Evaluation of Long-Term Institutions for Older People in Brazil: an overview of regional inequalities

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Abstract *This article aims to evaluate the Brazilian Long-Term Institutions for Older People (LTIE), according to the Integrated Multidimensional Theoretical Model of Quality and Service (MIQA), and compare the performance achieved between the regions of the country. Descriptive ecological study carried out with public secondary data from the LTIE participating in the 2018 Census of the Unified Social Assistance System. An Evaluation Matrix was constructed from the Census variables and the MIQA Theoretical Model. Quality parameters were used to classify the institutions' performance for each indicator as "incipient", "developing" or "desirable". The disparity index was obtained for each indicator. 1,665 institutions were analyzed. Differences were observed in the percentages of LTIE with "desirable" performance between Brazilian regions, and the need for improvement in most LTIE in relation to the proportion of caregivers of older people, the composition of the multidisciplinary team, accessibility and supply of health promotion actions. There was a need for government support for the suppression of exclusionary differentiation criteria and for the expansion of services to overcome overcrowding.*

Key words *Aged, Nursing homes, Long-Term Institutions for Older People, Old age assistance, Home Nursing*

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Introduction

The accentuated growth of the older population occurs in a context of accentuated structural transformations in families, resulting from changes in marriage, the drop in fertility and the massive entry of women into the labor market[1]. These changes impose recognition of the need to establish non-family or formal care alternatives for the frail older population and spark a debate about the provision and quality of long-term care (LTC)[1].

Different forms of LTC organizations for older people are observed in the world, depending on political, social and cultural issues, and the levels of responsibility of the State or of the individual/family. Social welfare strategies have been developed by some countries, with the establishment of universal and mandatory social insurance for the older population, with expenses incurred through co-payments, co-insurance and extra charges[2]. It is a consensus that the long-lived older population is the most exposed to non-transmissible chronic diseases and conditions, many of which culminate in sequelae that limit good functional performance, generating situations of dependence and consequent need for LTC[3,4]. Studies have indicated that the proportion of unmet needs for basic and instrumental activities of daily living is 65% for older people, with a predominance of economically disadvantaged groups[3,5]. This scenario, as well as the ongoing changes, require recognition of the need to establish public policies that allow LTC alternatives for certain older people, as well as to encourage the participation of the private market in the provision of these services[4].

In Brazil, among the modalities of assistance for LTC to people over 60 years of age are the Long Term Institutions for Older People (LTIE) which, according to the typification of the National Social Assistance Policy, are modalities to satisfy the housing, food, health and social living needs of older people without family ties or unable to provide for their own subsistence[6]. A national census survey of Brazilian LTIE, carried out between 2007 and 2009, showed a predominance of philanthropic LTIE (65.2%), with a lower percentage of public (6.6%) and private LTIE (28.2%)[4].

In the field of health, the regulation of Brazilian LTIE provides for the monitoring of mortality rates; incidence rate of acute diarrheal diseases, scabies and dehydration; prevalence rate of decubitus ulcers and malnutrition in the resident older population[7]. However, evaluating these institutions is a multidimensional and complex issue, which is influenced by the context and the health conditions of the residents. For the purpose of collecting information about Social Assistance services, programs and projects; and provide subsidies for the construction of monitoring and evaluation indicators, the Brazilian Ministry of Social Development established the Census of the Unified Social Assistance System (SUAS Census), starting in 2010, with annual data collection. The LTIE were included in the SUAS Census, starting in 2012, however, a specific model for evaluating and monitoring the results achieved by these institutions was not located, nor determinations to be taken, given the non-conformities found[8].

Institutional evaluation has been an encouraged and recognized practice in many countries and constitutes a powerful instrument for the implementation of social policies[9]. Different theoretical evaluation models were proposed for LTIE[1]. Rantz *et al.*[10] elaborated the Integrated Multidimensional Model of Quality and Person-centered Care with seven Dimensions of Quality[10]. A matrix of indicators, called in this study the Multidimensional Evaluation Matrix (MMA) was built from the variables of the SUAS Census, based on the Theoretical Model of Rantz *et al.*[10] and validated, in Brazil, by Guimarães *et al.*[11]. The objective of this study was to evaluate the Brazilian LTIE registered with the Unified Social Assistance System, through the MMA, comparing the performance achieved among the five regions of the country.

Method

This is a descriptive ecological study, carried out with public secondary data extracted from the SUAS Census Portal, linked to the National Secretariat of Social Assistance of the Ministry of Social Development of Brazil[12].

Study sample

All Brazilian LTIE linked to the social, public and philanthropic assistance policy were included, with data from the last SUAS Census available at the time of extraction (base year 2018). The collection of data from the SUAS Census is carried out by municipal and state public agents, by filling out an electronic questionnaire, when visiting the institutions[12]. Private, for-profit LTIE

do not respond to the SUAS Census. Two databases from the SUAS 2018 Census Bank were used: the Municipal and State Welcoming bank: general data and the Municipal Welcoming Human Resources database[12]. In the first base, the sampling units were the LTIE and in the second, the workers. The two databases were linked by the common variable identifying the LTIE, the Single Social Assistance System Register (Cad-SUAS)[12].

LTIE evaluation

The LTIE were evaluated using the MMA, validated in Brazil by Guimarães *et al.*[11]. The MMA is composed of 18 indicators, in seven dimensions of the quality of LTIEs: 1) Central focus on residents, family members, employees and community (4 indicators); 2) Human resources (3 indicators); 3) Family involvement (1 indicator); 4) Individualized care (4 indicators); 5) Environment (2 indicators); 6) Housing (3 indicators); 7) Communication (1 indicator) (Chart 1).

