



Social support perceived by the older college students compared to the younger ones

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ABSTRACT

This study was carried out with 326 university students (126 older adults and 200 younger adults) from 13 universities in the state of Rio de Janeiro. It aimed to investigate the importance these older and younger students attributed to the social support, identifying the differences and similarities between them. The students completed a questionnaire that included the Social Support Scale (MOS-SSS), using the Exploratory Graph Analysis – EGA method to demonstrate the dimensionality of this scale in these groups. The results showed that promoting social support in the older adults' network could help improve their functional and educational practice and general development. This knowledge emphasizes and consolidates the role of the university in gerontological education. Social support is important for both age groups, with affective and material dimensions predominant in the older adults.

Keywords: perceived social support; university students; younger and older adults; differences and similarities; scale.

RESUMO – Apoio social percebido por estudantes universitários mais velhos comparados aos mais jovens

Este estudo foi realizado com 326 universitários (126 idosos e 200 jovens) em 13 universidades do Estado do Rio de Janeiro. Objetivou compreender a importância que os estudantes universitários mais velhos e mais jovens atribuíam ao apoio social, identificando as diferenças e semelhanças entre eles. Estes participantes preencheram um questionário que incluiu a Escala de Suporte Social (MOS-SSS), usando o método *Exploratory Graph Analysis* (EGA) para demonstrar a dimensionalidade dessa escala nesses grupos. Os resultados demonstraram que a promoção do apoio social na rede de idosos pode ajudar a melhorar suas práticas funcionais e educacionais e o desenvolvimento geral. Esse conhecimento enfatiza e consolida o papel da universidade na educação gerontológica. Este estudo demonstrou que o apoio social é importante para as duas faixas etárias, embora as dimensões afetivas e materiais sejam predominantes em relação aos idosos.

Palavras-chave: Apoio social percebido; estudantes universitários; mais jovens e mais velhos; diferenças e semelhanças; escala.

RESUMEN – Apoyo social percibido por estudiantes universitarios mayores en comparación con los más jóvenes

Este estudio se realizó con 326 estudiantes universitarios (126 ancianos y 200 jóvenes) de 13 universidades en el estado de Río de Janeiro. Su objetivo fue comprender la importancia que los estudiantes universitarios mayores y más jóvenes atribuían al apoyo social, identificando las diferencias y similitudes entre ellos. Dichos estudiantes completaron un cuestionario que incluía datos sociodemográficos y la Escala de Apoyo Social (MOS-SSS), utilizando el método *Exploratory Graph Analysis* (EGA) para demostrar la dimensionalidad de esta escala en estos grupos. Los resultados evidenciaron que la promoción del apoyo social en la red de ancianos puede ayudar a mejorar sus prácticas funcionales y educativas y su desarrollo general. Este dato enfatiza y consolida el papel de la universidad en la educación gerontológica. El estudio demostró que el apoyo social es importante para ambos grupos de edad, aunque las dimensiones afectivas y materiales son predominantes en los estudiantes mayores.

Palabras clave: Apoyo social percibido; estudiantes universitarios; jóvenes y mayores; diferencias y similitudes; escala.

The aging process has drawn attention from various fields of knowledge. This is due largely to the need for understanding this phenomenon, which in Brazil is one of the greatest challenges of our time. Among the aspects, that influence well-being in aging, especially in Brazil, is the support of family and friends.

The way people perceived their relationships – as satisfactory or unsatisfactory – can lead to their mental and physical health (Bruggencate et al., 2018). The importance of being part of a social network and the feeling

of connectedness to others contributes to well-being and the feeling of the independence. Healthy relationships provide mutual support and shared moments of difficulty or celebration materially or emotionally related. Santini et al. (2015) in their literature review have confirmed that perceived emotional support from large and diverse social networks protect against depression, as well as they serve as an instrumental support.

These relationships are important, as people get older, since they are predictors of future well-being in

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retirement (Amorim & França, 2019). Social support can reduce social stressors, improve well-being and generate better overall living conditions, including health (Griep et al., 2005). Time is inexorable, as is the aging process it is natural that participation in social networks will decrease over time. Therefore, the participants in this social support network (family, friends, institutions, co-workers and colleagues) should be more attentive (Domingues, 2011). In general, the exclusion of elderly people can be explained by the progressive social isolation of older people or by the absence of social integration, extension and multiplicity of relationships (Cattan et al., 2011).

Brazilian heterogeneity is also noticeable in the aging process. Different models and lifestyles lead to different life experiences in terms of personality, level of education and economic status. These experiences are unique to each individual, but at the same time could be present in the same group in which the elderly person is part of social networks represent an important support for the elderly because it gives them the feeling, although not always effective, of security, stability and confidence, which positively impact the health of individuals (Ploughman et al., 2012).

In general, the exclusion of elderly people can be explained by the progressive social isolation of older people or by the absence of social integration, extension and multiplicity of relationships (Cattan et al., 2011). Many Brazilian elderly live in poor conditions and have serious health problems; these factors may pose a danger to their functional capacity affecting their learning ability (Rabelo & Neri, 2013). That is imperative to take comprehensive actions to promote quality of life in all periods of life including aging, so that the person's functional and intellectual independence are maintained.

