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Psychometric Properties of the Avoidance and Fusion Questionnaire for Older Adults

Propiedades Psicométricas del Cuestionario de Evitación y Fusión para Adultos Mayores

Running title: Older Adults' Avoidance and Fusion Questionnaire

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Declaration of authorship, originality, and exclusive submission

The authors hereby declare that the manuscript submitted to Psicothema is an original work, written entirely by them, and constitutes original research. It has not been published previously and is not under review by any other journal, nor has it been submitted simultaneously to another publication.

Resumen

Antecedentes: La inflexibilidad psicológica implica responder rígidamente a pensamientos y emociones, afectando al bienestar y adaptación ante retos vitales. Para evaluarla, el objetivo fue adaptar y analizar psicométricamente el Cuestionario de Evitación y Fusión (AFQ-Y8) en adultos mayores. **Método:** Participaron 312 personas de 65 a 92 años ($M = 72,07$; $DE = 5,49$; 75,3% mujeres). Se modificaron dos ítems y las opciones de respuesta para crear el Cuestionario de Evitación y Fusión para Adultos Mayores (AFQ-OA). Se midió fusión cognitiva, funcionamiento físico, autopercepciones del envejecimiento, restricción conductual, nivel de actividad, funcionamiento familiar y síntomas de ansiedad y depresión. Se realizaron análisis factorial exploratorio y confirmatorio, invarianza por género, consistencia interna, fiabilidad test-retest y evidencia de validez basada en el contenido, procesos de respuesta y relaciones con otras variables. **Resultados:** El AFQ-OA mostró una estructura unidimensional, adecuada fiabilidad, y asociaciones significativas con fusión cognitiva, peor funcionamiento físico, menos autopercepciones positivas del envejecimiento, restricción conductual, menor actividad, peor funcionamiento familiar y síntomas de ansiedad y depresión. También se asoció con ansiedad y depresión 12 meses después. **Conclusiones:** El AFQ-OA presenta evidencia preliminar de fiabilidad y validez para evaluar la inflexibilidad psicológica en personas mayores y contribuye a comprender su salud.

Palabras clave: autopercepciones de envejecimiento, inflexibilidad psicológica, restricción conductual, síntomas de ansiedad, síntomas de depresión

Abstract

Background: Psychological inflexibility is rigid responding to thoughts and feelings that undermines well-being and adaptive responses to life's challenges. To measure this, the aim was to adapt and examine the psychometric properties of the Avoidance and Fusion Questionnaire (AFQ-Y8) in older adults. **Method:** Participants were 312 people aged 65-92 years ($M = 72.07$; $SD = 5.49$; 75.3% women). Two items and response options were modified to create the Avoidance and Fusion Questionnaire for Older Adults (AFQ-OA). Measures included cognitive fusion, physical functioning, self-perceptions of aging, activity restriction, activity level, family functioning, and anxiety and depressive symptoms. Analyses included exploratory and confirmatory factor analysis, gender invariance, internal consistency, test-retest reliability, and evidence of validity based on test content, response processes, and relations to other variables. **Results:** The AFQ-OA showed a one-factor structure, good reliability, and significant associations with cognitive fusion, poorer physical functioning, less positive self-perceptions of aging, activity restriction, lower activity, poorer family functioning, and anxiety and depressive symptoms. It was also associated with anxiety and depressive symptoms 12 months later. **Conclusions:** The AFQ-OA provides preliminary evidence of reliability and validity as a measure of psychological inflexibility in older adults and contributes to understanding health in this population.

Keywords: activity restriction, anxiety symptoms, depression symptoms, psychological inflexibility, self-perceptions of aging

The older adult population is growing (Navaneetham & Arunachalam, 2023), and the final stage of the life cycle is often marked by various forms of loss (e.g., loss of loved ones, physical health, economic resources, etc.), which can pose significant challenges to adaptation (Baltes & Baltes, 1990). Most older adults are able to successfully carry out this adaptation process. From a lifespan perspective, in order to overcome these losses, and considering the active role of people during aging (Heckhausen et al., 2010), special emphasis is placed on flexibility as a key variable, specifically on the flexible adjustment of goals (Baltes & Baltes, 1990; Brandtstädter & Greve, 1994). Thus, being too inflexible in setting and executing goals may decrease psychological well-being in old age. In fact, the prevalence of emotional problems in this stage should not be overlooked, with rates of depression fluctuating around 35% (Cai et al., 2023).