The indicators were calculated using data collected in the 2018 SUAS census. The performance of the LTIE for each indicator was classified as: "incipient", "under development" and "desirable" based on regulatory legislation, literature or statistical criteria (Chart 1).

Regional variations in the proportions of LTIE that achieved "desirable" performances were shown using maps. Additionally, to synthesize the result for each dimension, the proportions of LTIE with at least one indicator with desirable performance in each region were calculated. To build the maps, Microsoft Excel 365® software was used.

Calculation of the disparity index

The Disparity Index (DI) was used to estimate and compare the magnitude of differences between Brazilian regions in the proportions of LTIE with "desirable" performance for the evaluated indicators, as it is a positive reference of quality to be achieved. The values of this index reflect, in percentages, the average of the absolute deviation obtained between the proportion of LTIE with desirable performance and the reference value (region with the highest percentage of LTIE with desirable performance for the indicator) or the value for Brazil. Disparity indices were also calculated to compare LTIE ratios with at least one desirable performing indicator across regions for each dimension. For this calcu-

lation, the reference value was always the region with the highest percentage. Its calculation was based on the formula developed by Pearcy and Keppel[13].

The study was approved by the research ethics committee of the Federal University of Minas Gerais through opinion nº 3,143,674. Data analysis was performed using IBM SPSS version 21 and Stata v. 16.

Results

A total of 1,665 LTIE were included in the analysis, 165 (9.91%) from the Midwest region, 189 (11.35%) from the Northeast, 35 (2.10%) from the North, 1,016 (61.02%) from the Southeast and 260 (15.62%) from the South region. The non-response rate was 0.18% (indicators 5 and 12); 0.96% (indicators 4, 8, 9, 10 and 18); 74.83% (indicator 7) and 65.47% (indicator 16). The losses observed in these indicators were due to the lack of complete data for the variables "Existence of training in the area of geriatrics" (25%), "The Institution receives provision from some public entity for physical structure, human resources, equipment/materials or transportation" (100%), "Presence of older people with continuous benefit" (11.17%) and "The institution is enrolled in the council for the rights of older people" (3.72%). The indicator variable 16 "The institution receives provision from some public entity for physical structure, HR, equipment/materials or transport" was excluded from the MMA calculation formula validated by Guimarães *et al.*[11] because it presented 100% of the missing data, adapting the denominator from five to four. The exclusion of this variable from indicator 16 did not have important consequences, since its calculation was carried out with the four variables that made up its original version.

The proportions of LTIE in the Brazilian regions with "incipient", "developing" and "desirable" performance, for each indicator, are presented in Table 1. For most indicators, the highest percentage of LTIE with desirable performance was observed in the Southeast region. The proportions of LTIE with "desirable" performance were 94.10% (indicator Favoring Family Tie); 87.50% (indicator Adequate physical structure) and 76.20% (indicator Valuing the team of professionals). More than 80% (83.81%) of the LTIE showed incipient performance for the indicator Professionals for leisure activities (Table 1). Lower percentages of LTIE with desirable per-

Chart 1. Indicators, SUAS Census Variables, Calculation Formula and Interpretation of performance parameters, according to the Multidimensional Evaluation Matrix, Brazil, 2018.

Indicators	SUAS Census Variables	Calculation Formula and Performance Parameters (I; ID and D)
Dimension 1 - Central focus on residents, family members, employees and community		
1. Access without exclusive differentiations	a) The unit accepts older people with mental disorders;	{(Number of variables with affirmative answers/6)*100}
	b) The unit accepts older refugees/immigrants;	- I: 0 to 33%
	c) The unit accepts older people with a history of homelessness;	- ID: 50 to 68%
	d) The unit accepts older people from indigenous or traditional communities (example: quilombola, gypsies, riverside people);	- D: 80 to 100%
	e) The unit accepts older people with physical, sensory or intellectual disabilities;	
	f) The unit accepts older transvestites, transsexuals, transgenders.	
2. Presence of Coordinator at the institution	a) The LTIE has a coordinator/technical manager with a higher level, with a minimum workload of 20 hours, with a formal link to coordinate the unit, according to legislation;	{(Number of variables with affirmative answers/2)*100} - I: 0% (Non-coord.)
	b) The LTIE has a coordinator/technician in charge at the unit.	- ID: 50% (Coord., but it does not comply with the law) - D: 100% (Coord. according to law)
3. Valuing the professional team	a) Number of professionals with an employment relationship with the institution [private sector employee, outsourced, press worker/cooperative/service provider, statutory employee or public employee;	{(a/b)*100} - I: 0 to 33% - ID: 33.01 to 66%
	b) Number of professionals working in the institution.	- D: 66 to 100%.
4. Care for the older person's family	a) Provides psychosocial assistance to the families of the people sheltered (family orientation);	{(Number of variables with affirmative answers/3)*100}
	b) Promotes meetings with groups of families of the older people;	- I: 0 to 33% - ID: 33.01 to 66%
	c) Promotes contact and participation of the family in the life of the older person.	- D: 66 to 100%
Dimension 2 - Human Resources		
5. Ratio of caregivers per older person	a) Number of caregivers with a workload of 40 hours a week or more than 40 hours a week.	{(a/b*100} - I: <0.025
	b) Number of older residents.	- ID: between 0.025 and 0.049% - D: ≥0.05%
6. Low turnover of professionals	a) Number of professionals working at the institution for 1 (one) year or more;	{(a/b)*100} - I: <50%
	b) Total number of professionals working at the institution.	- ID: between 50% and 86% - D: >86%
7. Permanent Training	a) Existence of lectures, workshops, training and qualification of workers in the unit;	{(Number of affirmative variables/2)*100} - I: 0%
	b) Existence of training in the area of geriatrics (Aging or Rights and care for older people).	- ID: 50% - D: 100%

