

## Effectiveness of an educational intervention on knowledge-attitude-practice of older adults' caregivers

*Efetividade da intervenção educativa no conhecimento-atitude-prática de cuidadores de idosos*  
*Eficacia de la intervención educacional en el conocimiento-actitud-práctica de cuidadores de adultos mayores*

Andréa Carvalho Araújo Moreira<sup>1,II</sup>, Maria Josefina da Silva<sup>I</sup>, Juan José Tirado Darder<sup>I,III</sup>,  
Janaína Fonseca Victor Coutinho<sup>I</sup>, Maristela Inês Osawa Vasconcelos<sup>I,II</sup>, Marília Braga Marques<sup>I</sup>

<sup>I</sup> Universidade Federal do Ceará, Faculty of Pharmacy, Dentistry and Nursing. Fortaleza, Ceará, Brazil.

<sup>II</sup> Universidade Estadual Vale do Acaraú, Health Sciences Center. Sobral, Ceará, Brazil.

<sup>III</sup> Universidad Cardenal Herrera, Colegio de Enfermería de Valencia. Valencia, Spain.

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### ABSTRACT

**Objective:** To compare the knowledge, attitude and practice of older adults' caregivers before and after an educational intervention in the domains of the care between caregiver and older adult, feeding, bathing, hygiene and mobility and transportation. **Method:** Quasi-experimental study carried out with 82 caregivers, of which 34 participated in the intervention. Interviews were conducted through a knowledge, attitude and practice research on the older adults' care. **Results:** The educational intervention led to improvements in knowledge, attitude and practice, with statistical significance of attitude ( $p < 0.020$ ) and practice ( $p < 0.001$ ), in the domain of the care between caregiver and older adult; knowledge ( $p < 0.001$ ) and practice ( $p < 0.003$ ) in feeding; Knowledge ( $p < 0.001$ ) and practice ( $p < 0.001$ ) in bathing and hygiene; and knowledge ( $p < 0.001$ ), attitude ( $p < 0.001$ ) and practice ( $p < 0.001$ ) in mobility and transportation. The analysis of the 34 caregivers who started and completed the study showed an improvement in attitude in most of the domains. **Conclusion:** the educational intervention is an effective and viable strategy for older adults' caregivers. **Descriptors:** Home Nursing; Health Services for the Aged; Caregivers; Health Knowledge, Attitudes, Practice; Health Education.

### RESUMO

**Objetivo:** Comparar conhecimento, atitude e prática de cuidadores de idosos nos domínios da relação de ajuda cuidador-idoso, alimentação, banho e higiene, mobilidade e transferência, antes e após uma intervenção educativa. **Método:** Estudo quase-experimental, realizado com 82 cuidadores, sendo que 34 participaram da intervenção. Foram realizadas entrevistas por meio do inquérito avaliativo de conhecimento, atitude e prática do cuidado ao idoso. **Resultados:** A intervenção educativa promoveu melhoria do conhecimento, da atitude e prática, com significância estatística da atitude ( $p < 0,020$ ) e prática ( $p < 0,001$ ), na relação de ajuda cuidador-idoso no domicílio; conhecimento ( $p < 0,001$ ) e prática ( $p < 0,003$ ), na alimentação do idoso; conhecimento ( $p < 0,001$ ) e prática ( $p < 0,001$ ), no banho e higiene; e conhecimento ( $p < 0,001$ ), atitude ( $p < 0,001$ ) e prática ( $p < 0,001$ ), na mobilização e transferência. Quando analisados separadamente os 34 cuidadores que iniciaram e concluíram o estudo, houve melhoria da atitude na maioria dos domínios. **Conclusão:** a intervenção educativa é uma estratégia possível e efetiva para o cuidador de idosos. **Descritores:** Assistência Domiciliar; Serviços de Saúde para Idosos; Cuidadores; Conhecimentos, Atitudes e Prática em Saúde; Educação em Saúde.

