The elderly with cognitive alterations in the context of poverty: a study of the social support network

IDOSOS COM ALTERAÇÃO COGNITIVA EM CONTEXTO DE POBREZA: ESTUDANDO A REDE DE APOIO SOCIAL

ANCIANOS CON ALTERACIÓN COGNITIVA EN ÁMBITO DE POBREZA: ESTUDIANDO LA RED DE APOYO SOCIAL

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ABSTRACT

The objective of this study was to analyze the structure and role of social support networks for the elderly with cognitive alterations, who lived in a context of high or very high social vulnerability, and identify the associations between the characteristics of the networks and functional capacity. The participants were 38 aged individuals living in a context of high or very high social vulnerability whose score on the Mini-Mental State Examination was below the cut-off point. All ethical considerations were observed. The following were administered: Mini-Mental State Examination, Convoy of Social Support, Katz Index, and Pfeffer Questionnaire. The results show that the elderly participants have a large social network, with most members in their inner circle, but only a few of the members play functional roles. A correlation was observed between the gender variable and the number of social network members. No significant correlation was observed between network characteristics and the functional capacity of the elderly.

DESCRIPTORS

Social support
Aged
Cognition disorders
Social vulnerability
Geriatric nursing

RESUMO

O objetivo deste trabalho foi analisar a estrutura e função das redes de apoio social de idosos com alterações cognitivas, residentes em contexto de alta e muito alta vulnerabilidade social, além de identificar associações entre as características das redes e a capacidade funcional. Os sujeitos estudados foram 38 idosos, residentes em contexto de alta e muito alta vulnerabilidade social, que apresentaram resultado no Mini Exame do Estado Mental abaixo da nota de corte. Todos os cuidados éticos foram observados. Aplicaram-se o Mini Exame do Estado Mental, o Diagrama de Escolta, o Índice de Katz e o Questionário de Pfeffer. Os resultados demonstraram que os idosos avaliados possuem rede social grande, com predomínio de integrantes no círculo interno, porém poucos integrantes desempenham papéis funcionais. Observou-se correlação entre a variável sexo e o número de integrantes das redes sociais. Não foi observada correlação significativa entre as características das redes e a capacidade funcional dos idosos.

DESCRITORES

Apoio social
Idoso
Transtornos cognitivos
Vulnerabilidade social
Enfermagem geriátrica

RESUMEN

Se objetivó analizar la estructura y función de las redes de apoyo social de ancianos con alteraciones cognitivas residentes en ámbitos de alta y muy alta vulnerabilidad social, además de identificar asociaciones entre características de las redes y su capacidad funcional. Los sujetos fueron 38 ancianos residentes en ámbito de alta y muy alta vulnerabilidad social que presentaron resultados en Mini Examen del Estado Mental por bajo la línea de corte. Fueron observados todos los cuidados éticos. Se aplicó Mini Examen de Estado Mental, Diagrama de Escolta, Índice de Katz y Cuestionario de Pfeffer. Los resultados mostraron que los ancianos poseen una gran red social, predominando integrantes del círculo interno, aunque pocos integrantes desempeñan papeles funcionales. Se observó correlación entre la variable sexo y el número de integrantes de las redes sociales. No se observó correlación significativa entre características de las redes y capacidades funcionales de los ancianos.

DESCRIPTORES

Apoyo social
Anciano
Transtornos del conocimiento
Vulnerabilidad social
Enfermería geriátrica

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INTRODUCTION

The increase of the elderly population both in Brazil and worldwide has contributed to a greater number of studies addressing the subject. This is a recent phenomenon in Brazil, as it is in other developing countries, and is quickly developing, posing challenges to a society that is required to adapt to the new reality[1].

As the number of elderly individuals grows in the population, a greater knowledge concerning their needs is required. Additionally, the identification of changes in this population is important because the characteristics of these individuals together with the aging process can result in decline of both physical and cognitive capacities[2].

