Competence of aged informal caregivers of people in home care[a]

Competência de idosos cuidadores informais de pessoas em assistência domiciliar

Competencia de ancianos que se desempeñan como cuidadores informales de personas en cuidados domiciliarios

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Abstract

Objectives: to analyze the conditional estimate of knowledge, adaptation and preparation in the skills of aged people who play the role of informal caregivers of assistance-dependent individuals in home care. **Method:** a cross-sectional study carried out with aged informal caregivers who live in the city of Maringá, Paraná, Brazil. Data collection was carried out between May and July 2019 through a constructed and validated instrument that assesses the skills of informal caregivers of assistance-dependent individuals in home care. Linear regression analysis was used to treat the variables. **Results:** the study participants were 101 aged informal caregivers, in which the conditional estimates of the cognitive and relational skills of the aged person showed a greater correlation with adaptation and preparation. Better knowledge estimates greater development of the psychomotor and cognitive competence of the elderly in care practices. **Conclusion and implications for the practice:** the hypothetical concepts of knowledge, adaptation and preparation explain the better performance of the cognitive, relational and psychomotor skills of aged informal caregivers. This result enables the development of new educational interventions for the elderly who play the role of informal caregivers.

Keywords: Aptitude; Home care services; Caregivers; Aged; Linear models.

Resumo

Objetivos: analisar a estimativa condicional do conhecimento, adaptação e preparo nas competências de idosos que exercem o papel de cuidadores informais de pessoas dependentes de cuidado em assistência domiciliar. **Método:** estudo transversal, realizado com idosos cuidadores informais, residentes no município de Maringá, Paraná, Brasil. A coleta de dados foi realizada entre maio e julho de 2019 com um instrumento que avalia as competências cognitivas, psicomotoras, emocionais e relacionais de cuidadores informais de pessoas dependentes de cuidado em assistência domiciliar. O instrumento é constituído por 14 itens e três construtos: conhecimento, adaptação e preparo, sendo a escala de resposta *Likert* de cinco pontos. Utilizou-se análise de regressão linear para tratamento das variáveis. **Resultados:** participaram do estudo 101 idosos cuidadores informais, e as estimativas condicionais das competências cognitiva e relacional apresentaram maior correlação com adaptação e o preparo. O melhor conhecimento estima maior desenvolvimento da competência psicomotora e cognitiva nas práticas de cuidado. **Conclusão e implicações para a prática:** os conceitos hipotéticos de conhecimento, adaptação e preparo explicam o melhor desempenho das competências cognitiva, relacional e psicomotora de idosos cuidadores informais. Este resultado possibilita o desenvolvimento de novas intervenções educativas aos idosos que desempenham o papel de cuidador informal.

Palavras-chave: Aptidão; Assistência domiciliar; Cuidadores; Idoso; Modelos lineares.

Resumen

Objetivos: analizar la estimación condicional del conocimiento, adaptación y preparación en las habilidades de personas mayores que desempeñan el papel de cuidadores informales de personas dependientes de cuidados en el hogar. **Método:** estudio transversal realizado con personas mayores que se desempeñan como cuidadores informales, residentes en la ciudad de Maringá, Paraná, Brasil. La recolección de datos se realizó entre mayo y julio de 2019 a través de un instrumento construido y validado que evalúa las habilidades de los cuidadores informales de personas dependientes de cuidados en el hogar. Se utilizó análisis de regresión lineal para tratar las variables. **Resultados:** participaron del estudio 101 personas mayores, que obran como cuidadores informales y las estimaciones condicionales de las habilidades cognitivas y relacionales de las personas mayores mostraron mayor correlación con la adaptación y preparación. Un mejor conocimiento estima un mayor desarrollo de la competencia psicomotora y cognitiva de las personas mayores en las prácticas asistenciales. **Conclusión e implicaciones para la práctica:** los conceptos hipotéticos de conocimiento, adaptación y preparación explican el mejor desempeño de las habilidades cognitivas, relacionales y psicomotoras de las personas mayores que actúan como cuidadores informales. Este resultado permite el desarrollo de nuevas intervenciones educativas para las personas mayores que desempeñan el papel de cuidadores informales.

Palabras clave: Aptitud; Atención domiciliaria de salud; Cuidadores; Personas Mayores; Modelos lineales.

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INTRODUCTION

The demographic transition characterized by an aging population is a reality in Brazil and worldwide.[1] It is estimated that the global number of people aged 60 and over will be 1.4 billion in 2030 and that the population aging rate will double from 12% to 22% between 2015 and 2050.[2]

Aging can lead to difficulties in the autonomy to perform basic activities of daily living; this situation demands the presence of caregivers to provide home care.[3] The caregiver is responsible for providing comfort, support, assistance and care to the dependent person, with an informal caregiver being defined as a person that provides assistance in an unpaid manner and does not have professional training, often being a family member.[4]

Currently, there is a household context in the literature with a high prevalence of aged people who take care of other more dependent aged individuals.[5] In this situation, health professionals, especially the Nursing team, must pay attention to the different health conditions of these caregivers, as this is a population segment in a vulnerable situation that often also presents health conditions requiring professional assistance.[6]

