

**Person-Centered Care for the Older People: Convergence and Assessment of
Users', Relatives', and Staff's perspectives**

Person-Centered Care for the Elderly

Teresa MARTÍNEZ¹, Álvaro POSTIGO^{2,*}, Marcelino CUESTA², and José MUÑIZ³

¹Services and Social Rights Council of the Principality of Asturias, Spain

²Department of Psychology. University of Oviedo, Spain

³Nebrija University, Spain

*Corresponding author: Álvaro Postigo

Department of Psychology

University of Oviedo

Plaza Feijoo s/n

33003 Oviedo (Spain)

Phone:

e-mail:

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Abstract

Aim: Develop two psychometrically sound questionnaires to assess users' and relatives' opinions of Person-Centered Care. Evaluate the convergence between the perspectives of the different agents involved in Person-Centered Care in the older people: Users, relatives, and staff. Examine the relationships between Person-Centered Care and care quality and the users' perceived psychological wellbeing.

Design: We used the psychometric technology involved in the development and analysis of tests for the first objective. For the second and third objectives, we used a descriptive-correlational design.

Method: The sample comprised 636 clients of older people care residences, 742 relatives, and 844 healthcare professionals. The mean age of the center residents was 81.62 years old (SD=9.51), the mean age of relatives was 56.7 (SD=10.15), and the mean age of healthcare professionals was 39.94 (SD=10.56). Data collection lasted 10 months, between May 2017 and March 2018. Two new Person-Centered Care instruments were developed and the correlations between different agents were calculated.

Results: The newly developed measurement instruments demonstrated a unidimensional structure and high internal consistency and stability over time (users: $\alpha=.96$, $\omega=.96$, $r=.91$; relatives: $\alpha=.97$, $\omega=.97$, $r=.95$). There was high convergence between the Person-Centered Care evaluations from the staff, users, and relatives, with correlations ranging between .62 and .76.

Conclusion: The new measurement instruments were reliable and valid. The opinions of the staff, users and relatives about Person-Centered Care in the residential centers were in good agreement. Furthermore, Person-Centered Care was associated with care quality and residents' psychological wellbeing.

Impact: A gap in the literature is an examination of the extent to which assessments of Person-Centered Care made by staff agree with those by users of the services and their relatives. In order to do that, two new measuring instruments were developed, which showed excellent psychometric properties, and are able to reliably, validly evaluate Person-Centered Care.

Key words: Person-Centered Care, gerontology, assessment, professionals, users, relatives, staff, nursing homes, instrument development.

INTRODUCTION

The Person-Centered Care (PCC) approach is the object of growing interest in health services and older people residential care (Lood et al., 2019; World Health Organization, 2015). From the PCC perspective, more traditional approaches are questioned and criticized for their focus on the illness and on the search for organizational efficiency, often at the expense of ignoring the needs and desires of the individual (Misiorski & Kahn, 2005). In the context of gerontological services, PCC aims to place older people as active protagonists of their lives and their care. The central values of PCC are the dignity of the person, and their right to care that respects their own preferences and individual identity, even if they may be affected by advanced dementia (Edvardsson, Winblad, & Sandman, 2008; Kitwood, 1997; Fazio, Pace, Flinner, & Kallmyer, 2018). These values of PCC make it a significant reference point, given its capacity to transform classical residential services which have been criticized for providing uniform care, the lack of privacy, and the little choice or control users of these services have over their daily lives (Koren, 2010; Misiorski & Kahn, 2005). In addition, various studies have found beneficial effects of using a PCC perspective in residential settings for both residents and staff. PCC is associated with reduced agitation of people with dementia, and higher quality of life for residents (Díaz-Veiga et al., 2014; Lood et al., 2019; Poey et al., 2017), as well as reduced job stress and higher job satisfaction for staff (Røen et al. 2018). One urgent, key aspect to encourage the rigorous use of PCC in applied contexts is having standardized measuring instruments available that allow us to evaluate the level to which this approach is applied in services, and thus improve their quality (Martínez et al., 2020).

Background

The PCC approach seeks to improve residential services, underlining the importance of people's quality of life (Lood et al., 2019; Poey et al., 2017, Røen et al., 2018), without that detracting from the importance of health and safety. As such, PCC is an approach with great potential to promote changes to traditional models and orient care based on seeking people's psychological wellbeing (Yoon, 2018).

This growing interest in PCC has been accompanied by the creation of new measuring instruments to assess the extent to which older people residential facilities apply it, and thus to improve on the current care provided. Recent reviews have shown a notable increase in the numbers of evaluation instruments designed from the PCC perspective, both in the field of health (De Silva, 2014; Pascual, Gil, Sánchez, & Menárguez, 2019; Ree, Wiig, Manser, & Storm, 2019) and in residential care (Edvardsson & Innes, 2010; Martínez, Suárez-Álvarez, & Yanguas, 2016).