### RESUMEN

**Objetivo:** Comparar conocimientos, actitudes y prácticas de cuidadores de adultos mayores en los dominios de la relación de ayuda cuidador-adulto mayor, alimentación, baño e higiene, movilidad y traslado, antes y después de una intervención educativa. **Método:** Estudio cuasi-experimental, realizado entre 82 cuidadores, de los cuales 34 participaron de la intervención. Se realizaron entrevistas mediante la encuesta evaluativa de conocimiento, actitud y práctica de la atención a la persona mayor. **Resultados:** La

intervención educativa promovió una mejoría del conocimiento, de la actitud y de la práctica, con significancia estadística de actitud ( $p < 0,020$ ) y práctica ( $p < 0,001$ ) en la relación de ayuda del cuidador de persona mayor a domicilio; conocimiento ( $p < 0,001$ ) y práctica ( $p < 0,003$ ), en la alimentación del adulto mayor; conocimiento ( $p < 0,001$ ) y práctica ( $p < 0,001$ ), en el baño y en la higiene; y conocimiento ( $p < 0,001$ ), actitud ( $p < 0,001$ ) y práctica ( $p < 0,001$ ), en la movilización y traslado. Según el análisis realizado separadamente de los 34 cuidadores que empezaron y terminaron el estudio, se observó una mejora de la actitud en la mayoría de los dominios. **Conclusión:** la intervención educacional es una estrategia posible y eficaz para el cuidador de adultos mayores.

**Descriptores:** Atención Domiciliaria; Servicios de Salud para Adultos mayores; Cuidadores; Conocimientos, Actitudes y Prácticas en Salud; Educación en Salud.

CORRESPONDING AUTHOR **Andréa Carvalho Araújo Moreira** E-mail: dreamoreira@yahoo.com.br

## INTRODUCTION

Population ageing can lead to a larger number of individuals with physical and emotional disorders, which increases the demand for caregivers<sup>(1)</sup>. In Brazil, there is a high prevalence of functional disability in older adults and a variability between the genders, with a 42.8% rate among women and 39.6% among men<sup>(2)</sup>. Functional incapacity among older adults directly interferes in their family, since their dependence in Activities of Daily living (ADLs) requires the presence of a caregiver.

The caregiver is a person, whether or not a family member, who undertakes the care of the older adult or dependent, with or without remuneration, assisting them in their ADLs<sup>(3-4)</sup>. The following nomenclatures and characteristics are present in the literature: formal caregivers, who are paid to provide care; informal caregivers, who are not paid; primary or main caregivers, who are always with the older adult and are responsible for performing almost all tasks; and secondary caregivers, who only rarely care for them<sup>(5)</sup>.

Caregivers are in an autonomous network that is not yet part of formal services; also, they lack orientations and support from health professionals<sup>(6)</sup>. Health professionals usually do not evaluate the family, the caregivers' knowledge and the necessary skills to assist the older adult in activities such as feeding, personal hygiene, locomotion and physical activities<sup>(7)</sup>. Consequently, many caregivers learn through trial and error, which can cause fear and anxiety due to the risk of harming the older adult<sup>(7)</sup>.

Thus, nurses have a relevant role in the assistance provided to caregivers, since they have the skills to identify vulnerable situations and to conduct interventions that can minimize negative influences on the care process and on the well-being of caregivers. Therefore, they can provide an effective care and preserve the health of these individuals<sup>(1)</sup>.

Educational actions promoted by nurses have had success with caregivers, fostering a sense of co-responsibility and providing a safer home care to older adults<sup>(8)</sup>. Therefore, health education is part of the nursing practice as a promising strategy to address the multiple health problems that affect populations and their social contexts. Nurses stand out as health educators, since they are the professionals who mostly assumed this role in the care process.

Given the above, improving the knowledge about the care for the older adult at home can lead to an attitude change among the caregivers and, if the knowledge is properly applied, through effective and viable educational strategies, it can change their practice of caring. The concern about the caregiver is recent in

the country and, in order to make the care of the older adult safer, it is necessary to implement educational interventions encompassing knowledge, attitude and practice.