Integration of the family member in the informal caregiver role requires the attribution of competences and skills so that they feel prepared to provide care to the sick family member;[7] thus, the competences can be classified as cognitive, psychomotor, emotional and relational. The ability to know the needs of care, development, planning and organization of actions is called cognitive competence, which includes the ability to analyze dietary restrictions, types of medications and signs and symptoms of diseases, among other necessary knowledge.[8]

Emotional competence is the ability to adapt to a variety of health-related situations, as well as to manage stressful and overload situations, in order to improve quality of life. Psychomotor competence is the manual dexterity and skills that are necessary to perform safe care, such as knowing how to dress patients, being able to reposition them in bed, transfer from bed to chair and vice versa and encourage physical exercise, always associating knowledge with practice. Relational competence is the ability to build an effective dialog, both verbally and non-verbally, as well as to establish a bond with the family member, always supported by a relationship of respect, sensitivity and empathy.[8]

With the unfolding of the epidemiological transition in Brazil, home care services are increasingly expanding to meet the care demands, with the caregiver becoming responsible for the assistance provided. Aged caregivers also play an important role in this context. A study found that, of the 26 informal caregivers, six were elderly and provided assistance to other aged individuals dependent on care for Activities of Daily Living (ADLs).[9]

In this context, the importance of offering qualification and training to aged informal caregivers is highlighted, so that they can provide safe and quality home care. The offer of guidance and monitoring by health and nursing professionals, in order to improve the skills of aged caregivers, also reflects in lower levels of burden, physical and emotional distress and, consequently, in better quality of life.[10,11] Thus, there is a need for evidence of the factors that estimate greater competence for the exercise of home care, in order to offer support to informal aged caregivers who, for being a more vulnerable population segment, require greater attention and visibility from the professionals. Given the above, this study aims at analyzing the conditional estimate of knowledge, adaptation and preparation in the competences of aged people who play the role of informal caregivers of assistance-dependent individuals in home care.

METHODS

This is a quantitative and cross-sectional study, which followed the recommendations of the Strengthening the Reporting of Observational studies in Epidemiology (STROBE) initiative,[12] carried out in the municipality of Maringá (PR), Brazil, with a population of 430,157 people, of whom, it is estimated that 10.08% are elderly.[13] The city's health care network is distributed in a decentralized manner, with 34 Basic Health Units (BHUs), four Family Health Support Units, 82 teams from the Family Health Strategy (FHS), which cover 64.83% of the population and a team from the Home Care Service (HCS), which provides complementary assistance to people dependent on home care.[14] Data collection was carried out between May and June 2019, in the homes of the participants selected for the study.

The research participants were informal caregivers of people dependent on home care, registered in the municipality's electronic health system, from which the list of people who received home assistance due to care dependence was obtained. At the time of the study, the total number was 1,017 people with active registration in the 82 teams, distributed in the 34 BHUs. The Municipal Health Secretariat does not have an electronic registration system for formal or informal caregivers, and the approach to these participants was based on meetings with nurses responsible for the FHS teams, from February to March 2019, as the professionals had information contiguous to this population, such as home address and telephone number. Subsequently, telephone contacts were made to collect prior information to define their framing in the study's inclusion and exclusion criteria.

The inclusion criteria for participation in the study were age 60 years old or more, both genders, and being an informal caregiver of a care-dependent person. The exclusion criteria were caregivers living in the rural area of the municipality, due to difficulties in contacting and accessing their homes, death of the care-dependent person, and unsuccessful attempts to contact the caregiver. It is reiterated that the definition of informal caregiver, an essential criterion for participation in the study, refers to the family member, close friends and/or people who provide care to the dependent person without receiving financial bonuses and/or having a formalized service provision contract. With the information from the previous collection acquired through telephone contacts from the caregivers of the 1,017 people dependent on home care, a total of 66 participants were excluded because of death or because they were formal caregivers, who received remuneration for the care provided.

For definition of the sample calculation, the 951 informal caregivers selected from the previous survey were considered, and it was concluded that 47.6% of them were elderly. The representative sample was determined, calculated using a random process stratified by proportion, with a maximum estimate error of 9.23% and 95% confidence level. Sample calculation resulted in 113 participants, which was corrected, considering that the population was finite and known, which established the maximum desired error, ending the sample in 101 informal caregivers. When randomly chosen participants refused to participate in the survey, the next on the list was automatically approached, and so on.

Initially, through telephone contacts, the study objectives were presented to randomly selected informal caregivers, asking for the scheduling dates of the meetings when the visits were carried out. With these data, a strategic schedule was created so that all participants included in the study could be assisted. Two nurses, master's and PhD students and an undergraduate Nursing student, linked to the Scientific Initiation Program, participated in data collection, all under the guidance of the coordinator of the project and of this research. All the individuals who performed data collection received prior training on the instruments and development of greater mastery for conducting the interviews.