Various evaluation strategies have been pursued, in particular: a) observation of the interaction between carers and those in their care, b) evaluation of the physical environment around the older people, c) questionnaires seeking the opinions of staff, users of the services, and their families, d) the level of compliance with individual preferences in users' care, and e) the progress of the services (Martínez et al., 2016). In older people care centers, the most widely used method is staff questionnaires (Chapell, Reid, & Gish, 2007; Edvardsson, Fetherstonhaugh, & Gibson, 2010; White, Newton-Curtis, & Lyons, 2008). Measuring instruments aimed at evaluating PCC according to the users of these services and their families have been less widely used, which contradicts the general philosophy of PCC of giving service users a central role (Martínez, 2017, 2018). Discovering and being able to compare the opinions of the different actors in care, not only the staff, is fundamental to the application and evaluation of PCC (De Silva, 2005; Martínez, 2016; McConnell & Meyer, 2019; Ree et

al., 2019). This is primarily because it is in line with what PCC proposes; listening to the preferences of service users and supporting and respecting their decisions. In addition, examining these other opinions may reduce the bias that could come from having only the staff evaluate the care that they themselves give. In fact, some recent studies suggest that the assessment of whether a center is offering Person-Centered Care can differ between staff and users (Neuberg et al., 2019; Yang et al., 2019). Because of that, various measuring instruments have been created to evaluate the points of view of the users of these services and their families. These include *Person-Centered Care Patient* (Coyle & Williams, 2001), and *Family involvement in care* (Reid, Chapell, & Gish, 2007), although the instruments which include versions for the different agents in the care process are of particular interest (staff, users and relatives) as they make it possible to compare the different perspectives. In this regard, it is worth mentioning the *Person-Centered Practices in Assisted Living (PC-PAL)*, which offers questionnaires for users and professionals (Zimmerman et al., 2015), and the *Person-Centered Climate Questionnaire*, which includes the corresponding versions for users (Edvardsson et al., 2009), relatives (Rahman et al., 2018), and professionals (Edvardsson et al., 2010).

Despite these advances in the assessment of PCC, there are still some limitations that must be borne in mind when creating new measuring instruments. Firstly, the lack of a universally accepted conceptual definition of PCC, which makes comparison and rigorous analysis of the results difficult (De Silva, 2015; Martínez, Suárez-Álvarez, Yanguas, & Muñiz, 2016; Ree et al., 2019). Because of that, it is essential for new measuring instruments to be developed starting from clear, well defined models of PCC. Secondly, the bias that can come from using only self-reporting methods, which is why combining different strategies and instruments is recommended (De Silva, 2014; Van Haitsma et al., 2014). A third, already noted, limitation is the reliance solely on the

opinions of the staff, which is why it is advisable to add the views of users and their families (De Silva, 2014; Martínez, 2016). Finally, mention must also be made of the difficulty of actually getting the users' opinions, especially those with cognitive decline, who represent a large proportion of those who live in residential centers.

To overcome these limitations, the PCC-Gerontology (PCC-G) model was recently proposed (Martínez, 2017, 2018). It was inspired by the model from White et al. (2008), which proposed two large dimensions (*Person centered practices* and *Environment*) and eight components: Autonomy; Personhood, Knowing the person, Comfort, Supporting relationships, Work with residents, Personal environment for residents and Management structure. The main reason for choosing White's model as a reference is the fact that its broad eight-component structure facilitates the identification of very important aspects of care for evaluating PCC in the Spanish residential context. The PDC test from White (White et al. 2008) comprehensively covers the most important aspects of professional practice.

The PCC-G model took on these two dimensions but reorganized the components, seeking a better fit to the context of Spanish residential services. The first dimension (*Person-Centered practices*) has five components: Knowledge, Autonomy, Communication, Individualization/wellbeing, and Privacy. The second (*PCC facilitating environment*) has another five: Day-to-day activity, Physical space, Family and friends, Community, and Organization. A detailed explanation of the model and its validation can be found in Martínez (2017, 2018). The model incorporates various instruments that collect the opinions of the older people users of the services, their families, the staff, and the management of the centers. A standardized scale has also been developed for the evaluation of PCC in the centers by outside experts, which allows the comparison between the opinions of staff, users, and families with this expert

gold standard (Martínez, 2018). The first instrument produced using this model was the *Person-Centered Care Gerontology Staff* questionnaire (*PCCG-S*), which is aimed at determining the level of PCC given in older people care centers in the opinion of the professionals working in them. It has excellent psychometric properties (Martínez et al., 2020).

THE STUDY

Aims

The main objective of this study was to develop and psychometrically analyze two new measuring instruments for users and their relatives: The Person-Centered Care Gerontology Users questionnaire and The Person-Centered Care Gerontology Relatives questionnaire. To do so, it was determined: a) the factorial structure of both scales, b) the internal consistency and test-retest reliability of both scales, c) the convergence of both scales with each other and with The Person-Centered Care Gerontology Staff questionnaire, and d) the convergence of both scales with the perceived quality of care and the perceived well-being. These new instruments allow the standardized evaluation of the extent to which older people who live in residential care and their relatives believe that the center provides Person-Centered Care. This will allow us to examine the extent to which the evaluations by residents, their relatives, and staff agree with each other, and in turn how they relate to the perceived quality of care and the psychological wellbeing of the residents.

