

Compassion in health professionals: Development and validation of the Capacity for Compassion Scale

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Abstract

Background: Health professionals witness pain and suffering when they care for sick people and their families. Compassion is a necessary quality in their work as it combines the will to help, alleviate suffering and promote the well-being of both the people they are attending and the professionals themselves. The aim of the study was to design and evaluate the psychometric properties of the Capacity for Compassion Scale (CCS).

Design: A quantitative, descriptive and cross-sectional study was carried out to evaluate the psychometric properties of the scale (reliability, temporal stability, content validity, criterion validity and construct validity).

Methods: The study was carried out in two phases: pilot study and final validation. The data were collected between April and May 2022. The sample was selected by convenience sampling and was made up of a total of 264 participants, 59 in the pilot phase and 205 in the final validation.

Results: The Capacity for Compassion Scale has been shown to have good psychometric properties in relation to reliability, temporal stability, and content, criterion, and construct validity. Factor analysis showed that there were four subdimensions of the scale: motivation/commitment, presence, shared humanity and self-compassion. The results also indicate that compassionate ability is significantly correlated with age and work experience.

Conclusions: The Capacity for Compassion Scale shows adequate psychometric properties. This instrument measures the compassion capacity of health professionals, which is a valuable discovery for new lines of research in this field.

Impact: Through this scale, low levels of capacity for compassion can be detected that negatively influence the quality of care provided by health professionals. The Capacity for Compassion Scale can therefore contribute to the identification of needs and promote training around compassion for health professionals.

Patient or Public Contribution: No patient or public contribution.

What Problem did the Study Address?

- Compassion in health professionals has positive effects on improving the quality of care, the satisfaction of professionals and the work environment.
- There are compassion cultivation programmes whose validity has been proven for the development of the dimensions of compassion.
- There is no specific instrument that measures capacity for compassion in health-care professionals.

What were the Main Findings?

- A scale is designed to measure capacity for compassion in health professionals. This is the only such scale available up until now.
- The scale measures four dimensions of compassion: motivation/commitment, presence, shared humanity and self-compassion.

Where and on Whom will the Research Have an Impact?

- The development of specific programmes that can increase the compassion of health professionals with all the benefits that this can bring to health care is encouraged.
- It will be possible to analyse the effects of training programmes on the cultivation of compassion.

KEYWORDS

compassion, capacity for compassion, health professionals, instrument development, psychometric testing

1 | INTRODUCTION

Health professionals witness the pain and suffering of their patients in daily practice (Fallek et al., 2019; Ruiz-Fernández, Pérez-García, & Ortega-Galán, 2020). Their work requires certain qualities, such as empathy, compassion and closeness to the people and family members they care for (Ortega-Galán et al., 2019; Ruiz-Fernández, Ramos-Pichardo, et al., 2020). The importance of compassion is widely recognized, and in recent years, it has gained increasing importance in health care (Sinclair, McClement, et al., 2016; Strauss et al., 2016).

Compassion refers to the emotion that arises from witnessing the suffering of another person, combined with the willingness to help and promote well-being, in order to find a solution to the situation (López et al., 2018; Perez-Bret et al., 2016). Compassion also includes the ability to adopt a non-judgmental stance towards others and tolerate one's own distress caused by the suffering of other people (Strauss et al., 2016). Self-compassion encompasses sensitivity and the desire to alleviate one's own suffering (Stevens & Woodruff, 2018), complementing the definition of compassion, which focuses on responding to the anguish of others (Birkett & Sasaki, 2018). Neff's theoretical model (2003) identifies mindfulness as one of the main components of self-compassion, defined as the awareness that arises by paying attention to the present with acceptance (DiCarlo et al., 2020; Sala et al., 2019).

Mindfulness and self-compassion are closely interrelated and interconnected (Biehler & Naragon-Gainey, 2022; Moreira

et al., 2018). Self-compassion has been more closely associated with suffering, while mindfulness is applied to feelings related to becoming aware of experiences and being present (Baer et al., 2012). Thus, self-compassion training requires mindfulness interventions (Campos-Bacas et al., 2015).

On the other hand, in the definitions of compassion, motivation has been included as one of the fundamental elements (Goetz et al., 2010; MacBeth & Gumley, 2012; Strauss et al., 2016). Motivation is the process through which goal-directed activities are initiated and maintained (Cook & Artino, 2016). Motivation is a key factor in guiding and increasing compassion-based interventions (Matos et al., 2021). Motivation in this area has two different functional processes: the motivation to attend to or commit oneself to suffering and the motivation to take useful action (Gilbert et al., 2017; Steindl et al., 2021). Health professionals find the motivation they need to offer compassionate care in the patient's suffering and the desire to alleviate it (Durkin et al., 2019).

