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Emotional health assessment related to COVID-19 in older people: A cross-sectional study

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Abstract

Background: The aim of this study was to assess the presence of anxiety, fear and psychological distress in the population of people over 65 years of age and to study possible differences with a sample of subjects aged between 60 and 65 years.

Methods: A descriptive and psychometric cross-sectional study. The total sample used consisted of 1112 subjects from university training programmes for the old people from all over Spain. Anxiety and fear of COVID-19 were measured using the AMICO scale and psychological distress using the GHQ-12 instrument.

Results: Significant differences were found in the AMICO ($p = 0.006$) and GHQ-12 ($p = 0.03$) measures between age subgroups, with lower values in older age groups. Contrast statistics showed significant differences on both measures (AMICO and GHQ) in women, single or widowed subjects, and those who had not been infected by the SARS-CoV-2 virus.

Limitations: It would be desirable to increase the sample size, especially in the lower age group (<65). The establishment of the age limit between the two groups could be located at 60 years of age. The use of new technologies to get information should be considered.

Conclusions: Overall, moderate levels of fear and anxiety of COVID-19 were present. Women tended to have higher levels of both general psychological distress and fear and anxiety of COVID-19. Especially in those over 65, higher levels of distress and fear/anxiety of COVID-19 were associated with being widowed or single, and not having been infected before with SARS-CoV-2.

KEYWORDS
ageing, COVID-19, emotional health, gerontology, public health

1 | INTRODUCTION

SARS-CoV-2 is a form of coronavirus that has caused the highly infectious disease known as COVID-19. This disease was detected in the Chinese city of Wuhan in December 2019 and spread to other countries, leading to being declared a Public Health Emergency of International Concern in late January 2020 (World Health Organization, 2020). It quickly became a global public health threat due to its high transmission rate, the symptoms that could develop from the infection, and the increase in deaths worldwide.

Faced with the situation caused by the COVID-19 pandemic, the governments of some countries opted to decree the confinement of the population. In the case of Spain, on 14 March, Royal Decree 463/2020 was published in BOE (Official Spanish Gazette) No. 67, declaring a state of alarm for the management of the health crisis situation caused by COVID-19 (Ministerio de la Presidencia, 2020). From that day on, the Spanish population faced situations of confinement in their homes for months: curfews, suspension of non-essential services, mobility limitations, and other measures intended to reduce contagion levels (Ministerio de la Presidencia, 2020). These measures were focused on limiting physical contact and social and family relationships, having a significant psychological impact on the population by affecting emotional well-being and mental health, with an increase in negative emotions, such as anxiety or depression, and sensitivity to social risks, as well as a decrease in positive emotions and life satisfaction (Rodríguez-Domínguez et al., 2021). All this has contributed to increasing concern regarding health and family and reducing it when it came to leisure and friends (Li et al., 2020). In the aforementioned study on the Spanish population, a high percentage of people with psychological distress was observed. Also, the studied population actively sought information about the coronavirus, expressed a high level of concern and knowledge, especially those with greater psychological distress, and the most frequent preventive behaviour was hand washing and respiratory hygiene. As predictors of these circumstances, these authors identified the degree of concern about COVID-19, the number of hours spent consulting information about the disease, or the need for psychological support, among others (Rodríguez-Domínguez et al., 2021).

As for situations of confinement, several studies suggest that it is related to negative effects on the mental health of the population, detecting an increase in the levels of anxiety and fear, especially in women (Rettie & Jo, 2021; Rodríguez-Domínguez et al., 2021; Sánchez-Teruel et al., 2021). To these effects, periods of enforced quarantine to contain the spread of the virus must be added (Ministerio de la Presidencia, 2020). Thus, a recent rapid review of studies on the effects of quarantines found that most reported negative psychological effects, including symptoms of post-traumatic stress, confusion, and anger, and stressors can amplify these effects both during and after quarantine (Brooks et al., 2020).

Likewise, anxiety and fear are factors that are related to self-efficacy, coping, sense of coherence, tolerance to uncertainty and other factors that influence the behaviour that people will exhibit in the face of the COVID-19 pandemic, as shown in some studies

Summary statement of implications for practice

What does this research add to existing knowledge in gerontology?

There are no studies on the emotional impact, specifically on anxiety and fear levels, of the COVID-19 pandemic on older people.

