowerment and the possibility to change one's self-perception.

This intervention proposes that qualified and accompanied volunteer work can be a complementary approach to treating anxiety and/or depression symptoms, helping these patients in their social reintegration.

Family doctors are closer to the community and, therefore, are more likely to use social prescribing as a complement in the management of some pathologies. However, it remains to be understood how doctors can include volunteering in their prescriptions.

## ACKNOWLEDGMENTS

The intervention carried out by Pista Mágica, the VoluntariaMente project, was funded by the Active Citizens Program, originating from Iceland, Liechtenstein, and Norway through the EEA Grants, managed by Fundação Calouste Gulbenkian in consortium with Fundação Bissaya Barreto.

## REFERENCES

1. Apóstolo JL, Figueiredo MH, Mendes AC, Rodrigues MA. Depression, anxiety and stress in primary health care users. *Rev Lat Am Enfermagem*. 2011;19(2):348-53.
2. Sartorius N, Ustün TB, Lecrubier Y, Wittchen HU. Depression comorbid with anxiety: results from the WHO study on psychological disorders in primary health care. *Br J Psychiatry Suppl*. 1996;(30):38-43.
3. Lloyd C, Tse S, Deane FP. Community participation and social inclusion: how practitioners can make a difference. *Aust eJ Adv Ment Health*. 2006;5(3):1-10.



4. Seabrook EM, Kern ML, Rickard NS. Social networking sites, depression, and anxiety: a systematic review. *JMIR Ment Health*. 2016;3(4):e50.
5. Yang J, Matz C. A latent deprivation perspective: mechanisms linking volunteering to mental health in later life. *Int J Aging Hum Dev*. 2022;95(1):110-30.
6. Ramos R, Brauchli R, Bauer G, Wehner T, Hämmig O. Busy yet socially engaged: volunteering, work-life balance, and health in the working population. *J Occup Environ Med*. 2015;57(2):164-72.
7. Seligman ME. *Flourish: a visionary new understanding of happiness and well-being*. New York: Free Press; 2011. ISBN 9781439190753
8. Kragh G, Stafford R, Curtin S, Diaz A. Environmental volunteer well-being: managers' perception and actual well-being of volunteers. *F1000Res*. 2016;5:2679.
9. Carlton S, Wong JH. Applying the PERMA framework to young volunteers in Aotearoa New Zealand. *Int J Appl Posit Psychol*. 2023;8(3):599-620.
10. Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol*. 1959;32(1):50-5.
11. Santos ER, Coelho JC, Ribeiro I, Sampaio F. Translation, cultural adaptation and evaluation of the psychometric properties of the Hamilton Anxiety Scale among a sample of Portuguese adult patients with mental health disorders. *BMC Psychiatry*. 2023;23(1):520.
12. Monteiro S, Torres A, Pereira A, Albuquerque E, Morgadinho R. 2017 – Preliminary validation study of a Portuguese version of the Patient Health Questionnaire (PHQ-9). *Eur Psychiatry*. 2013;28(S1):1.
13. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*. 2001;16(9):606-13.
14. Ballard PJ, Daniel SS, Anderson G, Nicolotti L, Caballero Quinones E, Lee M, et al. Incorporating volunteering into treatment for depression among adolescents: developmental and clinical considerations. *Front Psychol*. 2021;12:642910.
15. Anderson ND, Damianakis T, Kröger E, Wagner LM, Dawson DR, Binns MA, et al. The benefits associated with volunteering among seniors: a critical review and recommendations for future research. *Psychol Bull*. 2014;140(6):1505-33.
16. Chan W, Chui CH, Cheung JC, Lum TY, Lu S. Associations between volunteering and mental health during COVID-19 among Chinese older adults. *J Gerontol Soc Work*. 2021;64(6):599-612.
17. Webster NJ, Ajrouch KJ, Antonucci TC. Volunteering and health: the role of social network change. *Soc Sci Med*. 2021;285:114274.

#### AUTHORS CONTRIBUTION

Conceptualization, AG, PT, SA, and FSC; methodology, AG, PT, SA, and FSC; software, AG, PT, and SA; validation, PT, SA, AG, ASF, FSC, PC, and BTR; formal analysis, PT, SA, AG, and ASF; investigation, PT, SA, and AG; resources, PT, SA, AG, and ASF; data curation, PT, SA, AG, ASF, and PC; writing – original draft, PT, SA, and AG; writing – review & editing, PT, SA, AG, ASF, FSC, PC, and BTR; visualization, PT, SA, AG, ASF, FSC, PC, and BTR; supervision, PT, SA, AG, ASF, FSC, PC, and BTR; project administration, PT, SA, and AG; funding acquisition, AG. All authors read and agreed to the final version of the manuscript.

#### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

#### ENDEREÇO PARA CORRESPONDÊNCIA

Patrícia Tuna  
E-mail: patriciaift@hotmail.com  
<https://orcid.org/0000-0002-1403-2244>

Recebido em 08-09-2024

Aceite para publicação em 27-05-2025

## ABSTRACT

### VOLUNTARIAMENTE: O IMPACTO DO PAPEL SOCIAL INDIVIDUAL NA MELHORIA DA SAÚDE MENTAL

**Introdução:** As patologias de saúde mental estão entre os problemas de saúde mais comuns em todo o mundo, sendo uma causa importante de morbidade e isolamento social. Este trabalho teve como objetivo implementar um projeto de intervenção com pessoas que sofrem de ansiedade e/ou depressão, com o intuito de melhorar os seus índices de depressão e ansiedade.

**Métodos:** Pacientes de uma Unidade de Saúde Familiar portuguesa, medicados com ansiolíticos e/ou antidepressivos para tratar os seus transtornos de ansiedade e/ou depressão, foram selecionados e integrados num projeto de voluntariado que durou um ano. Os sintomas de ansiedade foram medidos pela Escala de Ansiedade de Hamilton e os índices de depressão foram quantificados pelo Questionário de Saúde do Paciente-9, antes e depois da intervenção.

**Resultados:** Foram selecionados 33 participantes e 25 foram incluídos no projeto. A maioria era mulheres, com mais de 50 anos, tendo realizado uma média de 48 horas de voluntariado. Houve uma redução estatisticamente significativa nos níveis de ansiedade e/ou depressão após a intervenção, independentemente do número de horas de voluntariado realizado.

**Conclusões:** Sugere-se que o trabalho voluntário qualificado e acompanhado pode ajudar a reduzir os índices de ansiedade e depressão.

**Palavras-chave:** Saúde mental; Ansiedade; Depressão; Voluntariado; Cuidados de saúde primários.