Compassion is recognized as a professional obligation and a patient's right (Baguley et al., 2020). On the one hand, providing care based on compassion has shown benefits in patients such as greater satisfaction with health care, reduced anxiety, greater pain tolerance and better stress response (Baguley et al., 2020; Sinclair et al., 2020; Sinclair, Kondejewski, et al., 2021; Smith et al., 2017), a decrease in symptoms, and improved quality of life (Sinclair, Kondejewski, et al., 2021). On the other hand, the benefits of health professionals applying compassion are better professional-patient relationships (Sinclair et al., 2020; Smith et al., 2017), increased well-being and

job satisfaction (Sinclair, Kondejewski, et al., 2021; Sinclair, Norris, et al., 2016). In addition, compassion is related to lower health-care costs (Sinclair, Kondejewski, et al., 2021), less absenteeism and a reduction in negligence claims and medical errors (Trzeciak et al., 2017).

Despite the benefits of compassionate care (Sinclair, Kondejewski, et al., 2021), the study of compassion has been hampered by a paucity of measurement tools (Gu et al., 2017; Strauss et al., 2016). The available tools are scarce, and they differ for healthcare professionals and patients (Sinclair et al., 2022). In patients, the scales assess perceived compassion in health care: 'the Compassionate Care Assessment Tool' (Burnell & Agan, 2013), 'the Schwartz Center Compassionate Care Scale' (Lown et al., 2015), 'the Five-item Tool to Measure Patient Assessment of Clinician Compassion' (Roberts et al., 2019) and 'the Sinclair Compassion Questionnaire' (SCQ) (Sinclair, Hack, et al., 2021). To measure the compassion of health professionals, there is only 'the Compassion Competence Scale' that evaluates the capacity for compassion in nurses (Lee & Seomun, 2016). On the other hand, a scale has also been developed to measure compassion in nursing students, called the 'Bolton Compassion Strengths Indicators' (Durkin et al., 2020). However, the absence of a clear definition and adequate psychometric tools has made the study and use of compassion-based interventions difficult (Kirby et al., 2022). Therefore, the objective of the study was to design and evaluate the psychometric properties of a scale to measure the capacity for compassion in health professionals.

2 | METHODOLOGY

2.1 | Design

A quantitative, descriptive and cross-sectional study was carried out to evaluate the psychometric properties of the Capacity for Compassion Scale (CCS) in health professionals. This trial was conducted according to the STROBE guidelines.

2.2 | Sampling and data collection

The study population, both in the pilot phase and the final study, were healthcare professionals or qualified and experienced workers providing care in the healthcare sector (doctors, nurses, physiotherapists, technicians, etc.). The participants were selected by convenience sampling in health centres in two provinces in south-eastern Spain. The inclusion criteria to be part of the study were being over 18 years of age, being a healthcare professional and giving their consent to be part of the study. The data were collected between April and May 2022. The questionnaire was developed on the Google Forms platform in Spanish language and was sent to the professionals through social networks such as WhatsApp, Twitter, Instagram or Facebook or by email. The emails were obtained from

the institutional emails of the health centres, once permission had been requested from those responsible for research. Questionnaires where participants had not responded to all items were eliminated. In addition, those participants who did not answer the survey a second time were excluded from the pilot phase in the evaluation of the stability of the scale. Therefore, the number of participants consisted of 264 health professionals, 59 professionals taking part in the pilot study and 205 professionals in the final study.

2.3 | Procedure and data analysis

The development of the scale of capacity for compassion in health professionals followed the phases described by McCoach et al. (2013). Initially, for the preparation of the pilot questionnaire, the available scientific literature on the subject was reviewed, focusing on the definition and dimensions of compassion: motivation, presence, shared humanity, commitment and self-compassion. The literature search also included available compassion scales. This review was developed in February and March 2022 in the PubMed, WOS and CINAHL databases. Afterwards, a first version of the scale was developed following the recommendations of Fernández-Núñez (2007) and Sarabia-Cobo and Alconero-Camarero (2019). The following demographic data of the participants were included: age, sex, marital status, employment status, professional experience, profession, workplace, work shift and the question 'Do you have any specific training in counselling or helping relationships, technical relaxation, mindfulness or full awareness, communication and emotional management?'