This study is relevant because, in the Brazilian context, there is a demand for caregivers with specific educational needs related to elder home care. Therefore, this is an important research for the health system, since it proposes a nursing intervention that aims at qualifying this care and promoting health to this population.

## OBJECTIVE

To compare the knowledge, attitude and practice of older adults' caregivers before and after an educational intervention in the domains of the care relationship between caregiver and older adult, feeding, bathing, hygiene, mobility and transportation, aiming to promote the autonomy and functional capacity to the older adult.

## METHOD

### Ethical aspects

The project was approved by the Research Ethics Committee of the Universidade Estadual Vale do Acaraú (UVA).

### Design, setting and period

Quasi-experimental study carried out in the city of Sobral-CE. The research setting were the households of the older adults in home care enrolled in the Better Stay Home Program and in family health teams of the territories of Coelce, Terrenos Novos and Alto da Brasília. The choice for these settings was intentional, because they contained a significant number of people in home care, according to data from the Health Secretariat of Sobral-CE from 2015. Data collection occurred from February to July 2015.

### Population or sample: inclusion and exclusion criteria

The estimated population of older adults' caregivers was 7,160, considering the total of 23,869 older adults enrolled in the Primary Care Information System (SIAB) in November 2015 and the expected proportion of individuals with the characteristic of interest (disability) - 30%. The non-probabilistic sample consisted of 82 older adults' caregivers. Caregivers who met the following inclusion criteria participated on the research: being the primary caregiver, being 18 years old or older, being responsible for the care for at least six months, and having self-reported ability to understand and answer the data collection instrument. The

exclusion criteria were: caregivers who gave up performing this role during the period of data collection; when the older adult in home care died; and caregivers who gave up participating in the study after the beginning of the data collection.

In the first stage of the research (pre-test), 87 caregivers were interviewed, of whom two were excluded due to death of the older adult and three abandoned their function during the period of data collection. Thus, 82 caregivers participated in the first stage, 34 in the second stage (Educational Intervention - EI) and also 34 in the third stage (immediate post-test).

The EI was planned for an average of 20 participants per group, in a total of four sessions, which would reach the sample of 82 participants. However, due to the attendance difficulties faced by the participants, mostly related to the fact that they were primary caregivers and did not have anyone to replace them and that no financial incentive was offered, and also because of a lack of motivation, four sessions with different groups were conducted. The first group had three (3) caregivers, the second had fifteen (15), the third had nine (9) and the fourth had seven (7), totaling 34 participants (57.5% loss).

### Study protocol

Data were collected in three stages. The first included the elaboration of the knowledge attitude and practice instrument (KAP), the interview form and the pre-test. The KAP instrument was elaborated by the researcher, with the collaboration of six nurse specialists who were professors and researchers - three with a Certificate in Geriatrics and Gerontology from the Brazilian Society of Geriatrics and Gerontology - and a foreigner, who had developed the software Holistic Home Care Planning Model (MPCAHD)<sup>(9)</sup>. This software, along with the recommendations of the Ministry of Health on the caregiver activities<sup>(3)</sup>, were the basis for the elaboration of the KAP, which was structured in four domains: 1. Care between caregiver and older adult; 2. Feeding; 3. Bath and hygiene 4. Mobility and transportation. For each domain, knowledge, attitude and practice were evaluated. The experience of the specialists was ensured by the authorship of at least one scientific paper in which a KAP instrument was applied and/or that addressed the topic, published in a "Qualis A" journal.

The evaluation of the knowledge, attitude and practice of caregivers occurred according to criteria based on previous studies<sup>(10-11)</sup>, classifying those as adequate or inadequate.