In this context, therapeutic approaches such as Acceptance and Commitment Therapy (ACT) may be particularly useful, which consists of a transdiagnostic treatment that aims to improve people's well-being by decreasing psychological inflexibility (Hayes et al., 2011). As Petkus and Wetherell (2013) state, ACT can be helpful for older adults as it encourages acceptance of the losses that occur at this stage while promoting action in line with one's values. Several studies have suggested its usefulness in older adults (Gillanders & Laidlaw, 2014; Gould et al., 2021; Karlin et al., 2013; Roberts & Sedley, 2016; Witlox et al., 2018). There is even data suggesting the superiority of ACT compared to other interventions, such as Cognitive Behavioral Therapy, in treating problems such as depression or chronic pain in this population (Wetherell et al., 2011; Wetherell et al., 2016).

One of the key concepts in ACT is psychological inflexibility (PI), that has been considered as a type of interaction between language, cognition and environmental

contingencies in which internal language is taken literally (Hayes et al., 2006). This concept is based on several psychological processes, including dominance of past/future, lack of values clarity, inaction, conceptualized self, cognitive fusion and experiential avoidance (*hexaflex* model).

PI has been linked to poorer health status and psychopathological problems (Kashdan & Rottenberg, 2010; Levin et al., 2014), and also to worse well-being and quality of life (Howell & Demuynck, 2021; Ong et al., 2024). In adolescents, it has also been studied in relation to poorer family functioning (Liu et al., 2025). Particularly in older adults, studies found higher PI linked to worse physical health (Lappalainen et al., 2021; Plys et al., 2023; Scott et al., 2017) and to symptoms of depression and anxiety (Lappalainen et al., 2021; Mahoney et al., 2015; Plys et al., 2023; Scott et al., 2017). Experiential avoidance, the opposite of acceptance, has also been linked to more negative affect and less meaning in life in older adults (Ferguson et al., 2017). PI has also been linked to a central gerontological variable: perceptions of aging. In this regard, there is evidence linking cognitive rigidity with more negative aging stereotypes (Levy, 2008).

One of the most used instruments for assessing PI is the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004), which is a measure of experiential avoidance and PI developed by ACT experts. It has been linked to general mental health, symptoms of depression and anxiety or quality of life (Hayes et al., 2006), and versions have been developed for various populations (for a review, see Ong et al. [2019]). However, despite its widespread use, validity evidence is mixed. For example, there are data supporting a single factor structure (Hayes et al., 2004), and findings pointing to two factors (Bond & Bunce, 2003). This instrument also tends to report low internal consistency data (Plys et al., 2023). In subsequent years, Bond et al. (2011) developed

the Acceptance and Action Questionnaire-II (AAQ-II), a measure of PI by considering it as a single factor. AAQ-II presented better psychometric properties than its predecessor version (Bond et al., 2011), although it is also not free of criticism. Several studies question its construct validity and point out that its difference from other measures of psychological distress is not well defined (Kashdan et al., 2020; Tyndall et al., 2019; Wolgast, 2014). Discrepancies in their scoring are also noted and its use is not recommended for PI assessment (Cherry et al., 2021).

There are studies that have used the AAQ or the AAQ-II in older adults (e.g., Márquez-González et al., 2012; Murphy et al., 2025; Scott et al., 2017; Steenhaut et al., 2019). With respect to its psychometric properties in this population, controversial results have been reported. Ferguson et al. (2017) found adequate psychometric properties of the AAQ-II after the removal of one item, whereas Plys et al. (2023) considered that both the AAQ and AAQ-II do not perform consistently in older people given the wide range of alpha values across studies. Other measures of psychological flexibility have also been applied to older adults. Adamowicz et al. (2023) conducted a preliminary study with 80 community-dwelling older adults investigating the factor structure of the Comprehensive assessment of Acceptance and Commitment Therapy processes (CompACT; Francis et al., 2016) and the Tacting of Function scale (TOF; Pierce & Levin, 2019), finding promising results in the former, but very contradictory results in the latter. However, it is a study with a small sample, and further research with larger sample sizes is needed before its use can be recommended in older adults.