Cognitive decline is a factor that is directly related to the social vulnerability of elderly individuals because it involves cultural, social, economic, and health issues, among others[3]. Social vulnerability refers to the way one obtains information, accesses means of communication, material resources, and education, the way one copes with cultural barriers, political power and influence, and the extent to which one is free from violent coercion, as well as all aspects concerning family structure, organization and dynamics[4].

Considering the aging process and the situation of social vulnerability to which many Brazilian elderly individuals are exposed, we note the importance of social support networks for this specific population. Satisfactory social relationships seem to promote improved health conditions, but the mechanisms through which these effects work are not completely known. Social support can both protect individuals from the pathogenic effects of stressful events and positively affect the health of these people by providing resources (financial and material aid and information), improving access to health care, and regulating habits such as alcohol consumption and smoking[5].

Even though there are studies reporting an association between social support and the existence of levels of health and disease, the concept of social support still presents definitional and operational problems[6].

The Convoy of Social Support approach is an important theoretical framework to understand social support networks. It considers one's social relationships throughout life, so that it offers a theoretical approach to social relationships over time. The emergence of this model was also a way to seek a more precise manner in which to put the concept of "social support" into operation and, consequently, measure it. Hence, according to this model, "social support" refers to interpersonal exchanges that include one or more of the following: affection, assertion, and help. From this perspective, the Convoy Social Support model was idealized and grounded taking into account that: affective exchange implies fondness, admiration, respect and/or love; assertive exchange refers to an individual's agreement or acknowledgement that another's act or statement is correct, that is, such an exchange implies acknowledging another and legitimating another's acts. Finally, help exchanges are those related to the assistance or help provided in the form of resources, money, information, care, etc.[7]

The term 'convoy' has a temporal connotation meaning individuals are, over the course of their lives, surrounded by sets of people with whom they are connected through relationships that involve giving and receiving social support. These relationships, generally held with significant family members and friends to whom an individual is emotionally close, help people to successfully deal with life challenges[7].

In this context, investigating the processes related to social networks can support interventions to improve the quality of life of elderly individuals. The rationale is that social support networks have been identified as a protective factor and contribute to the maintenance of the health and well being of this population. The effects of social networks have been highly relevant for the mental health of individuals to the extent these networks meet one's needs of affiliation and belonging to social groups, and to ensure the maintenance and improvement of one's identity and self-esteem[8]. Additionally, the use of the Convoy Social Support theoretical model can provide innovation in the measurement of social support, given that the instrument's adaptation was conducted in 2008 and further studies are recommended to achieve more conclusive results.

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OBJECTIVE

To analyze the structure and function of social support networks of elderly individuals with a cognitive deficit living in a context of high or very high social vulnerability and to identify associations between the characteristics of social networks and the individuals' functional capacity.

METHOD

This descriptive, cross-sectional study with a quantitative approach was conducted in São Carlos, located in the central region of the state of São Paulo, Brazil. The study's participants were individuals who were 60 years old or older, enrolled in Family Health Strategy (ESF[a]) units, and located in areas with high or very high social vulnerability

(a)Acronyms in Portuguese

according to the São Paulo Social Vulnerability Index. This index classifies census sectors in the state of São Paulo according to the degree of social vulnerability to which residents are exposed[9].

The inclusion criteria were: being 60 years old or older; being enrolled in ESF units with a social vulnerability index of 5 or 6; having obtained a score below the cutoff point (classified according to educational level[10]) on the Mini Mental State Exam (MMSE) in a previous study; not having severe impairment of speech or comprehension; signing a written informed consent form.

Of the 370 elderly individuals enrolled in the two participating units, 197 were assessed in a study conducted in 2007. Of these, 85 scored below the cutoff point on the MMSE and composed the study's population. A total of 46 individuals remained after those who died or moved in the period were excluded. Another eight individuals were excluded after they obtained a score above the cutoff point on the MMSE. Hence, the study's final population was composed of 38 elderly individuals.

Previously scheduled interviews were held individually at the participants' households and followed a previously developed script. The following instruments were applied: MMSE for cognitive assessment, the Katz index and Pfeffer Functional Activities Questionnaire, to evaluate the individuals' performance in basic and instrumental activities of daily living, and the Social Convoy Diagram to evaluate the participants' social support network.

