The Portuguese formal social support for autonomy and dependence in pain inventory (FSSADI_PAIN): a preliminary validation study

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ABSTRACT

Objectives: Development and preliminary validation of a Portuguese measure of perceived Formal Social Support for Autonomy and Dependence in Pain (FSSADI_PAIN).

Methods: 151 older adults (88.1% female), between 56 and 94 years old (*M* = 75.41; *SD* = 9.11), who attended one of the following institutions: day-care centre (33.1%), nursing home (36.4%) and senior university (30.5%). Along with the FSSADI_PAIN, participants filled out the Portuguese versions of the Brief Pain Inventory (Azevedo et al., 2007) and the Social Support Scale of Medical Outcomes Survey (Pais-Ribeiro & Ponte, 2009).

Results: The factorial structure reflected the functions of perceived promotion of 1) dependence and 2) autonomy, showing good internal consistency (alphas > .70) and sensitivity indices. The FSSADI_PAIN showed good content, discriminant and criterion validity; it differentiated the perceptions of promotion of dependence/autonomy according to individual's pain severity and disability, as well as the type of institution.

Conclusions: These preliminary findings suggest that the FSSADI_PAIN is an innovative and promising measure of perceived formal social support adapted to pain-related contexts.

Key Words: Perceived Social Support, Pain, Aging, Autonomy, Dependence

1. Introduction

Chronic pain (CP) is a persistent or recurrent pain that lasts for at least three months and has no functional value from a biological point of view (Merskey & Bogduk, 1994). Certain types of CP (e.g. musculoskeletal) can touch the lives of 60% of adults over 65 years, being usually associated with high levels of functional disability (Ferrell, & Ferrell & Osterweil, 1990; Helme & Gibson, 1997; Mobily, Herr, Clark & Wallace, 1994; Parmelee, Smith, & Katz, 1993; Reyes-Gibby, Aday & Cleeland, 2002; Roy & Thomas, 1986). Physical functioning is one of the main predictors of life quality, and a desirable factor in a process of active and successful aging. Pain-related functional constraints undermine one's autonomy and independence, which represents a serious obstacle to active aging (Cobos & Almendro, 2008; Kalache, 1999). Thus, the promotion of autonomy and functionality in pain among increasingly older populations has obvious positive consequences, not only for individuals and their families but also for societies in general.

When living in pain, social support may play a crucial role in the promotion and maintenance of older adults' autonomy and independence. In fact, it may be fundamental to overcoming the barriers caused by the functional disability associated with CP. In general, the social support available to older adults can be offered both by their informal (e.g. family and friends) and formal networks (e.g. nursing homes and day-care centres), the latter implying paid care (Gauler & Kane, 2001; Lafrenière, Carrière, Martel, & Bélanger, 2003). Despite the potential importance of such social support networks, most authors have mainly emphasized the concept of perceived social support (PSS) rather than offered social support, due to its greater association with individual health outcomes (e.g. Berscheid & Regan, 2004). In line with this argument, the present study focuses on perceived as opposed to offered social support.

PSS consists of representations about being loved, valued and accepted (Sarason, Pierce, & Sarason, 1990), but also the quality and adequacy of support regarding one's needs (Rascle et al., 1997). This paper generally focuses on older adults' PSS when in pain. More specifically, our goal was to develop and conduct a preliminary validation study of a measure of PSS for autonomy and dependence in older adults – the Formal Social Support for Autonomy and Dependence in Pain Inventory (FSSADI_PAIN). The rationale underlying the development of the FSSADI_PAIN will be shown first with a brief summary on the relationship between PSS and pain. Secondly, we will argue for the need to start considering the promotion of autonomy/dependence as a function of social support, especially in a pain context. Finally, we will describe the theoretical underpinnings of the development and preliminary validation of the FSSADI_PAIN.