There is another measure widely used to evaluate PI, which is the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco et al., 2008), developed for use with children and adolescents. It consists of 17 items mainly based on the experiential avoidance and cognitive fusion components of the PI construct. The AFQ-Y has also

been examined in adult samples, showing adequate psychometric properties and, in some cases, incremental validity over the AAQ-II, likely due to its clear wording and focus on concrete situations (Fergus et al., 2012; Schmalz & Murrell, 2010).

There is also a short 8-item version (AFQ-Y8; Greco et al., 2008) that, in some studies (Livheim et al., 2016; Simon & Verboon, 2016), shows better psychometric properties than the 17-item version, and also has the advantage of being a brief questionnaire. As stated by the original authors (Greco et al., 2008), the AFQ-Y8 is more appropriate for group-based research than the AFQ-Y. Renshaw (2018) conducted a study comparing the psychometric properties of the AFQ-Y, AFQ-Y8 and AAQ-II, and found that the AFQ-Y had structural validity problems, and that the AFQ-Y8 explained a slightly higher percentage of variance of depressive and anxiety symptoms than the AAQ-II. There is a validation to Spanish of the AFQ-Y8 carried out by García-Rubio et al. (2020) that showed adequate psychometric properties. This reduced 8-item version has a one-factor structure, presents very good psychometric properties and is recommended for assessing PI in the child and youth population (García-Rubio et al., 2020; Greco et al., 2008; Livheim et al., 2016; Renshaw, 2018; Simon & Verboon, 2016).

In summary, to our knowledge there is currently no validated instrument to assess PI in older adults. Given the relationship of this variable to the adaptation to changes and losses in aging (Baltes & Baltes, 1990) and to older adults' physical and mental health (e.g., Lappalainen et al., 2021), and also given the absence of rigorous measures that assess PI in this population (Plys et al., 2023), the objective of the present study was to test the psychometric properties of an instrument that assesses PI in older adults. For this purpose, an adaptation for older adults has been made (see Method section) of the AFQ-Y8 (García-Rubio et al., 2020; Greco et al., 2008), considering its

good psychometric properties, prior evidence in adult samples, and the need for age-appropriate measures in older populations (Mueller et al., 2015). Specifically, the Avoidance and Fusion Questionnaire for Older Adults (AFQ-OA) was developed, and its psychometric properties were evaluated in older adults, following contemporary validation frameworks (American Educational Research Association [AERA] et al., 2014; Sireci & Benítez, 2023), which conceptualize validity as a unitary construct supported by evidence based on test content, response processes, internal structure, and relations to other variables. Considering the revised literature, we hypothesized the following findings: higher scores on the AFQ-OA scale (i.e., higher PI) will be associated with 1) greater levels of cognitive fusion, 2) worse physical functioning, 3) lower levels of positive self-perceptions of aging, 4) higher activity restriction and lower levels of activity, 5) worse family functioning and 6) more symptoms of anxiety and depression at baseline and 12 months later.

Method

Participants

Participants in the present study were 312 people aged 65 and over from urban areas in the communities of Madrid and Guadalajara (Spain). Initially, 422 participants were considered; however, 76 declined to participate, 28 could not be contacted, and 6 did not meet the inclusion criteria. All of them were Spanish-speaking, community-dwelling older adults and met the following inclusion criteria: (1) being over 65 years of age; (2) not suffering from any cognitive or sensory limitation that would prevent them from attending independently and understanding the interview; (3) not using a nursing home or day-care facility; (4) if participating 12 months later, not having attended any type of psychological or psychiatric therapy during that period. Descriptive data on the sample are shown in Table 1. The study also includes data on PI and depressive and

anxiety symptomatology from participants who had reached 12 months since the initial assessment. A total of 146 participants were contacted, although only 118 assessments were considered, as 28 no longer met the inclusion criteria.

The sample size met COSMIN standards (Mokkink et al., 2024; Terwee et al., 2012). For factor analysis, ≥ 200 participants are recommended for nonlinear analyses (Ferrando et al., 2022), with around 20 participants per item suggested (Costello & Osborne, 2005). With eight items and 312 participants (39:1), the CFA sample exceeded these criteria.

Instruments

Sociodemographic variables: Data were collected on the age, gender, marital status, educational level and financial concern of the participants.