### Domain I – Care between caregiver and older adult

- a) Knowledge. Adequate: When the caregiver is aware of the health problems of the patient, has no difficulty supporting the patient with their health problems and knows the consequences of the state of dependence for the patient. Inadequate: When the caregiver is not aware of the health problems of the patient, has difficulty supporting them with their health problems or do not know the consequences of the state of dependence.
- b) Attitude. Adequate: When the caregiver fully agrees to be responsible for the well-being of the patient. When the caregiver fully agrees that the patient is able to adopt new behaviors to improve their well-being and that it is important

to give them the opportunity to make choices. Inadequate: When the caregiver partially agrees or disagrees to be responsible for the well-being of the patient. When the caregiver partially agrees or disagrees that the patient is able to adopt new behaviors to improve their well-being and that it is important to give them the possibility to make choices.

- c) Practice. Adequate: When the caregiver plans the care activities with the patient and/or is always encouraging them to take care of themselves in the basic activities of daily living. Inadequate: When the caregiver does not plan the care activities and/or does not encourage the patient to take care of themselves in the basic activities of daily living.

### Domain II – Feeding

- a) Knowledge. Adequate: When the caregiver received orientations on the patient's diet in home care and identifies difficulties in chewing and swallowing (coughing and choking) as common problems related to eating. Also, the caregiver can cite at least two consequences of inadequate feeding for the older adult and two care actions that help the patient to eat with autonomy and independence. Inadequate: When the caregiver has never received guidance on the patient's diet in home care or has received, but does not identify difficulties in chewing and swallowing (coughing and choking) as common problems related to eating. Also, the caregiver does not know how to cite the consequences of inadequate feeding for the patient or two care actions that help the patient to eat with autonomy and independence.
- b) Attitude. Adequate: When the caregiver fully agrees to follow food recommendations and meal times, prepares the dining environment so that the patients can serve themselves and encourages them to eat their own hands if possible. Inadequate: When the caregiver partially agrees or disagrees to follow food recommendations and meal times, does not prepare the dining environment so that the patients can serve themselves or does not encourage them to eat with their own hands if they can.
- c) Practice. Adequate: When the caregiver always controls the patient's food intake (quality, quantity and schedules), properly positions the patient and observes for any difficulty in chewing and swallowing. Inadequate: When the caregiver sometimes or never controls the patient's food intake (quality, quantity and schedules) and/or does not position the patient properly and/or does not observe for any difficulty in chewing and swallowing.

### Domain III – Bathing and Hygiene

- a) Knowledge. Adequate: When the caregiver received orientations on bathing and hygiene in home care, reports that the frequency of bathing will depend on the state of health and hygiene needs, but that oral hygiene should be performed upon waking and after each meal. Also, the caregiver is aware of the risk of falls during bathing and of the importance of carefully drying the patient's feet to avoid mycoses and exercising them to prevent atrophies. Inadequate: When the caregiver has never

received advice about bathing and hygiene in home care or has already received, but does not mention that the frequency of bathing will depend on the state of health and hygiene needs nor that oral hygiene should be performed upon awakening and after each meal. Or, he/she is not aware of the risk of falls during bathing and of the importance of carefully drying the feet to avoid mycoses and exercising them to prevent atrophies.

- b) Attitude. Adequate: When the caregiver fully agrees to respect and ensure the patient's privacy, to investigate the reasons for resisting the bath, to encourage the patient to dress or remove their own clothing and to allow them to choose hygiene products and clothing, if possible. Inadequate: When the caregiver partially agrees or disagrees to respect and ensure the patient's privacy, to investigate the reasons for resisting the bath, to encourage the patient to dress or remove their own clothing or to allow them to choose hygiene products and clothes, if possible.
- c) Practice. Adequate: When the caregiver always prepares a warm and safe bath environment, adopts safety procedures (sitting bath, installation of grab bars and use of anti-slip mats) and avoids interruptions during bathing. The caregiver also observes daily changes in the skin of the elderly, performs oral hygiene upon waking and after each meal, cleans and dries the perianal region after urinary and intestinal elimination and cares for the patient's feet, drying between the fingers, stimulating exercises and looking for any change. Inadequate: When the caregiver sometimes or never prepares a warm and safe bath environment, sometimes or never adopts safety procedures (sitting bath, installation of grab bars and use of non-slip mats) or sometimes or never avoids interruptions during bathing. Also, the caregiver does not observe daily changes in the skin of the patient, does not perform oral hygiene upon waking and after each meal, does not always clean and dry the perianal region after urinary and intestinal elimination and does not always care for the patient's feet, drying between the fingers, stimulating exercises and looking for possible changes.