Secondly, the scale was evaluated by a panel of experts in the field. The experts were healthcare professionals who taught in master's degree programmes or university experts related to compassion, as well as certified instructors in compassion training or cultivation programmes. The search for these experts was conducted over the Internet, and they were contacted by email. The items were evaluated by the experts as 1=not at all relevant, 2=some-what relevant, 3=quite relevant and 4=very relevant. The first two answers were given a score of 0, and the last two answers were given a score of 1. Content validity was calculated using the average Content Validity Index (CVI) of the entire questionnaire (CVI-t) and that of each item (CVI-i), maintaining the items that obtained a score equal to or greater than 0.78 (Polit & Beck, 2020). In addition, the experts were asked to tell us how we could improve the scale both in content and legibility. To assess the legibility of the questionnaire, the INFLESZ scale (Cantalejo et al., 2008) was used. In addition, the feedback from the experts was used in the initial phase.

Subsequently, a pilot phase was carried out as a validation measure of the scale. For the pilot phase, participants were selected according to the recommendations of Norman and Streiner (2014). Whether the variables followed a normal distribution, using the Kolmogorov-Smirnov normality test, was previously verified. In the case of not complying with normality, non-parametric tests were used. The correlation was calculated to assess the internal stability

of the scale, using Spearman's rho test between the responses of the test and the re-test of the participants. To do this, the professionals in the pilot study were asked to answer the scale again after an interval of 1 week. In addition, internal consistency was calculated through Cronbach's alpha (α), the corrected item-total correlation (C-ITC) and the α on the scale if an item were removed, eliminating the item if the C-ITC were less than 0.3 and the α on the scale increased significantly after removing it (Coaley, 2014). A level of $\alpha \geq 0.70$ was considered acceptable and between 0.80 and 0.90 adequate, providing reliable results (Oviedo & Campo-Arias, 2005).

For the final phase, participants were selected according to the recommendations of Norman and Streiner (2014) and Coaley (2014), which recommend a minimum of 10 subjects for each item on the scale. The internal consistency of the scale was calculated through the steps described above. The researchers who administered the questionnaire in both the pilot and the final study were trained and checked to ensure that they had no ties or relationships with the participants.

The construct validity was carried out through an exploratory factor analysis with a principal axis factoring matrix. Bartlett's test was calculated considering a value of $p < .05$ as significant. In addition, the Kaiser-Meyer-Olkin Index was used to analyse the degree of intercorrelation between the variables. An index value greater than 0.7 was considered adequate (Coaley, 2014; Furr, 2014; Polit & Beck, 2006). To ensure that there is no multicollinearity, item-item and item-total correlation was carried out using Spearman's rho test. Correlations greater than .08 are a sign of multicollinearity (Shrestha, 2020).

Criterion validity was carried out through correlations between the CCS and various gold standards, including the short Spanish version of the SCS (Garcia-Campayo et al., 2014), the FFMQ (Cebolla et al., 2012) and the Short ProQOL (Galiana et al., 2020). The short Spanish version of the SCS is used to measure self-compassion and consists of 12 items, grouped into 6 dimensions (kindness towards oneself, shared humanity, mindfulness, self-criticism, isolation and over-identification). On the one hand, the self-compassion dimension of the CCS was correlated with the total of the SCS; on the other hand, the shared humanity dimension of the SCS was correlated with the same dimension in the CCS. In addition, the FFMQ scale was used to measure mindfulness through 39 items. This scale was correlated with the mindfulness dimension of the CCS. Finally, the short version of the ProQOL was used to measure the negative and positive effects of helping other people, using three dimensions: compassion satisfaction, compassion fatigue and burnout. In our case, satisfaction due to compassion was related to the motivation/commitment dimension on the CCS.

Sociodemographic variables were also correlated with the total score of the Compassionate Ability Scale. In the case of quantitative variables, it was previously verified whether the variables followed a normal distribution, using the Kolmogorov-Smirnov normality test. To find out whether there were differences in means between the different groups, Student's *t* parametric tests and ANOVA were used at a significance level of .05. To correlate quantitative variables, the

Pearson (*r*) correlation test was used. All data analyses were performed using the IBM SPSS Statistics version 26 program.

2.4 | Ethical considerations

Ethical approval was obtained from the University of Almería (EGM 166/2022). The participants were informed of the purpose of the study and their rights. It was also explained to them that participation was completely voluntary and anonymous and that they could leave the study at any time and stop answering without any type of consequence or harm. The data obtained were treated confidentially in accordance with the Organic Law on Data Protection (2018).