1.1. Perceived Social Support and Pain

The relationship between PSS and pain seems to be sketchy and inconsistent. On one hand, some studies with CP patients suggest a negative relationship between PSS and pain interference and severity (e.g. Evers, Kraaimaat, Geenen, Jacobs & Bijlsma, 2003; Turk, Kerns, & Rosenberg, 1992), avoidance of daily activities and associated physical disability (e.g. Cohen & Wills, 1985; Jamison & Virts, 1990) and emotional distress (e.g. depression, anxiety; Zyrianova et al., 2006). Moreover, evidence shows that the higher the PSS, the less frequent the adoption of passive coping strategies, like physical and social activity avoidance or relational withdrawal (e.g. Katz, Ritvo, Ivine, & Jackson, 1996). Overall, these studies emphasize the benefits of high PSS in chronic pain patients.

On the other hand, however, some evidence shows positive relationships between high perceived solicitude (e.g. pity, constant help in relation to pain behaviour) and pain catastrophizing (e.g. Buenaver, Edwards, & Haythornthwaite, 2007), pain severity and disability, pain behaviour (e.g. complaints) and dependence (e.g. Turk et al., 1992). According to some authors (e.g. Cutrona, 1986), from an operant conditioning perspective (e.g. Fordyce, 1973), solicitousness positively reinforces pain behaviours. Thus, this evidence suggests that certain types of PSS may have a negative impact on pain.

But how can we account for such inconsistencies? It is our contention that the nature of the relationship between PSS and pain might depend on the extent to which the PSS is promoting autonomy and, hence, functional (chronic) pain coping strategies or, on the other hand, promoting dysfunctional coping strategies that reinforce dependence and disability. In other words, the promotion of autonomy/dependence should be considered as a function of PSS, which may moderate the relationship between PSS and (chronic) pain experiences.

1.2. Autonomy, Dependence and Pain

The promotion of autonomy is a central notion in an active aging process, being generally associated with the perception of having control over one's own life (Kane, 2001; Rowe & Kahn, 1987). When older adults' autonomy is promoted, their integrity and dignity are protected (Randers & Mattiasson, 2004). On the other hand, dependence is often the cause and consequence of physical and psychological degradation, and is associated with control loss, depression, feelings of inability and learned helplessness (Baltes, 1988; Seligman, 1975) which might happen after taking the persons' place in their daily activities and responsibilities (Paúl, 2005; Rowe & Kahn, 1987). Such promotion of dependence may have a negative impact on emotional states, well-being and physiological functioning (Rowe & Kahn, 1987), but also on physical and motor skills (Seligman, 1975), which are associated with diminished activity engagement – learned dependence (Stabell, Heide, Solheim, Solberg & RustØen, 2004). In fact, according to Baltes (1996), older adults' dependence, instead of only being the result of physical limitations might be learned in the relationship with the caregiver. In these cases, such learned dependence represents a secondary gain, in a sense that the elder gains control over the caregiver’s behaviours, by requesting help in actions that could be performed by the him/herself.

In pain contexts, promoting autonomy may mean the reinforcement of task persistence in daily activities in spite of pain, i.e. the promotion of active coping strategies that are known to be associated with lower levels of pain severity, disability, depression and higher levels of self-efficacy and physical or psychological functioning (e.g. Katz et al., 1996, López-Martinez, Esteve & Ramírez-Maestre, 2008; Turner, Ersek, & Kemp, 2005). In turn, promoting dependence may consist of the reinforcement of (social and physical) activity avoidance, dependency on others and social withdrawal, i.e. passive coping strategies that are known to be associated with increased pain severity and disability and worse physical and psychological adjustment (e.g. Boothy, Thorn, Stroud & Jensen, 2000; Evers et al., 2003; Keefe et al., 2002). Therefore, if we consider the promotion of autonomy/dependence as functions of social support, we could account for the apparent inconsistencies in the relationship between PSS and pain experiences.

But, should we expect the role of autonomy/dependence promotion perceptions to be the same in both chronic and acute pain experiences? We believe that if in an acute pain context, the promotion of dependence until recovery might be adaptive, in a CP context, it might reinforce the loss of functionality and contribute to pain increase (e.g. Turk et al., 1992). Thus, we expected that the relationship between the PSS for autonomy/dependence and pain severity and disability would be moderated by the type of pain experience (acute vs. chronic).