The Social Convoy Diagram is the instrument that graphically represents the theoretical framework of the Convoy model proposed in 1987[7], and was adapted for the Brazilian elderly population in 2008[11]. Even though it has not been validated in elderly individuals with cognitive impairment, its playful and interactive presentation facilitates its use in this population. The diagram presents three concentric and hierarchical circles. The participant is placed in the innermost circle and close and significant people are placed progressively outward in the circles. The diagram was presented in a frame made of felt together with dolls of different sizes, colors and forms (blue represented males and pink females). A piece of Velcro was fixed on the back of the dolls for them to be attached to the felt frame. We believe this playful and interactive way to present the diagram facilitates its application. The participants were asked to think about significant people present in their lives at that point in time and with whom they maintained different levels of proximity. They were then asked to think about "those people with whom you feel so close it would be difficult to imagine life without them". These people should be placed in the diagram's innermost circle. The same procedure was repeated for the intermediate circle, in which "those people to whom you do not feel so close, but who are still important to you" should be placed. Finally, for the outer circle, the participants were instructed to think about "those people who you have not mentioned yet, but to whom you feel close and believe are important to you and for this reason should be included in your network". The second stage concerning the application of the diagram involves the structural and functional aspects of the support network. This stage begins with a set of questions directed to the participant concerning the people included in his/her network. The questions address the following: name of the people included in the network, age, gender, circle in which the person was placed, type of relationship (spouse, child, grandchild, sibling, other family members, friend), time elapsed since the relationship started, frequency of contact, and distance between the residences. The assessment of the functional characteristics of the support network is based on six types of support provided and received by the studied individual. Such support includes: confiding important things; being reassured and encouraged during times of uncertainty; being respected; being cared for in a situation of disease; talking when sad, nervous or depressed; and talking about one's own health. For these functional questions, we asked the participants to look at the diagram and name those people from whom they receive each type of support or those they provide such support[7].

Data were then analyzed through descriptive and correlational statistics. The Shapiro-Wilk normality test and Spearman's correlation test were applied. The Repeated measures ANOVA test was used to correlate the results from the Pfeffer index and the characteristics of the social networks. The t test was used in the correlation among the networks' characteristics and the gender variable and the Katz index. The level of significance was fixed at 5% (p - value < 0.05).

The guidelines of Resolution 196/96, Brazilian Council of Health, concerning research involving human subjects, were complied with. The study was approved by the Ethics Research Committee at the Federal University of São Carlos (Protocol No. 135/2010) and authorized by the City Health Department. Data collection was initiated after the participants provided written consent.

RESULTS

The study's participants were elderly individuals living in areas assigned for the ESF units, classified as having high and very high social vulnerability. Among these individuals, 65.8% were women and 34.2% were men. The following profile predominated: elderly individuals aged between 70 and 79 years old (55.3%), white (52.6%), married (50.0%), illiterate (52.6%), with a monthly income of up one times the minimum wage (the minimum wage at time of data collection was R$ 465.00).

All the 38 elderly individuals participating in this study obtained scores below the cutoff point (considering educational levels) on the MMSE[11]. Most (55.3%) scored 1 to

3 points below the cutoff point, that is, they presented a low level of cognitive decline. 26.3% of the participants scored 4 to 6 points below the cutoff point, 13.1% scored from 7 to 9 points below the cutoff point, and only 5.3% presented a result of more than 9 points below the cutoff point. Table 1 presents a combination of the MMSE and the Pfeffer questionnaire to present a more specific measure of severe cognitive decline.

Table 1 – Distribution of elderly individuals according to the results of the Mini Mental State Exam and Pfeffer questionnaire – São Carlos, SP, Brazil – 2010

Pfeffer performance	Cognitive decline							
	I_1		I_2		I_3		I_4	
	N	%	N	%	N	%	N	%
Independence	16	76.2%	8	80.0%	0	0.0%	0	0.0%
Dependence	5	23.8%	2	20.0%	5	100.0%	2	100.0%
Total	21	100.0	10	100.0	5	100.0	2	100.0

The results concerning the participants' social support networks are presented in two parts: one addresses structural aspects and the other addresses the functional aspects of the social networks.