formance were observed for the following indicators: 9.9% (Professionals for leisure activities), 10.3% (Ratio of caregivers per older person), 15.4% (Multiprofessional Team in the area of Health), 18.0% (Accessibility), 22.6% (Materials and equipment that encourage culture) (Table 1).

The indicators "Favoring family ties", "Adequate physical structure" and "Access without ex-

Chart 1. Indicators, SUAS Census Variables, Calculation Formula and Interpretation of performance parameters, according to the Multidimensional Evaluation Matrix, Brazil, 2018.

Indicators	SUAS Census Variables	Calculation Formula and Performance Parameters (I; ID and D)
Dimension 3 - Family Involvement		
8. Favoring Family Bond	a) The unit promotes coexistence and bonding services for the older people and their families (0: no; 1 yes);	{(Sum of the variables codes a, b, c/5)*100}
	b) The unit welcomes users with family ties (0: no; 1 yes)	- I: 20 to 30%
	c) Visits are allowed in the LTIE (0: no; 1: only on some specific dates; 2: monthly and 1 to 2 days a week; 3: daily)	- ID: 40 to 60% - D: 80 to 100%
Dimension 4 - Individualized Care		
9. Socialization	a) The LTIE promotes activities with community participation;	{(Number of variables with affirmative answers/4)*100}
	b) Accompanies the older person to collect documents;	- I: 0 to 25%
	c) Conducts tours with users;	- ID: 50 to 75% - D: 100%
	d) Promotes the participation of people welcomed in existing services, projects or activities in the community.	
10. Health care management	a) Use of Individual Care Plan;	{(Number of variables with affirmative answers/4)*100}
	b) Use of medical records in the unit;	- I: 0 to 25%
	c) Produces technical reports of cases under follow-up;	- ID: 50 to 75% - D: 100%
	d) Discusses cases with other professionals in the network.	
11. Multiprofessional team in the health area	a) Presence of a psychologist for psychosocial care (individual or in groups at the unit);	{(Number of variables with affirmative answers/5)*100}
	b) Presence of a nurse in the unit;	- I: 0 to 20%
	c) Presence of a nutritionist in the unit; d) Presence of a physiotherapist in the unit; e) Presence of a doctor in the unit.	- ID: 40 to 60% - D: 80 to 100%
12. Professionals for leisure activities	a) Number of higher-level professionals for leisure activities (occupational educator/therapist);	{(Number of professionals for leisure activities 12 hours a week/number of older residents)}
	b) Number of older residents.	- I: 0 - ED: <0.025≠0 - D: ≥0.025

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clusive differentiation" were the ones that showed the lowest magnitude of disparity in terms of "desirable" performance. The greatest disparity was observed for the indicators "Multidisciplinary team in the health area" and "Ratio of caregivers per older person" (Table 1). Differences between the DI of the Brazilian Regions and DI Brazil were not very evident, and the DI for the Social Profile Indicator of the Institution could not be calculated, considering that none of the LTIE showed desirable performance (Table 1).

Variations in the percentages of LTIE with "desirable" performance between Brazilian regions, for the Indicators of the seven Dimensions of Quality, are represented in 18 maps. The different intensities of the colors indicate variations in the percentages reached in the regions, from the lowest to the highest value. There is a predominance of LTIE with "desirable" performance in the southeast and south regions, with the exception of the indicators "Access without exclusive differentiation", "Ratio of caregivers per older person", "Permanent Training" and "Professionals for leisure activities", which predominated in the North region, and "Low turnover of professionals" and "Accessibility", in the Northeast region (Figures 1 to 3).

Considering the set of indicators of each dimension, it was observed, for the dimensions Central focus on residents, family members, employees and community, Family Involvement, Individualized Care, Environment and Commu-

Chart 1. Indicators, SUAS Census Variables, Calculation Formula and Interpretation of performance parameters, according to the Multidimensional Evaluation Matrix, Brazil, 2018.