To the best of our knowledge, there have been no studies addressing the promotion of autonomy/dependence as functions of PSS, much less when it comes to assessing perceptions of formal social support in pain. In the absence of such measures, we aimed to develop and conduct a preliminary validation study of the Portuguese FSSADI_PAIN.

1.3. The development of the FSSADI_PAIN

The FSSADI_PAIN is a measure developed in Portuguese, in order to differentiate the formal PSS functions of the promotion of (1) autonomy and (2) dependence in older adults in pain. Within each one of these major functions, we also considered two classical functions of PSS (e.g. Rascle et al., 1997; Sherboune & Stewart, 1991), due to their prevalence in formal settings aimed at supporting older adults: a) emotional/esteem support; b) instrumental support. Therefore, on one hand, perceived promotion of autonomy was generally conceptualized as the perception of actions of support that either provide tangible help (instrumental function) or reinforce self-esteem and self-confidence (emotional/esteem support) to keep on going despite pain. On the other hand, perceived promotion of dependence was generally conceptualized as the perception of actions of support that either provide tangible help by substituting the person in his/her activities (instrumental support) or, by being overly understanding and empathic, reinforce lower self-efficacy to keep on going despite pain.

After establishing the conceptual structure of the instrument, a set of twenty items was developed to operationalize it. More specifically, ten items were developed both for perceived promotion of autonomy and dependence, respectively. Within these dimension, five items were developed to measure instrumental support and the remaining five to measure emotional/esteem support. The items were developed in order to reflect a variety of the most common actions of support to the elderly in formal settings.

Afterwards, in planning a preliminary validation study of the FSSADI_PAIN, three steps were considered. First, two independent experts on aging were asked to evaluate the instrument's content validity, by analysing the developed pool of items. Second, as regards to the criterion-related validity, we planned to assess the concurrent relationship between the FSSADI_PAIN and three criteria:

1) Present pain experience (acute vs. chronic vs. absent) – We expected that older adults with CP would generally report greater PSS, both for autonomy and dependence, as compared to adults with acute pain or with no pain at all (H1) because: (a) their higher need for support would make them more attentive to such actions, and (b) their perceptions could reflect caregivers' support actions, which are more likely and salient in a CP context;

2) Degree of pain severity and disability – Based on the aforementioned arguments, we expected that the relationship between perceptions of support measured by the FSSADI_PAIN and pain severity and/or disability would be moderated by the type of pain experience (acute vs. chronic). Specifically, we hypothesised that the PSS for dependence would be positively related to pain severity and/or interference, but only among older adults with CP (H2).

3) Type of formal setting (day-care centre, nursing home and senior university) – Because such institutions provide formal support to older adults with different levels of (and needs for) autonomy, we expected the FSSADI_PAIN would be sensitive to such group differences. Based on the rationale presented for the first criterion, we expected that the groups with bigger autonomy constraints (day-care centre and nursing home) would report higher PSS, both for autonomy and dependence (H3).

Finally, and as regards the discriminant validity of the FSSADI_PAIN, we expected that it would correlate poorly with a measure of informal PSS (H4).

2. Method

2.1. Participants

One hundred and fifty one retired older adults (88.1% women), aged between 56 and 94 years (*M* = 75.41, *SD* = 9.11), participated in this study. About half of the participants were widows, and more than half had four or less years of education (65.6%). Participants regularly attended one of the following institutions– Day-care Centre (33.1%), Nursing Home (36.4%) or Senior University (30.5%). Regarding current pain experiences, 27.8% of the participants reported feeling pain for more than three months, 22.5% reported having felt pain only in the last week and 49.6% reported no current pain.

