Caring ability of urban and rural family caregivers: association with overburden, stress and coping*

Habilidade de cuidado de cuidadores familiares urbanos e rurais: relação com a sobrecarga, estresse e coping

Habilidad de cuidadores familiares urbanos y rurales: relación con la sobrecarga, el estrés y el afrontamiento (coping)

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ABSTRACT
Objective: To correlate caring ability with overburden, stress and coping of urban and rural family caregivers of patients undergoing cancer treatment. Method: Cross-sectional study, carried out in a referral hospital for cancer treatment, with urban and rural caregivers who responded the following instruments: questionnaire of sociodemographic characterization of the caregiver and the care provided, Perceived Stress scale, Burden Interview scale and Brief COPE. Pearson’s correlation test was used for statistical analysis, with a significance level ≤5%. Results: A total of 163 urban caregivers and 59 rural caregivers participated in the study. Between the caring ability and stress, a negative and moderate correlation was found in rural caregivers. In the relationship between the caring ability and the overburden, there was a statistically significant correlation in urban caregivers in the interpersonal relationship and perception of self-efficacy factor. Between coping and the caring ability, a positive and moderate correlation was identified in coping focused on the problem in urban caregivers. Conclusion: Urban caregivers had greater intensity of overburden and coping focused on the problem in relation to the caring ability.

DESCRIPTORS
Caregivers; Patients; Neoplasms; Urban Population; Rural Population; Oncology Nursing.

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INTRODUCTION

Currently, cancer is one of the chronic non-communicable diseases with the greatest economic impact on health services, both globally and nationally\(^7\). Thus, the particularities of the illness can cause irreparable pathological changes that can compromise people’s ability to perform daily activities, requiring permanent care, both in the hospital and at home\(^6\). So, in a situation of incapacitating chronic illness, the demands for care can increase, generally requiring that a family member assume this responsibility as a caregiver\(^3\). The assumption of this role occurs gradually or suddenly, for which the caregiver may not be prepared, requiring the development of caring abilities\(^4\).

Thus, the ability to care is understood as a potential that a person has to assume the role of caregiver of a relative or significant person who has an incapacitating illness\(^5\). Under such considerations, this ability includes cognitive, instrumental and attitudinal dimensions that can be identified and measured according to indicators of knowledge, courage and patience\(^5\). The performance of caregiver functions without the balance between the caring ability and its dimensions, can lead to physical, emotional and social issues and, consequently, raise the perception of overburden and stress\(^6\). Moreover, the need to use certain coping strategies that favor dealing with the illness and care process stands out\(^7\).

Regarding living in the urban and rural context, caregivers face challenges in their responsibility to care, which may be related to their particularities and experiences in different ways in each environment\(^8\). Therefore, in order to know the possible differences and the performance of caregivers in the care function, comparing the urban and rural context, one sought, through a narrative review in the National Library of Medicine – PubMed and in Latin American and Caribbean Health Sciences (LILACS), and in the Scientific Electronic Library Online (SciELO) databases, to identify publications on this topic. As a result, it was found that comparative researches, among these scenarios, are still incipient and concentrated in the international context\(^9-11\), indicating a gap in the production of Brazilian studies and the need to develop investigations aimed at deepening knowledge in this topic related to factors that may interfere with being a caregiver in these scenarios.

Thus, the following question emerges: how do the caring ability and the overburden, stress and coping of urban and rural family caregivers of patients undergoing cancer treatment correlate? So, the study aims to correlate the caring ability with the overburden, stress and coping of urban and rural family caregivers of patients undergoing cancer treatment.

METHOD

TYPE OF STUDY

This is a cross-sectional study.

SCENARIO

It was carried out in the chemotherapy and radiotherapy sectors of a reference institution for cancer treatment in Rio Grande do Sul state. The study population consisted of urban and rural family caregivers of patients undergoing cancer treatment.

SELECTION CRITERIA

The selection of caregivers occurred based on the identification of patients over 18 years old, undergoing cancer treatment in the chemotherapy and radiotherapy sectors, who had some kind of dependence to perform daily activities at home, assessed by the Barthel Index\(^12\). The caregivers responsible for the care provided at home to the dependent patient were selected, and they may be a family member, friend, neighbor or other person considered significant aged 18 years old or more, regardless of the time in care. In situations where there was more than one caregiver, the patient was asked to indicate the caregiver who provided the longest care and was considered the main one.

SAMPLE DEFINITION

Nonprobability sampling technique was used. Therefore, a total of 264 dependent patients were seen at the service during the data collection period. When contacting the caregivers, thirty of them were not the main ones, five had difficulties in understanding and interpreting the questions of the data collection instruments, two were under 18 years old and five did not accept to participate in the research. Thus, the sample consisted of a total of 222 family caregivers, representing 84.09% of the population of dependent patients undergoing cancer treatment during this study. The final sample was divided into two groups, according to where the caregivers live: urban area (n=163) and rural area (n=59).