Psychological inflexibility (PI): An adaptation for older adults was made of the AFQ-Y8 (García-Rubio et al., 2020; Greco et al., 2008). Following recommendations for test adaptation (Gregoire, 2018; Hernández et al., 2020), the scale was reviewed by experts in ACT and aging to assess item relevance and clarity for older adults. This expert review and consensus process provided evidence based on test content (Sireci & Benítez, 2023) and supported the adaptation. In order to improve their contextual appropriateness for older adults, items six (“I do worse in school when I have thoughts that make me feel sad”) and seven (“I can’t be a good friend when I feel upset”) were changed, respectively, to “I do worse in everyday life when I have thoughts that make me feel sad” and “I can’t be nice to other people when I feel upset”. The response format was revised. The original five-point scale (0 = “not at all true”; 4 = “very true”) was simplified to four points (0 = “totally disagree”; 3 = “totally agree”), as recommended in studies with older adults (Balsamo et al., 2018; Edelstein et al., 2007).

A pilot study ($n = 10$) examined item clarity, response comprehension and administration procedures. Participants reported any difficulties, providing preliminary evidence on response processes (Sireci & Benítez, 2023), and no further modifications were required. The final version of the AFQ-OA was obtained (see Table 2). Scores range from 0 to 24, with higher scores indicating higher PI. Psychometric properties are reported in the Results.

Physical functioning: The physical function subscale of the Spanish version (Alonso et al., 1995) of the short version of the SF-36 Health Survey (Brazier et al., 1992) was used. It consisted of 10 items asking whether current health limits doing certain aspects of daily life (e.g., “Climbing several flights of stairs”). Higher scores indicated more physical limitation. In the present study Cronbach’s α was .88.

Cognitive fusion: The Spanish version (Romero-Moreno et al., 2014) of the Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014) was included. It had seven items (e.g., “I struggle with my thoughts”). As this scale was added later, data were available only for 91 participants. In this study, Cronbach’s α was .92.

Self-perceptions of aging: The Experience of Aging Scale (EAS; Steverink et al., 2001) was used, composed of 12 items (e.g., “Aging means to me that my health declines”). Cronbach's α value was .81 in this study.

Activity restriction: The Older Adults’ Activity Restriction Scale (ARS-OA; García-García et al., 2025) was used. It had nine items (e.g., “Doing household chores”). Available data included 288 participants. In the present study Cronbach's α was .81.

Level of activity: This was measured using the Spanish version (González-Roz et al., 2018) of the behavioral activation subscale of the Behavioral Activation for

Depression Scale short form (BADS-SF; Manos et al., 2011). It consisted of 5 items (e.g., “I engaged in a variety of activities”). Cronbach’s α was .81 in this study.

Family Functioning: The Spanish version (Bellón-Saameño et al., 1996) of the Family APGAR questionnaire (Smilkstein, 1978) was used, with 5 items (e.g., “Do you feel your family loves you?”). Cronbach’s α was .79 in the present study.

Anxiety symptoms: The Spanish version (Márquez-González et al., 2012) of the Geriatric Anxiety Inventory (GAI; Pachana et al., 2007) was used. It was composed of 20 items (e.g., “I find it difficult to make a decision”). In this study Cronbach's α values were .91 both at baseline and after 12 months.

Depressive symptoms: The Spanish version (Losada et al., 2012) of the Center for Epidemiological Studies Scale (CES-D; Radloff, 1977) was administered. It included 20 items (e.g., “I felt that everything I did was an effort”). In the present study Cronbach's α were .83 at baseline and .88 after 12 months.

Procedure

The sample recruitment was carried out through centers that offered cultural and other types of activities for older adults. Staff from the collaborating centers provided the research team with contact data of potential volunteer participants. A telephone call was made to assess the inclusion criteria and establish a date for a face-to-face assessment. Evaluators were psychologists (or senior psychology students) trained in the assessment protocol. They received three hours of training, observed an expert interview, and were supervised during their first interview to ensure standardization. All data collection started in September 2023 and ended in May 2025. The present study was pre-registered on the Open Science Framework platform (Losada-Baltar et al., 2025) and approved by the Ethics Committee of the Rey Juan Carlos University

(internal registration number: 090920244462024). All participants gave their written consent prior to the assessment.

Data Analysis

Descriptive analyses of the characteristics of the sample and of the scales and items were calculated.