Chi-square and t-student analyses identified significant differences between these groups of participants in terms of their sex, age, marital status, education level and current pain experiences ($p < .05$). Participants attending the senior university were, on average, the youngest (*M* = 67.6 years, *SD* = 5.9) and presented the highest proportion of males (23.9%) and people who were married (71.7%), had higher education (15.2%) and reported no current pain experiences (65.2%). Participants attending the day-care centre had a mean age of 74.5 years (*SD* = 7.4) and showed the highest proportion of women (96%) and people reporting current CP (42%). Finally, participants attending the nursing home were the oldest (*M* = 82.7, *SD* = 6.8), and had the highest proportion of widows (67.3%) and people reporting current acute pain (32.2%).

2.2. Instruments

2.2.1. FSSADI_PAIN

The FSSADI_PAIN is a measure developed in Portuguese that aims to measure formal PSS for autonomy and dependence. Also, as argued before, both PSS for autonomy and dependence might include perceptions of instrumental and emotional/esteem support. Thus, in order to develop the FSSADI_PAIN, five items were originally created for each of the following (sub)-dimensions (see all items in Table 1):

1) PSS for autonomy:
    1.1) Emotional/esteem: Support actions that reinforce self-esteem and self-confidence to function in spite of pain (e.g. When I am in pain, the employees at this institution encourage me to trust in my capacity to keep functioning)
    1.2) Instrumental: Support actions that provide tangible or behavioural help that allows older adults in pain to accomplish daily tasks by themselves (e.g. When I am in pain, the employees at this institution help me to arrange transportation to take care of my affairs)
2) PSS for dependence:
    2.1) Emotional/Esteem: Support actions that, by being overly understanding and empathic, reinforce lower self-efficacy to keep on going despite pain (e.g. When I am in pain, the employees at this institution acknowledge that I am not capable of coping with my pain)
    2.2) Instrumental: Support actions that provide tangible or behavioural help that substitute the person in his/her activities (e.g. When I am in pain, the employees at this institution substitute me in solving my problems)

Participants were asked to assess the perceived frequency of each type of support action on a rating scale from 1 (not at all frequent) to 7 (extremely frequent).

Finally, seven older adults (5 women and 2 men, aged between 66 and 81 years) assessed the clarity of the items. Their questions, suggestions and comments were considered in order to make the FSSADI_PAIN more accessible and clear.

2.2.2. Personal Pain Experiences.

Following the methodological strategy of several (chronic) pain epidemiological studies (e.g., Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006; Torrance, Smith, Bennett, Lee, & 2006), participants' actual pain experiences were assessed by yes-or-no questions: (1) *"Have you ever had constant or intermittent pain for more than three consecutive months?";* (2) *"Did you feel this pain during the last week?"; and* (3). *"Did you feel any pain in the last week?".* Participants were considered as having current CP if they answered positively to question 1 and 2. Participants who only answered positively to question 3 were considered as having current acute pain. Finally, all participants who answered negatively to questions 2 and 3 were considered as having no current pain.

2.2.3. Brief Pain Inventory.

Participants who reported experiencing current acute or chronic pain were asked to fill out the scales of pain severity and interference from the Portuguese version of the Brief Pain Inventory (BPI; Azevedo et al. 2007). As the original instrument (Cleeland, 1989), this version shows good psychometric properties, with good levels of internal reliability (α = .98 and .84 for pain severity and interference, respectively).

The pain severity scale consists of four items, and assesses pain intensity on a rating scale from 0 (no pain) to 10 (pain as bad as you can imagine) (e.g. *Please rate your pain by circling the one number that best describes your pain at its worst/least/average in the last week*). The pain interference scale consists of seven items, and assesses the degree of pain interference in people's lives on a scale from 0 (does not interfere) to 10 (completely interferes) (e.g. *Circle the one number that describes how, during the past week, pain has interfered with your: general activity, mood, walking ability, normal work, relations with* *other people, sleep and enjoyment of life*).

In order to assess some of the psychometric properties of this measure in our sample, a principal axis factor analysis (oblique rotation) was conducted (KMO = .720; Bartlett's $\chi 2$ (21) = 276.819, p = 0.000). Based on the Kaiser criterion, two factors were extracted accounting for 63% of the total variance: 1) pain interference (n = 4 items, α = .85) and 2) pain severity (n = 3 items, α = .84). The two factors had a Pearson correlation of .504.