Quality of life also values the social and family relationships and these are very important as people get older, since they are the main predictors of future well-being in retirement (Amorim & França, 2019). In light of the accelerated growth of this age group, the social problems that negatively affects the elderly require that effective public policies and, in some cases, emergency actions be taken. In the absence of adequate conditions of independence and health for the elderly, increased longevity, rather than being characterized as an achievement of society, can become an unprecedented problem for the Brazilian society (França et al., 2017; Miranda et al., 2016). There is a link among social contact, social support and longevity (Brito & Pavarini, 2012; Yang et al., 2016). However, Domingues et al. (2013) demonstrated the elderly had smaller social network than younger ones and those who had the stable relationships had a greater social support network than did single individuals.

According to the Brazilian laws, people who reach a certain age must be guaranteed opportunities for growth and personal development; preservation of their autonomy and the ability to perform daily activities; good

social relationships; the absence and/or controlled risks to health; legal representation; and the opportunity to avail themselves of adequate housing infrastructure, health care and transportation. In this scenario, several social programs have been conducted in public-private partnerships, including those involving universities, to offer appropriate activities to promote health and well-being (Borges & Seidl, 2014).

Thus, the participation in the university environment gives the elderly the opportunity to develop this link, as well as achieving a positive sense of belonging. Moreover, the university can help fulfill its crucial role of supporting the older student by providing them with tools to live an honest, charitable and fair existence that supports both material and spiritual aspects. However, not only Social Institutions or Universities for the Third Age are important for the self-development and social network, but the possibility to be (re)engaged in a regular course in the tertiary education. This is especially true for elderly who stopped their education in a secondary level and wish to continue their studies.

A recent study from OCDE (2020) shows that, 40% of the people from 25-34 years old who lived in OCDE countries had a tertiary education level, against 21% the same age group in Brazil. From a gender perspective, OCDE (2020) also indicated that younger women are more likely than younger men to achieve tertiary education. In these countries, 51% of younger women have a tertiary degree, compared to 39% of younger men and this gender gap in favour of women has widened between 2009 and 2019.

Besides the importance of the universities for all ages, the older females are in general less educated than their male counterparts. This demographic trend is typical from people who born before 1960 when women with higher education were very rare. There was a decreasing of the participation of people when they get older. In spite of that, there is a need on the labor market for more educated and specialized younger workers in Brazil. In accordance to the OCED, Brazilian females have more 34% of chance to have tertiary education although this fact did not follow the higher salaries or more Job opportunities.

A report from the Instituto Nacional de Estudos e Pesquisas Anísio Teixeira - INEP (2020) demonstrated that Brazilian women were the majority in Professional and Tertiary Education. This prevalence was higher in almost of all age groups, reaching the highest percentage (60%) on the group between 40-49 years, and a little decreasing on this prevalence of women compared to men in the group of 50 to 59 yrs. Then, the opposite trend occurred on the group of 60 years old and plus, and the prevalence on the tertiary education was from males.

Higher education is a vehicle of deepening and strengthening self-determination for the intellectual emancipation of humans (Rudnick et al., 2013). Data

from OCDE (2020) shows an increasing of the professional education in more than 40 countries on the last decade, including Brazil. This was due to the recent priority of the Labour Market on seeking for human resources with more technical and specialized skills. In Brazil, the proportion of students on the Tertiary Education is lower than all OECD countries. Respectively, it is important to consider that more than 75% of the Brazilians college students were from the private universities. Conversely, more than 80% of these Brazilians had their primary and second level education on public schools.

A successful aging process is built on a well-structured educational background and the support of the family and the society, which is of great importance (Zanjari et al., 2017). Although many studies have addressed the role of social support in health and aging, fewer have concerned education and aging, especially towards the theme of social support. The social support scale was created by Sherbourne and Stewart (1991), validated in Brazil by Griep et al. (2005) and has been used to evaluate college students (Zanini et al., 2009). A study developed by Zanini and Peixoto (2016) provided evidence of validity based on the internal structure of the instrument, showing a good fit of a four-factor solution to the data, via confirmatory factor analysis [$\chi^2=698.311$, $df=146$, CFI=.94; RMSEA=.06]. Zanini and Peixoto also provided evidence of configural invariance of the four-factor structure between men and women.

In order to fill the scarcity of research towards the differences or similarities on MOS-SSS amongst age groups, this article firstly verified the dimensionality of the social support scale, using a recent and innovative method called exploratory graph (EGA) used by Golino and Epskamp (2017), Golino and Demetriou (2017); Yu and Sheu (2018), and Golino et al. (2020). Secondly, it performed an analysis of invariance of the dimensionality structure in youth and senior groups. The application of this innovative method provides an exploratory structure that is optimized in terms of fit. This dimensionality optimization can be compared to the theoretical structures tested in previous studies (Zanini & Peixoto, 2016). The goal of this study is to better understand the importance attributed by the older students, in comparison with the younger ones, to the various forms of social support. In addition, it aims to identify the similarities and differences between the two groups regarding the perceived social support.