In line with contemporary validation frameworks (AERA et al., 2014; Sireci & Benítez, 2023), evidence based on internal structure was first examined through analyses of dimensionality. As a preliminary step, an Exploratory Factor Analysis (EFA) was performed using a random subsample from the study ($n = 163$) (see Supplementary Material). Subsequently, taking into account these results and the one-factor structure reported in the scientific literature (e.g., García-Rubio et al., 2020; Simon & Verboon, 2016), a Confirmatory Factor Analysis (CFA) was conducted using the entire sample ($N = 312$). The weighted least squares mean and variances adjusted (WLSMV) method was used in EFA and CFA, as recommended when working with categorical variables (Nussbeck et al., 2006). Model fit was evaluated using chi-square (χ^2), standardized root mean square residual (SRMR), weighted root mean square residual (WRMR), root mean square error of approximation (RMSEA) with 90% confidence interval, and comparative fit (CFI) and Tucker-Lewis (TLI) indices. Adequate model fit was indicated by $RMSEA \leq .08$ (Browne & Cudeck, 1992), $SRMR \leq .08$, CFI/TLI close to .95 (Hu & Bentler, 1999), $WRMR < 1$ (DiStefano et al., 2018) and $\chi^2/df < 3$ (Bollen, 1990). Additionally, gender invariance was tested using multigroup CFA (configural, metric, and scalar; Vandenberg & Lance, 2000), with $\Delta CFI > .01$ indicating meaningful decreases in fit (Cheung & Rensvold, 2002).

Thereafter, reliability was assessed as part of the evidence based on internal structure (Rios & Wells, 2014). Internal consistency was estimated using Cronbach's α and McDonald's ω . Test-retest reliability was calculated using Pearson's correlation between the AFQ-OA at baseline and 12 months later ($n = 118$). According to Raykov and Marcoulides (2011), enough time should be left between the two measures to minimize the effects of item recall. Item-test correlations were also computed.

Evidence based on relations to other variables was examined through Pearson's correlations. Specifically, associations between the AFQ-OA and cognitive fusion were analyzed ($n = 91$). Associations with physical functioning, self-perceptions of aging, activity restriction ($n = 288$), activity levels, family functioning, and anxiety and depressive symptoms were also calculated ($N = 312$ unless otherwise specified). Predictive associations were analyzed through correlations between AFQ-OA scores and anxiety and depressive symptoms 12 months later ($n = 118$), following other authors (Cronbach & Meehl, 1955; Sartori & Pasini, 2007).

Finally, no missing AFQ-OA data were found. Other variables had ≥ 309 responses, except cognitive fusion and activity restriction; pairwise deletion was used and no outliers were excluded. Mplus 7.0 (Muthén & Muthén, 2012) was used for EFA and CFA, and IBM SPSS Statistics 28 for the remaining analyses (McDonald's ω was calculated with the SPSS macro developed by Hayes and Coutts, 2020).

Results

Descriptive Data of the Sample

Sample characteristics are shown in Table 1. The sociodemographic data for the EFA subsample can be found in the Supplementary Material (see Table S1).

[INSERT TABLE 1]

Evidence Based on Internal Structure

The results of the preliminary EFA can be viewed in detail in the Supplementary Material (see Table S2). In summary, they supported a single-factor structure for the AFQ-OA. This one-factor model was also tested through the CFA and the following fit indices were obtained: $\chi^2(20) = 52.95, p < .001$; $\chi^2/df = 2.6$; WRMR = .82; RMSEA = .07 (90% CI = .05–.1); CFI = .96; TLI = .95. Inspection of modification indices (threshold = 10) did not reveal any substantial misspecifications. Table 2 shows the factor weights of the items and the descriptive data for both the items and the total scale. Regarding gender, multigroup CFA results showed configural invariance between men and women and non-significant differences in the scaled χ^2 tests for both the metric ($\Delta\chi^2 = 4.13, \Delta df = 7, p = .77$) and scalar ($\Delta\chi^2 = 14.00, \Delta df = 15, p = .53$) models. Additionally, CFI values did not decrease across models (see Table S3 in Supplementary Material).

Reliability

Cronbach's α of the AFQ-OA scale was .73 and none of its items contributed negatively to this value (see Table 2). McDonald's ω was .74. One-year test-retest reliability was .63 ($p < .001$). As shown in Table 2, all item-test correlations were significant ($p < .001$).