What are the implications of this new knowledge for nursing care with older people?

The results of the study provide an overview of the emotional impact of the COVID-19 pandemic, which should be considered by all nurses working with older people, in order to consider mental health interventions within nursing caring processes.

How could the findings be used to influence policy or practice or research or education?

The findings provide a new nursing care scenario as an opportunity to improve integrated and holistic care for older people. It is therefore a research and action line that should be considered by all levels involved of care.

(Rettie & Jo, 2021; Rodríguez-Domínguez et al., 2021; Ruiz-Frutos et al., 2021).

In response to this new scenario arising from COVID-19, it has become necessary to develop specific scales that allow the measurement of anxiety and fear in situations related to COVID-19, such as the Anxiety and Fear Assessment Scale for COVID-19 (AMICO) (Gómez-Salgado, Allande-Cussó, Domínguez, et al., 2021; Gómez-Salgado, Allande-Cussó, Rodríguez-Domínguez, et al., 2021). Using this tool, studies have already been carried out for the general adult Spanish population, offering adequate reliability data in terms of internal consistency, concurrent validity, and good levels of sensitivity (90.48%) and specificity (76%), proving to be a suitable instrument for the assessment of fear and anxiety of COVID-19 in the general Spanish population, in which moderate levels seem to be observed (Allande-Cussó et al., 2021).

The pandemic caused by COVID-19 has posed a major challenge for people with previous pathologies and vulnerable groups (people with chronic respiratory diseases, immunocompromised people or the elderly, among others). In the study by Rettie and Jo (2021), it is observed that people in vulnerable groups and people with previous mental health conditions have more health-related anxiety and more generalised anxiety. In the case of chronically ill patients, higher levels of expressive suppression and COVID-19-related concerns, as well as changes in medical treatment due to the pandemic, are reported to be associated with higher perceived stress. In addition, higher levels of COVID-19

concerns were associated with higher levels of stress (Bramanti et al., 2021).

In Spain (and in other countries), the elderly have been considered vulnerable to the pandemic, not only because of their age but also because of other factors such as the existence of previous pathologies, some of them chronic, which could pose a risk of SARS-CoV-2 infection (Centro de Coordinación de alertas y Emergencias Sanitarias. Ministerio de sanidad de España, 2021). Some studies have confirmed this increased impact by revealing higher levels of anxiety in these population groups (Rettie & Jo, 2021).

The pandemic has highlighted the existence of increasing psychosocial problems in people over 65 years of age. These issues are directly related to the preservation of mental health and quality of life of older people (Bubeyev et al., 2020). Furthermore, in a systematic review conducted by Petrova and Khvostikova (2021) to assess the prevalence and risk factors of mental disorders in the elderly at the present time, the mental health state of the elderly during the COVID-19 pandemic is detected and associated with specific risk factors for old age mental disorders. The review also emphasises the paucity of evidence-based research on the treatment of mental disorders in old age and the urgency of improving the organisation of psychiatric care for these patients (Petrova & Khvostikova, 2021).

Considering these circumstances, and from the perspective of holistic and person-centred nursing cares (McCormack & McCance, 2006), research on mental health and some factors such as fear and anxiety can become a key issue, especially for vulnerable groups such as older people. Therefore, the aim of this study is to assess the presence of anxiety, fear and psychological distress in the population of older people, aged over 65 years, and to study the possible differences with a sample of subjects aged between 60 and 65 years, using the AMICO scale and the Global Health Questionnaire (GHQ-12) scale as the main measurement instruments. The effect of sex, marital status and COVID-19 diagnosis will also be explored.

2 | METHOD

2.1 | Design

Descriptive and psychometric cross-sectional, questionnaire-based study.

2.2 | Participants

The population of people over 60 years of age in Spain amounts to 9,000,000 subjects (Instituto Nacional de Estadística del Ministerio de Economía del Gobierno de España, 2020).

Based on this population, with a confidence level of 95%, a heterogeneity of 50%, 25% losses, and a margin of error of 5%, a minimum sample size of 270 subjects was calculated. A non-probabilistic, consecutive snowball sampling was carried out, which finally yielded information on 1112 subjects. The sample was divided, according to World Health Organization criteria on the age of older people, into two subsamples for comparative study: 720 subjects over 65 years of age and 392 subjects between 60 and 65 years of age (World Health Organization, 2020).