Method

This quantitative and descriptive study used the Social Support Scale, created by the Medical Outcomes Study - MOS-SSS (Sherbourne & Stewart, 1991) and was validated by Griep et al. (2005). The innovation of this research was the use of the recent method called exploratory graph analysis – EGA (Golino & Epskamp,

2017; Golino & Demetriou, 2017; Yu & Sheu, 2018; Golino et al., 2020) to clearly demonstrate the difference between younger and older groups and the social support perceived in their academic lives.

Participants

The sample consisted of 326 participants – 126 older students (60 years or older) and 200 younger students (18-25 years) – which were registered in 13 undergraduate courses from private and public institutions of higher education in the metropolitan area of Rio de Janeiro. These participants were invited to take part of the research

Instrument

The Social Support Scale (Sherbourne & Stewart, 1991) is composed of 19 items, rated on a scale of 1 to 5: 1 ("never"), 2 ("rarely"), 3 ("sometimes"), 4 ("almost always"), and 5 ("always"). It covers five dimensions: material (four questions on the provision of practical resources and material aid), affective (three questions about physical demonstrations of love and affection), positive social interaction (four questions about the possibility of having people to relax and have fun with), emotional (four questions about the ability of the network to meet the individual's needs in relation to emotional problems), and informational (four questions about the possibility of having people who advise, inform and guide). By comparing older to younger students, this research sought to evaluate how often older students can count on someone to go to different day-to-day activities with them, emphasizing the importance of social support on the well-being of the elderly. Each item measures, on an ordinal scale, the frequency with which the student believes he or she has social support.

Procedures of Data Collection

This research was submitted to and approved by the University Ethics Committee under the number 1.184.032 and filled all ethical principles in research, based on the Brazilian Health Council. The first author made initial contacts with the board or coordinators of the 13 undergraduate courses of 12 public and private higher education institutions. It was explained to the directors that it was a research derived from doctoral studies. The directors granted access to their academic records, in order to identify their age groups.

The researchers distributed a previous invitation to older and younger students to take part of this research. The main researcher was available on a specific day in a room at each university to distribute the questionnaire, including a socio-demographic section (age, sex, type of university, registered courses) and help them complete it, if it was necessary.

As the contacts took place during the school term, the questionnaires were applied as a rule, at the end of

the class hours, by the first author. The students did not have obligation to participate or any financial incentives was given to the students, but 95% of them agreed on being part of this research. The students were also told that they could discontinue the process at any time and that the results would be confidential. The questionnaire also clarified that by completing it, the participant would be agreeing to take part in the research process.

Data were collected by administering the questionnaire to youth and senior groups who were at different stages of their courses and had signed the consent form. The data collection lasted six months.

Data Analysis

To verify the dimensionality of the social support scale, a recent innovative method called exploratory graph analysis (EGA) was used (Golino & Epskamp, 2016; Golino & Demetriou, 2017). This new method has been shown to be similar to parallel analysis when the number of items per factor is high, when the number of factors is low, and when the correlation between factors is from orthogonal to moderate (Golino & Epskamp, 2016). However, EGA is more accurate than parallel analysis when the number of items per factor is low and the correlation between factors is high (Golino & Demetriou, 2017). It also showed results very close to those seen in other previously published analyses, in which traditional techniques, such as parallel analysis and minimum average partial procedure, would have underestimated the number of dimensions when the correlation between factors was high and the number of items per factor was low (Crawford et al., 2010; Garrido et al., 2011; Green et al., 2016; Kieth et al., 2016; Timmerman & Lorenzo-Seva, 2011).

EGA works as follows: first, it estimates the correlation between items (polychoric if the items are polytomous; tetrachoric if the items are binary); it then uses the LASSO graphic estimation to obtain the sparse inverse

covariance matrix, with the regularization parameter defined by EBIC over 100 different values. To conclude, the *walktrap* algorithm (Pons & Latapy, 2004) is used to determine the number of communities in the network of partial correlations. The number of communities (or clusters) identified equals the number of latent factors in a given dataset (Golino & Epskamp, 2016). EGA can be applied by using the R package *EGA* (Golino, 2016).

After verifying the number of dimensions in the social support scale, the structure suggested by the EGA procedure is verified via the confirmatory factor analysis. The *lavaan* package (Rosell, 2012) is used to run the confirmatory factor analysis using the robust weighted mean-square estimator. The fit (suitability, relevance) of the model is verified by using the root mean-square error of approximation (RMSEA), the comparative fit index – CFI (Bentler, 1990) and the normed fit index (NFI) (Bentler & Bonett, 1980). A good data fit is indicated by an RMSEA score less than .06 (Browne & Cudeck, 1993), a CFI equal to or greater than .95 (Hu & Bentler, 1999), and a NFI greater than .90 (Bentler & Bonett, 1980).