DATA COLLECTION

Data collection was carried out from April 2017 to May 2018, through the application of a questionnaire of sociodemographic characterization of the caregiver and the care provided, the Caring Ability Inventory (CAI), the Burden Interview Scale, the Perceived Stress Scale (PSS) and the brief COPE.

SOCIODEMOGRAPHIC CHARACTERIZATION QUESTIONNAIRE

It contains the variables: gender, age, educational level, marital status, family income, time and period of care, assistance from other people and who lives with them.

CARING ABILITY INVENTORY (CAI)

CAI was created in 1990\(^5\) with the objective of assessing people’s abilities based on their own perception to provide proper care, paying attention to instrumental and cognitive aspects. It was validated and translated into Brazilian Portuguese in 2016\(^13\) and the reliability and validity were evaluated by Cronbach’s Alpha, obtaining a value of 0.78 and the Correlation Coefficient with a score of 0.76\(^13\). In this study, the internal consistency obtained was 0.68 in the total CAI. It consists of 37 items, which are divided into three dimensions: knowledge, courage and patience, with 14, 13 and 10 items, respectively. Responses are organized on a Likert scale, ranging from 1 to 5, 1 referring to “strongly disagree”
and 5 “strongly agree”. The responses to the items are added, generating a total score and one for each subscale.

**Burden Interview Scale**

The scale was translated and validated for Brazil in 2002 and obtained a Cronbach’s Alpha of 0.87. It consists of a total of 22 items, where each item is scored from zero to four. When adding the score, a global score is obtained, which can vary from zero to 88. The higher the score, the greater the perception of overburden, being classified as: <20: absence of burden; 21–40: mild to moderate burden; 41–60 moderate to severe burden; >60 intense burden. In addition, the scale has a multidimensional construct that allows the assessment of objective and subjective overburden, consisting of four factors: impact on care provision (ICP) and interpersonal relationship (IR), which are directed towards objective overburden; expectation regarding care (ERC) and perception of self-efficacy (PS), which are factors that lead to subjective overburden. It is noteworthy that this scale has already been translated into several languages, being used in many countries with caregivers of dependent people in different age groups and situations of illness.

**Perceived Stress Scale (PSS)**

A scale originally developed in 1983 and validated for the Portuguese language in 2007. Internal consistency was verified by obtaining a Cronbach’s Alpha of 0.62. It is a scale composed of 14 items, seven positives and seven negatives, and each item on the scale is scored from zero to five. The questions with a positive connotation have their scores reversed, and the other questions are negative and must be added directly. Thus, the higher the score, the greater the perception of stress.

**COPE-Brief**

Instrument translated and validated for the Brazilian population in 2012 and had a Cronbach’s Alpha of 0.84. It contains a total of 28 items evaluated by a Likert scale, which varies from one to four, in which 1=I have not done it and 4=I have done it a lot, allowing the interviewees to report what they usually do regarding the stressor. The scores are added, and the higher the score obtained, the greater the use of a certain coping strategy. The result of the scale points to a profile based on the more or less used subscales. The type of coping used can be classified as focused on the problem or focused on emotion, which can be subdivided into adaptive or maladaptive.

**Data analysis**

For statistical analysis, the data were organized and typed concurrently with the data collection period, in an electronic spreadsheet, Excel for Windows, by independent double data entry. After checking for inconsistencies, the information was analyzed electronically with the Statistical Package for Social Sciences (SPSS) version 23.0. The data obtained were grouped according to where the caregivers live and the sociodemographic variables were all measured categorically and presented by the distribution of absolute and relative frequencies. The normality of the groups was tested using the Lilliefors test. The internal consistency of the instruments used was assessed by Cronbach’s Alpha. The association between the caring ability with the overburden, stress and coping was assessed by Pearson’s Correlation Coefficient, at a significance level ≤5%, given the adherence to data normality. For the analysis of the linear correlation forces between the measures, one used a classification that determines that the correlation values less than 0.30 indicate weak correlation and, even when statistically significant, do not have clinical relevance; values between 0.30 and 0.50 indicate a moderate correlation, and above 0.50, a strong correlation.

**Ethical aspects**

The development of the research respected the ethical precepts that govern studies involving human beings of Resolution no. 466/2012, of the National Health Council and was approved by the Research Ethics Committee, protocol 1.977.316, from 2017. All participants signed the Informed Consent Form (ICF).
urban caregivers. These results show that, with the increase in the total care ability and the dimensions of knowledge and courage, there was a decrease in perceived stress among urban caregivers, or vice versa.