Convenience sampling was carried out, and the sample was accessed with the help of the coordinators of the *Aulas de la Experiencia* (Schools of Experience, a Spanish service provided for the elderly who wish to attend university-like studies) of all the universities in the country. They distributed by e-mail a presentation of the study, the request for informed consent, and the link to the Google Forms© questionnaire to all people over 60 years of age enrolled in any of the university training plans for the elderly. Likewise, once the subject accessed the questionnaire via the corresponding link, questions were asked about the legal conditions and the consent to be able to access the survey was requested.

2.3 | Variables

The online questionnaire contained socio-demographic variables (sex, age, province of residence, marital status, employment status, educational level, questions related to COVID-19 contacts and infections and self-perception of health status). Two scale variables measuring anxiety and fear of COVID-19 and emotional distress were also included. Also, the age variable was subsequently categorised into a dichotomous variable according to different age groups: group 1 from 60 to 65 years; group 2 over 65 years.

2.4 | Instrument

For the assessment of the presence of anxiety and fear of COVID-19, the Anxiety and Fear of COVID-19 (AMICO) scale was used. This scale was designed and validated in previous studies, with a 2-factor dimensional structure and 16 items that explained 64.8% of the variance (Gómez-Salgado, Allande-Cussó, Rodríguez-Domínguez, et al., 2021; Gómez-Salgado, Allande-Cussó, Domínguez, et al., 2021). The reliability study offered a value of Cronbach's $\alpha = 0.92$ (Gómez-Salgado, Allande-Cussó, Rodríguez-Domínguez, et al., 2021). The response options of the AMICO scale range from 1 to 10 points, where 1 indicates strongly disagree, and 10 indicates strongly agree. The cut-off point for the general population was set at 6.4 points, above which anxiety and fear of COVID-19 are considered to exist (Gómez-Salgado, Allande-Cussó, Rodríguez-Domínguez, et al., 2021; Gómez-Salgado, Allande-Cussó, Domínguez, et al., 2021).

Psychological distress was measured using the General Health Questionnaire (GHQ-12), a psychometric instrument widely used as a screening tool for non-psychotic psychiatric disorders (Garmendia, 2007). It consists of 12 items with four response options, and each item can be scored from 0 to 3 points, giving a total score ranging from 0 to 36. This instrument was duly validated in the Spanish population with a Cronbach's α value of 0.86 (Rocha

et al., 2011; Sánchez-Teruel et al., 2021). The cut-off point established for the general population was 12, where subjects with scores higher than or equal to 12 being considered a potential case of psychiatric morbidity (Rocha et al., 2011).

2.5 | Data analysis

Univariate and bivariate statistical analyses were performed using SPSS Statistics v.26 (IBM Corporation, 2019). For the bivariate study, the normality of the data distribution was analysed using the Kolmogorov–Smirnov test, which showed a p-value = 0.01 for sample 1 and p = 0.04 for sample 2. According to the non-normal distribution of the data, the Mann–Whitney U and Kruskal–Wallis tests were used. Kendall's Tau B statistic was used to study the correlation between quantitative variables.

Possible differences between samples in mean scores on the AMICO and GHQ-12 scales were analysed using Mann–Whitney U tests. The level of self-perceived health was analysed using Kendall's Taub B statistic.

To establish the relationship between the presence of anxiety and fear (measured with the AMICO questionnaire) and psychological distress (assessed with the GHQ-12 questionnaire) with the rest of the independent variables within each subsample, categorical regression analysis (CATREG) was performed, in accordance with the qualitative nature of these variables (Ho, 2014). The CATREG's logic bases on the non-linear transformation of dependent and independent variables and categorical variables are quantified by using optimal scaling, in order to reach the optimal regression model coefficients. Consequently, CATREG is equivalent to an ordinary linear regression when the qualitative predictors are substituted by the transformed and quantified values (Xu et al., 2010). It includes characteristic aspects of classical regression analysis: coefficient of determination (R^2), analysis of variance in the regression and significance of the parameters (Guerra et al., 2019). For its calculation, the optimal scaling option was selected in the SPSS© software.