#### **Domain IV - Mobility and Transportation**

- a) Knowledge. Adequate: When the caregiver has received orientation on how to change the position, transfer the patient from one place to another and assist them to walk at home and also recognizes deformities, pressure ulcers and bedsores as risks to the patient when they remain in the same position for more than two hours. The caregiver can also cite at least two steps to help the patient change position, walk or move from one place to another. Inadequate: When the caregiver has never received orientation on how to change the position, transfer the patient from one place to another and assist them to walk, or has received orientation but does not recognize deformities, pressure ulcers or bedsores as risks to the patient when they remain in the same position for more than two hours. Also, the caregiver cannot cite at least two steps to help the patient change position, walk or move from one place to another.

- b) Attitude. Adequate: When the caregiver fully agrees to stimulate movement, even in simple daily activities, and to promote a safe home environment making changes whenever they identify the risk of falls. Inadequate: When the caregiver partially agrees or disagrees to stimulate movement, even in simple activities, and to promote a safe home environment, making changes whenever they identify risks of falls.
- c) Practice. Adequate: When the caregiver changes the position of the bedridden patient every two hours, has exercises scheduled in the routine of care at least three times a week, and, whenever necessary, adapts the environment of the house for better locomotion. Inadequate: When the caregiver does not change the position of the bedridden patient every two hours, does not include scheduled exercises at least three times a week, and only occasionally adapts the environment for better locomotion.

The interview form consisted of 17 items divided in two sections: section I - demographic and socioeconomic conditions; section II - home care for older adults. In the first stage, a schedule for home visits aimed at performing the pre-test and characterizing the caregiver's profile was elaborated. After completing the pre-test KAP instrument, the caregivers were invited, by letter, to the next stage of the study (intervention). Participants were contacted by telephone three days before the intervention and were also reminded on the day before.

The second stage - Educational Intervention (EI) - was carried out on a health education group and lasted four hours. The topics discussed included the caregiver-older adult relationship and the care given to the older adult at home (feeding, bathing and hygiene, mobility and transportation). The duration of the intervention took into account the possibility of the caregivers expressing their doubts and their levels of stress, fear and anxiety caused by the overload of care.

The EI was conducted by a nurse with the help of five trained nursing students from the 10th semester of the Universidade Estadual do Vale do Acaraú. The EI occurred in four distinct sites, close to the caregivers' homes. For the EI, educational videos, simulations and group discussions were used. Written orientations were also distributed.

The third stage was the immediate post-test KAP. The immediate post-test was conducted because the EI addressed the caregivers' KAP and this procedure was used in a similar study<sup>(12)</sup>. In this study, it was important to guarantee a partial evaluation (immediate post-test) because of the difficulty to recruit this type of group, considering they were primary caregivers (full-time daily care of the older adult) and had a disadvantaged social status, as seen in the literature<sup>(13)</sup>. It is also important to point out that the effectiveness indicator of an evaluation process considers the application of partial evaluations at the end of the stages of a program/intervention as a relevant step<sup>(14)</sup>.

#### **Analysis of results and statistics**

Data from the KAP instrument were typed in Excel version 10 and analyzed in the software Statistical Package for Social Sciences (SPSS) version 21.0. Initially, univariate descriptive

analysis was performed along with the calculation of central tendency and frequency distribution. The McNemar test was used to compare KAP domains before and after the intervention. Results with  $p < 0.05$  were considered statistically significant.