Finally, an invariance analysis is implemented to investigate whether the structure suggested by EGA is invariant over the age groups (younger college students vs. older college students) using the *semTools* package (Pornprasertmanit et al., 2014). If the structure does not present invariance over the age groups, EGA will be applied in each group separately, in order to verify the structure of the scale for adults and elderly people.

Results

The questionnaire was administered to 200 young college students (age 18 to 25 years) and 126 older college students (age 60 years or older) from 12 courses and 13 universities in Rio de Janeiro estate. Table 1 describes the sociodemographic characteristics of the sample.

Table 1
Participants' Characteristics

Variables	Total		Younger		Older	
	N	%	N	%	N	%
Age	326	100.00	200	61.35	126	38.65
Male	161	49.39	87	26.69	75	23.01
Female	165	50.61	113	34.66	51	15.65
Public university (free of charge)	67	20.55	20	6.13	47	14.42
Private university	259	79.45	180	55.22	79	24.23
Human and social area of study	325	99.69	201	61.66	124	38.03
Technological area of study	1	0.31	0	0.00	1	0.31

Participant's ages ranged from 18 to 82. The average age among the older participants was 63 years. The average

age among the younger participants was 22 years. Although the total number of women was slightly higher than the

number of men in many age groups, this difference was the opposite on the group of students 60 years and older. Also the same tendency was observed on the type of university that almost 80% were from the private ones. When considering the gender and the type of university the prevalence was higher for the younger ones, which reaching nine (9) times more from private (55%) than from public universities (6%). For the older group the difference was lower than

half for private x public (14 % x 24%).

As shown in Table 2, Law was the most chosen course on both age groups, expressed in percentage terms, followed by Management. Accounting was the third choice for the younger group while the older group was Psychology. The only identified case of the Technological area was an interior designer registered in a course of Architecture, who wanted to expand his field of activity,

Table 2
Participants' Courses

Courses	Total		Younger		Older	
	n	%	n	%	n	%
Law	171	52.46	126	38.65	45	13.81
Management	49	15.04	24	7.36	25	7.67
Accounting	31	9.52	17	5.22	14	4.30
Psychology	31	9.52	12	3.68	19	5.84
Human resources	23	7.06	16	4.91	7	2.15
Languages	2	0.61	0	0	2	0.61
Social communication	6	1.83	2	0.61	4	1.22
Philosophy	4	1.22	2	0.61	2	0.61
History	3	0.92	0	0	3	0.92
Architecture	1	0.30	0	0	1	0.30
Theology	1	0.30	0	0	1	0.30
Sociology	4	1.22	1	0.30	3	0.92

Figure 1 presents the dimensionality suggested by EGA. Four dimensions were estimated: 1. tangible support (the provision of material aid and/or behavioral assistance), 2. emotional and informative support (the expression of positive affect and feelings; empathetic understanding; and the offering of advice, information, and guidance), 3. social interaction support (the availability of other people to do fun things with you), and 4. affectionate support (involving expressions of love and affection).

The confirmatory factor analysis showed a good fit of the four-factor model to the data [χ^2 (146)=173.54; $p=0.06$; CFI=0.99; RMSEA=0.024; NFI=0.96]. The standardized loadings and correlations of the four-factor model are shown in Figure 2.

Although presenting very good data fit, the four-factor model does not have configural measurement invariance over the age groups compared (younger college students vs. older college students). The configural invariance analysis showed that the age groups may have different factor structure [χ^2 (292)=1077.38; $p=0.00$; CFI=0.81; RMSEA=0.12]. To discover the best factor structure of the Social Support Scale for each age group, EGA was applied using the data separated by younger college students and older college students. Figure 3 shows the structure suggested by EGA using the youth

sample. It is the same four-factor model presented earlier, with a good data fit [χ^2 (146)=173.54; $p=0.06$; CFI=0.99; RMSEA=0.024; NFI=0.96].

Figure 4 shows the standardized loadings and correlations of the social support scale factor solution for younger college students.

Figure 5 shows the structure suggested by EGA using the elderly sample. It is a two-factor model, with a good data fit [χ^2 (151)=378.73; $p=0.00$; CFI=0.95; RMSEA=0.07; NFI=0.91].

Finally, Figure 6 shows the standardized loadings and correlations of the social support scale factor solution for elderly people. Two dimensions were estimated. The first dimension is social and emotional support (which involves friendship and social support). The network of friendship relationships is not simply a link among friends but a system for making decisions, mobilizing resources, omitting and transmitting information, and other related functions combined with behavior in life and social interactions. The second dimension is instrumental support (which emerges from the performance of activities and involves exchanges of resources related to life). This dimension includes information, expertise, professional advice/guidance, material resources, sponsorship, and help in achieving challenges/making the tasks clearer.