2.6 | Ethical aspects

This study is part of the IMPACTCOVID-19 project, which aims to assess the impact of the COVID-19 pandemic on the emotional well-being and psychological adjustment of the general population in Spain, which was granted permission to be implemented by the Ethics and Research Committee of the Regional Government of Andalusia (Ref. PI 036/20). The study complies with the guidelines of the Helsinki Declaration of Ethical Principles in Human Research (Barrios et al., 2016; World Medical Assembly, 1964) and the state regulation on biomedical research that protects the voluntariness and confidentiality of personal data obtained (Jefatura del Estado Español, 2007). Data from this study are available within reasonable request to the corresponding author.

All subjects in the sample confirmed their voluntary and confidential participation in the study by means of a specific box, in which they had to tick the option "I agree to participate". Otherwise, the application did not allow access to the questionnaire. However, the option "I do not accept" also appeared in the link to the questionnaire, thus guaranteeing the voluntary nature of participation in the study.

3 | RESULTS

3.1 | Descriptive analysis of sample 1

The total sample consisted of 392 subjects, aged between 60 and 65 years and resident in Spain. Of this sample, 61.7% were women with a mean age of 62.5 years (SD = 2.2). Also, 64.8% were married, 14.1% single or had a partner, 13.7% divorced, and 7.4 widowed. In addition, 74.5% of the sample were retired, 4.6% had never worked, 9.7% worked full-time and 1.8% worked part-time. In terms of educational level, 62.2% had higher education, 30.4% had received vocational training and the remaining 7.4% had primary and secondary education studies (see Table 1).

Of the 52 provinces in Spain, the ones with the highest response rates were Valencia (33.7%), Madrid (14.8%) and Badajoz (12%). Other provinces, such as Alicante, Almeria, Cadiz, Granada, Huelva and Jaen presented participation percentages between 4% and 7%. Likewise, the provinces of Ceuta, Ciudad Real, Melilla and Zaragoza obtained percentages of less than 3%.

Regarding the COVID-19 diagnosis variable, only 4.8% of the sample had been infected with COVID-19 at the time of data collection, and 18.6% had required isolation due to close contact with a positive case. In addition, the self-perceived level of health, on a range of 0–10 points, scored a mean of 7.44 points (SD = 1.3) (see Table 1).

The mean score on the AMICO scale was 5.45 points (SD = 1.82) and on the GHQ-12 scale, 13.18 points (SD = 5.5). Bivariate analysis reported no statistically significant differences between the mean scores on the AMICO scale and the GHQ-12 scale for the different categories of the marital status, employment status, academic level, COVID-19 diagnosis and contact-related isolation variables. On the contrary, the contrast statistics did show significant differences for the sex variable (see Table 1). Thus, women in sample 1 showed higher mean scores on the AMICO scale and the GHQ-12 scale (see Table 1). No association was observed between the mean scores of the AMICO (p = 0.001) and GHQ-12 (p = 0.001) with the variables of age and self-perceived health (see Table 1).

3.2 | Descriptive analysis of sample 2

The total sample consisted of 720 subjects over 65 years of age and resident in Spain. Of this sample, 52.2% were women with a mean age of 69.4 years (SD = 3.8). Likewise, 63.8% were

TABLE 1 Socio-demographic characteristics and results of sample 1 (participants aged 60–65 years)

	Total sample (n = 392)	AMICO mean score	Contrast hypothesis*, AMICO scale	GHQ-12 mean score	Contrast hypothesis*, GHQ-12 scale
Sex					
Female	242 (61.7%)	5.58	**p = 0.001[a]**	14	**p = 0.001[a]**
Male	150 (38.3%)	5.24		12	
Age					
Mean (SD)	62.5 (2.2%)		Tau = −0.04[b]		Tau = −0.05[b]
Marital status					
Married	254 (64.8%)	5.45	p = 0.36[c]	13	p = 0.80[c]
Divorced	54 (13.7%)	5.12		13	
Widow/er	29 (7.4%)	5.9		14	
Single	44 (11.2%)	5.54		14	
Recent couple	11 (2.9%)	5.06		17	
Work situation					
Retired	292 (74.5%)	5.45	p = 0.49[c]	13	p = 0.30[c]
Full-time	38 (9.7%)	5.82		13	
Part-time	6 (1.8%)	4.68		12	
Never worked	18 (4.6%)	5.03		12	
Educational level					
Higher studies	244 (62.2%)	5.44	p = 0.18[c]	13	p = 0.14[c]
Vocational training	119 (30.4%)	5.58		13	
Primary and/or Secondary	29 (7.4%)	5.82		13	
COVID-19 diagnosis					
No	373 (95.2%)	5.15	p = 0.17[c]	13	p = 0.68[a]
Yes	19 (4.8%)	4.54		11	
Contact-related isolation					
No	319 (81.4%)	5.15	p = 0.08[c]	12	p = 0.63[a]
Yes	73 (18.6%)	4.92		12	
Self-perceived health					
Mean (SD)	7.44 (1.3)		Tau = −0.13[b]		Tau = 0.19[b]