Design

For the first study objective, we used a psychometric design, including multivariate techniques. For the second and third objectives, we used a descriptive-correlational design.

Participants

The participants in the study were the users and their relatives from 42 residential care centers who voluntarily agreed to participate. The inclusion criteria for the centers were: a) that the center appeared in the register of residential care centers authorized by the relevant autonomous community, b) that it was a center dedicated to long-term care due to situations of dependence, and c) that they accepted the stipulated obligations of participation in the study. Exclusion criteria were: a) centers which exclusively offered care to those with a high level of independence and autonomy, b) palliative care, acute care or convalescent units, and c) exclusively short-stay or temporary care centers. The levels of prior training in Person-Centered Care in the centers was variable.

All of the residents who were sufficiently competent to complete the questionnaires, along with their relatives, were invited to participate, without excluding those with mild cognitive deterioration or in the initial stages of dementia. The selection of users was made by professionals in each center, normally a doctor or psychologist, using up to date information available in the centers about users' diagnoses and cognitive state.

Data collection

Instruments

Person-Centered Care Gerontology Staff Questionnaire (PCCG-S). This questionnaire uses the aforementioned PCC-Gerontology framework (Martínez, 2017, 2018), and evaluates PCC in residences according to the opinions of the professionals working in them. The PCCG-S questionnaire has a unifactorial structure, and is composed of 23 Likert-type items (1 = *completely disagree*, 10 = *completely agree*). The reliability of the test is excellent, with internal consistency ($\alpha = .95$, $\omega = .95$) and test-retest reliability: $r = .88$ (Martínez et al., 2020).

Person-Centered Care Gerontology Users Questionnaire (PCCG-U). This questionnaire assesses the opinions of the users of older people care centers about PCC. It uses the aforementioned model of PCC as a framework (Martínez, 2017, 2018), and was created following the most recent psychometric developments about construction of measuring instruments (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 2014; Downing & Haladyna, 2006; Haladyna & Rodríguez, 2013; Irwing, Booth, & Hughes, 2018; Lane, Raymond, & Haladyna, 2016; Muñiz, 2018; Muñiz & Fonseca-Pedrero, 2019; Schmeiser & Welch, 2006). It is made up of 22 Likert-type items (1 = *completely disagree*, 10 = *completely agree*), two for each of the components of the PCC model, with the exception of the organization component which has four items due to its importance to the model (Martínez, 2017, 2018). As the results will show, it had suitable psychometric properties. The items are given in Table 1.

Person-Centered Care Gerontology Relatives Questionnaire (PCCG-R). This questionnaire assesses the opinions of the relatives of those in older people care centers about PCC. It uses the aforementioned model of PCC as a framework (Martínez, 2017, 2018), and was created following the most recent psychometric developments about construction of measuring instruments (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 2014; Downing & Haladyna, 2006; Haladyna & Rodríguez, 2013; Irwing et al., 2018; Lane et al., 2016; Muñiz, 2018; Muñiz & Fonseca-Pedrero, 2019; Schmeiser & Welch, 2006). It is made up of 22 Likert-type items (1 = *completely disagree*, 10 = *completely agree*), two for each of the components of the PCC model, with the exception of the organization component which has four items due to its importance to

the model (Martínez, 2017, 2018). As the results will show, it had suitable psychometric properties. The items are given in Table 2.

The three instruments (PCCG-S, PCCG-U, and PCCG-R) were originally developed in Spanish, and worded positively in order to maximize their psychometric properties (Vigil-Colet, Navarro-González, & Morales-Vives, 2020).

Perceived care quality. The quality of care provided by the centers was evaluated on a scale of 1 to 10. The staff were asked for their opinions about the quality of the care provided in the center (1 very low, 10 very high), as were the residents (1 very bad, 10 very good), and the residents' relatives (1 very bad, 10 very good). Scores were obtained for the staff (Q-S), users (Q-U), and relatives (Q-R).

Perceived psychological wellbeing. We included a question to discover the older people residents' perceptions of their psychological wellbeing, as well as a question for an assessment by their relatives (W-U; W-R). In the context of this study, psychological wellbeing is understood as users' subjective perceptions of feeling good about themselves and the type of life they have in the center (Serrano, Andreu, & Murgui, 2020). The residents were asked how they felt about their lives at the time (1 not happy at all, 10 very happy), and the relatives were asked how they thought that their older people relatives felt about their lives at the time (1 not happy at all, 10 very happy).

Procedure

We contacted the management of various private and public residential care centers, as well as relevant organizations in the sector, informing them about the study and requesting their participation. We also sent them a letter outlining the study aims, the methodology and the obligations of all involved in the study.

Following this initial contact, we confirmed the participation of 42 residential centers in the autonomous communities mentioned above. In the interests of good data

collection and high participation, each center designated a member of staff who was responsible for coordinating the data collection process. A total of 1,200 test booklets were sent and 742 relatives and 636 older people residents responded (response rate 61.6% and 53% respectively).