With regard to overburden and its factors, there is a negative correlation in the total CAI-BR (r=-0.194; p=0.030) and in the courage dimension (r=-0.206; p=0.021) with the PS factor. The IR factor shows a statistically significant and negative correlation in the knowledge dimension (r=-0.203; p=0.034). These results had weak intensity correlations, and may indicate that the greater the total care ability and courage, the less the overburden on the PS factor, and the greater the knowledge dimension, the less the overburden on the IR factor in caregivers.

In the analysis of the correlation measures of the caring ability and its dimensions, with coping strategies, a moderate, positive and statistically significant relationship was identified between the knowledge dimension and the coping strategies focused on the problem (r=0.341; p<0.001). Thus, these results indicate that the greater the knowledge, the greater the use of strategies focused on the problem.

Regarding the perceived stress among rural caregivers, the results showed a statistically significant, negative and moderate relationship between the total CAI-BR (r=-0.305; p=0.019) and the knowledge dimension (r=-0.359; p=0.005), demonstrating that the greater the total care ability and knowledge, the less the perception of stress among caregivers, and vice versa (Table 2).

When relating the measures of the caring ability and its dimensions with the overburden factors, there was a weak negative correlation in the knowledge dimension, and statistically significant with the IR factor (r=-0.290; p=0.026), indicating that the greater the knowledge, the less the impact on the IR factor in rural caregivers.

When analyzing the measures of correlation of the caring ability and its dimensions with coping strategies, the results had a statistically significant, negative and moderate relationship in the maladaptive coping strategy focused on emotion, with the total CAI-BR (r=-0.355; p=0.008) and the knowledge dimension (r=-0.334; p=0.013). These results indicate that the greater the total care ability and knowledge, the less the use of maladaptive coping strategies, focused on emotion among rural caregivers.

### Table 1 – Correlation between measures of total care ability (Total CAI-BR) and its dimensions with the overburden, stress and coping of urban caregivers – Santa Maria, RS, Brazil, 2019.

<table>
<thead>
<tr>
<th>Perceived</th>
<th>Overburden</th>
<th>Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stress</td>
<td>ICP</td>
</tr>
<tr>
<td><strong>Total CAI-BR</strong></td>
<td>r</td>
<td>-0.165</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.035</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>r</td>
<td>-0.211</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.007</td>
</tr>
<tr>
<td><strong>Courage</strong></td>
<td>r</td>
<td>-0.165</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.035</td>
</tr>
<tr>
<td><strong>Patience</strong></td>
<td>r</td>
<td>0.098</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.213</td>
</tr>
</tbody>
</table>

ICP=Impact on care provision; PS=Perception of self-efficacy; ERC=Expectation regarding care; IR=Interpersonal relationship.

### Table 2 – Correlation between the measures of total care ability (Total CAI-BR) and its dimensions with the overburden, stress and coping of rural caregivers – Santa Maria, RS, Brazil, 2019.

<table>
<thead>
<tr>
<th>Perceived</th>
<th>Overburden</th>
<th>Coping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stress</td>
<td>ICP</td>
</tr>
<tr>
<td><strong>Total CAI-BR</strong></td>
<td>r</td>
<td>-0.305</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.019</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>r</td>
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</tr>
<tr>
<td></td>
<td>p-value</td>
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<tr>
<td><strong>Courage</strong></td>
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<tr>
<td></td>
<td>p-value</td>
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<tr>
<td><strong>Patience</strong></td>
<td>r</td>
<td>-0.058</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.663</td>
</tr>
</tbody>
</table>

ICP=Impact on care provision; PS=Perception of self-efficacy; ERC=Expectation regarding care; IR=Interpersonal relationship.
DISCUSSION

The results of this study show similarity in the characterization of caregivers, in most of the variables analyzed, when comparing the urban and rural context. Thus, there is the reaffirmation that women have been the main provider of care, in line with the literature\(^{(21-23)}\), reflecting the important social role that women play in society, both at work and in caring for the home and family members\(^{(22)}\).

Regarding family income, most urban and rural caregivers reported receiving up to three minimum wages. This income may have been influenced by the removal from the labor market, in favor of the role of full-time caregiver, as identified in other studies\(^{(22)}\). In addition, it may reflect the reality of the Brazilian population\(^{(22)}\).

Receiving assistance from other people to perform daily life tasks and to care for the sick family member, a characteristic mentioned by urban and rural caregivers, can favor and strengthen the ability of caregivers to care, due to the fact that they have people to count on when they need support. Therefore, a study that compared urban and rural family caregivers identified that urban caregivers rely on the help of friends and other people, while the source of assistance for rural caregivers is usually centered on the family\(^{(23)}\).