Structural aspects of the elderly individuals' social support networks

The 38 participants reported that 470 individuals comprised their social networks, that is, an average of 12.4 people per network. The diagram's innermost circle, where the closest people are included (those without whom it would be difficult to live) was the one that presented the largest number of members (350), with an average of 9.2 people per network. Image 1 represents the social network of a female participant with a large number of individuals within the innermost circle.

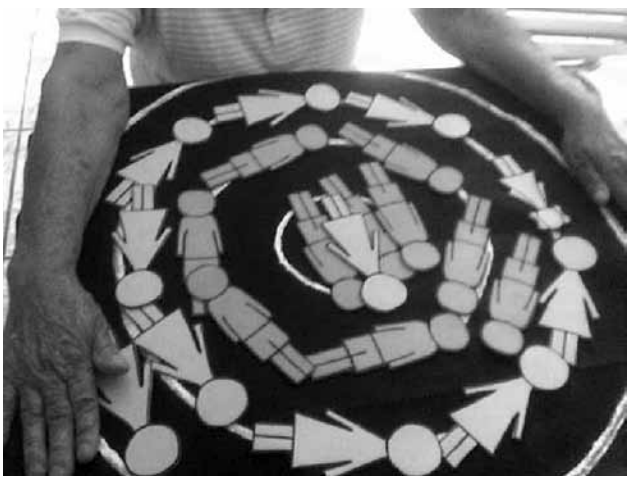

Figure 1 – The social support network of the participant *Margarida* – São Carlos, SP, Brazil – 2010

The following was observed in relation to the participants' closest people placed in the innermost circle: women predominated (54%); 24.3% were aged between 31 and 40 years of age; most (45.7%) were the participants' children, followed by their grandchildren (21.4%). Hence, in most cases, the participants have known the individuals placed in their innermost circle for more than 40 years, have daily contact with these individuals or even live with them (64.0%). In relation to distance between the participants' houses and most (44.6%) of the individuals placed in the innermost circle, the participants reported their houses were up to 15 minutes away; while 23.4% of the participants live with the individuals placed in the innermost circle.

A total of 116 individuals, those not so close people but still considered to be significant, were placed in the intermediate circle, that is, an average of three individuals per network. Again, female individuals predominated (54.3%); aged 60 years old or older (23.3%); most (34.5%) was classified as family member other than spouse, child, or grandchild. Grandchildren are individuals who appear in second place both in the innermost and intermediate (28.4%) circles. For the most part (25.9%), the participants knew the individuals placed in the second circle 10 years at most, and contact was daily or people even lived together (37.1%). Most (46.5%) participants lived 15 minutes away from the participants of the intermediate circle followed by those (34.5%) who lived more than one hour away.

In the third circle, the most distant from the interviewee, people were placed who had not been mentioned yet, but who were close and important enough to be included in the elderly individual's social network. Only three out of the 38 participants placed people in this circle. These participants mentioned a total of four people in the external circle, resulting in an average of 0.1 people per network. All these were women, three were between 51 and 60 years old, and one was aged between 31 and 40 years old. Three were reported to be friends and one was a family member other than spouse, child, or grandchild. These individuals lived 15 minutes away, at most, had daily contact and had known each other for up to 20 years.

In addition to the fact that the participants' social networks were predominantly composed of women, data analysis revealed that the social networks of the female participants were larger than those of the male participants. A statistically significant correlation was observed between gender and the number of members within networks ($p<0.01$).

Functional aspects of the elderly individuals' social networks

The functional aspects of the participants' social support networks were assessed through six types of support: confiding important things; being reassured and encouraged during times of uncertainty; being respected; being cared for in a situation of disease; talking when sad, nervous or depressed; and talking about one's own health. In addition to listing the people from whom the participants receive each type of support, they also listed those to whom they provided support.

The analysis of the six support categories revealed that the elderly individuals provided and received all types of support, mostly from their children, female individuals, aged between 30 and 39 years old, who lived 15 minutes away, at most, and had daily contact or even lived together with the participants.