In order to ensure awareness and consistency of the process, we prepared an instruction document describing the data collection process. These instructions were sent to the director of each center along with the designated coordinating staff member, who instructed the staff in each center about the application process. The questionnaires were completed individually, distributed by each center coordinator to the residents and relatives who had agreed to participate.

All of the residents who were sufficiently competent were invited to complete the questionnaires, without excluding those with mild cognitive deterioration or in the initial stages of dementia. In order to assist good completion rates of the tests in each center, we gave the residents the option of asking for help from volunteers who had been assigned previously. In some cases the help of trainee or work-experience staff was requested, as long as they were not part of the center team in order to avoid bias in the responses. The assigned study coordinator in each center provided instruction to these volunteers. Our written instructions to the center for data collection included specific indications about how assistance should be given: explaining and clarifying items but never providing or interpreting the subjects' opinions.

The relatives were all asked to participate in the survey. The residents and their relatives were informed of the objectives of the study by the center coordinator responsible for the data collection, and signed to indicate their consent to participate. Data collection lasted 10 months, between May 2017 and March 2018. A total of 130

residents and 175 relatives (in 8 centers) completed two instances of the PCC-G questionnaire 7 days apart so that test-retest reliability could be analyzed.

Ethical considerations

The participation of the users and their relatives, and the staff was voluntary. They were all informed of the study objectives and conditions, and prior to participating gave their written consent to participate using a form we provided to the centers. All responses were anonymous, and confidentiality was maintained throughout the data collection process. It was not considered necessary for the study to be reviewed by an ethics committee; it followed all of the recommendations laid out in the ISO-10667 Standard for the evaluation of people, the Deontological Code of the Spanish Psychological Association and the International Test Commission (ITC) Guidelines for Test Use (ITC, 2017).

Data analysis

A small number of residents (5.35%) and relatives (7.68%) had missing values in the questionnaires, for which we carried out a process of imputation following a linear regression process under the assumption of missing data completely at random (MCAR). This procedure has been shown to work well in psychometric contexts such as this study (Cuesta & Fonseca-Pedrero, 2014; Cuesta, Fonseca-Pedrero, Vallejo, & Muñiz, 2013). To analyse the factorial structure of the tests, we proceeded in two phases, dividing the total sample into two random subsamples. The first subsample was used to perform an exploratory factor analysis. The second was used to fit a confirmatory factorial model. In the first subsample, an exploratory factor analysis was carried out on the matrix of polychoric correlations. Unweighted Least Squares (ULS) was used as an extraction method, and the number of factors to be retained was determined by the optimal implementation of parallel analysis (Timmerman & Lorenzo-

Seva, 2011), the percentage of variance explained, and the model fit indices based on the study of residuals: Goodness of Fit Index (GFI) and Root Mean Square of Residuals (RMSR). These analyses are the most appropriate, regardless of the method of estimation used (Ferrando & Lorenzo-Seva, 2017). Model fit is considered adequate when GFI is greater than 0.90 and RMSR is less than 0.08 (Kline, 2011). Indices of closeness to unidimensionality were also used, Unidimensional Congruence (UniCo), Explained Common Variance (ECV) and Mean of Item Residual Absolute Loadings (MIREAL). Data can be treated as essentially one-dimensional when UniCo>.95, ECV>.85 or MIREAL<.30 (Calderón, Navarro, Lorenzo-Seva, & Ferrando, 2019; Ferrando & Lorenzo-Seva, 2018). In the second subsample, a confirmatory factor analysis was carried out with a single factor. The items were treated as categorical variables and the estimation method used was Weighted Least Square Mean and Variance (WLSMV). As fit indices, χ^2/df , and CFI were used.

Reliability was estimated by internal consistency procedures (Cronbach's alpha, McDonald's omega), calculated using the polychoric correlation matrix, thus making use of the ordinal properties of the data (Oliden & Zumbo, 2008). Temporal stability (test-retest) was estimated using the Pearson correlation and the intra-class correlation coefficient (ICC). Pearson correlations were performed in order to obtain evidence of convergent validity.

Data analysis was performed using the statistical software packages SPSS 24 (IBM Corp, 2016), FACTOR 10.5.03 (Lorenzo-Seva & Ferrando, 2013), and MPlus8 (Muthen & Muthen, 2017).

RESULTS

Sample

Sample details are given in Table 3. Given its characteristics, the sample may be considered to reasonably represent the Spanish population of older people-care center users.

Person-Centered Care Gerontology Users' Questionnaire (PCCG-U)

Table 4 gives the descriptive statistics of the questionnaire items. All of the indices of discrimination were high, between .50 and .76. The item means were also high and showed a tendency towards negative skewness. As noted in the data analysis section, the internal structure of the test was established in two phases, first via exploratory factor analysis and then by confirmatory factor analysis. The data from the first subsample ($n = 318$) demonstrated suitability for exploratory factor analysis (Kaiser-Meyer-Olkin = .93; Bartlett's test $p < .001$). Parallel analysis recommended the extraction of a single factor which explains 55% of the variance. As Table 5 shows, both the indices of fit and the indicators of unidimensionality were adequate, by which we could conclude that the questionnaire was essentially unidimensional (Calderón et al., 2019). That solution was examined using a second subsample ($n = 318$) via confirmatory factor analysis, according to the model obtained in in the exploratory analysis. The indicators of fit were reasonably adequate ($\chi^2/df = 4.99$; CFI = .94), with factorial loadings between .59 and .83. This confirmed the essentially unidimensional structure of the instrument (Calderón et al., 2019; Ferrando & Lorenzo-Seva, 2018).