Figure 1
Structure of the Social Support Scale estimated via Exploratory Graph Analysis

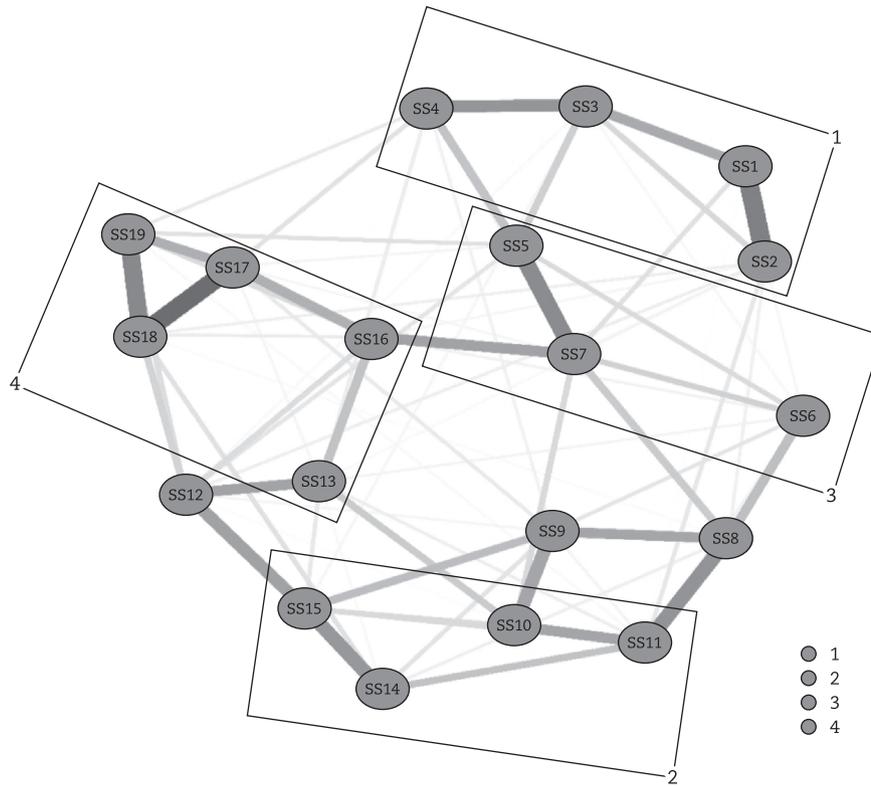


Figure 2
The standardized loadings and correlations of the four-factor model

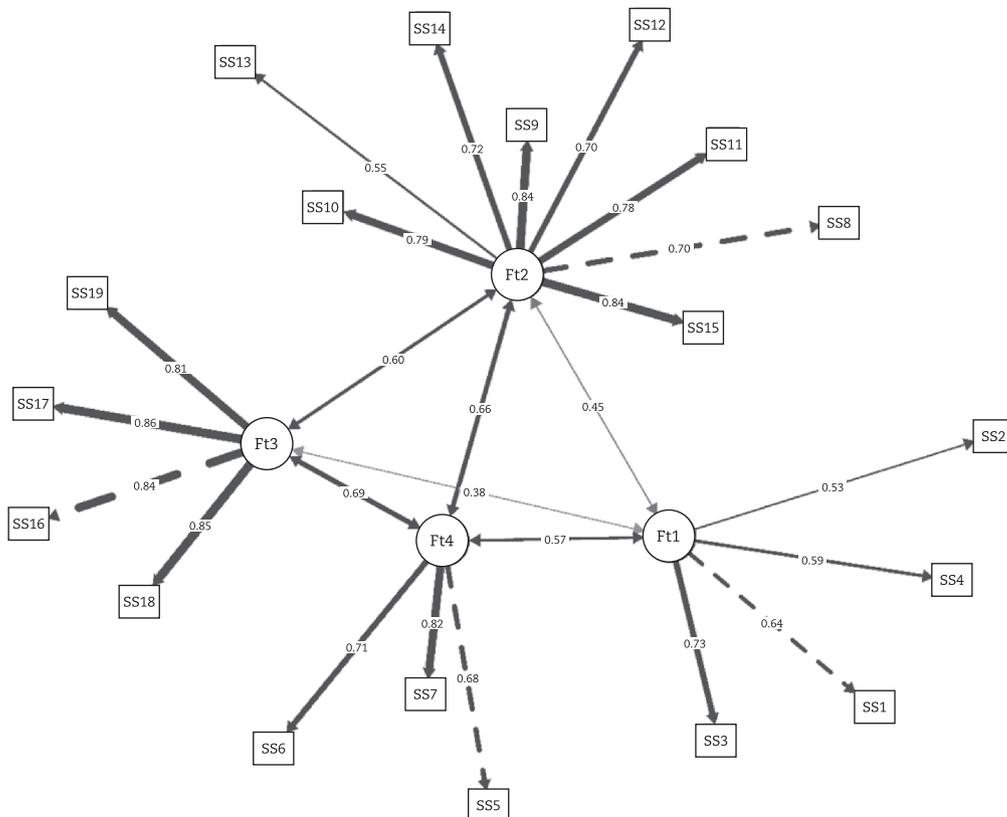


Figure 3
Structure of the Social Support Scale for younger adults estimated via Exploratory Graph Analysis