Two instruments were used for data collection. Initially, the Brazilian Economic Classification Criteria (ABEP) instrument was applied, which refers to the assessment of the economic profile, classifying the purchasing power of the household head.[15] The results of this assessment were grouped into AB (good conditions), C (fair conditions) and DE (poor conditions). Subsequently, the questionnaire to assess the competences of informal caregivers (COPER 14) was applied, in which, according to the authors, the competence assessed by the instrument refers to the ability to perform some function and/or task.[8,16]

The instrument is divided into two parts, namely: the first consists of 13 questions to characterize the informal caregiver; and the second has 14 questions, divided into four domains, called cognitive competences (four questions), emotional competences (two questions), psychomotor competences (five questions) and relational competences (three questions). This instrument was built and validated, and its measurement properties were evaluated according to psychometric analyses.[8,16]

In addition, the instrument is divided into three constructs, which encompass the aforementioned dimensions, the hypothetical concepts of COPER 14 and its five possible answers, measured using the Likert scale, namely: **Knowledge construct | how do you rate your knowledge:** "awful", "fair", "good", "great" and "excellent". In this construct there are questions related to cognitive, relational and psychomotor competences; **Adaptation construct | to what extent you feel adapted:** "not adapted", "little adapted", "adapted", "well adapted" and "totally adapted". In this construct there are questions related to cognitive and relational competences; **Preparation construct | how do you feel about your preparation:** "not prepared", "little prepared", "prepared", "well prepared" and "totally prepared". In this construct there are questions related to cognitive, relational and psychomotor competences.[8,16]

The data were double-entered into a *Microsoft Excel* 2019 spreadsheet and sent for analysis using the *Statistical Package for Social Sciences* (SPSS) software, version 20.0. The variables related to training to carry out care practices as a caregiver and length of experience in caring for dependent people at home were categorized. Data normality was identified using the *Kolmogorov-Smirnov* test, with *Lilliefors* correction. Sociodemographic variables and those related to the experience of care and training to carry out the assistance-related practices for care-dependent people were described in absolute values and in percentages.

To predict the conditional estimates of the constructs of hypothetical concepts knowledge, adaptation and preparation, linear regression models were used in the results of the assessment of cognitive, emotional, psychomotor and relational competences. First, linearity assumption was observed, through a Scatter Plot to verify if the explanatory variables, referring to the constructs, interfere in the competences and follow a linear trend. To analyze the autocorrelation of residuals, independently of predicted values and observations, the Durbin-Watson test was performed.[17]

The determination of the sums of squares and the statistics of the hypothesis tests, as well as the standardized residuals, was verified for homoscedasticity, using the Breusch-Pagan test. The residual statistics were analyzed from the Scatter Plot, developed in the *MedCalc* statistical software, version 18.2.1, which presented the outliers without violating the linear regression premises, as well as assigning the trend line, establishing R^2, which occurred from the equation $y = a + bx$, presenting the variability of the data resulting from this analysis.[16] A significance level of $p < 0.05$ was considered for all tests performed.

This research followed the guidelines of Resolution No. 466/2012, being submitted to the Health Secretariat of the city of reference and, after approval, forwarded to the Committee of Ethics and Research with Human Beings (*Comitê de Ética e Pesquisa*, CEP), receiving a favorable opinion for its conduction under number 2,584,897/2018. All participants were instructed on the study objectives and potential benefits and explanation of the possible discomforts and risks arising from participation in the research, receiving the Informed Consent Form (ICF), in clear and objective language, which was signed in two copies of equal content.

RESULTS

The study included 101 aged individuals, caregivers of people dependent on home care, most of whom were aged between 60 and 69 years old (57.4%), female (81.2%), living with a partner (63.4%) and with education up to basic elementary school (51.7%). As for the economic characteristics, more than half belong to stratum C, corresponding to the degree of family consumption (54.5%), receive up to two minimum wages (62.4%) and are retired/pensioners (59.4%). As for the role of caregiver,

the majority reported that they provide assistance to their wife or husband (37.6%), have more than five years of care experience (59.4%) and have not undergone any training to provide home care (53.3%) (Table 1).

Table 2 shows the conditional estimate of the hypothetical constructs, predictors and competences of the elderly who provide assistance to people dependent on home care. In the knowledge construct, psychomotor competences (R^2: 0.813) and cognitive competences (R^2: 0.429) presented a higher predictive estimate. Cognitive (R^2: 0.527) and relational (R^2: 0.437) competences showed a linear increase in the adaptive issues in care assistance. In the preparation construct, cognitive (R^2: 0.561) and relational (R^2: 0.441) competences showed a moderate increase in the conditional estimates.

Figure 1 shows the Scatter Plot of the hypothetical knowledge construct. As presented numerically in Table 2, the greatest prediction is found in psychomotor and cognitive competences. The scatter plots also show the distributions of the cases, which did not present discrepant distances, with outliers close to the linear line. In addition, according to the geometric entities in the graph, it is possible to observe the degree of inclination of the straight line, in which the variation in knowledge interferes with the informal caregiver's skills, mainly in terms of the psychomotor competence.

The Scatter Plots in Figure 2, which correspond to the hypothetical construct about adaptation, graphically show that the greater the adaptation of the elderly, the greater their cognitive and relational competences, represented by the conditional estimate of R^2. It is reiterated that the determination coefficients of the three figures, which refer to the hypothetical constructs, resulted in statistical significance in all competences, that is, they presented a p-value below 0.05. Considering that all competences presented a significant difference, the strength of the estimation and interpretation of the results were established by the measure of the adjustment of the linear model, represented by R^2.