Reliability in terms of internal consistency produced very high values ($\alpha = .96$ y $\omega = .96$). Reliability as stability over time was also examined, using a sample of 130 participants, who completed the questionnaire at two different times. The test-retest correlation was .91, and the intra-class correlation was .91. These values indicate excellent temporal stability of the scores produced by the questionnaire.

Person-Centered Care Gerontology Relatives' Questionnaire (PCCG-R)

The descriptive statistics for this instrument are given in Table 6. Similarly to the users' questionnaire (PCCG-U), the item means were high and the distributions tended to present negative skewness. The discrimination indices were all adequate (Muñiz, 2018), ranging between .62 and .85.

We followed the same strategy as for the users' instrument to examine the internal structure, using two subsamples, each with 371 people. The suitability of the data for exploratory factor analysis was excellent (Kaiser-Meyer-Olkin = .95; Bartlett's test $p < .001$). As Table 7 shows, the different indicators showed that the PCCG-R questionnaire has an essentially unidimensional structure (Calderón et al., 2019; Ferrando & Lorenzo-Seva, 2018).

The single-factor model was tested using the second subsample via confirmatory factor analysis. The indicators of fit were reasonably adequate ($\chi^2/df = 6.56$; CFI = .95), and the factor loadings ranged between .72 and .90. This confirms the idea of an essentially unidimensional structure for the instrument.

The test's internal consistency was very high ($\alpha = .97$ y $\omega = .97$). We used a subsample of 175 participants who completed the questionnaire at two time points to calculate the stability of the instrument over time. The test-retest reliability coefficient was .95 and the intra-class correlation was .95, indicating that the scores from the questionnaire are very stable over time.

PCC convergent evaluations of users, relatives and staff

Our second objective in this study was to examine the extent to which the opinions of the different parties involved agreed in their evaluations of the levels of Person-Centered Care. To do that, we analyzed the evaluations from the three principal actors: users, relatives, and staff. The data came from 41 centers evaluated (one of the centers did not collect data from relatives) by the three involved parties, results are

given in Table 8. Some of the results are worth noting. There was a strong correlation between the three instruments created using our model of Person-Centered Care (PCCG-U, PCCG-R, PCCG-S), with correlations between .62 and .76 (Cohen, 1988).

Perceived care quality, psychological well-being and PCC

There was a clear relationship between the scores in the questionnaires and the perceptions of quality and psychological well-being reported by the different agents (Table 9).

DISCUSSION

This study had three objectives. Firstly, to develop and validate two new instruments for evaluating PCC according to users of care centers (PCCG-U) and according to their relatives (PCCG-R). Secondly, to examine the extent to which there was agreement between the evaluations of PCC in older people care centers made by the staff, the users of the centers, and their families. Finally, we also looked at the relationships of PCC evaluations with care quality and users' psychological wellbeing.

We first developed two new measuring instruments to measure PCC from users and their families. The results indicate that the two new instruments -the *PCCG-U*, and the *PCCG-R*, have good psychometric properties for measuring the level of PCC provided in care centers, including suitable test-retest reliability, which supports their future use in research and in the applied field. These two questionnaires, together with the *PCCG-S* (Martínez et al., 2020), comprise part of the first test battery in Spanish for discovering and comparing the opinions of the principal actors in residential care with regard to the level of Person-Centered Care offered. This convergent evaluation of the parties involved (users, families, staff) is highly recommended for combining the different, complementary views of residential care quality (De Silva, 2005; Martínez, 2016; McConnell & Meyer, 2019; Ree et al., 2019).

The data indicated high convergence between staff, user, and relatives' opinions about the levels of Person-Centered Care, with a correlation of $r = .75$ between users and staff, $r = .62$ between users and relatives, and $r = .76$ between relatives and staff. There was also good agreement in terms of the aspects of care that were rated highest and lowest by the older people residents and their families. The highest scores from both groups was how welcoming the centers were to the families. The relatives had a mean score of 9.21 for item 15 ("When I go to the center I am well received by the staff"), and the users had a mean score of 9.26 ("My family is well received by the center and they feel comfortable when they come to see me"). The lowest scored aspect, also by both groups, was item 19, about there being sufficient staff in the centers ("There are enough staff to provide good care"), with mean scores of 7.14 (users) and 7.32 (relatives). The convergence between the three agents involved (staff, users and relatives) about PCC is a clear indicator of the validity of the tests used and the underlying PCC model (Martínez, 2017, 2018). Such clear convergence has not always been found in other studies (Neuberg et al., 2019; Nolan, Brown, Davies, Nolan, & Keady, 2006; Yang et al., 2019), which may be due to their definitions of the PCC construct, or the measuring instruments used (De Silva, 2015; Ree et al., 2019). This is an open topic in current literature, about which we hope to be able to contribute our small part. It is important to underline the high score that both the users and their families gave to the aspects of care linked to Person-Centered Care, which has also been reported by other authors (Ree et al., 2019). Because of that, including external expert evaluation via observation and checking objective descriptors is something that should be contemplated in the evaluation of PCC, and is something we are working on at the moment.