*Non-parametric contrast statistics: [a]U Mann–Whitney, [b]Tau B de Kendall, [c]H Kruskal–Wallis.

Values in bold are significant *p*-values.

married, 14.4% divorced, 12.1% widowed and 9.7% single. In addition, 97.9% of the sample were retired, 1.1% had never worked and 0.9% were still working. Of the four subjects in the sample who were still working, three of them worked in administration services and one in the construction sector. Regarding the educational level, 68.1% had higher education, 24.9% had received vocational training and the remaining 7% had primary and secondary education (see Table 2).

Of the 52 provinces in Spain, the ones with the highest response rates were Valencia (41.5%), Madrid (14.6%) and Asturias (10.7%). Other provinces, such as Alicante, Badajoz, Granada, Huelva and Jaen had participation percentages between 4% and 7%. Likewise, Almeria, Cadiz and Zaragoza obtained percentages of less than 3%. The provinces of Castellon, Ceuta, Guadalajara, Leon and Murcia had participation percentages of 1% or less.

Regarding the COVID-19 diagnosis variable, only 6% of the sample had been infected at the time of data collection, and 15.6% had required isolation due to close contact with a positive case. In addition, the self-perceived level of health, on a range of 0–10 points, had a mean of 7.56 points (SD = 1.3) (see Table 2).

The mean score on the AMICO scale was 5.11 points (SD = 1.83) and on the GHQ-12 scale, 12.44 points (SD = 5.42). Bivariate analysis reported no statistically significant differences between the mean scores on the AMICO and GHQ-12 scales for the different categories of the work situation, academic level and contact-related isolation variables. On the contrary, the contrast statistics did show significant differences for the variables sex, marital status and COVID-19 diagnosis (see Table 2). Thus, women, single or widowed subjects, and those who had not been infected by the SARS-CoV-2 virus had higher mean scores on the AMICO scale (*p* = 0.001; *p* = 0.049 and

TABLE 2 Socio-demographic characteristics and results of sample 2 (participants over 65 years of age)

	Total sample (n = 392)	AMICO mean score	Contrast hypothesis*, AMICO scale	GHQ-12 mean score	Contrast hypothesis*, GHQ-12 scale
Sex					
Female	376 (52.2%)	5.35	**p = 0.001**[a]	13	**p = 0.001**[a]
Male	344 (47.78%)	4.86		11	
Age					
Mean (SD)	69.4 (3.8%)		Tau = −0.08[b]		Tau = −0.09[b]
Marital status					
Married	454 (63.8%)	5.14	**p = 0.049**[c]	12	**p = 0.005**[c]
Divorced	104 (14.4%)	4.76		12	
Widow/er	87 (12.1%)	5.34		13	
Single	75 (9.7%)	5.37		14	
Work situation					
Retired	705 (97.9%)	5.11	p = 0.55[c]	12	p = 0.98[c]
Working	4 (0.9%)	4.38		12	
Never worked	11 (1.1%)	5.73		13	
Educational level					
Higher studies	491 (68.1%)	5.21	p = 0.23[c]	13	p = 0.54[c]
Vocational training	179 (27.9%)	5.37		13	
Primary and/or Secondary	50 (7%)	5.49		14	
COVID-19 diagnosis					
No	677 (94%)	5.15	**p = 0.029**[c]	13	**p = 0.017**[a]
Yes	43 (6%)	4.54		11	
Contact-related isolation					
No	608 (84.4%)	5.15	p = 0.23[c]	12	p = 0.42[a]
Yes	112 (15.6%)	4.92		12	
Self-perceived health					
Mean (SD)	7.56 (1.3)		Tau = −0.14[b]		**Tau = 0.42**[b]

*Non-parametric contrast statistics: [a]U Mann–Whitney, [b]Tau B de Kendall, [c]H Kruskal–Wallis.