## RESULTS

The socio-demographic and professional profile of the caregivers was characterized by a mean age of 47.82 years (Minimum: 18; Maximum: 77, SD: 14.02) with 22.0% of them being 60 years old or older. 85.4% of the caregivers were women and 14.6% were men, while a similar percentage was found for married and single caregivers, 40.2% and 59.8%, respectively. The majority, 45.1%, had incomplete elementary education and 20.7% completed high school. Regarding their work situation, 68.3% were unemployed and 82.9% were not paid to care for the older adult. A total of 56.1% were children of the older adult and 13.4% were spouses. Most caregivers (75.6%) lived with the older adult in a situation of dependency, predominantly for more than three years (51.2%). The number of hours of daily care was, on average, 19.56 hours (Minimum: 4, Maximum: 24, SD: 6.7) and 64.6% said they received assistance. The people who most collaborated in the care activities were the members of the same family, representing 88.9%, while health professionals represented only 7.4% of the help. In this respect, it should be noted that 91.0% of the caregivers did not receive care training.

Table 1 shows the KAP instrument data, considering the comparative analysis of the 82 caregivers who participated in the study before the intervention and the 34 evaluated after the intervention. It was considered pertinent to investigate the care relationship between the caregiver and the patient at home, based on the belief that an appropriate home care starts from the establishment of a bond or a motivation, which arouses in the caregiver the interest in the health-disease process and the recognition of their important role. This, in turn, helps to promote the well-being of those who care and a respect for the autonomy of the patient, which is understood as an orientation in this type of care.

However, regarding the knowledge in the domain that evaluated the care relationship between caregiver and patient, the results were only from before the intervention, since the EI aimed to train the caregivers collectively, not collecting specific and

individual information from the older adult and the caregivers in the home care context. The results found show that before the intervention the caregivers presented inadequate knowledge in all domains related to the home care of the older adult, and in the bathing domain, they showed an expressive inadequate knowledge, 98,8% (Table 1). After the intervention, there was a significant change in the knowledge regarding feeding ( $p = 0.001$ ), bathing ( $p = 0.001$ ) and mobility ( $p = 0.001$ ) (Table 1).

The evaluation of the attitude change in the domain care between caregiver and older adult was statistically significant  $p=0.020$ ; the attitude change in the mobility domain obtained  $p=0.001$ . The attitude in the domains of feeding and bathing did not obtain the same results (Table 1). Regarding the practice of the home care, before the intervention practice was inadequate in all domains. The change in the perception of how care practice should be had a statistically significant change in all domains, care relationship between the caregiver and the older adult ( $p=0.001$ ); feeding ( $p=0.003$ ), bathing and hygiene ( $p=0.001$ ) and mobility ( $p=0.001$ ) (Table 1).

**Table 1 –** Assessment on the adequacy and inadequacy of Knowledge, Attitude and Practice on home care for older adults, Sobral, State of Ceará, Brazil, 2015

		Group - n (%)		Total	p*
		Pre-test	Post-test		
Care between caregiver and older adult					
Knowledge	Adequate	17 (20.7)	-	17 (20.7)	-
	Inadequate	65 (79.3)	-	65 (79.3)	
Attitude	Adequate	34 (41.5)	27 (79.4)	61 (52.6)	0.020
	Inadequate	48 (58.5)	7 (20.6)	55 (47.4)	
Practice	Adequate	32 (39.0)	24 (70.6)	56 (46.9)	0.001
	Inadequate	50 (61.0)	10 (29.4)	60 (53.1)	
Feeding					
Knowledge	Adequate	13 (15.9)	22 (64.7)	35 (29.4)	<0.001
	Inadequate	69 (84.1)	12 (35.3)	81 (70.4)	
Attitude	Adequate	59 (72.0)	31 (91.2)	90 (77.6)	0.341
	Inadequate	23 (28.0)	3 (8.8)	26 (22.4)	
Practice	Adequate	32 (39.0)	25 (73.5)	57 (48.7)	0.003
	Inadequate	50 (61.0)	9 (26.5)	59 (51.3)	
Bathing					
Knowledge	Adequate	1 (1.2)	18 (52.9)	19 (16.4)	<0.001
	Inadequate	81 (98.8)	16 (47.1)	97 (83.6)	
Attitude	Adequate	44 (53.7)	29 (85.3)	73 (62.3)	0.215
	Inadequate	38 (46.3)	5 (14.7)	43 (37.7)	
Practice	Adequate	16 (19.5)	13 (38.2)	29 (25.2)	<0.001
	Inadequate	66 (80.5)	21 (61.8)	87 (74.8)	
Mobility					
Knowledge	Adequate	21 (25.6)	14 (41.2)	35 (30.2)	<0.001
	Inadequate	61 (74.4)	20 (58.8)	81 (69.8)	
Attitude	Adequate	74 (90.2)	32 (94.1)	106 (91.3)	<0.001
	Inadequate	8 (9.8)	2 (5.9)	10 (8.7)	
Practice	Adequate	2 (2.4)	34 (100.0)	36 (31.0)	<0.001
	Inadequate	80 (97.6)	-	80 (69.0)	