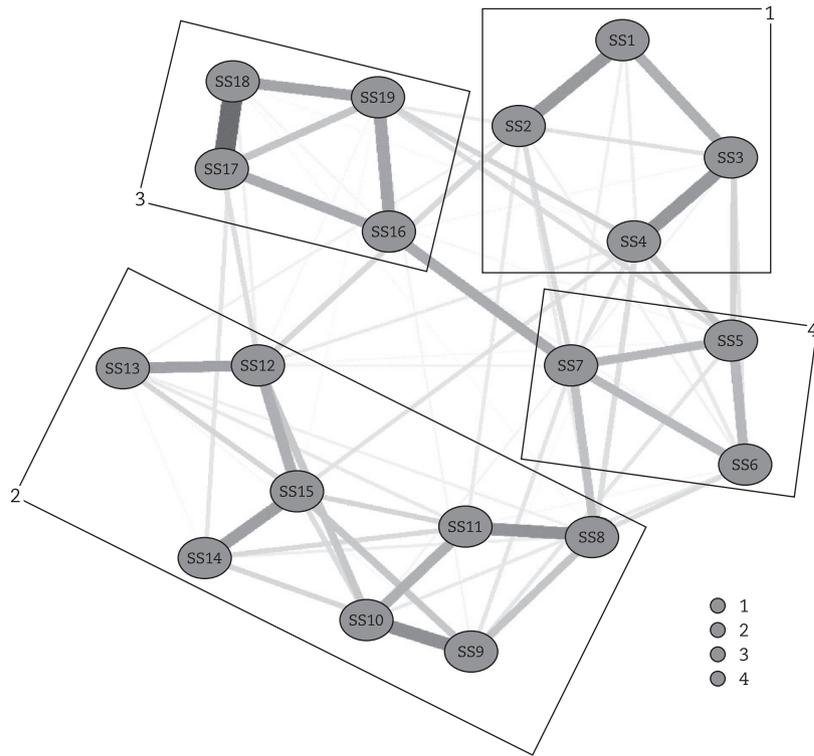


Figure 4
Standardized loadings and correlations of the four-factor model for younger adults

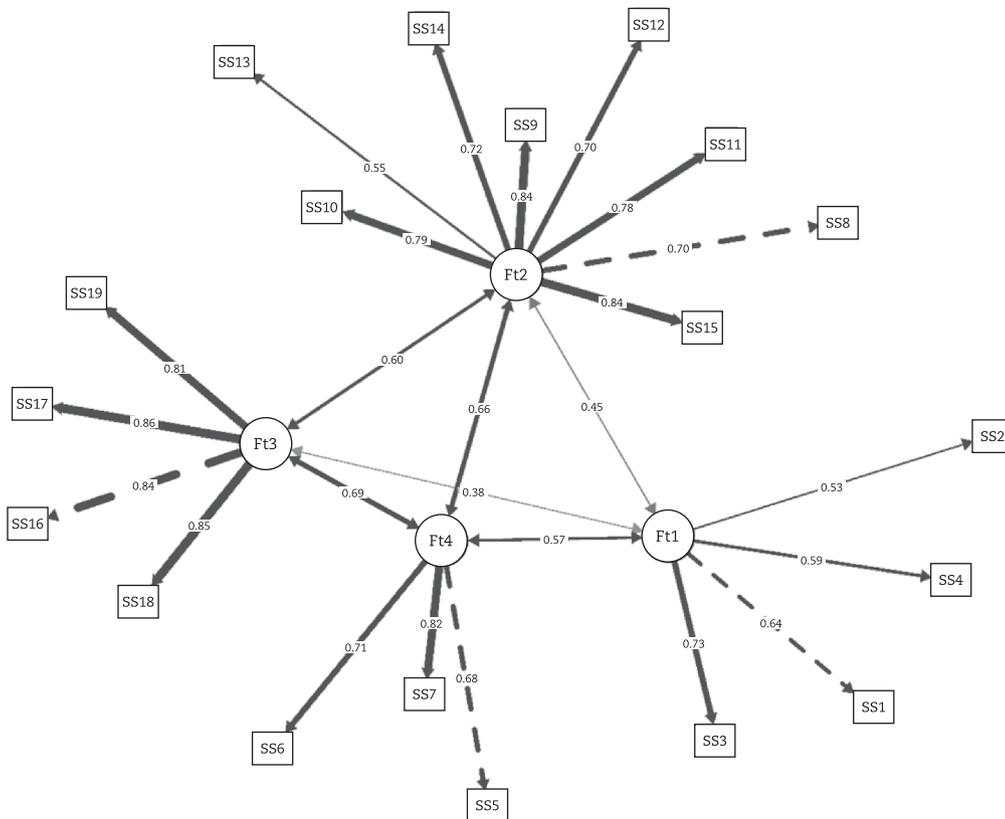


Figure 5
Structure of the Social Support Scale for elderly people estimated via Exploratory Graph Analysis