[INSERT TABLE 2]

Evidence Based on Relations to other Variables

As shown in Table 3, the AFQ-OA correlated positively and significantly with cognitive fusion ($p < .001$), and negatively and significantly with positive self-perceptions of aging ($p < .001$), level of activity ($p < .001$) and better family functioning ($p < .001$), and positively and significantly with poorer physical functioning ($p < .01$),

activity restriction ($p < .001$), and anxiety ($p < .001$) and depressive symptoms ($p < .001$). In relation to predictive associations, the AFQ-OA at baseline was significantly associated ($p < .001$) with higher levels of anxiety and depressive symptoms after 12 months.

[INSERT TABLE 3]

Discussion

Given the lack of rigorous validated measures to assess PI in older adults, with most existing studies analyzing this construct focusing on other age ranges (Plys et al., 2023), the aim of the present study was to adapt an existing instrument for this population. In addition, its psychometric properties were examined by gathering multiple sources of validity evidence (AERA et al., 2014; Sireci & Benítez, 2023), and different hypotheses regarding its relationships with relevant physical and psychological indicators were tested. To this end, the AFQ-Y8 (García-Rubio et al., 2020; Greco et al., 2008) was adapted for older adults through an expert review and consensus process, along with a pilot study, leading to the development of the AFQ-OA.

Regarding internal structure, EFA and CFA supported a one-factor structure for the AFQ-OA. In the EFA, all items loaded onto a single factor and, despite a second eigenvalue close to 1, a two-factor solution could not be estimated. The CFA showed satisfactory fit, with no substantial model misspecifications identified. The pattern of factor loadings was consistent across EFA and CFA, with items 1 and 7 showing comparatively lower loadings. These items were retained due to acceptable item–test correlations, the lack of improvement in Cronbach’s α if removed, consistency with previous AFQ-Y8 studies (e.g., Livheim et al., 2016; Renshaw, 2018), and current psychometric recommendations emphasizing construct representation over purely

statistical criteria (Ferrando et al., 2022; Suárez-Álvarez et al., 2026). Content validity was supported through expert review (Sireci & Benítez, 2023). Measurement invariance analyses supported the AFQ-OA across gender, indicating that PI is assessed equivalently in men and women.

Together, these findings suggest that the AFQ-OA assesses PI in a unidimensional way, consistent with previous studies using the AFQ-Y8 (e.g., García-Rubio et al., 2020; Renshaw, 2018; Simon & Verboon, 2016). This structure is aligned with the conceptualization of PI within ACT as a unified construct. Although it includes multiple processes (e.g., cognitive fusion and experiential avoidance), these are conceptualized as overlapping components of a single functional dimension targeting psychological flexibility (Hayes et al., 2006; Hayes et al., 2011). Some studies using other PI measures also support this unifactorial structure (Bond et al., 2011; Gloster et al., 2011), suggesting that PI reflects closely related facets with substantial shared variance.

With regard to reliability, Cronbach's α was acceptable (Cortina, 1993), and McDonald's ω and test-retest coefficients were comparable to those reported by García-Rubio et al. (2020) in a Spanish youth sample. The reliability of test scores suggests that the AFQ-OA shows acceptable levels of internal consistency and temporal stability. In line with previous research, reliability is a fundamental aspect of evidence based on internal structure (Rios & Wells, 2014); therefore, these results contribute to the overall validity argument (AERA et al., 2014; Sireci & Benítez, 2023).

In relation to evidence based on other variables, the AFQ-OA was strongly associated with cognitive fusion. This finding is consistent with the first hypothesis and suggests that the instrument reflects PI, in line with previous studies (Bond et al., 2011; Greco et al., 2008). Higher PI was also associated with poorer physical functioning,

consistent with previous research (e.g., Scott et al., 2017) and the second hypothesis. Higher scores on the AFQ-OA were associated with lower levels of positive self-perceptions of aging, supporting the third hypothesis. These findings highlight the relevance of PI for understanding self-perceptions of aging (Levy, 2008).

In terms of activity, higher scores on the AFQ-OA were associated with greater activity restriction and lower activity levels. These findings support the fourth hypothesis and highlight the inaction component of PI (in line with Cherry et al. [2021]). This is particularly important because, in older adults, activity restriction has been associated cross-sectionally with functional limitation, pain and depressive symptoms (e.g., Williamson & Schulz, 1992), and longitudinally with late-life depression (Yao et al., 2021). The results also support the fifth hypothesis, linking higher PI to poorer family functioning (as Liu et al. [2025] previously reported in adolescents), and represent, to our knowledge, the first evidence of this relationship in older adults. Finally, consistent with the sixth hypothesis, higher scores on the AFQ-OA were related to higher anxiety and depressive symptoms, as reported in previous research (e.g., Lappalainen et al., 2021). The predictive findings further suggest the relevance of PI in the development of emotional distress, in line with previous longitudinal evidence in other populations (Kılıç et al., 2022).