In addition, it is worth noting the strong correlations found between perceived care quality and the level of PCC: $r=.89$ for users, $r=.85$ relatives, and $r=.85$ staff. This data provides new evidence in addition to that from other studies, underlining the positive association between PCC and perceived quality of care (Díaz-Veiga et al., 2014; Lood, 2019; Poey et al., 2017). This is an important conclusion which supports PCC being the guiding, transforming principle of care quality in modern residential models. We also found a positive relationship between the level of PCC and the psychological wellbeing of the centers' older people residents, both when we asked the users themselves, and when we asked their relatives. The association found between the two variables in the users' group was $.45$, and in the relatives' group it was $.72$. The weaker association in the users' group may be because care quality is not the only, nor even the main, factor affecting the psychological wellbeing of those living in residential care. Other subjective factors, such as perceived health, satisfaction with social support, life satisfaction, and certain strategies of adaptation to change associated with functional loss should also be considered (Villar & Serrat, 2019). These data support and add to the growing evidence of the relationship between PCC, quality of life, and psychological wellbeing in people receiving care (Ballard et al., 2018; Chenoweth, Forbes, Fleming, King, & Stein-Parbury, 2014; McConnell & Meyer, 2019; Poey et al., 2017; Sjogren et al., 2013; Terada et al., 2013; Yasuda & Sakakibara, 2017; Yang et al., 2019; Yoon, 2018; Zimmerman et al., 2013).

Limitations

These results must be interpreted in light of the limitations of the study. Firstly, the Spanish sample used means that it remains to be confirmed whether these results can be extrapolated to other cultural contexts. Secondly, the absence of people with advanced dementia in our sample, because they were unable to respond to the items,

means that it was not possible to assess the care this group receives, a group which is growing ever larger in residential services, and which needs more personal care.

CONCLUSION

The psychometric properties of the two new instruments created for the evaluation of Person-Centered Care in older people care residences from the perspectives of users and their relatives demonstrated excellent psychometric properties. This study, therefore, provides two new reliable, valid, measuring instruments for the evaluation of Person-Centered Care.

The evaluations of Person-Centered Care in older people care centers by staff, users of the service, and their relatives, showed high convergence, with very high correlations between the scores from the three groups.

The level of Person-Centered Care in older people care centers, as assessed by staff, users and relatives, is strongly related to the perception of the quality of the care received, and with the users' psychological wellbeing.

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| | |
|----------------|---|
| Item 1 | Those who care for me recognize me as a person and don't only focus on my illnesses or disabilities. |
| Item 2 | The staff who care for me know me well, they know my habits and what I like and don't like. |
| Item 3 | In this center, I am free to decide the care I receive (for example when I get up or go to bed, when to wash, what clothes to wear, and whether I follow a diet). |
| Item 4 | I decide how I spend the day and I choose what activities to participate in. |
| Item 5 | I feel that I am treated with respect. |
| Item 6 | The staff listen to and understand my problems and concerns, always trying to put themselves in my shoes. |
| Item 7 | The staff are flexible, depending on how I feel each day, they can change times and rules based on my needs. |
| Item 8 | I feel that I am more than just another number here, they treat me as an individual. |
| Item 9 | My private issues (health problems, close relationships, personal preferences, etc.) are treated with discretion and respect. |
| Item 10 | The staff protect my privacy when it comes to bodily care (bathing, going to the toilet, dressing, etc.). |
| Item 11 | The activities organized in the center really are interesting (not stupid or childish). |
| Item 12 | During the day I can do the things I like and continue my hobbies. |
| Item 13 | The center seems like a home (not like a hospital). |
| Item 14 | I'm free to arrange and decorate my room how I want. |
| Item 15 | My family are treated well by the staff and they feel at ease when they come to see me. |
| Item 16 | The center allows and encourages families to take part in daily life here. |
| Item 17 | The center encourages people in the neighborhood, volunteers, and other associations to come and participate in activities. |
| Item 18 | If you can't leave the center alone, they find someone to go with you habitually (for a stroll, to parks, shops, cafes, church, etc.). |
| Item 19 | There are enough staff to provide good care. |
| Item 20 | The staff are sufficiently trained to give personalized care. |
| Item 21 | The center has a range of professionals (technical team) to provide quality care. |
| Item 22 | The care in this center is flexible and aims to adapt to each person's needs and preferences. |