Note: \*McNemar Test

The McNemar's test was considered relevant exclusively for the caregivers who started and concluded the study, that is, 34 caregivers. Statistically significant data were related to attitude change in the domains feeding ( $p = 0.020$ ), bathing and hygiene ( $p = 0.014$ ) and mobility ( $p = 0.001$ ).

## DISCUSSION

The sociodemographic and professional profile of the caregivers is similar to that identified in other studies in the literature<sup>(15-17)</sup>. The mean age of 47.82 years old was similar to Brazilian studies<sup>(15-17)</sup>. However, in international studies, the mean age diverges to around 60 years old<sup>(18-19)</sup>. The caregiver has been a cause for concern because their overload increases the risk for the development of chronic diseases and limitations<sup>(20)</sup>. The high percentage of female caregivers, 85.2% is associated with the prevailing belief that it is the woman's responsibility to take care of the family and with the fact that she has been, throughout family history, the main caregiver in the home environment<sup>(20)</sup>. In Brazil, care for older adults is carried out inter- and intra-generationally and mainly by women, and wives, sisters, daughters and granddaughters usually assume this responsibility<sup>(21)</sup>.

The fact that 56.1% of the primary caregivers are the patient's children may be related to a feeling of retribution to the care received during childhood, so caring for parents in old age becomes a moral duty. This result contributes to understanding why 82.9% of the caregivers do not receive remuneration for the activities performed.

The low educational level presented by 45.1% of the caregivers with incomplete primary education can influence the quality of care, since the caregiver needs basic instructions to follow the therapeutic prescriptions. The tasks attributed to the caregiver are obstacles to getting a job, which may explain the 68.3% rate of unemployment. Restriction of financial resources is an important limitation that can jeopardize the care for the older adult due to social vulnerability<sup>(22)</sup>.

Most of the caregivers, 75.6%, live with the elderly in a situation of dependency and provide daily care with a mean of 19.56 hours/day. It is complicated for the caregiver to be present and refuse, for some reason, to answer the patient's calls. Thus, caregivers deserve special attention from professionals because they are exposed to chronic stress experiences that interfere with their physical and psychological health, and because they are responsible for ensuring continuity of care for the older adult at home. In addition, caregivers reported receiving more support from family members, 88.9%, than from health professionals, 7.4%; still 91.5% reported they never received any training. Primary care nurses believe that the home visit to the dependent older adults and their caregivers is treated as a secondary activity, due to the busy context of the work process, organized to prioritize spontaneous demand<sup>(23)</sup>. Thus, caregivers and older adults are potentially unaware of the orientations needed for health care, which demands from managers and professionals an analysis of this reality in order to identify solutions to this problem. These findings reflect the lack of preparation of the caregiver, which can lead to risk situations for caregivers and receivers<sup>(24)</sup>. Therefore, there is a justified need for investments

in educational strategies to qualify home care for the older adults and to make the caregivers secure in their actions, which will benefit both the patient and the caregiver.