Taken together, these findings support the validity of the AFQ-OA based on relations with other variables (AERA et al., 2014; Sireci & Benítez, 2023). They also highlight the role of PI in health and psychopathology (Kashdan & Rottenberg, 2010; Levin et al., 2014), and the relevance of ACT, which targets this construct as a central mechanism (Hayes et al., 2011).

The usefulness of ACT in older adults, as noted by Petkus and Wetherell (2013), can be understood in the context of gerontological theories of adaptation. Given that

age-related losses become more frequent with advancing age (Baltes, 1987), successful adaptation requires flexible goal adjustment (Brandtstädter & Renner, 1990). This involves maintaining an open and adaptive stance that allows individuals to pursue goals through alternative pathways or to replace unattainable goals with more achievable ones. From an ACT perspective, this process is facilitated by psychological flexibility, which enables continued engagement in meaningful, value-based activities despite age-related changes. Such adaptation relies on internal regulatory processes, including accommodation (Brandtstädter & Greve, 1994), secondary control (Heckhausen et al., 2010) and selection, optimization, and compensation (Baltes & Baltes, 1990). Conversely, PI may impair adaptation by fostering rigid persistence toward unattainable goals or withdrawal from valued activities. Given the close association between PI and more negative self-perceptions of aging, such disengagement may partly reflect internalized ageist stereotypes such as “at my age, I shouldn't be doing certain things anymore”. These findings suggest that PI is a key mechanism associated with poorer adaptation to aging.

From a practical perspective, these findings suggest that assessing PI with the AFQ-OA may help identify older adults at risk of poorer adjustment to aging. Interventions targeting perceptions of aging should include components to enhance psychological flexibility, and vice versa (e.g., Murphy et al., 2025). Given its associations with activity restriction, activity levels, physical functioning, and emotional symptoms, interventions should prioritize increasing engagement in meaningful activities in the frame of personal values. In this context, ACT-based approaches appear to be particularly suitable, especially when combined with strategies such as selection, optimization, and compensation to adapt goals to individuals' functional capacities (e.g., Alonso-Fernández et al., 2016). They have also been shown to reduce emotional distress

in older adults (Sun et al., 2025). Family problems or a perceived lack of family support suggest that ACT should also address social and familial relationships (e.g., Zarling et al., 2024).

Although the results provide initial support for the AFQ-OA, several limitations should be noted. First, the cross-sectional design and limited longitudinal data preclude causal inferences regarding the relationships between PI and physical and mental health. Second, the use of a convenience sample with voluntary participation may have introduced selection biases, potentially overrepresenting individuals who are more socially active, healthier, and with fewer financial concerns. In addition, the sample was predominantly female and drawn from a specific urban context, which may limit generalizability. Relevant variables such as living arrangements and ethnicity were not assessed and may have influenced the findings. Furthermore, the relatively small sample size, particularly for the EFA and invariance testing (following recommendations by Ferrando et al. [2022]), calls for caution when interpreting the results and requires replication in larger and more diverse samples. Finally, although preliminary evidence regarding response processes was obtained (Sireci & Benítez, 2023), formal cognitive interviewing was not conducted. Future studies should incorporate these procedures and alternative approaches such as ecological momentary assessment (Kashdan & Rottenberg, 2010; Ong et al., 2019) to better understand the directionality of the variables and their interaction with real-life contexts.

In conclusion, the results of the present study provide preliminary support for the reliability and validity of the AFQ-OA as a measure of PI in older adults, including evidence based on test content, response processes, internal structure, and relations to other variables. These findings support its use in research and clinical contexts, although they should be interpreted with caution given the study's limitations. Moreover, given

the association of this construct with older adults' physical and mental health, further research is needed to better understand its underlying mechanisms and to inform the development of psychotherapeutic interventions aimed at mitigating its impact.

Author Contributions

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Declaration of Interests

The authors declare that there is no conflict of interest.

Data Availability Statement

Data are available upon reasonable request. Moreover, the present study was pre-registered on the Open Science Framework platform (Losada-Baltar et al., 2025; <https://doi.org/10.17605/OSF.IO/TZ637>). The Supplementary Material associated with this study is publicly available in the Zenodo repository: <https://doi.org/10.5281/zenodo.21267626>.