Values in bold are significant p-values.

p = 0.029, respectively) and the GHQ-12 scale (p = 0.001; p = 0.005 and p = 0.017, respectively) (Table 2). On the contrary, there was no association between the mean scores of the AMICO questionnaire and the age and self-perceived health variables. In contrast, a moderate association was found between the mean score on the GHQ-12 scale and the self-perceived health variable (see Table 2).

3.3 | Comparative analysis between sample 1 and sample 2

The result of the hypothesis test between each subsample and the mean scores on the AMICO scale and the GHQ-12 scale was significant (p = 0.006 and p = 0.03, respectively). Thus, the subsample of subjects aged between 60 and 65 years presented a mean score of 5.45 on the AMICO scale, and the subsample older than 65 years, a score of 5.11. In the same sense, sample 1 obtained a mean score of 13.18 points on

the GHQ-12 scale, and sample 2 a score of 12.44 points. In contrast, no significant differences were found with respect to the mean health value between samples 1 and 2.

3.4 | Regression analysis

In relation to sample 1, the bivariate analysis revealed a significant effect only for the sex variable. Therefore, it is not possible to study the existence of an association between different independent variables, since only sex has shown to be significant.

In contrast, the categorical regression analysis performed with sample 2, with the mean total score of the AMICO questionnaire, and the GHQ-12 questionnaire, as the dependent variable and the rest of the variables that presented significant differences in the bivariate analysis, revealed a R^2 value of 0.65 and a p-value = 0.001 (see Table 3). With this analysis, the specific association that might

exist between marital status (married, divorced, widowed, single), having been diagnosed with COVID-19 or not, and sex was studied. Only the sex variable obtained significance in the model (Coefficient $\beta = 0.10$; F = 4.44; $p = 0.001$). Thus, women suffer 0.1 times more anxiety and fear of COVID-19 than men in this population segment. Following the same assumptions, the categorical regression model performed with the mean score of the GHQ-12 scale obtained an R^2 value of 0.62 and a significance of $p = 0.001$. Similarly, only the sex variable was significant in the model (Coefficient $\beta = 0.19$; F = 23.30; $p = 0.001$). Thus, women suffer 0.19 times more emotional distress than men in this segment of the population.

Therefore, these results suggest that there is a significant relationship between being a woman over 65 years of age, in the specific case of this study, and having psychological distress, anxiety and fear related to COVID-19.

4 | DISCUSSION

Previous research has tried to identify possible effects of the pandemic on the mental health of the general population and some of them emphasise the need to focus attention on the most vulnerable groups in order to identify risk circumstances due to their particular condition (Allande-Cussó et al., 2021). In this line, attention to the elderly population, and especially those over 65 years of age, becomes a necessity in order to warn of the presence of distress linked to the COVID-19 situation, in case it becomes necessary to establish particular considerations both in the identification of problems and in the consequent intervention (Huang et al., 2020; Li et al., 2020).

The results of the present study show that some socio-demographic and health variables are related to greater distress associated with the pandemic, this relationship being more intense in the population over 65 years of age. Thus, being widowed or single seems to be associated with higher levels of distress, both in terms of fear and anxiety about COVID-19 and general psychological distress (GHQ-12). This psychological condition, as other studies point

out, could be favoured by the situation of living alone, which could increase the perception of loneliness, in turn associated with higher levels of distress, finding that the situation of having a partner becomes a protective factor (Cabello et al., 2020; Huang et al., 2020; Li et al., 2020). These data seem to be contrary to those found in the general Spanish population (Allande-Cussó et al., 2021), as the levels of anxiety and fear detected were higher in married subjects than in widowed or single ones. On the contrary, the results seem congruent with data from the study by Carreira Capeáns and Facal (2017), who found higher levels of anxiety in widowed/single people, also in the Spanish population (Carreira Capeáns & Facal, 2017). Even so, older age status, compared with younger population groups and in relation to the COVID-19 pandemic situation, seems to generate significantly lower levels of psychological distress, as shown by Li et al. (2020, b); and almost no increase compared with pre-pandemic times, according to Pierce et al. (2020). In the present study, prior diagnosis of COVID-19 seems to be associated with lower levels of general psychological distress (GHQ-12) and expected lower fear and anxiety of the illness (AMICO), although only in the over-65 age group. No data have been found in other studies that report the effect of this variable, although it could nevertheless be considered as expected, to the extent that having faced and overcome the disease satisfactorily, being a potentially feared situation, could be favouring a certain desensitisation, thus acting like a kind of 'psychological vaccine'. However, these data should be taken with caution, given the fact that, on the one hand, the effect is only statistically significant in the older subsample, and that the group of subjects with this condition in the total sample is a relatively small minority ($n = 62$; 10.8%). Future studies with larger samples could provide evidence on this possible relationship.