Regarding the differences between the characteristics of urban and rural caregivers, it is evident that urban caregivers had more years of study while rural caregivers care for a longer period of time for their relative undergoing cancer treatment. The higher level of education among urban caregivers is a favorable factor for these individuals to have a longer period of time for their relative undergoing cancer treatment. The higher level of education among urban caregivers has been influenced by the removal from the labor market, in favor of the role of full-time caregiver, as identified in other studies\(^{(22)}\). In addition, it may reflect the reality of the Brazilian population\(^{(22)}\).

The perceived stress can have a negative impact on the caregivers’ ability to understand the needs of the person being cared for, leading to the development of greater care and understanding their needs and those of the person being cared for, both in urban and rural caregivers, not that the greater the knowledge, the less the interpersonal impact resulting from the relationship of care provision. Still, there was a statistically significant correlation between the total care ability and courage, as denoted by the greater total care ability and courage, the less the impact on the perception of this factor, which is related to the caregivers’ opinion regarding their caregiving performance.

So, knowing other people’s need and the ability to care contributes to improving the interpersonal relationship of the caregiver with the individual being cared for\(^{(5,21)}\), positively influencing the caring ability, regardless of the context. In urban caregivers, the influence on the perception of self-efficacy, that is, the caregivers’ opinion regarding their care performance, can interfere with the total care ability and courage, causing feelings of dissatisfaction in their care practice. Thus, a study that compared the experiences of urban and rural caregivers with rural ones showed that urban caregivers had more feelings of dissatisfaction in the responsibility to care, seen as an obligation to be fulfilled, limiting their personal space and independence\(^{(8)}\).

Regarding the results of the coping strategies identified in this study, differences were found in the correlation between urban and rural caregivers. Therefore, it was found that urban caregivers pointed out that the greater the knowledge, the greater the use of strategies focused on the problem. So, the caregiver makes a positive reassessment of the situation experienced at the moment, in which cognitive strategies are used to manage the feeling of the stressful moment\(^{(19)}\). Thus, the individual initiates an action, thinking about how to face the stressor, when seeking instrumental support in the form of information or advice from other people and also emotional support\(^{(17-19)}\).

Among rural caregivers it is evident that the lower the impact of maladaptive coping, that is, the use of denial strategies in an attempt to reject the stressful reality, blaming themselves, criticizing or failing to strive to face the stressor, the greater the total care ability and knowledge. However, it is observed that the type of strategy used by the caregiver can influence their total care ability and knowledge, both in urban and rural settings, which presupposes that the caregiver, regardless of the context, strives to manage stress\(^{(17-19)}\) and understand their needs and those of the person being cared for, leading to the development of greater care and knowledge abilities.

The evidence from this study contributes to the knowledge related to the caring ability, overburden, stress and coping strategies of urban and rural family caregivers. In addition, they can sensitize and encourage health professionals, especially nurses, to plan and implement actions that guide, instrumentalize, encourage, value and promote...
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caregiver support and self-care, considering the particularities of the context in which they live. These actions have the potential to minimize overburden and stress, favoring the use of strategies focused on the problem, so that the situation experienced with sickness by cancer does not interfere with the caring ability.

The limitations of this study are related to the cross-sectional design and the temporality bias, which makes the causal relationship of the investigated events unfeasible, as well as the delimitation of family caregivers linked to a public oncology specialized care service, which restricts the generalization of results. It is also noteworthy the lack of Brazilian studies that compare the caring abilities of urban and rural caregivers, which makes it difficult to discuss the results.

CONCLUSION

In this study it was found that urban and rural family caregivers were predominantly female, aged 48 to 76 years old, with a partner, with an income up to three minimum wages, who lived with the person being cared for and other family members, were full time caregivers and had the help of other people. The differences between urban and rural caregivers were concentrated on education and care time. Urban caregivers had more years of study, while rural ones had more time in the caregiver role.

It was evidenced that the strength of the association between measures of the caring ability with stress was higher in rural caregivers, having a moderate, negative and statistically significant correlation in the total care ability and knowledge. It was found that, in urban caregivers, the association between the caring ability with overburden had a statistically significant, weak and negative correlation in the factor of perception of self-efficacy with the total care ability and courage and in the factor of interpersonal relationship with knowledge. In the association between caring ability and coping strategies, there was a statistically significant, moderate, and negative correlation in maladaptive coping with total care ability and knowledge among rural caregivers. In urban caregivers, the correlation was statistically significant, moderate and positive in coping focused on the problem with knowledge.

The findings of this study contribute for professionals who work in health services to mobilize information, guidance, and support strategies to strengthen and instrumentalize caregivers for care, to minimize overburden and stress. In addition, it encourages new research to compare the context of other services, allowing these family caregivers to develop their caring abilities.

REFERENCES