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Table 1*Descriptive Data of the Sample*

		Mean (<i>SD</i>) or Percentage (<i>n</i>) / Range
Age		72.07 (5.49) / 65-92
Gender	Men	24.7% (77)
	Women	75.3% (235)
Marital status	Married or similar	53.8% (168)
	Widowed	27.2% (85)
	Single	4.8% (15)
	Divorced or separated	14.2% (44)
Level of education	No formal education	3.2% (10)
	Primary education	26.3% (82)
	Secondary education	18.6% (58)
	High school	28.8% (90)
	University studies	21.8% (68)
Financial concern	Post-university studies	1.3% (4)
	None	72.1% (225)
	A little	18.6% (58)
	Quite a lot	6.4% (20)
	A lot	2.9% (9)

Note: *SD* = standard deviation; *n* = sample size

Table 2*Factor Weights from CFA and Descriptive Data of the AFQ-OA and its Items*

English/Spanish items	Factor weights	Item-test correlations	Cronbach's α removing the item	Mean (<i>SD</i>) / Range
1. My life won't be good until I feel happy / <i>Mi vida no será buena hasta que me sienta feliz</i>	.38**	.51**	.73	1.48 (1.08) / 0-3
2. My thoughts and feelings mess up my life / <i>Mis pensamientos y emociones estropean mi vida</i>	.64**	.65**	.69	1.04 (.98) / 0-3
3. The bad things I think about myself must be true / <i>Las cosas malas que pienso sobre mí mismo deben de ser ciertas</i>	.63**	.63**	.69	.92 (.91) / 0-3
4. If my heart beats fast, there must be something wrong with me / <i>Si mi corazón late rápido, debe haber algo malo en mí</i>	.57**	.58**	.71	.78 (.92) / 0-3
5. I stop doing things that are important to me whenever I feel bad / <i>Dejo de hacer cosas que son importantes para mí cada vez que me siento mal</i>	.70**	.63**	.70	.98 (.96) / 0-3
6. I do worse in everyday life when I have thoughts that make me feel sad / <i>Hago las cosas peor en mi día a día cuando tengo pensamientos que me hacen sentir triste</i>	.69**	.65**	.69	1.61 (1.01) / 0-3
7. I can't be nice to other people when I feel upset / <i>No puedo ser bueno con otras personas cuando me siento molesto</i>	.37**	.47**	.73	1.01 (.96) / 0-3
8. I am afraid of my feelings / <i>Tengo miedo de mis sentimientos</i>	.67**	.63**	.70	.68 (.88) / 0-3
Total AFQ-OA scale	-	-	-	8.50 (4.54) / 0-20

*Note: SD = standard deviation; ** $p < .001$*

Table 3

Descriptive Data on Measures of Cognitive Fusion, Physical Functioning, Self-Perceptions of Aging, Activity Restriction, Level of Activity, Family Functioning and Anxiety and Depressive Symptoms, and their Pearson's Correlations with AFQ-OA

	Mean (SD) / Range	Pearson's correlation with AFQ-OA
Cognitive Fusion Questionnaire (CFQ)	21.87 (10.66) / 7-45	.62**
Physical function subscale (SF-36) ^a	13.34 (3.68) / 10-29	.16*
Experience of Aging Scale (EAS) ^b	33.23 (5.80) / 19-48	-.39**
Older Adults' Version of the Activity Restriction Scale (ARS-OA)	2.75 (4.19) / 0-24	.21**
Behavioral activation subscale (BADS-SF)	25.53 (4.73) / 0-30	-.19**
Family questionnaire (APGAR) ^c	8.28 (2.09) / 0-10	-.23**
Geriatric Anxiety Inventory (GAI)	5.80 (5.43) / 0-20	.49**
Center for Epidemiological Studies Scale (CES-D)	8.74 (7.10) / 0-43	.39**
GAI assessed 12 months later	3.39 (4.43) / 0-20	.40**
CES-D assessed 12 months later	7.08 (7.15) / 0-36	.31**

Note: SD = standard deviation; ^a Higher scores indicate more physical limitation;

^b higher scores indicate more positive self-perceptions of aging; ^c higher scores indicate better family functioning; * $p < .01$; ** $p < .001$