Self-perceived health and general psychological distress (GHQ-12) only appear to be significantly related in the older age group (subsample of those aged 65 and over). This result is congruent with the trend towards a lower perception of health at older ages, which is evident in data from successive National Health Surveys in Spain (Girón Daviña & Girón Daviña, 2010; Ministerio de Sanidad y

TABLE 3 Model adjustment and significance of the regression analysis

AMICO scale				
$R^2 = 0.65$	Fisher's F = 3.23		$p = 0.001$	
Variable	Coefficient	Degrees of freedom	Fisher's F	p-Value
Sex	0.108	2	4.445	0.012
Marital status	0.065	2	0.445	0.641
COVID-19 diagnosis	−0.097	2	2.746	0.065
GHQ-12				
$R^2 = 0.62$	Fisher's F = 9.55		$p = 0.001$	
Variable	Coefficient	Degrees of freedom	Fisher's F	p-Value
Sex	0.195	2	23.30	0.001
Marital status	0.029	2	0.170	0.681
COVID-19 diagnosis	−0.085	2	3.411	0.065

Consumo, 2006, 2013, 2018), as well as in other international contexts. Likewise, it is characteristic in older adults, especially above 65 years of age, a tendency to show a greater number of physical symptoms, which results in somewhat higher GHQ values for that age group than others of lower age (Rocha et al., 2011).

For both the COVID-19 measures of fear and anxiety and the GHQ measures of general psychological distress, there are clear significant differences between the two age subgroups. The sample of those over 65 years of age obtained lower values for both measures. These findings, although preliminary, point to the need, on the one hand, to reconsider the limits established by the WHO for "old age", tending to consider this population group as homogeneous from the age of 60 onwards, and, on the other hand, to highlight the possible existence of a turning point in terms of general malaise (and in relation to the pandemic situation in particular) from an age closer to 65 years. This data, if the sample had been treated homogeneously in terms of age, might have gone unnoticed. Thus, the inclusion of the control group aged under 65 but still with ages typical of old age (over 60) has made it possible to discriminate between older subgroups that respond differently to the relationship between the pandemic situation and mental health.

In general, the results of the present study clearly show COVID-19 (AMICO) distress values below the cut-off point for the general population, as compared to the data reported in the work by Allande-Cussó et al. (2021), being more intense in the older age group (Allande-Cussó et al., 2021). In addition, and similarly, the data suggest that the perception of health or general psychological distress (GHQ-12) is also influenced by the same differentiated effect of age (lower values in the older age group), which could be interpreted as a factor with a certain protective effect on the possible psychological consequences of distress in the face of the possibility of SARS-CoV-2 infection. However, the higher values of general psychological distress found in both age groups, which are in turn above the cut-off point for the general population (Rocha et al., 2011), could be interpreted in several ways. On the one hand, as a greater sensitivity of this population group, which would highlight, from a clinical point of view, the need for greater attention in face of the possibility of a higher vulnerability and greater risk of related health problems; and, on the other hand, the consideration that the mean values, and therefore, the cut-off points, could be different (higher) for the classification of circumstances worthy of relevant clinical attention or risk, which would highlight the interest in having specific normative values for this age group. Several studies already seem to show that, in this sense, the values of psychological distress in older people, assessed by means of the GHQ, tend to be higher, without them seeming to be of significant clinical relevance other than the fact of being a population with a greater propensity to express and recognise physical symptoms (Papassotiropoulos et al., 2021). Even with this consideration in mind, taking as a reference the normative data from the over-65 subsample of the normative study by Rocha et al. (2011) in the Spanish population, in which the means were 11.4 points, the mean value of 12.44 obtained by the similar age group in

our study (sample 2) could indicate significantly higher levels of self-reported psychological distress.