2.2.4. Social Support Scale of Medical Outcomes Study (SSS-MOS).

Participants were also asked to fill out a Portuguese version of the SSS-MOS (Pais-Ribeiro & Ponte, 2009). As the original instrument (Sherboune & Stewart, 1991), the Portuguese version showed to be reliable (all alphas above .78), valid and stable.

The SSS-MOS is composed of 19 items, answered on a rating scale from 1 (never) to 5 (always), that assess four dimensions of informal PSS: 1) tangible support (e.g. *availability of someone to take to doctor*); 2) emotional/informational support (e.g. *availability of someone to share worries with*); 3) affective support (e.g. *availability of someone to show love and affection*); and 4) positive social interaction (e.g. *availability of someone to have a good time with*).

In order to assess some of the psychometric properties of this measure in our sample, a principal axis factor analysis (orthogonal rotation) was conducted (KMO = .935; Bartlett's $\chi 2$ (105) = 287.949, p = 0.000). Based on the Kaiser criterion, two factors were extracted, accounting for 70.6% of the total variance: 1) perceptions of emotional/informational, affective and positive social interaction support (n = 11 items, α = .96); 2) perceptions of tangible support (n = 4, α = .90). Despite not reproducing the factorial structure reported by Ribeiro & Ponte (2009), these scales were used to test FSSADI_PAIN's discriminant validity.

2.3. Procedure

The formal consent of every institutional board was obtained. Afterwards, questionnaires were individually administered to participants after their individual informed consent. The purpose of the study was explained and the collaboration of the participants was requested, guaranteeing their anonymity and confidentiality. The first part of the questionnaire was composed of the FSSADI_PAIN. After the presentation of this scale, participants were presented with the questions regarding their personal pain experiences. Participants who reported current pain (chronic or acute) were asked to fill out the Portuguese versions of the BPI and SSS-MOS, while those who reported no present pain only filled out the latter. Finally, information was collected on participants' socio-demographic characteristics.

3. Results

3.1. Descriptive analysis of the FSSADI_PAIN items

The analysis of the item distribution on the total sample showed that participants' responses covered all the scale range for every item. The means ranged between 2.02 and 4.45 and standard deviations ranged between 1.7 and 2.1 (Table 1). Most of the items did not present a normal distribution of responses, showing high levels of skewness ($\text{skewness}/SD_{\text{skewness}} > |1.96|$) and kurtosis ($\text{kurtosis}/SD_{\text{kurtosis}} > |1.96|$).

Insert Table 1

3.2. FSSADI_PAIN Factorial Structure

A principal axis factoring analysis (oblique rotation) was conducted with all the items in order to explore the factor structure of the FSSADI_PAIN (KMO = 0.857, Bartlett's $\chi2$ (45) = 805.020, *p* = 0.000). Items with loadings above .400 were kept in the structure, and items with high crossloadings were progressively eliminated. Based on the Kaiser criterion, two factors were extracted accounting for 57.8% of the variance (Table 1): 1) Perceptions of promotion of dependence (PPD); and 2) Perceptions of promotion of autonomy (PPA). These factors presented a moderate and positive correlation (*r* = .527, *p* = .000).

3.3. Descriptive analysis of the factors, internal reliability and sensitivity.

As can be seen in Table 2, in the total sample, despite responses covering all the scale range, the PPD factor presented a low mean value, i.e. participants seldom perceived actions promoting dependence. Also, the answers did not follow a normal distribution, which was rather skewed and leptokurtic. It should be noted that the answers of the participants attending the nursing homes presented the highest levels of skewness and kurtosis as compared to the remaining sub-samples.

As for the PPA factor, responses again covered all the scale range, but the participants more frequently perceived actions promoting autonomy. Like the PPD factor, this factor did not show a normal distribution, but showed acceptable levels of skewness and kurtosis. In fact, in the sub-samples of the day-care centres and nursing home, the responses followed a normal distribution.

Finally, both factors showed good internal consistency indices, both for the total sample and each sub-samples (Table 2).