Table 1. *Person-Centered Care Gerontology Users Questionnaire*

| | |
|----------------|--|
| Item 1 | Those who care for my relative recognize them as a person and don't only focus on their illnesses or disabilities. |
| Item 2 | The staff who care for them know them well, they know their habits and what they like and don't like. |
| Item 3 | My relative can decide on their care (for example, when they get up or go to bed, when they wash, or what clothes they wear). If they have advanced dementia these things are decided considering their habits and noting their wellbeing. |
| Item 4 | My relative decides how they spend the day and they choose what activities to participate in. If they have advanced dementia these things are decided considering their habits and noting their wellbeing. |
| Item 5 | My relative is treated with respect. |
| Item 6 | The staff listen to and understand my relative's problems and concerns, always trying to put themselves in their shoes. |
| Item 7 | The staff are flexible, depending on how my relative feels each day, they can change times and rules based on their needs. |
| Item 8 | My relative is treated as an individual, not just another number. |
| Item 9 | Their private issues (health problems, close relationships, personal preferences, etc.) are treated with discretion and respect, even if they have advanced cognitive decline. |
| Item 10 | The staff protect my relative's privacy when it comes to bodily care (bathing, going to the toilet, dressing, etc.) even if they have advanced cognitive decline. |
| Item 11 | The activities organized in the center really are stimulating and appropriate for adults (not stupid or childish). |
| Item 12 | My relative can continue their hobbies and spend their time doing what they want. If they have significant deterioration, the staff look for activities that they can do and which make them feel good. |
| Item 13 | The center seems like a home (not like a hospital). |
| Item 14 | My relative's room is personalized and reflects their personality. |
| Item 15 | When I go to the center, I feel welcomed by the staff. |
| Item 16 | In this center, families are allowed and encouraged to participate in some care and the daily life of the center. |
| Item 17 | The center encourages people in the neighborhood, volunteers, and other associations to come and participate in activities. |
| Item 18 | The residents are encouraged to leave the center (for a stroll, to parks, shops, cafés, church, etc.) and if they can't go alone, the staff look for people to go with them. |
| Item 19 | There are enough staff to provide good care. |
| Item 20 | The staff are sufficiently trained to give personalized care. |
| Item 21 | The center has a range of professionals (technical team) to provide quality care. |
| Item 22 | The care in this center is flexible and aims to adapt to each person's needs and preferences. |

Table 2. *Person-Centered Care Gerontology Relatives Questionnaire*

| | Users (n = 636) | Relatives (n = 742) |
|---------------------------------------|-------------------------|------------------------|
| Age mean (standard deviation) [range] | 81.62 (9.51) [48 – 103] | 56.7 (10.15) [21 – 91] |
| Geographical | | |
| Spanish distribution (%) | | |
| Andalucía | 4.5 | 2.8 |
| Principality of Asturias | 35.2 | 40.3 |
| Aragón | 3.1 | 3.9 |
| Basque Country | 10.4 | 12.3 |
| Canary Islands | 14.3 | 15.9 |
| Castilla León | 19.3 | 10.6 |
| Castilla La Mancha | 6.8 | 6.7 |
| Galicia | 6.4 | 7.5 |

Table 3. *Details of the sample.*

| Items | Mean | Standard Deviation | Skewness | Kurtosis | Discrimination indices |
|-------|------|--------------------|----------|----------|------------------------|
| 1 | 8.74 | 1.73 | -1.75 | 3.33 | .57 |
| 2 | 8.50 | 1.92 | -1.54 | 2.14 | .59 |
| 3 | 7.95 | 2.54 | -1.24 | 0.63 | .59 |
| 4 | 8.86 | 1.71 | -2.03 | 4.72 | .60 |
| 5 | 8.94 | 1.72 | -2.16 | 5.22 | .59 |
| 6 | 8.26 | 2.09 | -1.28 | 1.12 | .69 |
| 7 | 8.06 | 2.38 | -1.35 | 1.06 | .72 |
| 8 | 8.50 | 1.97 | -1.48 | 1.81 | .71 |
| 9 | 8.80 | 1.75 | -1.75 | 2.99 | .67 |
| 10 | 8.82 | 1.82 | -1.81 | 3.13 | .61 |
| 11 | 8.29 | 2.15 | -1.49 | 1.84 | .56 |
| 12 | 8.65 | 1.91 | -1.74 | 2.87 | .63 |
| 13 | 8.30 | 2.31 | -1.53 | 1.71 | .59 |
| 14 | 8.35 | 2.40 | -1.63 | 1.83 | .59 |
| 15 | 9.23 | 1.42 | -2.46 | 7.00 | .58 |
| 16 | 8.41 | 2.24 | -1.67 | 2.24 | .60 |
| 17 | 7.81 | 2.47 | -1.18 | 0.65 | .50 |
| 18 | 7.76 | 2.64 | -1.16 | 0.36 | .58 |
| 19 | 7.32 | 2.69 | -0.81 | -0.38 | .57 |
| 20 | 8.47 | 2.03 | -1.54 | 2.15 | .66 |
| 21 | 8.78 | 1.80 | -1.96 | 4.29 | .62 |
| 22 | 8.26 | 2.15 | -1.41 | 1.60 | .76 |

