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Children's attitudes towards aging people-validation of an instrument

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Abstract

Purpose: It is essential to develop and improve instruments that measure and assess children's attitudes towards the elderly. Despite the degree of questions related to this topic, no tools validated for the Portuguese population on the subject were found in the literature. Consequently, this study aimed to translate and validate a scale designed to assess children's attitudes towards the elderly (Todaro Scale) for the Portuguese population.

Design and methods: The method recommended by the literature for psychometric validation and evaluation of instruments was followed. In the conception of the study, the following stages were followed: translation of the "Todaro Scale", translation and back-translation by an independent translator, validation by an expert panel, pre-test and validation of the questionnaire, and testing the scale measurement properties. The convenience sample comprised 60 children between the ages of 4 and 6, of Portuguese nationality and residents of Portugal.

Results: The results obtained in the reliability and validity tests reveal a good internal consistency. The 14 items of the scale, and after the use of principal component analysis, there were grouped into five dimensions: social participation, personality characteristics; Health and Safety, physical and instrumental; cognitive and social appreciation.

Conclusions: The psychometric study confirms that the "Galvão Scale: children's attitudes towards the elderly" includes the essential indicators and dimensions to ensure an adequate assessment of children's attitudes towards the elderly. Practice implications: we believe this research could become an indispensable contribution to analysing, monitoring, and intervening to demystify existing ageing stereotypes.

Keywords: Elderly, Attitude, Child, Aging, Intergenerational relations, Aging

Introduction

Demographic ageing is a social phenomenon in most developed countries. Although more extended life expectancy is a positive result, the growing elderly population may face challenges such as increased negative attitudes towards them (Drury et al., 2016. This phenomenon enforces new challenges, a more significant concern with the stereotypes that have emerged concerning the higher age groups and influence the way we look at the elderly. In addition to the physical limitations of the normal ageing process, society creates other stereotypes at the emotional and sentimental level concerning the

elderly (Chao, 2019; Lloyd et al., 2018; Lemaire et al., 2018). Four central stereotypes against the elderly seem to prevail in society: the elderly are in general depressed and lonely without family and close friends and with mood disorders; the elderly represent a crucial homogeneous group, and the ageing process is perceived as a one-dimensional and a one-way direction; the elderly is frail, sick and dependent on others; and the elderly are seen as having cognitive and psychological limitations (Mendonça et al., 2018).

Over time as stereotypes develop, social interactions are affected, since they are cognitively stored and mentally evocated to an interpretation of a social situation (Teater, 2018). The negative stereotype of the elderly can also result in more episodes of generational conflict (Lloyd et al., 2018). For example, a young person may believe that the elderly are "dirty" and "cranky" (cognitive response based on stereotypes) and may feel fear (emotional response) of the elderly and, therefore, can avoid approaching or interacting (behavioural response) with an older person (Teater, 2018).

Stereotypes can, therefore, influence attitudes, which comprise a general assessment of a person or group of people that influences emotional, cognitive and behavioural responses to that person or group of people (Mendonça et al., 2018; Teater, 2018). On the other hand, research suggests that more positive stereotypes correlate with more positive attitudes towards the elderly (Teater & Chonody, 2017).

Stereotypes formed in childhood lead to internalisation, strengthening throughout a person's life. At this stage, preschool age, they assimilate the outside world, where they organise conceptions about others (Mendonça et al., 2018). It is established that age-based preconceptions are present in children from 3 years and are strengthened by social messages and cultural practices (Teater, 2018). It could become an essential contribution to the analysis of stereotypes about ageing (Fernandes et al., 2021).

Many studies have been developed in this area with people of various ages and different populations, such as undergraduate students or social and health service providers but less frequently in children. Results show that negative attitudes against the elderly are not limited to children but spread to all generations (Chung & park et al., 2019). Today's children will be tomorrow's adults; therefore, their attitudes towards older people prepare the ground for their future self-concept, psychological well-being, and relationship with each other (Mendonça et al., 2018; Teater & Chonody, 2017). Therefore, understanding how children perceive the elderly is crucial in an ageing world (Mendonça et al., 2018).

Measures of attitudes towards the elderly, old age and ageing have been the focus of studies since the mid-twentieth century. From the 1970s onwards, the investigation of attitudes based on age discrimination or ageism, its determinants and forms of manifestation in societies took shape (Todaro, 2017). Some instruments referring to this target population have been developed in the international context: the CVOA (Marks et al., 1985), which includes four sections with open questions. Another referenced study is the Children's Attitudes for the Elderly (CATE) instrument, designed by Jantz et al. (1977) to assess the attitudes of children, ages 3 to 11, towards the elderly by analysing the affective, behavioural, and knowledge components of attitudes.