Insert Table 2

3.4. Validity

3.4.1. Content Validity.

Two experts on aging were asked to independently assess the content validity of the items of the FSSADI_PAIN. They were given the conceptual definitions of the four sub-dimensions of the FSSADI-PAIN, and asked to match each one of the original 20 items to the respective sub-dimension. The inter-judge reliability was very good (Cohen's $K = 0.80$).

3.4.2. Criterion-related Validity.

In order to test the criterion-related validity of the FSSADI_PAIN, we wanted to explore whether it would be able to differentiate the perceptions of support of participants with different types of current pain (acute vs. chronic vs. absent), different levels of pain severity and disability, and also attendance at different institutions (day-care centre, senior university and nursing home). In order to ascertain the effects of the socio-demographic variables on perceptions of support, several statistical tests were conducted (t-test, Chi-square and Pearson r). These previous analyses showed that only the number of years of education was significantly correlated with PPA ($r = -.287$, $p = .001$). As such, only this variable was controlled for in some of the analyses that follow.

3.4.3. The relationship between PPA/PPD, current pain experience and type of institution.

A multivariate analysis of variance 3 (current pain experience) x 3 (type of institution) was conducted over PPA and PPD[1]. The multivariate tests showed the main effects of the current pain experience, *F* (2, 142) = 4.52, *p* = .01, η2 = .06, and the type of institution, *F* (2, 142) = 26.14, *p* <.001, η2 = .27, on the perceptions of formal social support. However, univariate tests showed that only the type of institution had significant effects on both PPA, *F* (2, 142) = 22.37, *p* < .001, η2=0.24, and PPD, *F* (2, 142) = 8.35, *p* < .001, η2 = 0.11.

Tukey post-hoc tests showed significant differences between the PPA of the participants attending the three types of institutions (*p* < .04). Participants in the day-care centre were the ones who presented the highest PPA (*M* = 4.88, *SD* = 1.25), followed by the adults attending the nursing home (*M* = 4.26, *SD* = 1.09), and finally by the ones attending the senior university (*M* = 2.81, *SD* = 1.50). As for PPD, the participants attending the day-care centres again showed the highest perceptions of support (*M* = 2.97, *SD* = 1.93) as compared to the perceptions of support of the adults attending the nursing home (*M* = 1.77, *SD* = .97, *p* = .001) and senior university (*M* = 2.26, *SD* = 1.32, *p* = .05), but PPD of these latter groups were not significantly different.

3.4.4. The relationship between PPA/PPD and pain severity and disability: the moderator role of current pain experience.

We aimed to explore the extent to which the presence of acute or chronic pain moderated the relationship between the pain severity and disability and PPA/PPD.

We started by exploring the correlations between PPA/PPD and pain severity and disability for older adults who reported acute and chronic pain separately. Results showed

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[1] An analysis of variance 3 (current pain experience) x 3 (type of institution) with the number of years of education as a covariate showed no significant effects on PPA, *F*(2,140)=0.27, *p*=.76. For this reason, the number of years of education was not included as a covariate in the MANOVA.

significant correlations only among older adults with CP; PPD was positively correlated with pain disability ($r = .531$, $p < 0.001$) and severity ($r = .518$, $p < .001$).

Afterwards, we sought to directly test this apparent moderator effect by conducting multiple linear regressions following the procedures proposed by Baron & Kenny (1986). We dummy coded the moderator (0 = acute pain and 1 = chronic pain) and then centered all the predictors and created the respective interaction terms. Initial regression models with pain severity or disability as criterion variables and PPD as a predictor did not show any significant results. The regression models presented in Table 3 had PPD as the criterion variable and pain severity and disability as predictors.