The nurse can be a key element for a comprehensive care of the caregiver and a positive influence on the care for the older adult and caregiver<sup>(25)</sup>. Nurses need to develop intervention strategies that favor the daily practice of the caregiver, since studies of educational interventions<sup>(26-27)</sup> have provided evidence for the following statements: 1. Both patients and family caregivers feel a need to learn about health care, including disease progression, methods for disease prevention and health promotion. 2. Learning about health care would lead to the application of knowledge in practice and give a greater motivation to live. The EI conducted in the present study had desirable effects, since it obtained a statistically significant improvement in knowledge (feeding  $p < 0.001$ ; bathing and hygiene  $p < 0.001$ , mobility and transportation  $p < 0.001$ ), attitude (care between caregiver and older adult  $p < 0.001$ ); mobility and transportation  $p < 0.001$ ) and practice (care relationship between caregiver and older adult  $p < 0.001$ ; feeding  $p < 0.003$ ; bathing and hygiene  $p < 0.001$ ; mobility and transportation  $p < 0.001$ ).

The daily life of the caregiver is built according to the needs of the other. Dealing with this reality means, in the case of caregivers of older adults, facing problems related to the most prevalent aging-associated diseases and to the state of dependency. In the care between caregiver and older adult, the way the caregivers perceive their role, their limitations and potentialities of the person they care for can lead to positive or negative attitudes. The knowledge that supports the care for the older adult and for the caregiver includes understanding basic human needs, the adaptations and changes that occur throughout life, which in turn have biological, psychological, social, cultural and spiritual dimensions. When caring for the elderly and their caregiver, nurses should not focus their actions on the disease, but should prioritize the promotion, maintenance and recovery of health<sup>(28)</sup>.

Qualifying the caregivers' knowledge about feeding is one of the factors pointed out as important for prevention and control of avoidant food intake behavior. A review study showed positive effects of nutritional education on body mass control, nutritional status, mood, and also on the reduction of cognitive decline in older adults with dementia<sup>(29)</sup>. Bathing is seen as a daily activity with greater difficulty, so much so that 98.8% of the caregivers demonstrated inadequate knowledge in this subject. In addition to the technical issues and the risk of falls, the caregiver deals with the subjectivity related to the fear and embarrassment experienced in the execution of this task, which disturbs the privacy and intimacy of the older adult. Regarding mobility and transportation, it is important to recognize that the older adults are exposed to numerous risks of falls and to social isolation in their own home, since households are not always adapted to their health needs, with safe environments. Caregivers and family members are interested in providing a safe home environment, but not all of them have enough financial conditions to make the necessary changes. Therefore, the nursing care given to the older adult in home care must include remembering the caregiver to be always alert to the patient's locomotion and providing

information on safe and appropriate techniques for transferring the patient from one place to another.

### Study limitations

The limitations of this study are the sample size, the lack of a control group, the immediate post-test and the duration of the intervention, since the four hour intervention may not have been enough for the caregivers to transform the information received into knowledge, change of attitude and practice.

### Implications for Nursing

This research can expand the knowledge of the nursing science, increasing evidence on the elaboration and application of educational interventions aimed at empowering caregivers and attending to their repressed learning needs. The results of this research may also be important for nurses and other health professionals who work with elder home care, since they enable reflection, discussion and implementation of educational actions to qualify this assistance. Another important element is that the caregiver becomes a future propagator of appropriate knowledge, attitude and practices among their peers

### CONCLUSION

The results of this study reaffirm the importance of conducting educational interventions with caregivers of older adults, considering that the nursing educational intervention applied was able to improve knowledge, attitude and practice.

Older adults' caregivers are within a context of social vulnerability characterized by a low level of education, financial restrictions and lack of training to care for the older adult. The nurse who coordinates the home care should use the educational intervention to improve the interaction with the caregiver and the older adult, in order to foster closer ties and mutual trust and develop a care plan that minimizes damage to the patient's health.

Therefore, the significant improvement in the knowledge, attitude and practice indicators reveal that the intervention was effective and conducted in an adequate manner; however, it is necessary to follow up on these caregivers. The performance of the caregivers is enhanced when they become more informed about the sensitive aspects regarding the care of the older adult and the performance of ADLs, which will possibly have an impact on the caregiver's and the patient's quality of life.

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