In relation to 'confiding important things', 72.3% of the 470 individuals included in the elderly individuals' networks did not provide or receive this type of support. Only 7.7% of these provided and received such support from the participants, 12.3% received this support from the elderly individuals, while 7.7% provide and receive support.

Support involving 'being reassured and encouraged in times of uncertainty' is not provided or received by 56.8% of the 470 individuals composing the network. The elderly individuals received this type of support from 16% of the individuals from their circles and provided it to 16.6% of them. A total of 10.6% of the individuals composing the network received and also provided such support.

The type of social support for a greater number of individuals composing the networks refers to respect and being respected. The elderly individuals provided and received this type of support from 89.7% of those composing the networks. People providing such support totaled 2.8% of the individuals, those who only received such support were 0.2%, and those who did not receive or provide this support totaled 7.7%.

Being cared for when in a situation of disease was another type of support investigated and the results show that 31.5% did not receive or provide this support to the participants. Only 7.9% of the participants provided such support to the elderly individuals, while 35.1% received this type of support from the elderly individuals; 25.5% of the individuals received and provided this type of support.

The elderly individuals did not receive nor provide support related to 'talk when sad, nervous or depressed' from 76.4% of the individuals composing the networks. A total of 7.7% of these individuals received such support from the elderly individuals, while 9.8% provided it to the participants and only 6.2% of the individuals provided and received such support.

Finally, in relation to 'talk about one's own health', most (61.3%) of the individuals included in the networks did not receive from or provide to the elderly individuals this type of support. A total of 11.1% of the individuals provided such support to the elderly individuals and 6.8% of them received such support; 20.8% received and provided this type of support.

In relation to the elderly individuals' functional condition, assessed through the Katz index and Pfeiffer questionnaire, we observed that 89.5% of the 38 elderly participants were classified as independent in the performance of daily living activities; 2.6% were partially dependent and 7.9% were totally dependent. In relation to instrumental daily living activities, 63.2% were classified as independent and 36.8% as dependent individuals.

No statistically significant correlations were found between the characteristics of the elderly individuals' social networks and their performance of basic and instrumental activities of daily living.

DISCUSSION

The answers of the studied elderly individuals concerning their social support networks should be taken into account despite their cognitive deficiency. Even though their perceptions related to the social support network were sometimes distorted due to cognitive decline, their answers concerning the diagram may in fact indicate their real attitudes. Such attitudes may impede the possibility of receiving support; consequently, these individuals may be deprived of the beneficial effects on health promoted by perceived social support. Additionally, the elderly individuals with severe cognitive impairment (language and comprehension) were already excluded from this study; most of the individuals included in this study presented low levels of cognitive decline, specifically to avoid potential distortions. A study addressing individuals with Alzheimer's disease reported that the participants provided imprecise information concerning their clinical conditions but showed a relatively preserved ability to identify the presence of psychological symptoms[12].

The socioeconomic characteristics most frequently observed in the studied population are similar to those found in other studies. Another study conducted in São Carlos, SP, Brazil with 523 elderly individuals reported the predominance of women aged between 60 and 69 years old, married, with a low level of education and income[13]. A study conducted in Jequié, BA, Brazil investigated 117 dependent elderly individuals and reported they were women, illiterate, widowed, with monthly incomes ranging from one to three times the minimum wage[14].

The results showing a larger number of female participants may be related to the fact that women have a longer life expectancy than men. Such a fact is attributed to the

women's low exposure to certain occupational risk factors, lower prevalence of smoking and alcohol consumption, differences in terms of attitude in relation to disease and impairment, and greater coverage of healthcare due to gynecological-obstetrical care[15].

With regard to the elderly individuals' social support networks, the importance of identifying the number of people composing their social network and who they are is related to the fact that few social contacts are closely related to the development of impairment and diminished physical function[16].

This study's results corroborate those reported by the study in which the Convoy Diagram was adapted, in terms of disposition of individuals in the networks. The study adapting the instrument assessed 15 elderly individuals and also observed an average of four people in the innermost circle[11].