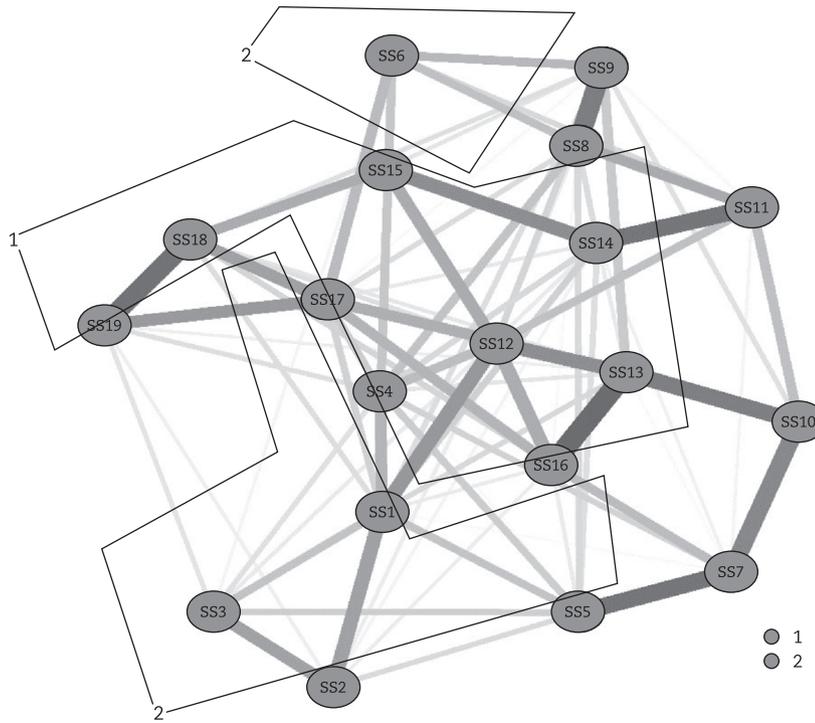
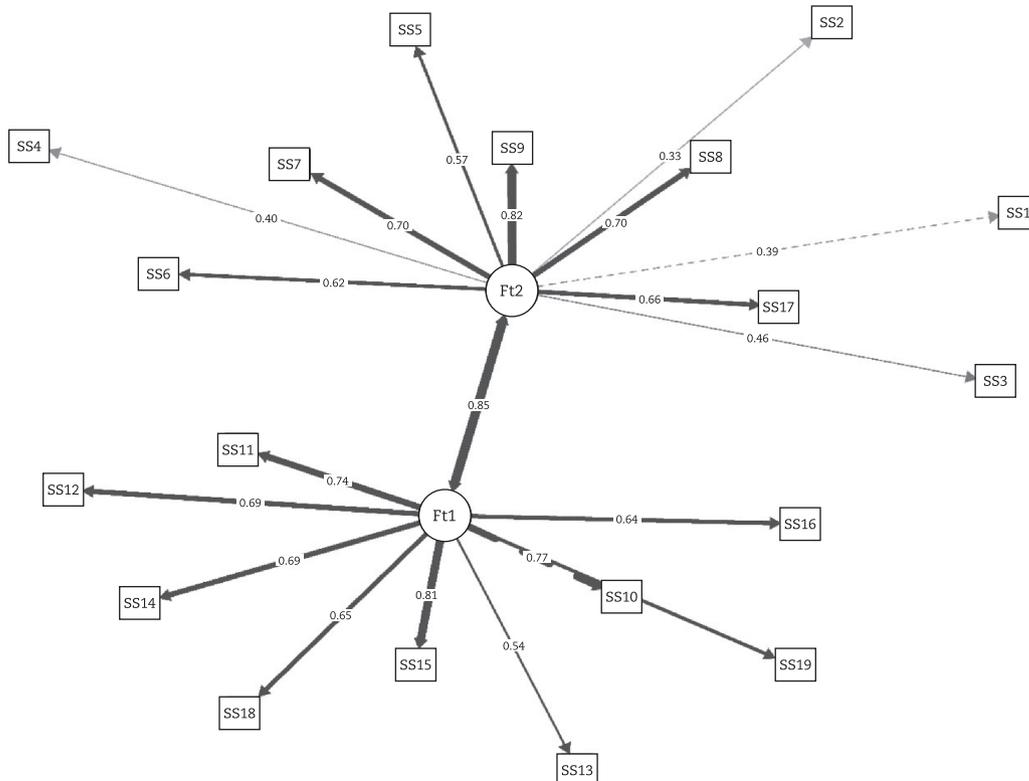


Figure 6
Standardized loadings and correlations of the two-factor model for elderly people



Discussion

The relevance of this research was to show the differences and similarities of Perceived Social Support (Sherbourne & Stewart, 1991; Griep et al., 2005) in older university students, compared to the younger ones. Also, the study is original in promoting the method of exploratory graph analysis (EGA) as a good way for data analyses (Golino, 2016; Golino, & Demetriou, 2017; Golino & Epskamp, 2017; Golino et al., 2020).