Indicators	SUAS Census Variables	Calculation Formula and Performance Parameters (I; ID and D)
Dimension 5 - Environment		
13. Adequate physical structure	a) Existence of dormitories for a maximum of 3 older people;	{(Number of variables with affirmative answers/9)*100} - I: 0 to 33% - ID: 44 to 67% - D: 78 to 100%
	b) Existence of bathrooms in the same number as bedrooms;	
	c) Existence of an external recreation area;	
	d) Existence of kitchen, with or without pantry;	
	e) Existence of laundry;	
	f) Existence of a cafeteria/dining room;	
	g) Existence of living room, for coexistence;	
	h) Existence of an administration room or meeting rooms	
	i) Existence of room for collective activities.	
14. Accessibility	a) Main access adapted with ramps and the existence of an accessible route from the sidewalk to the interior of the unit;	{(Number of variables with affirmative answers/9)*100} - I: 0 to 33% - ID: 44 to 67% - D: 78 to 100%
	b) Bathrooms adapted for people with reduced mobility;	
	c) Route accessible to the bathroom;	
	d) Route accessible to dormitories and spaces for collective use;	
	e) Equipment Furniture/materials suitable for PwD or dependency (Assistive Technologies);	
	f) Main access adapted with ramps and the existence of an accessible route from the sidewalk to the interior of the unit, as per regulation;	
	g) Bathrooms adapted for PwD, according to regulation;	
	h) Route accessible to the bathroom, according to regulation;	
	i) Route accessible to dormitories and spaces for collective use, according to specific regulation.	
Dimension 6 - Housing		
15. Existence of materials for culture and leisure	a) Presence of a bibliographic collection;	{(Number of variables with affirmative answers/5)*100} - I: 0 to 20% - ID: 40 to 60% - D: 80 to 100%
	b) Presence of educational and cultural materials;	
	c) Presence of sports equipment;	
	d) Presence of educational and pastime games;	
	e) Presence of television;	
16. Institution's social profile	a) Presence of an agreement or partnership with the public authorities;	{(Number of variables with affirmative answers/4)*100} - I: 0 to 25% - ID: 50 to 75% - D: 100%
	b) The institution is of a governmental nature;	
	c) The institution is registered with the council for the rights of the older people;	
	d) Presence of older people with the Benefit of Continued Benefit in the institution (disabled or not).	
17. Occupancy rate	a) Number of people accommodated in the unit;	{(Number of older residents in the LTIE/maximum capacity of the LTIE)*100} - I: >100% - ID: <85% - D: 85 to 100%
	b) Maximum service capacity.	
Dimension 7 - Communication		
18. Openness to dialogue	a) The unit organizes or promotes discussions with the older people about the routines of the unit; b) The unit holds meetings with Family members of the older people.	{(Number of variables with affirmative answers/2)*100} - I: 0% - ID: 50% - D: 100%

I: incipient; ID: in development and D: desirable.

Source: Authors.

Table 1. Distribution of Brazilian LTIE according to performance in the Multidimensional Evaluation Matrix and Disparity Index for indicators according to the Quality Dimensions of Rantz et al.[10]. SUAS Census, Brazil, 2018.

Indicators according to Quality Dimensions	Performance[a]	Percentage of LTIE according to the performance achieved					Brazil (%)	Disparity Indexes
		Brazilian Regions (%)						
		North	Northeast	Midwest	South	Southeast		
Central focus on residents, family members, employees and community Dimension								
1 Access without exclusive differentiations[c]	I	5.7	19	21.8	12.3	20	18.6	7.2
	ID	22.9	19.6	15.8	17.7	14	15.6	
	D	**71.4**	61.4	62.4	70	66	65.8	
2 Presence of coordinator in the institution	I	17.1	7.4	7.9	8.9	11.7	10.5	22.2
	ID	51.4	57.1	49.1	37.7	31.8	37.7	
	D	31.5	35.5	43	53.4	**56.5**	51.8	
3 Valuing the professional team	I	42.9	38.6	24.2	7.3	6.7	12.9	29.2
	ID	31.4	14.8	17.6	8.9	8.9	10.9	
	D	25.7	46.6	58.2	83.8	**84.4**	76.2	
4 Care for the older person's family	I	55.9	46.3	58.7	47.9	35.1	41.1	31.8
	ID	25.5	27.1	21.6	28.4	28.7	27.7	
	D	17.6	26.6	19.7	23.7	**36.2**	31.2	
% LTIE with at least one indicator with desirable performance		79.4	87.8	86.4	97.8	**93.1**	-	8.4
Human Resources Dimension								
5. Ratio of older person caregivers	I	71.4	61.2	56.7	39.6	36.2	42.3	33.7
	ID	14.3	34	34.8	52.7	51.7	47.4	
	D	**14.3**	4.8	8.5	7.7	12.1	10.3	
6. Low turnover of professionals	I	20	4.2	5.5	2.3	3	3.6	21.3
	ID	34.3	21.7	26.7	54.2	36.6	36.6	
	D	45.7	**74.1**	67.8	43.5	60.4	59.8	
7. Permanent Training	I	4	8.7	7.8	9.4	6.2	7.1	13.7
	ID	24	28.2	37.3	35.1	28.7	30.3	
	D	**72**	63.1	54.9	55.5	65.1	62.6	
% LTIE with at least one indicator with desirable performance		88	**91.2**	87.3	88.5	80.1		4.6
Family Involvement Dimension								
8. Favoring Family Bond	I	2.9	0.5	0	0.4	0.1	0.2	6.2
	ID	17.7	8	8.6	5.8	4.2	5.7	
	D	79.4	91.5	91.4	93.8	**95.7**	94.1	
% LTIE with at least one indicator with desirable performance[d]		79.4	91.5	91.4	93.8	**95.7**	-	5.6
Individualized Care Dimension								
9. Socialization	I	5.9	9.6	12.3	9.3	4.9	6.9	14.2
	ID	52.9	48.9	50.9	47.1	46	47.3	
	D	41.2	41.5	35.8	43.6	**48.9**	45.8	
10. Health care management	I	5.9	11.7	14.2	11.3	4.9	7.6	15.7
	ID	47.1	47.9	50	44.8	43.5	44.9	
	D	47.1	40.4	35.8	43.9	**51.6**	47.5	
11. Multidisciplinary team in the Health area	I	80	70.4	71.5	53.1	39	48.8	48.5
	ID	17.1	23.3	23	31.5	41.9	35.8	
	D	2.9	6.3	5.5	15.4	**19.1**	15.4	
12. Professionals for leisure activities	I	85.7	86.2	86.5	88.1	81.8	83.8	22.1
	ID	2.9	5.3	5.5	6.2	6.8	6.3	
	D	**11.4**	8.5	8	5.7	11.4	9.9	
% LTIE with at least one indicator with desirable performance		64.7	60.4	56.2	**75.2**	66.2	-	14.2

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Table 1. Distribution of Brazilian LTIE according to performance in the Multidimensional Evaluation Matrix and Disparity Index for indicators according to the Quality Dimensions of Rantz *et al.*[10]. SUAS Census, Brazil, 2018.