The larger number of women in social networks in all the circles may be explained by the fact that women are more competent in terms of interpersonal skills, which enables them to keep warmer and more intimate relationships. Hence, not only do the social relationships of women have better quality than those of men, but their social support networks are composed of a larger number of people than those of men. Another important aspect originates in the family sphere, since women are most commonly the primary caregivers of the remaining family members over the course of their lives, which may be associated with the maintenance of this social role or the possibility of receiving care from family members in return[17-18].

Another important aspect to consider is related to the type of relationship established between the elderly individuals and those composing their network. The main social contact of adult individuals is their spouses, however, as people age, this role is inverted and spouses give place to children as the main individuals comprising their social network. This fact is likely to be related to widowhood, however, the presence of young individuals, mainly children, in the participants' network promotes psychological wellbeing. In addition to the important role the individuals' children play in psychological terms, they are also essential to help in activities of daily living[19].

As observed in each type of support, the elderly individuals reported providing more support than receiving it, which may be beneficial because when these individuals become involved and help others, a positive effect is observed in reducing psychological suffering: they experience a sense of worth and of being involved with their family and community. Additionally, excessive assistance to them may cause suffering in elderly individuals. Hence, it is important in these situations to offer the elderly individuals the opportunity to act reciprocally so they do not feel too dependent or that they are a burden to others[20].

No statistically significant correlation was observed in this study between the characteristics of participants' social networks and their functional capacity, though a relationship between social support and functionality was reported in a study conducted in Denmark addressing 1,396 elderly individuals. The study's objective was to establish whether social relationships are determinant of impairment among elderly individuals and its results show that the diversity of social relationships and participation in social activities are key factors in maintaining functionality in individuals 75 years old or older[21]. A systematic review conducted in the MEDLINE, PsycINFO, SOCA, and EMBASE databases covering from 1985 and 1997 concluded that the existence of a small number of social contacts is related to the development of impairment and reduced physical function[16].

In addition to the relationship between social support and functionality, it is extremely important to consider the specificity of cognitive impairment in the studied population. The hypothesis is that social life and different leisure activities function as a protection factor against cognitive decline. These activities help elderly individuals keep their autonomy within their family and sociocultural context, which is essential for their cognitive functions and psychological wellbeing[2]. Cognitive decline hinders the performance of activities of daily living and social and family relationships, gradually harming an individual's autonomy. Additionally, with aging, the maintenance of quality of life is closely related to the elderly individual's capacity to perform functions required in daily life, and consequently, keeping independence within their socioeconomic and cultural context[22].

CONCLUSION

Elderly individuals with cognitive deficits living in a context of poverty have large social networks. The innermost circles of their networks contain the largest number of individuals, however, only a few perform functional roles. Most of the individuals composing the participants' networks and providing or receiving support were the elderly individuals' children, who were mainly female individuals, aged from 30 to 39 years old, lived 15 minutes away from the participants' house, and had contact daily or even lived together with the participant.

There is a scarcity of studies addressing this subject both in Brazil and in the international context. Nonetheless, this study's results reveal that the direct relationship between satisfactory social relationships and health and functional capacity in elderly individuals living in a context of poverty is essential for the development and guidance of health actions and policies directed to the elderly, considering that the elderly are a priority in the Pact for Health and functionality is the paradigm of the aging process. Cognitive impairment in these elderly individuals reinforces the need to provide integral care, taking into ac-

count the social networks that meet their support needs and ensure them a better quality of life and better health conditions.

Taking the family (the main source of care in Brazil) as a bridge to establish satisfactory social networks, nursing workers can provide social support to elderly individuals within primary health care services, positively affecting their functional capacity and cognitive condition.

A limitation of this study is the fact that participants' answers may be distorted due to some level of cognitive deficit. Further studies are recommended to address a representative sample of the population. The Convoy Diagram was easy to apply and useful to assess the social support networks of elderly individuals with cognitive deficit due to its playful characteristics. The participation of the studied individuals was voluntary and interested and they did not present any comprehension problems during the application of the instrument.

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