Figure 3 shows the relationship of the preparation construct, in which the cognitive, relational and psychomotor competences presented a high estimate when compared to better preparation, as observed in the linear line and in the values of R^2. We emphasize the presentation of the residuals in the three figures, grouping the 12 Scatter Plots, which are normally distributed, respecting the premises of data homoscedasticity.

In addition, the figures graphically present the angular coefficient, numerically observed in Table 1, which corresponds to the slope of the linear line, according to the parameters estimated in the regression. It is observed that the psychomotor, cognitive and relational competences are more inclined in relation to the knowledge, adaptation and preparation constructs, presenting conditional estimates of R^2 from moderate to high. Despite showing an increasing inclination of the line, emotional competence did not have a higher angular value than the other competences, as can be observed in the abscissa axes, which resulted in a low R^2.

Table 1. Sociodemographic and economic profile of aged caregivers of people dependent on home care. Maringá (PR), Brazil, 2019.

	N	%
Age		
60 – 69 years old	58	57.4
70 – 79 years old	32	31.7
80 – 89 years old	11	10.9
Gender		
Female	82	81.2
Male	19	18.8
Marital Status		
Has a partner	64	63.4
No partner	37	36.6
Schooling		
No schooling	13	12.9
Primary education	52	51.7
Elementary education	14	13.9
High school	17	16.8
Higher education	5	5.0
Consumption Class		
AB	26	25.7
C	55	54.5
DE	20	19.8
Family Income*		
Up to two wages	63	62.4
From three to five wages	35	34.7
More than six wages	3	3.1
Occupation		
Employee	9	8.9
Unemployed	32	31.7
Retired/Pensioner	60	59.4
Relationship		
Spouse	38	37.6
Son/Daughter	32	31.7
Sister/Brother	12	11.7
Mother/Father	8	7.9
Others	11	10.9
Care experience time		
Up to five years	41	40.6
Over five years	60	59.4
Training		
No	54	53.3
Yes	47	46.5

Source: The author. ABEP: Brazil Economic Classification Criteria; AB: Good conditions; C: Fair conditions; and DE: Low conditions. * Minimum wage in force in 2019: R$ 998.00.

Table 2. Conditional estimate of predictive constructs of the competences of aged caregivers of people dependent on home care. Maringá (PR), Brazil, 2019.

Knowledge	Equation β + α	R^2	Residual SD	p-value*	Durbin Watson	F	p-value**
Cognitive	y=1.399+0.752x	0.429	0.628	< 0.001	1.957	74.33	0.0001
Psychomotor	y=-0.817+1.140x	0.813	0.395	< 0.001	1.998	431.95	0.0001
Relational	y=2.071+0.530x	0.245	0.671	< 0.001	1.91	32.26	0.0001
Emotional	y=1.896+0.567x	0.152	0.969	< 0.001	1.886	17.75	0.0001
Adaptation	**Equation β + α**	R^2	**Residual SD**	**p-value***	**Durbin Watson**	**F**	**p-value****
Cognitive	y=0.737+0.836x	0.527	0.571	< 0.001	1.781	110.37	0.0001
Psychomotor	y=-0.123+0.809x	0.407	0.704	< 0.001	1.861	68.1	0.0001
Relational	y=1.162+0.7089x	0.437	0.58	< 0.001	1.977	76.98	0.0001
Emotional	y=2.625+0.322x	0.057	0.689	< 0.003	2.05	9.35	0.0029
Preparation	**Equation β + α**	R^2	**Residual SD**	**p-value***	**Durbin Watson**	**F**	**p-value****
Cognitive	y=0.782+0.833x	0.561	0.55	< 0.001	1.89	126.71	0.0001
Psychomotor	y=-0.018+0.789x	0.416	0.699	< 0.001	1.867	70.55	0.0001
Relational	y=1.267+0.687x	0.441	0.577	< 0.001	2.033	78.39	0.0001
Emotional	y=2.024+0.466x	0.109	0.993	< 0.001	2.061	12.18	0.0007