3 | RESULTS

3.1 | Development instrument

The first version of the scale was designed by three experts in the field, based on dimensions of compassion found in the literature review (motivation, presence, shared humanity, commitment and self-compassion), obtaining an initial version of 17 items. Items were scored on a 5-point Likert scale, corresponding to 1=never, 2=rarely, 3=sometimes, 4=frequently and 5=always. The score on the scale ranged from 17 to 85 points, and the higher the score, the greater the capacity for compassion.

3.2 | Pilot phase: Analysis of psychometric properties

3.2.1 | Content validity

A panel of 7 experts was used for content validity. The analysis showed that the total IVC-i of the CCS in health professionals was 0.901 (Table 1). Most of the items had an IVC-i greater than 0.78, with the exception of items 4, 15 and 17. The experts agreed that the wording of these items should be improved for greater comprehension, so their recommendations were followed.

In relation to legibility, the INFLESZ scale showed that the scale had little difficulty in being understood as the participants of both the pilot study and the final validation did not find any difficulty in reading or understanding the scale, which, on average, took participants 10 min to complete.

3.2.2 | Reliability and temporal stability of the pilot scale

A total of 59 participants took part in the pilot phase of the scale. Cronbach's α in the questionnaire obtained a result of 0.781, corresponding to good internal consistency. Most of the items

TABLE 1 IVC-i broken down by items of the Capacity for Compassion Scale in health professionals.

Items	E1	E2	E3	E4	E5	E6	E7	IVC-1
ITEM 1. I feel a great desire to prevent suffering, alleviate it and/or avoid it	1	1	1	1	1	1	1	1
ITEM 2. I have always felt the need to help others	1	1	1	1	0	1	1	0.86
ITEM 3. I feel strong and courageous to deal with suffering	1	1	1	1	0	1	1	0.86
ITEM 4. I am able to listen attentively without my mind wandering	1	1	1	0	0	1	1	0.71
ITEM 5. I am able to observe my thoughts and emotions with curiosity and not judge them.	1	1	1	1	0	1	1	0.86
ITEM 6. I am able to stay physically and emotionally with the patient and don't escape	1	1	1	1	1	1	1	1
ITEM 7. If anything distracts me, I take a deep breath and concentrate again	1	1	1	1	1	1	1	1
ITEM 8. I recognize that, like this person, I too can suffer	1	1	1	1	1	1	1	1
ITEM 9. I understand that all human beings want to be free from suffering and we want to be happy	1	1	1	1	1	1	1	1
ITEM 10. I feel that we all are connected and need each other	1	1	1	1	1	1	1	1
ITEM 11. The ability to understand and appreciate the person who is suffering arises in me	1	1	1	1	1	1	1	1
ITEM 12. I feel involved with the suffering of this person	1	1	1	1	1	1	0	0.86
ITEM 13. I do everything possible to alleviate suffering	1	1	1	1	1	1	0	0.86
ITEM 14. Faced with a defenceless situation, I am capable of mobilizing all resources possible to protect it	1	1	1	1	1	1	0	0.86
ITEM 15. If I feel weak, I am able to care for myself with affection	1	1	0	1	0	1	1	0.71
ITEM 16. If I'm wrong, I try not to judge myself and treat myself kindly	1	1	1	1	1	1	1	1
ITEM 17. If I'm feeling down, I can provide myself with comfort and understanding	0	1	0	1	1	1	1	0.71
Total								0.91

Note: Score: value 0 for scores 1 (not at all relevant) and 2 (not very relevant), and value 1 for scores 3 (quite relevant) and 4 (very relevant).

Abbreviation: E, expert.

obtained a corrected item-total correlation greater than 0.3. The items that obtained a lower score were not eliminated because Cronbach's α did not significantly increase in the scale if the item was eliminated. Regarding temporal stability, the results of the correlation between "TOTAL_TEST" (mean of the scores obtained in the first response of the pilot sample) and "TOTAL_RETEST" (mean of the scores obtained in the second response of the pilot sample) were of $\rho = 0.824$, $p < .01$.