Stereotypes and conceptions about different areas of the lives of the elderly were also assessed using Kogan's Attitude Towards Old People Scale (Ivester & King, 1977), Social Attitude Scale of Ageist Prejudice (SASAP) Isaacs & Bearison, 1986), Tuckman-Lorge

Old People Scale (OP) (Harris & Fiedler, 1988). In the Tuckman-Lorge Old People Scale, participants are asked to respond "yes" or "no" to each of 137 statements about old people. A very similar method was used in the Child Adolescent Facts on Aging Quiz (CAFAQ) (Haught et al., 1999), which has only 16 items (Mendonça et al., 2018). The YCVOP has inspired the Children's Attitudes Towards the Elderly (CATE) scale (Jantz et al., 1976), the Children's Views of Aging scale (CVOA) (Marks et al., 1985), and a cartoon method designed by Caspi (Caspi, 1984). The YCVOP evaluates young children's views of older people through 11 bipolar pairs of adjectives: Sad–Happy, Slow–Fast, Dirty–Clean, Sick–Healthy, Dull–Exciting, Hated–Loved, Mean–Kind, and Weak–Strong. (Mendonça) (Flamion et al., 2020). The Todaro scale (2017) is also a semantic differential scale composed of 14 pairs of bipolar attributes, validated for the Brazilian population.

All these instruments have in common the idea that children's attitudes are best assessed by asking children about their representations of specific stereotypical traits of older people Mendonça et al., 2018).

However, developing and improving instruments that measure and evaluate children's attitudes towards the elderly is essential. These will allow a better understanding of how the image of ageing develops in childhood and the promotion of effective intervention programs to reduce negative stereotypes (Mendonça et al., 2018; Tarallo et al., 2016).

It is stressed that, despite the degree of the issues related to this topic, no validated instruments for the Portuguese population on the subject were found in the literature. The Galvão scale proposed in this study was inspired by Todaro's (2017) Scale of Children's Attitudes towards the Elderly, given the linguistic similarity developed in Portuguese but requiring validation to the social, political, and language context of Portuguese of Portugal. Thus, this study aimed to translate and validate a scale designed to evaluate children's attitudes towards the elderly.

Materials and methods

Study design, setting, and sample

This is a methodological study, which included the translation and validation of the Scale "Evaluating children's attitudes towards the elderly-Todaro´s Scale" to translate and validate, to the Portuguese population, following the steps recommended in the literature (Fig. 1) (Cunha et al., 2016). In a review of the literature, we found that an adequate psychometric evaluation of measurement instruments of children is of extreme importance, especially concerning the evidence of their validity and reliability (Cunha et al., 2016; Echevarría-Guanilo et al., 2019; Souza et al., 2017).

The "Todaro Scale: attitudes of children towards the elderly" validated for the Brazilian population (Todaro, 2017) was used for this method. The choice resulted from the linguistic easiness for translation and the short size of the instrument, which would simplify its application to the population to be studied. The author gave authorisation for the Scale translation.

In Step one, the researchers translated the "Todaro Scale", followed by translation and back-translation by an independent translator, fluent in the original and target language (Portuguese), selected by convenience.

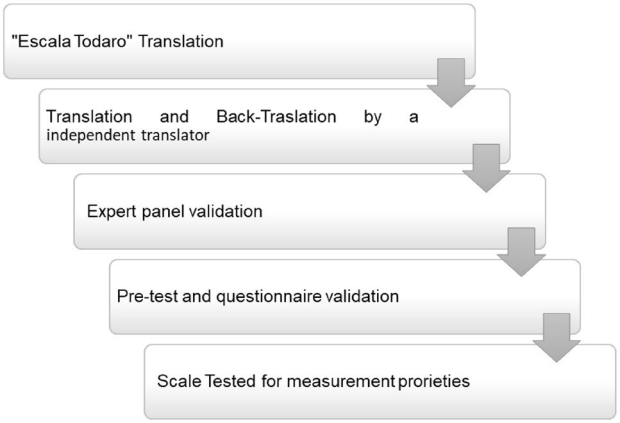

Fig. 1 Study steps

Subsequently, a panel of experts agreed to collaborate on the translated scale. The sample of participants was obtained by convenience, having as inclusion criteria a specific skill and considered experts in the areas of Geriatrics or Pediatrics and scientific research in the same areas. The scale was submitted through an electronic form in Google Forms®. This step was executed over two cycles after obtaining the agreement of at least 90% of the expert panel.

The pre-test was applied to a group of ten Portuguese preschool children selected by convenience to estimate their completion time, understanding and adequacy of vocabulary preschool children.