Source: The author. β: Angular coefficient; α: Linear coefficient; R^2: Determination coefficient; SD: Standard Deviation; *Durbin-Watson*: Independence of variables test; F: Test of variance or equality between means. * Statistical significance of the determination coefficient and of ** the ratio between the constructs and competences.
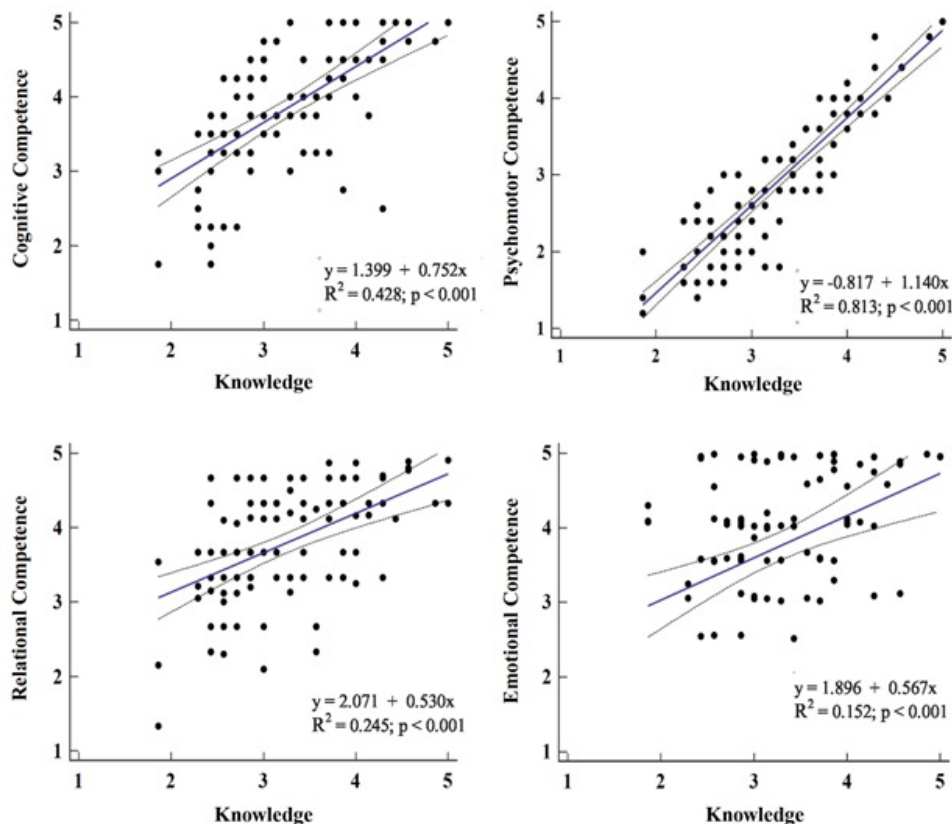
Figure 1. Scatter Plots of the relationship between the knowledge constructs and competences of aged caregivers of people dependent on home care. Maringá (PR), Brazil, 2019.
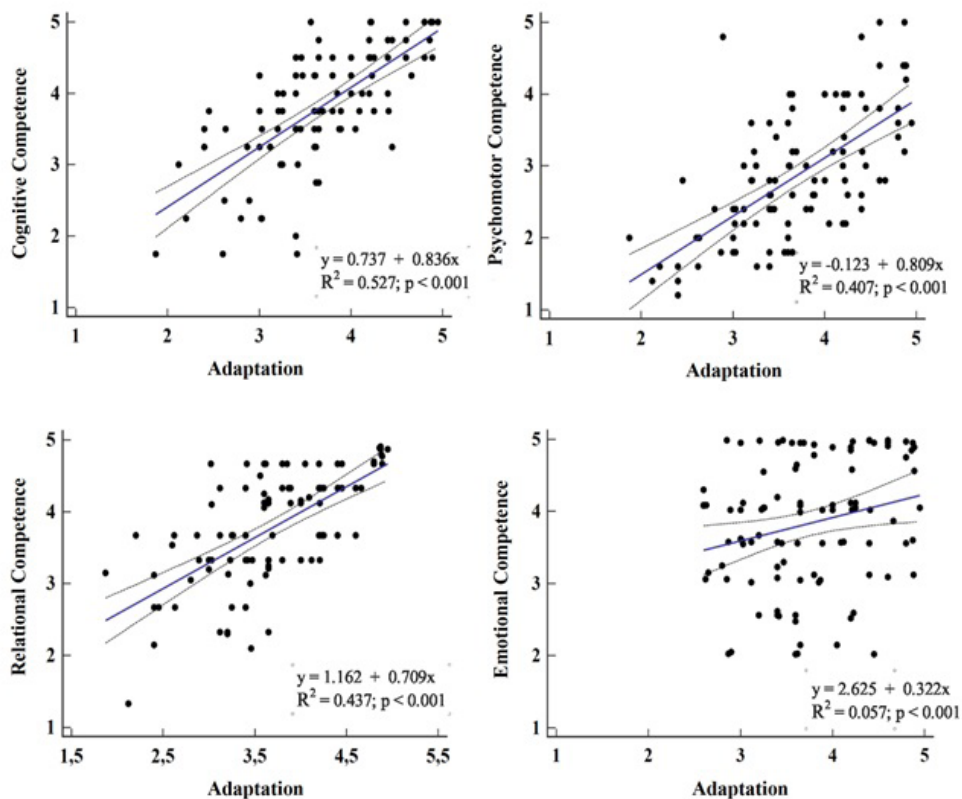**Source:** The author