Insert Table 3

As shown in Table 3, the current pain experience (acute vs. chronic) significantly moderates the relationship between PPD and pain severity and interference; when entering the interaction terms in the models, there is a significant increase in the explained variance, both for pain disability, $\Delta R^2 = 0.08$, $p = 0.01$, and pain severity, $\Delta R^2 = 0.056$, $p = 0.029$. Afterwards, in order to explore the interaction effects, we conducted simple linear regression models to analyse the predictive role of pain severity/disability on PPD for each sub-group of participants with different current pain experiences separately. These regression models showed that the effects of pain severity ($R_{adj}^2 = .25$, $\beta = .52$, $p < .001$) and disability ($R_{adj}^2 = .26$, $\beta = .53$, $p < .001$) on PPD were only significant among older adults with CP.

3.5. Discriminant validity

In order to test the discriminant validity of the FSSADI_PAIN, we conducted several Pearson correlations between the subscales of the FSSADI_PAIN and SSS-MOS on the global sample, and for each sub-group of participants with different current pain experiences (Table 4). Using the Bonferroni correction in order to control for Type I error (.05/16 = .003), the scales of the FSSADI_PAIN did not show any significant correlations with the scales of the SSS-MOS.

4. Discussion

This study aimed at the development and preliminary validation of the Formal Social Support for Autonomy and Dependence in Pain Inventory (FSSADI_PAIN) in a sample of Portuguese older adults. Overall, our preliminary findings suggest the presence of a valid and reliable measure. It follows a detailed discussion of its psychometric properties, as well as a reflection on the implications and limitations of this work, and potential future directions for research.

4.1. Factor structure, sensitivity and reliability of the FSSADI_PAIN

An exploratory factorial analysis highlighted the presence of two factors: 1) PPD; and 2) PPA. Both included items related to perceptions of instrumental and emotional/esteem support, suggesting that the functions of autonomy/dependence promotion assumed a more central role in the organization of the participants’ responses.

The extraction of two factors suggests an organization of the perceptions of support for autonomy and dependence as independent dimensions, and not as opposite poles of the same dimension. This two-fold conception of such perceptions of support allows the identification of individuals who perceive low/high levels of support both for autonomy and dependence, which is not possible if we consider such perceptions as opposite poles of one dimension. Indeed, the high positive correlation between PPA and PPD could only arise in this scenario. This correlation suggests that, for most participants, the greater the perceived support for autonomy, the greater the perceived support for dependence. We can think of some possible interpretations of this result. First, it may reflect the actual perceptions of the participants, suggesting the presence in our sample of older adults whose PPA and PPD are generally low and seniors who have ambivalent perceptions of social support, i.e. whose PPA and PPD are generally high. Second, the positive correlation between the two factors also could be the result of a response bias or a halo effect of the satisfaction with the institution. Third, it can also be the reflection of an underlying second-order factor of general perceived formal social support. Finally, this result may reflect differences between the meanings assigned to items by researchers and participants, e.g. participants may not be interpreting certain kinds of actions as promoting autonomy or dependence. These possible interpretations raise important questions for the future development of FSSADI_PAIN, which will be discussed later.

With regard to the internal consistency and sensitivity of the FSSADI_PAIN factors, the results are quite positive. The factors showed good levels of internal consistency, both for the overall sample and for each sub-group of participants. Such factors also seem to be quite sensitive to differences between participants in terms of PPA and PPD.

In general, we found that PPD are on average lower than the PPA and have more skewed distributions, especially among older adults attending the nursing home. This may be the result of a reluctance of participants to list the most negative aspects of the institution to which they belong. This reluctance may indeed be more pronounced among the older adults attending the nursing home, which often might be perceived as their home/family.

4.2. Validity of the FSSADI_PAIN

The assessment of the two independent experts in the field of aging and the inter-observer reliability index suggests that the FSSADI_PAIN has a good content validity.

Concerning the criterion-related validity, it was expected that participants with greater autonomy constraints, namely the ones with chronic pain (H1) or the ones in nursing homes or day-care centres (H3), would report higher PPA and PPD. These hypotheses were only partially confirmed. First, the type of current pain experience had no significant effect on PPA or PPD. Second, if the participants of the day-care centre reported higher PPA and PPD than those of the senior university as expected, the perceptions of support of the older adults attending the nursing home revealed an unexpected pattern. In fact, although these participants reported greater PPA than the participants of the senior university as expected, their PPA and PPD were generally lower than those of the older adults attending the day-care centre. This unexpected result may be related to specific features of this particular nursing home.