3.3 | Final phase: Analysis of psychometric properties

3.3.1 | Characteristics of the participants

For the final phase, the study had 205 participants. Of the total number of participants, the majority were married women. The mean age of the participants was 42.32 years (SD 12.51), with an age range between 22 and 70 years. The majority of the participants were nurses ($n = 133$) and technicians ($n = 39$) (middle-grade technicians as auxiliary nursing care or in health emergencies and higher-grade technicians as clinical and biomedical laboratory). The majority were temporary, working in primary care and on a morning/afternoon shift. The average work experience of the participants was 15.79 years (SD 12.41). The participants ($n = 83$) had between one and two training courses in counselling or helping relationships,

relaxation techniques, mindfulness or full awareness, communication and emotional management. Table 2 shows the main sociodemographic characteristics of the participants.

3.3.2 | Reliability compassionate ability scale

The reliability analysis of the CCS obtained a Cronbach's α of 0.855. Cronbach's alpha was analysed considering the deletion of one element. The test concluded that removing an element did not improve the internal consistency of the questionnaire. Cronbach's alphas were also calculated for the scale dimensions and were higher than 0.70 (Table 3). All the items on the scale obtained an ICC-T > 3, so it was concluded that the items were adequate.

Item-item and item-total correlation was carried out observing that there is no multicollinearity (Table 4).

3.3.3 | Construct validity

The result of the Kaiser-Meyer-Olkin (KMO) test was 0.830, and the Bartlett sphericity test was significant ($\chi^2(136) = 1241.06$; $p < .001$), which allowed us to conclude that there are significant correlations between the attributes and that performing the factor analysis was appropriate. The factor analysis revealed the presence of four dimensions (Table 5).

TABLE 2 Sociodemographic characteristics of the participants.

Variable	N	%	Av (SD)
Age			42.32 (12.51)
Sex			
Women	163	79.5	
Men	42	20.5	
Civil status			
Single	75	36.6	
Married or living with partner	108	52.7	
Divorced	17	8.3	
Widowed	1	0.5	
Other	4	2	
Employment			
Temporary/interim	103	52.2	
Permanent (tenured)	91	44.4	
Other	11	5.4	
Work experience			15.79 (12.41)
Profession			
Doctor	13	6.3	
Nurse	133	64.9	
Physiotherapist	12	5.9	
Technician (professional qualification)	39	19	
Other	8	3.9	
Work location			
Hospital	78	38	
Primary care	127	62.1	
Work shift			
Morning/Afternoon	131	63.9	
Rotated (M/A/N)	48	23.4	
12-h shift	14	6.8	
Night	5	2.4	
Other	7	3.4	
Specific training ^a			
0	56	27.3	
1–2	83	40.5	
>2	66	32.1	

Abbreviations: Av, average; SD, standard deviation.

^aNumber of workshops or specific training courses in counselling or helping relationships, relaxation techniques, mindfulness or full awareness, communication and emotional management.

3.3.4 | Criterion validity

A statistically significant correlation was found between the self-compassion dimension in the Capacity for Compassion Scale in Health Professionals and the short version of the SCS ($r = -.142$; $p = .042$), between the mindfulness dimension and the FFMQ ($r = -.151$; $p = .030$), between the motivation/commitment dimension

and satisfaction through compassion in the Short ProQOL ($r = .259$; $p < .001$) and also between the shared humanity dimension and the same dimension in the SCS short version ($r = .151$, $p = .031$).

3.3.5 | Relationship between the capacity for compassion scale and sociodemographic variables

A correlation was made between the CCS and sociodemographic variables. A statistically significant correlation was obtained with age ($r = .25$; $p = \leq .01$) and with pooled professional experience ($r = .24$; $p = \leq .01$). Therefore, higher scores on the CCS were related to higher age and professional experience. In addition, a statistically significant relationship was found between the CCS and the workplace ($t = -2.92$; $p = \leq .01$). In this case, the participants who worked in primary care ($M = 70.13$; $SD 5.91$) had significantly higher mean scores on the CCS than those who worked in hospitals. In the case of marital status, the scores were significantly higher for those who were divorced ($M = 72.53$; $SD 7.22$) than those in the other marital status groups ($F = 3.90$; $p = .004$).

4 | DISCUSSION

Compassion is an element that guarantees the provision of quality care and patient-centred care (Bickford et al., 2019; Pehlivan & Güner, 2020; Salvador Zaragozá et al., 2021). The aim of the study was to design and evaluate the psychometric properties of a scale to measure the capacity for compassion in health professionals. However, the scarcity of measurement tools has made research on this topic difficult. The only scale that measures capacity for compassion is 'The Compassion Competence Scale', but it is designed only for nurses (Lee & Seomun, 2016). However, in the analysis carried out by Sinclair et al. (2017), it could be seen that it had little or no evidence regarding responsiveness or interpretability, and furthermore, it starts from the premise that compassion cannot be directly measured or observed.