Indicators according to Quality Dimensions	Performance[a]	Percentage of LTIE according to the performance achieved						Disparity Indexes
		Brazilian Regions (%)					Brazil (%)	
		North	Northeast	Midwest	South	Southeast		
Environment Dimension								
13. Adequate physical structure	I	0	0.5	0.6	0	0.3	0.3	6.7
	ID	28.6	17.5	14.5	11.2	10.5	12.2	
	D	71.4	82	84.9	88.8	**89.2**	87.5	
14. Accessibility	I	8.6	6.9	6.1	3.5	4.4	4.8	20.4
	ID	77.1	69.3	72.7	77.3	79.3	77.2	
	D	14.3	**23.8**	21.2	19.2	16.3	18	
% LTIE with at least one indicator with desirable performance		71.4	87.3	88.5	91.5	**93.1**	-	7.2
Housing Dimension								
15. Existence of materials for culture and leisure	I	42.9	33.9	48.5	31.9	35.5	36.2	26
	ID	42.8	45.5	34.5	40.4	41.6	41.2	
	D	14.3	20.6	17	**27.7**	22.9	22.6	
16. Institution's social profile[e]	I	0	0.1	0.1	0.1	0.1	0.1	It does not apply[e]
	ID	100	99.9	99.9	99.9	99.9	99.9	
	D	0	0	0	0	0	0	
17. Occupancy rate	I	5.7	6.9	8.4	7.3	4.7	5.8	12.9
	ID	51.4	47.1	45.5	35.4	38	39.6	
	D	42.9	46	46.1	**57.3**	**57.3**	54.6	
% LTIE with at least one indicator with desirable performance		**71.4**	62.4	60.3	69.2	71.2	-	7
Communication Dimension								
18. Openness to dialogue	I	44.1	27.7	37	38.9	28	30.8	16.8
	ID	26.5	38.3	38.3	35	36.1	35	
	D	29.4	34	24.7	26.1	**35.9**	32.2	
% LTIE with at least one indicator with desirable performance [d]		29.4	34	24.7	26.1	**35.9**	32.2	16.4

a) I: incipient; ID: in development; D: desirable. b) Values in bold highlight higher percentages of LTIE with desirable performance. c) 30% of the LTIE stated that they do not accept older people with mental disorders. d) Considering that the dimension has a single indicator, the percentage of LTIE with at least one indicator with desirable performance is equal to the percentage observed for the isolated indicator. e) The calculation of the data took into account the change in the calculation formula with the exclusion of the variable: "The institution receives provision from some public entity for physical structure, HR, equipment/materials or transport" for having presented 100% of missing in the time of assessment. It was not possible to calculate the ID of this indicator because there was no LTIE with desirable performance.

Source: Authors.

nication, higher percentages of LTIE with at least one of the indicators of the dimension with desirable performance in the Southeast and South regions. In general, worse performance was observed for the indicators of the Communication and Individualized Care dimensions. The quality dimensions with the highest DI were "Communication" (16.4) and "Individualized Care" (14.2) (Table 1).

Discussion

This study described the performance of Brazilian public and philanthropic LTIE in the quality assessment, considering the dimensions of the Integrated Multidimensional Theoretical Model for LTIE by Rantz *et al.*[10]. The data presented revealed aspects that point to the need for a new division of obligations between the State, the family and the private market for the provision of care for the older population.
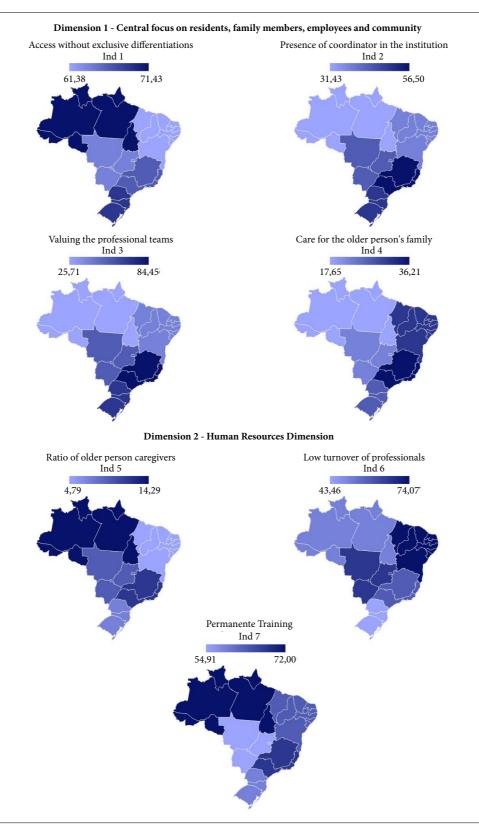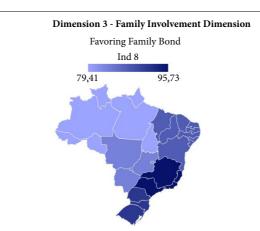
Dimension 1 - Central focus on residents, family members, employees and community