Reliability and validity were verified to test the scale's measurement properties. For this step, the convenience sample comprised 60 children between the ages of 4 and 6, Portuguese nationality and residents of Portugal. The instrument was sent by electronic form on Google Forms® indicating that the child should answer it under the supervision and help of an adult. The process took place between January 2019 and April 2020.

The "Todaro Scale" was developed by Todaro (Todaro, 2017) through the adaptation and validation of the Neri scale "Assessment of Attitudes towards Old Age", initially designed for adults. The Todaro scale comprises 14 items, each with a pair of antagonistic adjectives, of which the child must choose the best alternative to the perception: "The elderly are:". Each item has, in addition to the two adjectives, three intensity levels in which data are analysed: level one will be attributed to the positive attitude, level two will assume the neutral attitude, and level three will represent the negative attitude. Thus, the higher the child's score, the more negative their attitude towards old age (Todaro, 2017).

The scale is divided, so that it can assess children's attitude towards ageing through 4 domains: cognition, which refers to the ability of the elderly to process information and solve problems; agency, which refers to autonomy and instrumentality to carry out actions; social relationships that are related to affective-emotional aspects; and identity, which covers social labels used to label the elderly (Todaro, 2017). The six pair items: wise-fools, clear-confused, insecure-safe, slow-fast, creative-without creativity, and attentive-distracted relate to the cognitive domain. The two pairs of items: cheerful-sad and sick-healthy, refer to the agency domain. The last three pairs: humorous—grumpy, side-faced, and valued-mistreated items, cover aspects of the social relationships

domain. The three cool-flat pairs, brave-weak, and open-handed–snitch, refer to the domain identity (Todaro, 2017). The Statistical Package for the Social Sciences (SPSS), version 24, was used for data processing.

Ethical considerations

The research had ethical approval by the University ethics committee (*n*º. 042019). Respondents, through their legal representatives, were informed about the aims and objectives of the study and the voluntary nature of their participation. Anonymity and confidentiality were guaranteed in all responses, and the participant's right to privacy was guaranteed.

Results

The translation and adaptation of the "Todaro Scale" for Portuguese preschool children were based on standard recommendations that include the following steps: translation and synthesis, back-translation and synthesis, expert panel and pre-test. The translation and adaptation of the "Todaro Scale" were held by the researchers, using the Portuguese language dictionary, then submitted to a new translator from the original language and subsequently submitted to a back translation to the target language (European Portuguese) by a Portuguese teacher, Brazilian Nationality, resident in Portugal, was possible to reach than the first version of the "Todaro Scale" scale. To facilitate the writing of the text, the Scale will be called the "Galvão Scale".

After the translations, the results were jointly analysed with the expert panel comprising 1xperts (Table 1). The experts were asked if they agreed, had no opinion or disagreed with each scale item.

The form was submitted in two turns, of which the expert panel could agree 94% regarding the translation and terminology of each pair of antagonistic adjectives. Changes were made to the pair of intelligent-dizzy adjectives to ignorant elders, the pair of valued-despised adjectives for valued-devalued, and the pair of cheap-generous adjectives for savers-spenders.

The pre-test was performed on a group of ten children selected by convenience. The sample, according to the inclusion criteria: aged between 4 and 6 years, consisted of three children aged 4, four aged five and three aged 6 years, residents of Portugal and Portuguese nationality. After filling out the scale, the father or mother and child were asked to make an overall assessment of the same, individually, via message, followed by a moment of critical analysis of the different questions. From this dialogue, it was possible to verify that the domain of terminology related to ageing was within the age group to which it was being proposed, as well as to the Portuguese culture. The estimated time to fill in the questionnaire was of 5 min, as well as the clarity of the instructions was confirmed.

The scale's measurement properties, reliability and validity were tested to validate the scale. These properties were verified after applying the scale to a sample of 60 preschool children (from 4 to 6 years of age), Portuguese nationality and residents of Portugal. Internal consistency was calculated using Cronbach's alpha coefficient, which refers to the degree of correlation between the answers in the questionnaire. Cronbach's alpha index was 0.716, and studies show that Cronbach's alpha index values higher than 0.7 are

Table 1 Expert panel participants

Sociodemographic character	*N*	%
Gender		
Female	14	78
Male	4	22
Age		
40–49	8	44
50–59	7	39
60–69	2	11
70	1	6
Academic degree		
First degree in nursing	4	22
Master degree	6	33
PhD	8	45
Professional activity		
Registed nurse in practice	5	28
Lecture	13	73
Years of professional activity		
12–19	2	11
20–29	8	44
30–39	7	39
40–41	1	6
Professional experience in pediatrics and geriatrics		
Sim	16	89
Não	2	11
Scientific research in pediatrics and geriatrics		
Yes	14	78
No	4	22