The CCS in this study showed excellent reliability, considering results above 0.90 as redundancy or duplication (Oviedo & Campo-Arias, 2005). The analysis of the temporal stability of the scale proved to be adequate, demonstrating that the results are consistent over time (Streiner & Kottner, 2014). The psychometric properties of the Capacity for Compassion Scale were evaluated through content, criterion and construct validity. Our tool has shown good content validity (Polit & Beck, 2020), obtaining an IVC-i of 0.901. Therefore, all the items that are part of the questionnaire contributed to measuring the capacity for compassion in health professionals (Coaley, 2014). Regarding the criterion validity, the scores of the participants in the 'self-compassion' subdimension were correlated with the short version of the SCS, the scores of the 'mindfulness' subdimension with the FFMQ and the scores of the 'motivation-commitment' subdimension with the 'compassion satisfaction' subdimension in the Short ProQOL scale, obtaining a statistically significant correlation in all the scales.

TABLE 3 Reliability of the pilot and final scale.

	Cronbach's alpha	Average of the scale if the element has been deleted		Scale variance if the element has been deleted		Corrected correlation of total of elements		Cronbach's alpha if the element has been deleted	
		P*	F*	P*	F*	P*	F*	P*	F*
Motivation and compromise dimension	.813								
ITEM 1		63.25	64.62	30.676	40.569	.387	.437	.769	.848
ITEM 2		63.24	64.55	30.425	41.406	.450	.441	.765	.848
ITEM 3		63.83	65.10	30.798	39.588	.325	.523	.773	.844
ITEM 11		63.61	64.81	29.759	40.380	.567	.501	.758	.846
ITEM 12		63.73	65.09	30.684	40.379	.353	.419	.771	.849
ITEM 13		63.42	64.69	29.731	39.931	.462	.564	.763	.843
ITEM 14		63.66	64.91	28.538	38.771	.569	.534	.754	.844
Presence dimension	.737								
ITEM 4		63.81	65.00	31.775	40.211	.226	.492	.779	.846
ITEM 5		64.24	65.46	31.219	39.681	.246	.519	.779	.844
ITEM 6		63.47	64.83	32.426	39.907	.152	.562	.783	.843
ITEM 7		63.90	65.13	29.300	40.111	.464	.469	.762	.847
Common humanity dimension	.728								
ITEM 8		63.17	64.36	31.005	41.144	.262	.292	.778	.842
ITEM 9		62.93	64.20	32.375	41.815	.208	.307	.779	.839
ITEM 10		63.93	64.72	27.995	39.329	.421	.451	.767	.833
Self-compassion dimension	.877								
ITEM 15		64.54	65.65	29.115	38.963	.420	.483	.766	.846
ITEM 16		64.61	65.75	28.414	38.984	.507	.471	.758	.847
ITEM 17		64.31	65.69	31.009	39.892	.230	.409	.781	.850

Abbreviations: F, final phase; P, pilot phase.

Regarding construct validity, our findings suggest that all the items that make up the CCS refer to important aspects of capacity for compassion and contribute to measuring a dimension of the construct (Sinclair et al., 2022). The results of the factor analysis revealed that the underlying structure of the CCS was composed of four factors: motivation and commitment, presence, shared humanity and self-compassion, in line with the self-compassion model of Neff (2003) whose dimensions were mindfulness, self-compassion and shared humanity. However, motivation and commitment have been conceptualized as one of the main elements of the capacity for compassion (Strauss et al., 2016) and are one of the factors that influence the practice of health professionals and the quality of the services provided (Avelar-Ferreira et al., 2016). On the other hand, in this scale, item number three, which in the original design was in the motivation and commitment dimension, in the factor analysis had a similar score in this dimension and in that of shared humanity, although somewhat higher in the latter. Nevertheless, it was considered that it was more appropriate to keep it in the motivation and commitment dimension. This decision is grounded in the

central idea of Gilbert's Compassion-Focused Therapy (2009) that strength and courage are necessary elements for the sustainability of the commitment in the practice of compassion (Gilbert, 2014), and its connection with motivation is one of the essential elements for its development in extremely difficult situations (Ruiz-Fernández, Ramos-Pichardo, et al., 2020).