Access without exclusive differentiations
Ind 1

61,38   71,43

Presence of coordinator in the institution
Ind 2

31,43   56,50

Valuing the professional teams
Ind 3

25,71   84,45

Care for the older person's family
Ind 4

17,65   36,21

Dimension 2 - Human Resources Dimension

Ratio of older person caregivers
Ind 5

4,79   14,29

Low turnover of professionals
Ind 6

43,46   74,07

Permanente Training
Ind 7

54,91   72,00

Figure 1. Percentage of long-term institutions for older people with desirable performance for the indicators that make up dimensions 1 and 2 of the Integrated Multidimensional Theoretical Model of Quality and Care by Rantz et al.[10]. SUAS Census, Brazil, 2018.

Source: Authors.

Dimension 3 - Family Involvement Dimension

Favoring Family Bond
Ind 8

79,41   95,73

Dimension 4 - Individualized Care Dimension

Socialization
Ind 9

35,80   48,91

Health care management
Ind 10

35,80   51,59

Multidisciplinary team in the Health area
Ind 11

2,86   19,09

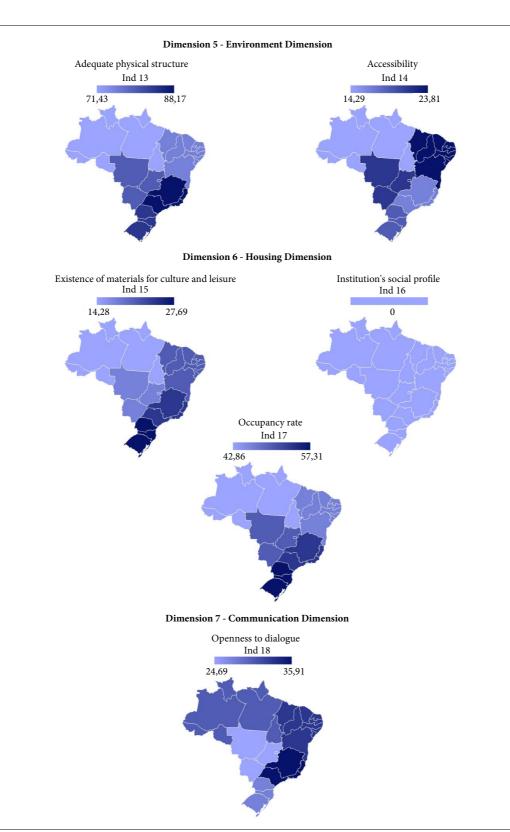Professionals for leisure activities
Ind 12

6,77   11,43

Figure 2. Percentage of long-term institutions for older people with desirable performance for the indicators that make up dimensions 3 and 4 of the Integrated Multidimensional Theoretical Model of Quality and Care by Rantz *et al.*[10]. SUAS Census, Brazil, 2018.

Source: Authors.

This study brought approaches that have not yet been demonstrated in the literature, such as the central focus of LTIE, communication in these institutions and the appreciation of family ties. The theoretical model of Rantz *et al.*[10] adopted in the MMA includes seven dimensions of quality with different concepts. The indicators were developed seeking to assess aspects of each dimension, so that the interpretation of results must be based on these concepts.

The dimension "Central focus on residents, family members, employees and the community" includes the standards related to the service offered by the LTIE to the community, addresses

Dimension 5 - Environment Dimension

Adequate physical structure
Ind 13

Accessibility
Ind 14

Dimension 6 - Housing Dimension

Existence of materials for culture and leisure
Ind 15

Institution's social profile
Ind 16

Occupancy rate
Ind 17

Dimension 7 - Communication Dimension

Openness to dialogue
Ind 18

Figure 3. Percentage of long-term institutions for older people with desirable performance for the indicators that make up dimensions 5, 6 and 7 of the Integrated Multidimensional Theoretical Model of Quality and Care by Rantz *et al.*[10]. SUAS Census, Brazil, 2018.

Source: Authors.

the needs of the residents' families and recognizes the importance of the team of professionals in the qualified care of the older people. The indicator of this dimension with the highest percentage of incipient performance was "Care for the family of the older person", considering the presence of psychosocial care for the families of the people sheltered (family orientation), promotion of meetings with groups of families of users or contact and participation of the family in the user's life. Even though support actions for family members of older people ensure the rights of the older public and their families, contribute to the autonomy and promotion of the well-being of both[14], and are provided for in the programs and services implemented by SUAS, this study showed that such actions are still a challenge in the routine of Brazilian LTIE[14]. The indicator "access without excluding differentiations" showed that, of the verified variables, mental disorder was the most prevalent excluding category in 30% of the total sample. However, older people with mental health problems have a greater reliance on LTC and are therefore more likely to need an LTIE[15]. Thus, such exclusionary differentiations may, on the one hand, indicate disregard for the real needs of the older population, and on the other hand, indicate that public and philanthropic LTIE face many difficulties, whether they be the lack of adequate infrastructure, availability of qualified human resources, or others, that limit the ability to offer care to all older people in need. Therefore, the expansion of support and investment in LTIE can enable a greater offer of care without any type of exclusion. A higher percentage of desirable performance in this dimension was observed for the indicator "Valuing the team of professionals". This indicator considers LTIE data from the perspective of the professional, with regard to labor relations and hiring professionals. The results show that formal work is the predominant employment relationship in these institutions, which can be explained by the fact that public entities provide human resources as a form of support for LTIE[4]. However, more favorable results were observed in the Southeast and South regions, indicating regional challenges for persistent precarious work situations.