Table 2 Item—total statistics

	Average scale if item deleted	Scale variance if item deleted	Correlation of total items corrected	Cronbach's Alpha if item deleted
Question 1	22.25	23.208	0.266	0.708
Question 2	22.38	23.291	0.335	0.700
Question 3	22.13	22.795	0.290	0.706
Question 4	22.27	22.538	0.390	0.694
Question 5	22.22	21.156	0.627	0.666
Question 6	22.27	22.741	0.359	0.697
Question 7	21.67	23.141	0.221	0.716
Question 8	22.50	24.186	0.211	0.712
Question 9	22.07	23.453	0.220	0.714
Question 10	21.83	21.294	0.469	0.682
Question 11	21.92	22.790	0.323	0.701
Question 12	21.97	21.389	0.447	0.685
Question 13	21.18	24.762	0.080	0.727
Question 14	21.88	22.240	0.381	0.694

ideal. Thus, the correlation capacity (homogeneity) between the instrument's items with scale format was verified and reported in Table 2**.**

The present study used factor analysis and cross-cultural validity to evaluate construct validity. As the "Galvão Scale" did not behave as the original scale, the authors decided to perform factor analysis. To ensure the adequacy of the scale, the Bartlett statistical sphericity test and the Kaiser–Meyer–Olkin (KMO) measurement analysis were performed. The proportion of variance of the KMO values shows that the indicators are commonly presented, and KMO values between 0.6 and 0.7 are reasonable. This study obtained the KMO good values (0.618), indicating that the main components' analysis can be performed. When analysing bartlett's sphericity test (test = 180.343, sig = 0.00), it is observed that a correlation between the variables exists. This means that the values of the KMO test and bartlett's sphericity test were adequate to perform factor analysis on the scale items.

The solution for the factorial model presented by the main components method selects the factors of the first main components. As seen in Table 3, for example, the value of component 1 = 3.246 represents the sample variance of the first major component. Dividing by the sum of all variances, we obtain the percentage of variance that the first component explains in relation to the total, approximately 23%. According to the Kaiser criterion, five main components are retained, as many as the own values greater than one.

The five retained factors explain 63% of the total variance. The next step was to determine the rotating factor weights for the matrix. The values of the factorial weights rotated according to the Varimax criterion are presented in Table 4.

The highest weight factor in absolute value identifies the factor with which each variable is associated. About the criteria of standardisation of the Scale, it can reach an amplitude that runs between 14 (minimum point) and 42 (maximum point); a higher value, the more negative the attitude (midpoint 28). It is recalled that the negative items 3, 7, 11, and 13 should be reversed.

Table 3 Total variance explained for the 14 main sample components

Component	Total	% de Variance	% Cumulative
1	3246	23,183	23,183
2	1906	13,615	36,798
3	1367	9764	46,561
4	1225	8751	55,313
5	1136	8115	63,427
6	0.947	6761	70,188
7	0.840	6001	76,189
8	0.708	5060	81,249
9	0.636	4546	85,795
10	0.561	4006	89,801
11	0.502	3583	93,383
12	0.352	2517	95,900
13	0.301	2151	98,051
14	0.273	1949	100,000

Table 4 Matrix of factorial weights rotated according to Varimax criterion

Facotrs	1	2	3	4	5
Question 5	0.806				
Question 4	0.705				
Question 12	0.677				
Question 10	0.575				
Question 2		0.767			
Question on 6		0.748			
Question 8		0.720			
Question 14		0.516			
Question 7			0.815		
Question 11			0.714		
Question 9				0.882	
Question 13				0.480	
Question 1					0.683
Question 3					0.592

Discussion

The present study aimed to translate and validate a scale designed to assess children's attitudes towards the elderly (Todaro Scale) for the Portuguese population. This pathway allows us to expand the knowledge about what younger generations think about ageing and, therefore, promote interventions between health professionals and teachers to demystify existing stereotypes (Oliveira et al., 2015). The Galvão Scale that evaluates children's attitudes towards ageing showed good indicators of validity and fidelity.

It was possible to perceive that the data obtained were passive factor analysis. Factor analysis with factor extraction by the principal components method, using the kaiser rule, allowed to explain 63.4% of the total variance. This analysis involved five factors different from those of Todaro (Todaro's (2017). The internal consistency of the scale established by Cronbach's Alpha showed adequate reliability indexes for its global version (0.716). The literature reports that, in general, it is recommended that coefficients above 0.70 (Cunha et al., 2016; Echevarría-Guanilo et al., 2019; Souza et al., 2017) should be adopted.