In addition, the CCS showed statistically significant differences with the age and professional experience variables. In this study, a positive correlation was observed between age and compassionate capacity. In line with our results, the study by Nijboer and van der Cingel (2019) observed that novice nurses felt more insecure in professional practice, not always having the ability to provide compassion. However, this positive correlation has not been observed in other research; on the contrary, there are studies in which it has been observed that with increasing age the compassionate capacity decreases (Ruiz-Fernández, Pérez-García, & Ortega-Galán, 2020). This contrariety observed in this research compared to others may be due to the different professional profiles that have been included in the sample of participants. As has

TABLE 4 Correlation item–item and item–total.

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	ITEM 6	ITEM 7	ITEM 8	ITEM 9	ITEM 10	ITEM 11	ITEM 12	ITEM 13	ITEM 14	ITEM 15	ITEM 16	ITEM 17	Total
ITEM 1 Spearman's correlation		.520**	.397**	.296**	.226**	.334**	.241**	.220**	.147*	.287**	.381**	.419**	.514**	.382**	.032	.034	.020	.565**
Sig.		<.001	<.001	<.001	.001	<.001	<.001	.002	.036	<.001	<.001	<.001	<.001	<.001	.648	.632	.779	<.001
ITEM 2 Spearman's correlation			.296**	.265**	.130	.310**	.104	.201**	.144*	.233**	.374**	.264**	.402**	.398**	.112	.141*	.121	.512**
Sig.			<.001	<.001	.064	<.001	.137	.004	.040	<.001	<.001	<.001	<.001	<.001	.108	.044	.085	<.001
ITEM 3 Spearman's correlation				.386**	.413**	.433**	.258**	.125	.078	.209**	.306**	.329**	.380**	.349**	.222**	.166*	.127	.594**
Sig.				<.001	<.001	<.001	<.001	.073	.269	.003	<.001	<.001	<.001	<.001	.001	.017	.069	<.001
ITEM 4 Spearman's correlation					.474**	.435**	.449**	.054	.191**	.208**	.320**	.188**	.305**	.199**	.245**	.272**	.172*	.595**
Sig.					<.001	<.001	<.001	.442	.006	.003	<.001	.007	<.001	.004	<.001	<.001	.014	<.001
ITEM 5 Spearman's correlation						.329**	.299**	.105	.084	.181**	.254**	.179*	.247**	.278**	.418*	.375**	.288**	.596**
Sig.						<.001	<.001	.132	.233	.009	<.001	.010	<.001	<.001	<.001	<.001	<.001	<.001
ITEM 6 Spearman's correlation							.449**	.243**	.192**	.245**	.323**	.247**	.286**	.308*	.250**	.226**	.220**	.610**
Sig.							<.001	<.001	.006	<.001	<.001	<.001	<.001	<.001	<.001	.001	.002	<.001
ITEM 7 Spearman's correlation								.139*	.158*	.163*	.283**	.115	.261**	.279**	.305**	.280**	.242**	.559**
Sig.								.047	.024	.019	<.001	.100	<.001	<.001	<.001	<.001	<.001	<.001
ITEM 8 Spearman's correlation									.490**	.410**	.263**	.205**	.181**	.208*	.026	.057	-.040	.245**
Sig.									<.001	<.001	<.001	.003	.010	.003	.710	.416	.566	<.001
ITEM 9 Spearman's correlation										.382**	.175*	.147*	.290**	.171*	.160*	.127	.152*	.260**
Sig.										<.001	.012	.035	<.001	.014	.022	.069	.030	<.001
ITEM 10 Spearman's correlation											.394**	.312*	.216**	.278*	.181**	.143*	.134	.355**
Sig.											<.001	<.001	.002	<.001	.009	.040	.055	<.001
ITEM 11 Spearman's correlation												.393**	.388**	.362**	.085	.094	.036	.417**
Sig.												<.001	<.001	<.001	.225	.179	.606	<.001
ITEM 12 Spearman's correlation													.468**	.382**	.079	.013	.038	.450**
Sig.													<.001	<.001	.263	.856	.592	<.001
ITEM 13 Spearman's correlation														.547**	.103	.129	.139*	.606**
Sig.														<.001	.142	.065	.047	<.001
ITEM 14 Spearman's correlation															.195**	.247**	.114	.610**
Sig.															.005	<.001	.105	<.001
ITEM 15 Spearman's correlation																.664**	.680**	.589**
Sig.																<.001	<.001	<.001
ITEM 16 Spearman's correlation																	.715**	.590**
Sig.																	<.001	<.001
ITEM 17 Spearman's correlation																		.533**
Sig.																		<.001

*<.05. **<.01.