With regard to the indicator "presence of a coordinator at the institution", approximately half of the LTIE meet the determination of the national legislation, which provides for a technical supervisor with a higher level, with a formal contract of 20 hours. The highest frequencies of LTIE in this situation were identified in the South

and Southeast regions, which was expected, possibly due to the reduced number of professionals with the profile to coordinate LTIE in other Brazilian regions, and also due to the cost of hiring this professional, which burdens institutions who are already struggling to maintain themselves.

The Human Resources dimension defines that "The LTIE must have a satisfactory number of professionals. It is important that there is low turnover of professionals, supervision and training. The LTIE must recruit and retain employees who are responsive, compassionate, attentive, clean, well prepared and involved in care"[11]. A lower percentage of LTIE with desirable performance was observed for the indicator "Ratio of caregivers per older person" (10.3%), which evaluated the proportion of caregivers recommended by federal legislation[7] in LTIE, that is, one caregiver for each group of 20 older people, with the lowest degree of dependence (proportion 0.05%). This result indicates the high percentage of LTIE that do not comply with the legislation. Hiring more caregivers represents a financial expense for LTIE. In this sense, some policy or action by the government would be necessary to encourage the LTIE to comply with the legislation, supporting with additional resources to hire more caregivers, which would also enable greater qualification and psychological support for this group[16]. Regional disparities are also observed here, mainly due to the smaller proportions observed in the northeast and south regions. Still in the human resources dimension, around 60% of the LTIE presented "desirable" performances for the indicators "Low turnover of professionals" and "Permanent training". These findings are positive, as they favor the qualification of LTIE. Professional turnover, from an organizational perspective, includes replacement and training costs, lost productivity and compromised quality[17]. For Pélissier *et al.*[18], a policy to reduce this turnover in homes for older people should involve the organization of work, reduction of psychosocial demand and access to training in the area of geriatrics and gerontology[18]. The indicators of the "Human Resources" dimension showed regional disparities, probably due to the profile of the labor market in some regions, often marked by the reduced number of qualified labor and the departure of trained professionals in search of better job opportunities[19].

The indicator "Favoring family ties", the only one in the "Family Involvement" dimension, showed a good result, with low regional disparities, suggesting that Brazilian LTIEs would be

recognizing the importance of family ties and promoting actions to reduce the feeling of abandonment and loneliness, as found in a study with older people living in LTIE[20]. Possibly, the favorable results of this indicator are due to the fact that they do not depend on direct financial support for the LTIE. Although these findings seem to contradict the observations found for the indicator "Care for the older person's family" in the dimension "Central focus on residents, family members, employees and the community", it should be noted that the indicator "Favoring the family bond" addresses the provision of coexistence, welcoming people with the same degree of kinship and permission to visit the institution services. The indicator "Care for the older person's family" analyzed the presence of psychosocial care for the families of the people sheltered (family orientation), promotion of meetings with groups of users' families or the contact and participation of the family in the user's life. Although support actions for older people's relatives ensure the rights of the older public and their families, contribute to the autonomy and promotion of the well-being of both[14], and are foreseen in the programs and services implemented by SUAS, this study showed that such actions still constitute a challenge in the routine of Brazilian LTIE[14].

The Individualized Care dimension defines that "the LTIE must guarantee basic care and minimize incidents and injuries at home. It is necessary that they take care of residents as people, offering good food and helping them to eat, engaging residents in activities"[11]. The highest percentage of LTIE with incipient performance was observed for the indicators "Professionals for leisure activities" and "Multidisciplinary team in the area of Health". Federal legislation[6] establishes the proportion of a professional with a university degree for leisure activities, with a workload of 12 hours per week, for each group of 40 older people (proportion of 0.025%). The findings of this study showed little adherence to this legal determination, demonstrating the fragility of institutions regarding health promotion, although recommended by the National Health Policy for Older People[21]. The high regional disparities supposedly result from the polarization of specialized labor in regions with better socioeconomic indices. Regarding the Multiprofessional Health Team indicator, the scenario proved to be unfavorable, but predictable, as federal legislation[6] does not establish the composition of a multiprofessional team to work in LTIE. The aforementioned legal order determines that LTIE must

have a relationship with a professional in the health area, without mentioning their workload or their area of expertise[6]. Silva and Gutierrez[22] drew attention to the requirements of federal legislation[6], in relation to human resources in the health area, since, according to the authors, the frequent demand for health care for institutionalized older people cannot be neglected[22]. The "socialization" indicator sought information on carrying out social activities in the LTIE with bond strengthening, outings and insertion of the older people in existing services and projects in the community. Most of the LTIE showed a desirable performance for this indicator, which is of great relevance, since the stimulation of social interaction is fundamental for the physical and mental capacity of the older person, as well as for the recovery of those who have some functional loss and depression[23].