Figure 2. Scatter Plots of the relationship between the adaptation constructs and the competences of aged caregivers of people dependent on home care. Maringá (PR), Brazil, 2019.
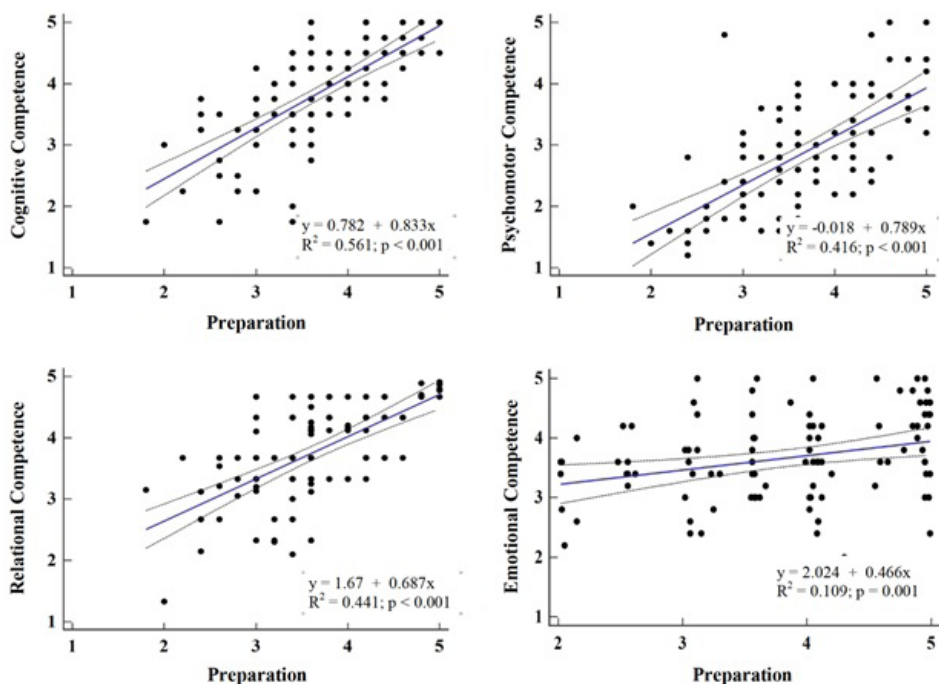**Source:** The author.

Figure 3. Scatter Plots of the relationship between the preparation constructs and the competences of aged caregivers of people dependent on home care. Maringá (PR), Brazil, 2019.
Source: The author.

DISCUSSION

The conditional estimates of cognitive and relational competences were more correlated with the adaptive and preparation constructs. Better knowledge estimates greater development of psychomotor and cognitive competences of the elderly in the care practices. Emotional competence presented a weak correlation with the constructs analyzed.

The aging process is not always associated with illness or poor health conditions; advances in the field of health and technology allow for a better quality of life for the elderly with access to adequate public or private services.[18] It is estimated that 80% of the aged people in Brazil are independent and are able to carry out their daily activities by themselves, being characterized as totally independent.[19] Thus, it can be inferred that most aged caregivers are active individuals, with well-preserved psychomotor and cognitive aspects. In this study, more than 50% of the participants were aged between 60 and 69 years old, a factor that contributes to greater functional preservation when compared to others, being essential to offer quality care, evidenced by the important association between psychomotor competence and the knowledge construct.

A study carried out with 39 elderly caregivers aged between 60 and 75 years old showed that the knowledge construct was indicated as an essential factor in the care process, and that provision of care without guidance, with lack of information and without prior knowledge, presents itself as a risk to the health of the caregiver and the person in need of care;[11] thus, greater knowledge predisposes to better provision of care and development of the psychomotor and cognitive construct as verified in the study.

In this sense, it is worth emphasizing the importance of guiding the caregiver and offering training that promotes new knowledge based on scientific evidence.[8,11] Psychomotor competence requires knowledge related to care delivery, such as handling technologies, moving the patient in bed and from the bed to the chair, among others. A study carried out in Bahia showed that aged caregivers of bedridden patients often have musculoskeletal problems due to negligence in self-care, among other factors. The study highlighted that ergonomic guidelines can be an important method of preventing musculoskeletal injuries, also prioritizing health promotion actions for aged informal caregivers.[20]

The information offered by professionals trained through courses or training exerts a significantly positive impact on the development of the competences for home care. The educational interventions can be carried out through a group approach, multiprofessional training interventions with distribution of materials and digital platforms, among others, and they show effectiveness in promoting the quality of home care.[8,11]

Among the factors that promote a higher level of active aging and, consequently, better conditions to provide care, higher schooling, higher per capita family income, physical activity and better physical and mental health stand out.[3] Regarding the schooling of the participants in this research, more than 50% studied up to primary school, which corresponds to 5 years of study, representing an important weakness in the education process of informal caregivers, as a lower degree of instruction compromises assimilation of the guidelines received by the professionals regarding the appropriate care practices. In addition to that, more educated individuals are better able to access and search for information, which favors the development of care skills.[21-23]

The cognitive and relational competences showed a high degree of estimation when compared to better adaptation. In this survey, most of the respondents had been providing care for more than five years. It is interpreted that the time providing care is a relevant factor for the results obtained, as the process of adaptation to the care routine is not weakened due to this greater experience. A study carried out in Rio Grande do Sul verified that the experiences acquired over the years are a form of learning in the cognitive and relational aspects, and pointed out that knowledge can be built over the years, given that care experiences are constituted as a form of learning.[22] Furthermore, relational competence is also refined over time, as the caregiver starts to better understand the person cared for, the needs and aspects that promote greater well-being.[22]