The present study also analyzed sociodemographic data such as: age, gender and type of university. Although our main scope was to compare the age differences, especially focusing on the older group, it is interesting to comment three findings that corroborated to the last reports from INEP (2020) and OCDE (2020) regarding Tertiary Education in Brazil: a) the decreasing of the number of older students at the universities (INEP, 2020); b) The prevalence of older male students at the universities, conversely to what happened in other age groups. The group of females exceeded the number of males registered at the University in mostly age groups, except for those who were 60 years and over (INEP, 2020); c) There were more tertiary students from private universities (80%), and this percentage was slightly superior than OCDE (2020) pointed out. This difference was even higher when comparing younger and older students: younger students are more nine (9) times in private universities than the older ones.

A relatively short, simple and easy-to-understand survey of functional social support represents multiple dimensions of support (emotional, informational, material, affectionate and social interaction). Current theory gives consistency to the most relevant dimensions of support (Sherbourne & Stewart, 1991). The survey items focused on the most essential aspects of social support: the perceived availability of some components of functional support.

The majority of the elderly people in this study reported high levels of perceived social support, confirming previous research (Griep et al., 2005; Zanini et al., 2009; Zanini & Peixoto, 2016). The perception of having good relationships with the family, and that these can help in times of need, is an important factor in maintaining quality of life for the elderly (Li et al., 2014). In relation to social support, trust, empathy, care, love, interest and attention will determine the extension of emotional support. On the other hand, willingness to be open to advice, suggestions and information will determine the extension of informative support.

The results presented good discriminant validity of items and convergence, which supports the dimensionality of the measures. The support subscales also presented good correlation confirming dimensions of a common higher order factor. Despite relevant correlations among dimensions, specific social support components

do not always show the same patterns of correlations in comparison with other variables (Santos et al., 2019). This could be developed using the social support scale and the topic of higher education age differences and large samples comparing the results in Brazil and overseas through the EGA technique. EGA had performed the most accurate method and produced the best large-sample properties compared to the other methods evaluated (Golino et al., 2020).

The dimension of positive social interaction, which refers to having somebody with whom one could relax and do pleasant things with, should be stimulated, especially in the elderly, in order to satisfy their needs. This finding is corroborated by the fact that emotional support has a protective effect for the elderly; as a result, it leads to feelings of commitment and to social interaction, bestowing greater meaning on their lives (Brito & Pavarini, 2012).

Comparing the two age groups, in the elderly the decline in social, organizational, educational, productive and leisure activities may be associated with losses resulting from the aging process. It may also be related to the process of socio-emotional selectivity, which affects the choice of activities and social partners. According to the theory of socio-emotional selectivity, the elderly tend to decrease their network of social relationships, but the quality of relationships and the quality of engagement are maintained through selection and optimization processes.

The elderly seek to choose activities in which they feel more competent, less threatened and more similar to their contemporaries, or whose performance favors self-esteem and self-efficacy. They tend to abandon social activities that offer them less chance of obtaining these outcomes. They relate to people who offer them emotional comfort, instead of investing in the search for information and social status. They maintain social activities carried out in close environments and leave aside those carried out in the open environment, not least because there are implicit social rules that restrict the participation of the elderly in social activities (Scheibe & Carstensen, 2010).

The scarcity of Brazilian studies regarding the relevance of social support in education for the elderly was a strong impetus for this research. Despite the study's limitations especially related to the low national representation, it is important to consider the benefit of the influence of social support in the development of the elderly. To better guide educational actions for this population, it is essential to make this knowledge their own.

Elderly people are returning to universities; this requires a great deal of gerontologists and technicians working on and researching the factors that could improve their development. Recognizing the relationship between social support and development in the elderly, it is important to have an educational plan in place in order to encourage social support in all forms.

Independent elderly university students were the majority in this sample, as much for basic day-to-day activities as for instrumental activities. Concerning the social support scale, the material and affective dimensions were more representative when compared to the others. Further empirical, national and cross-cultural study is needed to determine whether these dimensions can be differentiated in age groups.

By promoting the construction of networks that could offer social support to elderly students, the universities would improve their functional and general development as well as their social inclusion. Once incorporated into educational practices, this knowledge could contribute to the consolidation of the role of the university in gerontological education.

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Authors' contributions

We declare that all authors participated in the preparation of the manuscript. Specifically, the first author, Professor Soniárlei Vieira Leite, prepared the initial draft of the study, data collection, data analysis, discussion, and final draft of the article. Professor Lucia França, second author and doctoral advisor of the first author, participated in the initial project, data analysis, discussion, and review with the first author in all stages of the article and the final edition of the final edition text for the *Interamerican Journal of Psychological Assessment*.

Availability of data and materials

All data and syntax generated and analyzed during this research will be treated with complete confidentiality due to the Ethics Committee for Research in Human Beings requirements. However, the dataset and syntax that support the conclusions of this article are available upon reasonable request to the principal author of the study.

Competing interests

The authors declare that there are no conflicts of interest.

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