The indicators of the "Environment" dimension sought to portray the aspects related to the physical space of the LTIE. Most of the LTIE obtained a "desirable" performance for the "Adequate physical structure" indicator, with low regional disparity, while for the "Accessibility" indicator, almost 80% of the LTIE presented a "developing" performance, as they were not, in their entirety, according to the specific regulation[6]. Accessibility is a fundamental condition for human life and, in the case of older people, it can represent more than the possibility of coming and going. Similar data were demonstrated in a study carried out in the Northeast Region that analyzed six LTIE with different management and fundraising systems and infrastructures with their own characteristics. The results showed that most LTIE did not comply with accessibility regulations, with several basic problems and the presence of poor adaptations and improvisations that put the resident population at risk[24].

Understanding the factors that contribute to making older people feel as if they were in a home has been the object of study[25]. The "Housing" dimension sought to demonstrate these aspects through three indicators. The indicator "Occupancy Rate" provided information on the presence of overcrowding in 5.8% of Brazilian LTIE, with percentages ranging from 4.7% in the Southeast region to 8.4% in the Midwest. These data confirmed the findings of the Institute of Applied Economic Research on the need to increase the number of LTIE in the Brazilian territory[26]. Overcrowding in LTIE is a major problem in Brazil today due to the rapid growth of the older population in the country, which has

not prepared for such a phenomenon and this problem is greater in the most impoverished or less inhabited regions. Still in the "Housing" dimension, no LTIE presented a "desirable" performance for the indicator "Social Profile of the Institution", although it is a Social Assistance policy, revealing the inexpressive government support. In addition, social assistance should be non-contributory for people of all ages who need it, but, in fact, the funding of LTIE depends on the contribution of the residents themselves, and, in the case of philanthropic ones, on the solidarity action of the community[26]. Performance "in development" for the indicator "Materials and equipment for culture and leisure" was observed in approximately 40% of the LTIE. More than 1/3 of the LTIE showed incipient performance for this same indicator, which includes variables on the availability of bibliographic collection, pedagogical and cultural materials, sports materials and educational and hobby games, in addition to television. This was the indicator of the "Housing" dimension with the greatest regional disparity, with the best results in the South region, as portrayed by Camarano[27]. In the institutional context, the physical space and limited hours for activities, the dependency of the older people and established norms and routines, which do not always offer adequate conditions for the practice of leisure, were agents that hindered the adoption of these practices in LTIE, according to a study carried out in the southern region of the country[28].

The analysis of the "Communication" Dimension sought data on verbal and behavioral actions with family members and residents, aiming to meet the needs of the older people through two available variables: the unit organizes or promotes discussions with the older people about the unit's routines; and the unit holds meetings with the relatives of the older people. The results showed that the majority of LTIE presented "developing" performance and regional disparities, with better results in the Southeast region. Findings in the literature indicate that the listening process is associated with a series of well-being indicators for residents and, in this sense, the profile of professionals working in LTIE is important to make this process possible[29]. It is worth highlighting the need for the LTIE to promote the use of communication tools as a process of continuous interaction between professionals and residents, observing the opinion of the older person about aspects of their life, for their well-being[16].

As a strong point of this study, the use of a representative group from the largest country in Lat-

in America, with data collected by public agents on public and philanthropic LTIE, allows for a direct analysis of the response of public policies to regional inequalities. As a limitation, we highlight the two indicators that showed a high rate of non-response, due to the lack of data on variables from the SUAS Census. In addition, there was an uneven distribution of the non-response rate between regions. For the indicator Social profile of the institution, the non-response rate ranged from 21.1% in the Northeast region to 38.2% in the Midwest region and for the indicator "Permanent Training" from 26.8% in the Southeast region to 80% in the North region. This unequal distribution of missing data also highlights the need to qualify records in national information systems. Another aspect to be considered is the inherent limitation of the MMA, whose indicators were built considering the information contained in the SUAS Census, restricting the evaluation of all concepts presented in the theoretical dimension. However, the MMA allowed the evaluation of a significant number of LTIE, pointing out the aspects that must advance to improve the quality of care, and the regions that need greater investment to reach desirable levels of performance. It is worth highlighting the importance of analyzing the regional context of the LTIE in evaluation processes. Future studies may confront the results of the evaluated indicators with contextual aspects related to aging and the availability of specialists in older people care in Brazil. It also emphasizes the importance of continuity of studies that advance in the conceptualization of the quality of care in LTIE, and of tools to operationalize and measure this concept in complex contexts.

Conclusions

It was observed that most of the LTIE have a basic physical structure, favor the family bond and that most of its professional team has a formal work bond. However, crucial elements for care need to be improved, such as the proportion of caregivers of older people, the composition of the multidisciplinary team, accessibility and the provision of health promotion actions. There was also a need for governmental and universal support for the suppression of exclusionary differentiation criteria and for the expansion of services to overcome overcrowding. The low funding of LTIE by public management directly and indirectly affects the care provided to the institutionalized older population, as it limits the hiring of human

resources in sufficient numbers, qualified professionals, the acquisition of accessibility devices and the expansion of LTIE installed capacity. They observed differences in the percentages of LTIE with "desirable" performance between the Brazilian regions, and for a greater number of indicators, more positive results were observed in the South and Southeast regions. This evidence points to the need to prepare for the growing demands for LTC, mainly due to the very rapid increase in the older population in Brazil, with an increase in financial support for LTIE and equitable interventions and policies for the improvement of existing institutions.

Collaborations

AMD Vargas and RC Ferreira participated in the conception and design of the research, obtained funding and performed critical review of the manuscript. KC Giacomin carried out the critical review of the manuscript. MRC Guimarães participated in obtaining, analyzing and interpreting the data as well as writing the manuscript.

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