TABLE 5 Factor analysis of the 4 dimensions.

	Factor			
	1	2	3	4
DIMENSION 1: Motivation and commitment				
ITEM 1	.645	-.057	.205	.076
ITEM 2	.575	.042	.132	.132
ITEM 3	.451	.112	.459	.033
ITEM 11	.418	-.005	.281	.380
ITEM 12	.555	-.021	.077	.265
ITEM 13	.691	.095	.191	.166
ITEM 14	.600	.140	.127	.239
DIMENSION 2: Presence				
ITEM 4	.201	.117	.740	.015
ITEM 5	.183	.316	.506	.097
ITEM 6	.281	.144	.524	.248
ITEM 7	.091	.220	.496	.242
DIMENSION 3: Shared humanity				
ITEM 8	.182	-.001	.032	.671
ITEM 9	.148	.143	.153	.458
ITEM 10	.302	.159	.121	.439
DIMENSION 4: Self-compassion				
ITEM 15	.039	.773	.241	.113
ITEM 16	.040	.826	.193	.104
ITEM 17	.032	.852	.110	.049

The bold values indicates that these items belong to that dimension.

been observed in other studies, compassionate capacity has differed between doctors and nurses when dealing with health crisis situations (Ruiz-Fernández, Ramos-Pichardo, et al., 2020). The term capacity has been used to describe the skills, competencies and experience of individuals (Lemmetty & Collin, 2020), which implies a positive correlation between capacity for compassion and work experience. In addition, the study by Numminen et al. (2013) demonstrated that this capacity in nurses increases with age and work experience. In the study by Ruiz-Fernández, Pérez-García, and Ortega-Galán (2020), no relationship was observed between compassionate ability and work experience. Perhaps it may be that more than work experience, it is the workplace that influences compassionate ability (Baek et al., 2020), as can be seen in healthcare professionals working in specific services such as an intensive care unit or oncology services (Xie et al., 2021). In these services, the contact with suffering is greater, and therefore, professionals need to develop more compassion to cope with their daily work (Baqeas et al., 2021). For this reason, it is necessary to measure the compassionate capacity of healthcare professionals and to establish specific intervention programmes to train or cultivate compassion (Sinclair et al., 2020).

The results of this study should take into account a number of limitations. First, convenience sampling was used due to the ease of access to the sample. A large percentage of the participants are

nurses compared to other groups, which may raise doubts about the target population of the survey. However, it is normal that there is a higher percentage of nurses compared to other groups if we take into account the professional staff of the health centres in the autonomous community where the study was carried out (Andalusian Health Service, 2022). Second, most of the participants were women, which may have influenced the responses though we must bear in mind that most members of the health professions are women (World Health Organization, 2019). Third, recall bias may be present in this study in the reliability and temporal stability of the pilot scale. Lastly, the CCS was a self-administered tool so a social desirability bias may be present. However, despite the limitations, a tool capable of measuring the capacity for compassion in health professionals has been obtained, which has achieved good psychometric properties.

The lack of research available on this topic highlights the innovative nature of this research and the need to develop new studies that delve further into this subject. Future lines of research should consider a larger and more varied sample, in addition to testing the instrument in different languages and clinical situations.

5 | CONCLUSIONS

The CCS has been shown to have good psychometric properties in relation to reliability, temporal stability, and content, criterion and construct validity. This instrument measures the compassion capacity of health professionals, which is a valuable discovery for research in this field, allowing the detection of low levels of compassion capacity, which have a negative influence on the quality of care provided to sick people and on the satisfaction of the professionals themselves. Therefore, the CCS can detect the shortage of compassionate competencies in professionals and, consequently, programme interventions to increase them by measuring the real effect of the intervention. This possibility will allow longitudinal research to test the benefits of compassionate competencies for professionals, patients and the multidisciplinary health team and the long-term changes that occur in health institutions.

AUTHOR CONTRIBUTIONS

All authors have participated in the development of this study. Ruiz-Fernández, Alcaraz-Córdoba and Ortega-Galán conceived the study and participated in the data collection, data analysis and writing of the manuscript. Ventura-Miranda and García-Navarro managed the data, created the database and participated in the data analysis. Ibañez-Masero participated in the interpretation of the data and writing of the manuscript.

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All authors declare that there are no conflicts of interest in this investigation.

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DATA AVAILABILITY STATEMENT

Data are available from the first author or corresponding author on reasonable request.

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