Finally, we hypothesized that PPD were positively related to pain severity and disability, but only among older adults with CP (H3). Our results confirmed this hypothesis. As expected, it was only among the elderly with CP that there was a moderate positive association between PPD and pain severity and disability. More specifically, such dimensions of pain experience significantly predicted these older adults' PPD.

These findings suggest that the FSSADI_PAIN is a particularly valuable tool to assess the perceptions of older people with CP. However, in contrast to most studies reporting an effect of perceptions of social support in the pain experience (e.g. Evers et al., 2003; Turk et al., 1992), these results suggest an effect of CP experiences on PPD. On one hand, this result may be accounted for by an increased sensitivity of CP patients to the loss of autonomy and, hence, a higher tendency to interpret many actions of support as promoting dependency. On the other hand, it may also reflect a more frequently offered support to older adults with CP. For example, an elderly person who clearly shows pain-related mobility constraints will probably receive more support, which may solve his/her immediate needs, but which does not promote his/her autonomy. This being true, such findings may be a warning sign for the presence of a relational pattern between caregivers and seniors with CP, which may lead to the latter's learned dependence (Baltes, 1996) and in the long run may have adverse effects for their autonomy and functionality (e.g. Turk et al., 1992).

Finally, no significant relationship between FSSADI_PAIN and SSS-MOS was expected, given that such instruments aim to assess PSS from distinct sources of support (H4). The empirical support of this hypothesis suggests that the FSSADI_PAIN has good discriminant validity.

4.3. Implications, limitations and future directions for research.

Theoretical, methodological and practical implications can be drawn from this preliminary study. From a theoretical and methodological point of view, both the conceptualization and operationalization of the functions of PPA and PPD are innovative. Despite being preliminary, our results stress the importance of taking into consideration and differentiating these functions of PSS. From a practical point of view, our results highlight the central role of PPD among older adults with CP. In fact, assuming that the role of such perceptions may be partially a reflection of the social support actually received by such seniors, it might be useful to start considering the development of training programs aimed at minimizing/maximizing caregivers' practices of promotion of dependence/autonomy in a CP context.

Despite these contributions, some limitations can be pointed out in our study, which are in turn related to future directions for research. First of all, the debate around the results of the exploratory factorial analysis highlights the need to consider the future use of structural equation modelling, to confirm the FSSADI_PAIN's underlying factorial structure, namely the presence of a second-order factor of general perceived formal social support.

Second, some sampling issues should be noted, since they raise some questions regarding the generalization of the results. The sample included older people who attended only one nursing home and one senior university. Future studies should include representative samples of various institutions, preferably characterized by various types of practices in elderly assistance. This last detail is particularly challenging because the institutions known for the best practices, such as those involved in this study, are the ones that more easily give their consent to conduct this type of research.

Thirdly, it should be stressed that administering the questionnaires within the institutions themselves may have contributed to increase the likelihood of social desirability effects, especially among participants who were most dependent on them, as was the case of the seniors attending the nursing home. Also regarding the application of the questionnaires, we highlight the difficulty that participants with lower levels of education had in understanding a 7-point Likert scale. This may suggest that its simplification, e.g. to a 5-point scale, might be useful.

Finally, if the FSSADI_PAIN assesses the PPA and PPD in pain, it does not allow us to understand the degree to which this PSS fits the participants' needs. Therefore, the future development of a scale to measure the satisfaction with PPA and PPD should be considered.

These limitations suggest that the development of FSSADI_PAIN can still be improved. However, the present results allow us to conclude that it is an innovative, valid and reliable tool which allows us to assess two important functions of social support, especially in contexts of chronic pain: the promotion of autonomy and dependence. We believe that further research on such functions of formal PSS in a context of pain may be one step among many in the prevention and reduction of physical disability associated with chronic pain, which is an obstacle to a full experience of an active and successful aging process.

5. References

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