The factor analysis, the 14 items were grouped into five dimensions: social participation, personality characteristics; Health and Safety, physical and instrumental; cognitive impairment and social appreciation.

The dimension "Social Participation" is composed of 4 variables, which correspond to questions 5, 4, 12 and 10, namely, the items Valued/Devalued, Cheerful/Sad, Clear/Confused and Attentive/Distracted. Social participation is associated with active and prosperous ageing processes, while social isolation and loneliness in old age are linked to a decline in physical and mental well-being (Castro Rojas et al., 2018; Vieira & Lima, 2015). It is emphasised that for active ageing, the individual's social participation should be privileged.

The dimension "personality characteristics" is composed of 4 variables corresponding to questions 2,6,8, and 14, namely, the items Humorous/Grumpy, Fun/Boring, Good/Bad and Creative/Non-Creative. Personality characteristics are one of the essential

factors in defining ageing. The dimensions of personality are related to how they behave and how the world sees them. This factor addresses personality characteristics in an interpersonal dimension incorporating mood and emotional understanding. Personality traits affect the strength of social media connections; however, these characteristics can have a negative impact (Iveniuk, 2019; Ramos & Crespo, 2018; Torres et al., 2016). At this level, we can find two opposites, the view of the good-natured "positive" elderly or the "negative" elderly, who reflects a sad person with a personality of difficult conviviality and grumpiness.

The "health and safety" dimension this is composed of 2 variables, which correspond to questions 7 and 11, namely, safe/unsafe and Sick and Healthy items. Currently, the social representation of the elderly is performed with negative connotations projected in the social subconscious with images of this vital stage disguised by the disease (Ramos & Crespo, 2018).

On the other hand, in the "physical and instrumental" dimension, comprised of 2 variables, which correspond to questions 9 and 13, the items saved/spendthrift and slow/fast are included. Children have some stereotyped visions of the elderly in which they consider them a little "slow", needing a "little" help to live on their own (Lloyd et al., 2018). When school-age children are asked about what they think of the elderly, they usually express negative visions and stereotypes in a line of physical abilities, such as deterioration of the skin, bones, posture, hearing and thinking power, as well as bad mood, impatience and inability to deal with stress (Torres et al., 2016, Flamion, Missotten, Jennotte, Hody, & Adam, 2020). Children tend to have more negative stereotypes based on physical characteristics (Fernandes et al., 2021; North & Fiske, 2015).

Finally, concerning "cognitive and social valorisation", it comprises two questions, 1 and 3, namely, the items Sages/ignorant and Accepted/put aside.

Studies have shown that the stereotyped view of ageing is present, which consists of a significant decrease in the cognitive performance of the elderly (Lemaire et al., 2018; Mendonça et al., 2018). Sometimes, beliefs relate to attributes that are less valued socially, sustaining a devaluation status for groups such as the elderly (Vieira & Lima, 2015). The devaluation shows that old age is a stage of life that is socially undervalued, since what is appreciated is youth and everything that constitutes it. Therefore, given the valorisation of youth and the devaluation of old age, the current context favours the prejudice related to age and the marginalisation of the elderly that does not fit the characteristics of youth (Brito et al., 2017).

Negative opinions and attitudes towards the elderly can start very early in life; when children are questioned, they often reveal negative views and stereotypes of ageing Flamion et al., 2020). We need to develop strategies to prevent the formation of prejudices against older people from an early age (Lloyd et al., 2018. Moreover, this view of the elderly is not only maintained by other age groups but is sometimes shared by them.

Conclusion

Given the presented research, the validated scale includes the essential indicators and dimensions to ensure an adequate assessment of children's attitudes towards the elderly in The Portuguese Population. The limitations were evident in the reduced national literature on the subject and the small number of participants, only 60 children.

The quality of this scale was demonstrated in this study; semantic and cultural similarities of the scale were performed, providing evidence that it is adapted to the Portuguese population and was called "Galvão Scale: attitudes of children towards the elderly". As further research, we suggest replicating the study in programs that perform activities with children and the elderly and for professionals working in these contexts. Further studies are indicated with children with other age groups and larger samples.

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Author contributions
This article is original work. The article has not received prior publication and is not under consideration for publication elsewhere. CF drafted the manuscript. CF, TM, and JG collected the data. JG analyse the data. TM and CF review the manuscript. All authors have seen and approve the manuscript being submitted. All authors read and approved the final manuscript.

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Availability of data and materials
The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Competing interests
All authors declare that they have no competing interests.

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