The sex variable, on its part, would seem to condition, independently of the age of both subsamples, a higher perception of distress in women, both in general (GHQ12) and linked to COVID-19 in terms of anxiety and fear (AMICO). These findings are consistent with previous results which, in general, attribute to the female sex higher levels of activation (in terms of anxiety) in interaction with the environment, as reflected in systematically higher scores on the neuroticism factor, reported in studies such as the one by Mazza et al. (2021), who find that higher levels of neuroticism in mothers, among other factors, are predictors of higher levels of parental stress in the COVID-19 confinement situation (Mazza et al., 2021). Likewise, the results of studies of anxiety (Allande-Cussó et al., 2021; Rettie & Jo, 2021), fear (Sánchez-Teruel et al., 2021) or general psychological distress (GHQ) (Li et al., 2020; Pierce et al., 2020) in relation to the pandemic also tend to indicate higher values in females than in males.

Thus, the manifestations of general psychological distress in both subsamples are clearly congruent and in the same direction as those related to fear of COVID-19, although the former tend to exceed the cut-off points established in the general population (Rocha et al., 2011) and the latter are clearly below the values of clinical significance or risk (cut-off point) also shown for the general population (Allande-Cussó et al., 2021). Furthermore, in this sector of the older population, less fear and anxiety about the disease could be identified than in other age groups of the population. Also, their level of general psychological distress would tend to be higher, so it would not seem that the management of the pandemic situation due to COVID-19 was contributing significantly to the perception of distress previously existing in this age group. This would allow attributing to this population group, to a certain extent, a higher degree of resilience in adverse situations, something that is also congruent with the interpretations by Cao et al., 2020 or Li et al., 2020, b (Cao et al., 2020; Li et al., 2020). In addition, the older age status might be favouring a tendency towards higher general psychological distress, with a higher prevalence of false positives by reporting a higher number of (physical) symptoms, which might support the need for different cut-off points for this population (Papassotiropoulos et al., 2021). Despite such an older age condition, COVID-19 management tends to confer values of distress, although below the significant cut-off points established for the general population. Given the possible tendency for women to show higher levels of anxiety, the degree of general distress could be conferring a higher level of anxiety expression in the management of adverse situations such as COVID-19, which could lead to considering being a male in older age groups as a protective condition, as well as being a woman in the younger age group (between 60 and 65 years of age) as a more vulnerable condition. Based on these results, further studies are considered necessary to analyse the mental health impact of the COVID-19 pandemic on older people in the medium and long term.

Regarding the limitations of the study, the division of the sample into two age groups that are not homogeneous in size could be

influencing the direction of the analyses, so it would be desirable to increase the sample size, especially in the lower age group (<65). On the contrary, the establishment of the age limit between the two groups at 65 years of age, although it responds to a trend in use as a limit for establishing old age (or the elderly) in favourable socio-economic contexts (first world), the WHO does not seem to make an explicit statement in this sense; on the contrary, it maintains 60 years of age as a general and international dividing line. Likewise, the self-administration of questionnaires introduces a variable which, although it facilitates the collection of information, could favour uncontrolled sources of variation. Finally, the fact that the subjects in the sample come from those enrolled in a university programme for people over 55 years of age, and therefore, starting a priori from a sample population with specific characteristics, could imply differences with respect to the general population of older people in Spain, which to some extent could be compromising the external validity of the study. This could be exacerbated by the way the tests were administered, as older people, in general, may have unequal access to or tendency to use new technologies (internet, computers, smartphones or other electronic devices).

Finally, the findings provide a new nursing care scenario as an opportunity to improve integrated and holistic care for older people. Person-centred care is needed, and the impact of the COVID-19 pandemic on the emotional well-being of older people is of course a dimension to be considered in this perspective. It is therefore a research and action line that should be considered by all levels involved in nursing care.

5 | CONCLUSIONS

Levels of anxiety and fear of COVID-19 in older people in Spain are moderate, and psychological distress is higher than in the general population. Women over 60 years of age, and those over 65 years of age, have higher values of both general distress and fear and anxiety of COVID-19 than their male counterparts.

In the specific case of people over 65 years of age, women who had not experienced COVID-19 and were single or widowed had higher levels of psychological distress, fear and anxiety. Furthermore, women had 0.10 times more anxiety and fear of COVID-19 and 0.19 times more emotional distress than men.

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