In relation to the cognitive, relational and psychomotor competences, they showed a high degree of estimation when compared to the better preparation of the aged informal caregiver. Such preparation is necessary so that they may feel safe to provide care more efficiently. In a study carried out in Paraíba, it was found that aged caregivers who carry out care without any preparation are more susceptible to physical and emotional burden and distress, as their own quality of life and self-care do not have proper attention.[11]

Emotional competence had the weakest correlations in all of the instrument's constructs. It is concluded that it is difficult to objectively explain the predictors of emotional competence because it is permeated by unique and, therefore, subjective aspects. It is recommended to carry out future research studies with a qualitative approach to further deepen the emotional competence of the elderly and how such factors interfere with home care, seeking to understand the meanings attributed to individual experiences and behaviors.

FINAL CONSIDERATIONS AND IMPLICATIONS FOR THE PRACTICE

By analyzing the conditional estimate of knowledge, adaptation and preparation in the competences of the aged people who play the role of informal caregivers of individuals dependent of home care, it was identified that the hypothetical concepts of knowledge, adaptation and preparation explain the best performance of the cognitive, relational and psychomotor competences of aged informal caregivers. Furthermore, the cognitive and relational competences presented a greater correlation with the adaptation and preparation constructs, knowledge estimates greater development of psychomotor and cognitive competences, and emotional competence presented a weak correlation with the constructs analyzed.

It is expected that the results of this study assist in the development of new educational interventions for the elderly who play the role of informal caregivers in order to promote greater knowledge, adaptation and preparation for them, ensuring safe and quality home care.

Among the study limitations, there is a population selection bias, as the caregivers were identified based on the FHS registration, and it is not possible to cover those who are monitored by the private sector. The participants' age can also be considered a study limitation, as it makes it difficult to generalize the results to other age groups.

The impossibility of attributing causality to the results is also pointed out, considering the nature of cross-sectional studies, which reduces their potential for generalization. However, the results presented in this research evidenced that knowledge, adaptation and preparation explain the improvement in the competences of aged informal caregivers, reinforcing the importance of supporting this population, contributing to better home care.

FINANCIAL SUPPORT

AUTHORS' CONTRIBUTIONS

Study design. Fernanda Gatez Trevisan dos Santos. Camila Harmuch.

Data collection or production. Fernanda Gatez Trevisan dos Santos.

Data analysis. Fernanda Gatez Trevisan dos Santos. Camila Harmuch. Marcelle Paiano. Cremilde Aparecida Trindade Radovanovic. Anderson da Silva Rego. Lígia Carreira.

Interpretation of the results. Fernanda Gatez Trevisan dos Santos. Camila Harmuch. Marcelle Paiano. Cremilde Aparecida Trindade Radovanovic. Anderson da Silva Rego. Lígia Carreira.

Writing and critical review of the manuscript. Fernanda Gatez Trevisan dos Santos. Camila Harmuch. Marcelle Paiano. Cremilde Aparecida Trindade Radovanovic. Anderson da Silva Rego. Lígia Carreira.

Approval of the final version of the article. Fernanda Gatez Trevisan dos Santos. Camila Harmuch. Marcelle Paiano. Cremilde Aparecida Trindade Radovanovic. Anderson da Silva Rego. Lígia Carreira.

Responsibility for all aspects of the content and integrity of the published article. Fernanda Gatez Trevisan dos Santos. Camila Harmuch. Marcelle Paiano. Cremilde Aparecida Trindade Radovanovic. Anderson da Silva Rego. Lígia Carreira.

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REFERENCES

1. Farias MFRN, Souza PHV, Santos VS. O novo retrato demográfico do Brasil: análise acerca do envelhecimento populacional e suas decorrências econômicas. Rev Bras de Direito e Gestão Pública [Internet]. 2019; [citado 2020 set 19];7(3):1-11. Disponível em: https://gvaa.com.br/revista/index.php/RDGP/article/view/7074/6463

2. Organização Pan-Americana de Saúde. Folha informativa- Envelhecimento e saúde.Brasília: OPAS; 2018. Folha informativa atualizada em fevereiro de 2018.

3. Sousa NFS, Lima M, Cesar CLG, Barros MBA. Envelhecimento ativo: prevalência e diferenças de gênero e idade em estudo de base populacional. Cad Saude Publica. 2018;34(11):1-13. http://dx.doi.org/10.1590/0102-311x00173317. PMid:30484561.

4. Pocinho R, Belo P, Melo C, Navarro-Pardo E, Fernández Muñoz JJ. Relação entre o estado psicossocial do cuidador informal e o tempo de cuidado dos idosos da região centro de Portugal. Educ. Humanismo. 2017;19(32):88-101. http://dx.doi.org/10.17081/eduhum.19.32.2533.

5. Oliveira NA, Souza ÉN, Luchesi BM, Inouye K, Pavarini SCI. Stress and optimism of elderlies who are caregivers for elderlies and live with children. Rev Bras Enferm. 2017 Jul-Aug;70(4):697-703. http://dx.doi.org/10.1590/0034-7167-2017-0088. PMid:28793097.