Table 4. *Descriptive statistics of the Person-Centered Care Gerontology Users Questionnaire*

| Items | Factor loadings |
|---|-----------------|
| 1 | .67 |
| 2 | .70 |
| 3 | .66 |
| 4 | .72 |
| 5 | .74 |
| 6 | .78 |
| 7 | .77 |
| 8 | .79 |
| 9 | .81 |
| 10 | .77 |
| 11 | .68 |
| 12 | .79 |
| 13 | .71 |
| 14 | .67 |
| 15 | .71 |
| 16 | .67 |
| 17 | .58 |
| 18 | .63 |
| 19 | .65 |
| 20 | .79 |
| 21 | .77 |
| 22 | .81 |
| Explained variance | 55% |
| Goodness of Fit Index | .98 |
| Root Mean Square of Residuals | .06 |
| Unidimensional Congruence | .98 |
| Explained Common Variance | .91 |
| Mean of Item Residual Absolute Loadings | .19 |

Table 5. *Factor Analysis of Person-Centered Care Gerontology Users Questionnaire*

| Items | Mean | Standard deviation | Skewness | Kurtosis | Discrimination indices |
|-------|------|--------------------|----------|----------|------------------------|
| 1 | 8.69 | 1.38 | -1.01 | 0.64 | .72 |
| 2 | 8.54 | 1.51 | -1.13 | 1.17 | .68 |
| 3 | 7.37 | 2.47 | -.98 | 0.26 | .62 |
| 4 | 7.87 | 2.19 | -1.25 | 1.25 | .67 |
| 5 | 9.21 | 1.10 | -1.72 | 3.32 | .70 |
| 6 | 8.48 | 1.58 | -1.18 | 1.52 | .80 |
| 7 | 7.98 | 2.11 | -1.24 | 1.28 | .76 |
| 8 | 8.42 | 1.77 | -1.41 | 2.17 | .77 |
| 9 | 8.89 | 1.29 | -1.28 | 1.48 | .70 |
| 10 | 8.74 | 1.53 | -1.79 | 4.12 | .72 |
| 11 | 8.54 | 1.58 | -1.49 | 2.98 | .70 |
| 12 | 8.06 | 2.01 | -1.20 | 1.20 | .76 |
| 13 | 8.42 | 1.83 | -1.44 | 2.05 | .72 |
| 14 | 8.01 | 2.17 | -1.18 | 0.84 | .71 |
| 15 | 9.26 | 1.12 | -2.07 | 5.79 | .68 |
| 16 | 8.78 | 1.70 | -2.16 | 5.68 | .65 |
| 17 | 8.24 | 2.01 | -1.32 | 1.42 | .64 |
| 18 | 7.94 | 2.21 | -1.22 | 1.07 | .64 |
| 19 | 7.14 | 2.52 | -.77 | -0.19 | .67 |
| 20 | 8.49 | 1.63 | -1.45 | 2.76 | .79 |
| 21 | 8.68 | 1.57 | -1.74 | 3.92 | .77 |
| 22 | 8.22 | 1.86 | -1.39 | 2.17 | .85 |

Table 6. *Descriptive statistics of the Person-Centered Care Gerontology Relatives Questionnaire*

| Items | Factor loadings |
|---|-----------------|
| 1 | .79 |
| 2 | .77 |
| 3 | .66 |
| 4 | .71 |
| 5 | .80 |
| 6 | .87 |
| 7 | .81 |
| 8 | .82 |
| 9 | .80 |
| 10 | .82 |
| 11 | .81 |
| 12 | .83 |
| 13 | .78 |
| 14 | .77 |
| 15 | .80 |
| 16 | .76 |
| 17 | .70 |
| 18 | .70 |
| 19 | .65 |
| 20 | .84 |
| 21 | .85 |
| 22 | .88 |
| Explained variance | 63% |
| Goodness of Fit Index | .99 |
| Root Mean Square of Residuals | .06 |
| Unidimensional Congruence | .99 |
| Explained Common Variance | .91 |
| Mean of Item Residual Absolute Loadings | .21 |

Table 7. *Factor Analysis of Person-Centered Care Gerontology Relatives questionnaire*

| | Person-Centered Care Gerontology Relatives Questionnaire | Person-Centered Care Gerontology Staff Questionnaire |
|--|--|--|
| Person-Centered Care Gerontology Users Questionnaire | .62*** | .75*** |
| Person-Centered Care Gerontology Relatives Questionnaire | | .76*** |

*** p<.001

Table 8. *The convergence of users, relatives, and staff Person-Centered Care.*

| | | Quality | Well-being |
|-----------|---|---------|------------|
| Users | Person-Centered Care Gerontology Users Questionnaire | .89*** | .45*** |
| | Quality users | | .50*** |
| Relatives | Person-Centered Care Gerontology Relatives Questionnaire | .85*** | .72*** |
| | Quality relatives | | .82*** |
| Staff | Person-Centered Care Gerontology Staff Questionnaire | .85*** | - |

*** p<.001

Table 9. *The convergence of perceived care quality, psychological well-being, and Person-Centered Care.*