6. Santos-Orlandi AA, Brigola AG, Ottaviani AC, Luchesi B, Souza E, Moura FG et al. Elderly caregivers of the elderly: frailty, loneliness and depressive symptoms. Rev Bras Enferm. 2019;72(2, suppl 2):88-96. http://dx.doi.org/10.1590/0034-7167-2018-0137. PMid:31826196.

7. Castro L, Souza DN, Pereira A. O autocuidado do cuidador familiar: Intervenção psicoeducativa para o desenvolvimento de competências pessoais/sociais. Atas do XIV Colóquio Internacional de Psicologia e Educação. Curitiba: Editora Artemis; 2019. p. 231-240.

8. Sanches RCN. Construção e validação de questionário de avaliação das competências do cuidador informal - COPER14. [Tese]. Maringá (PR): Universidade Estadual de Maringá; 2019.

9. S Silva YC, Silva KL. Constituição do sujeito cuidador na atenção domiciliar: dimensões psicoafetiva, cognitiva e moral. Esc Anna Nery. 2020;24(4):e20190335. http://dx.doi.org/10.1590/2177-9465-ean-2019-0335.

10. Assenheimer A, Brum ZPD. Difficulties faced by the elderly care. Rev Inter Ciên Saúde Biol. 2019;3(2):3-12. http://dx.doi.org/10.31512/ricsb.v3i2.3281.

11. Santos WP, Freitas FBD, Sousa VAG, Oliveira AMD, Santos JM, Gouveia BDL. Sobrecarga de cuidadores idosos que cuidam de idosos dependentes. Rev Cuid (Bucaramanga). 2019;10(2):e607-18. http://dx.doi.org/10.15649/cuidarte.v10i2.607.

12. Vandenbroucke JP, Von Elm E, Altman DG, Gøtzsche PC, Mulrow CD, Pocock SJ et al. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. PLoS Med. 2007;4(10):e297. http://dx.doi.org/10.1371/journal.pmed.0040297. PMid:17941715.

13. Instituto Paranaense de Desenvolvimento Econômico e Social. Caderno Estatístico Município de Maringá [Internet]. Curitiba: IPARDES; 2020. Disponível em: http://www.ipardes.gov.br/perfil_municipal/MontaPerfil.php?codlocal=309&btOk=ok

14. Ministério da Saúde (BR). Departamento de Atenção Básica (DAB). Histórico de Cobertura da Saúde da Família [Internet]. Brasília, DF: MS; 2020 [citado 2020 set 6]. Disponível em: https://egestorab.saude.gov.br/paginas/acessoPublico/relatorios/relHistoricoCoberturaAB.xhtml

15. Associação Brasileira de Empresas de Pesquisa. Critério Brasil, 2018 [Internet]. São Paulo: ABEP; 2020 [citado 2020 set 18]. Disponível em: http://www.abep.org/

16. Santos FGT. Propriedades psicométricas do questionário de avaliação das competências do cuidador informal. [Dissertação]. Maringá (PR): Universidade Estadual de Maringá; 2020.

17. Flatt C, Jacobs RL. Principle assumptions of regression analysis: testing, techniques, and statistical reporting of imperfect data sets. Adv Dev Hum Resour in Developing Human Resources. 2019;21(4):484-502. http://dx.doi.org/10.1177/1523422319869915.

18. Miranda GMD, Mendes ACG, Silva ALA. Population aging in Brazil: current and future social challenges and consequences. Rev Bras Geriatr Gerontol. 2016;19(3):507-19. http://dx.doi.org/10.1590/1809-98232016019.150140.

19. Monier EB, Soares RR. Saúde do idoso e a saúde da família. São Luís: EDUFMA; 2016. 79 p. (Cadernos de Saúde da Família, n. 7).

20. Gomes NP, Pedreira LC, Gomes NP, Fonseca EOS, Reis LA, Santos AA. Health-related consequences of caring for dependent relatives in older adult caregivers. Rev Esc Enferm USP. 2019;53:e03446. http://dx.doi.org/10.1590/s1980-220x2018002303446. PMid:30864620.

21. Prieto AM, Rocha HF. Competencias del cuidador familiar para cuidar a su familiar que recibe quimioterapia. Rev Cienc Cuidad. 2019;16(2):95-107. http://dx.doi.org/10.22463/17949831.1612.

22. Coppetti LC, Girardon-Perlini NMO, Andolhe R, Gutiérrez MGR, Dapper SN, Siqueira FD. Habilidade de cuidado de cuidadores familiares de pacientes em tratamento oncológico: fatores associados. Rev Lat Am Enfermagem. 2018 Oct 11;26:e3048. http://dx.doi.org/10.1590/1518-8345.2824.3048. PMid:30328974.

23. Araújo MGO, Dutra MOM, Freitas CCSL, Guedes TG, Souza FS, Baptista RS. Caring for the carer: quality of life and burden of female caregivers. Rev Bras Enferm. 2019;72(3):728-36. http://dx.doi.org/10.1590/0034-7167-2018-0334. PMid:31269139.