Quality of care in long-term care institutions: A scoping review of literature

Qualidade do cuidado em instituições de longa permnência: Uma revisão de escopo da literatura

Calidad de la atención en las instituciones de atención a largo plazo: Una revisión de alcance de la literatura

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Abstract
This review sought to answer the question "What theoretical models have been used to define and evaluate the quality of care provided to older adults in long-term care institutions?" The employed study methodology followed the recommendations of the Joanna Briggs Institute Reviewers Manual. Using MESH terms and keywords such as "elderly," "long-term care," and "theoretical," four electronic databases (i.e., PubMed, Scopus, Web of Science, and LILACS) were searched for articles in Portuguese, English, and Spanish, without a time frame restriction. Titles and abstracts were independently screened by two reviewers, followed by a full-text review. A total of 1,211 articles met our inclusion criteria, 80 were selected for full reading, and 21 were included for qualitative synthesis. The theoretical models cited in the studies included the multidimensional model (n = 10); the structure, process, and results model (n = 8); a theory centered on the person (n = 2); and one centered on the work environment (n = 1). Few articles used a conceptual model as the basis for assessing long-term care institutions, which is important for the construction of instruments and indicators that assess the quality of care.
Keywords: Quality of care; Theoretical model; Long-term care for the aged; Elder.

Resumo
Esta revisão buscou responder à questão "Quais modelos teóricos têm sido utilizados para definir e avaliar a qualidade da assistência prestada a idosos em instituições de longa permanência?" A metodologia de estudo empregada seguiu as recomendações do Joanna Briggs Institute Reviewers Manual. Usando termos MESH e palavras-chave, como "idosos," "instituição de longa permanência para idosos" e "teoria", quatro bases de dados eletrônicos (PubMed, Scopus, Web of Science e LILACS) foram pesquisadas e incluídos artigos em português, inglês e espanhol, sem restrição de data. Os títulos e resumos foram selecionados de forma independente por dois revisores, seguidos de uma revisão do texto completo. Um total de 1.211 artigos preencheram nossos critérios de inclusão, 80 foram selecionados para leitura na íntegra e 21 foram incluídos para uma síntese qualitativa. Os modelos teóricos citados nos estudos incluíram o modelo multidimensional (n = 10); a estrutura, processo, resultados (n = 8); uma teoria centrada na pessoa (n = 2); e uma centrada no ambiente de trabalho (n = 1). Poucos artigos utilizaram um modelo conceitual como base para a avaliação das instituições de longa permanência, o que é importante para a construção de instrumentos e indicadores que avaliem a qualidade do cuidado.
Palavras-chave: Qualidade do cuidado; Modelo teórico; Instituições de longa permanência para idosos; Idosos.

Resumen
Esta revisión busca dar respuesta a la pregunta "¿Qué modelos teóricos se han utilizado para definir y evaluar la calidad de la atención brindada a los individuos en instituciones de largo plazo?" La metodología de estudio realizada fue seguida como recomendaciones por el Manual de Revisores del Instituto Joanna Briggs. Utilizando términos MESH y palabras clave, como "idosos", "instituição de longa permanência para idosos" y "teoría", se buscaron cuatro

bases de datos electrónicos (PubMed, Scopus, Web of Science y LILACS), incluidos artículos en portugués, inglés y español, con restricción de datos. Dos revisores seleccionaron de forma independiente los títulos y los resúmenes, seguidos de una revisión del texto completo. Un total de 1211 artículos cumplimentaron previamente nuestros criterios de inclusión, 80 seleccionados para su lectura completa y 21 incluidos para una revisión cualitativa. Los modelos teóricos citados en nuestros estudios incluyeron el modelo multidimensional (n = 10); una estructura, proceso, resultados (n = 8); una teoría centrada en el peso (n = 2); un entorno no laboral centrado (n = 1). Poucos artigos utilizará un modelo conceptual como base para la evaluación de instituciones de largo plazo, o que sea importante para la construcción de instrumentos e indicadores que evalúen la calidad de la asistencia.

Palabras clave: Calidad de la atención; Modelo teórico; Instituciones de larga estancia para ancianos; Personas mayores

1. Introdution

Population aging is a worldwide phenomenon that occurs in conjunction with an increasing number of older adults with functional impairment and dependence on daily activities. These older adults need continuous and long-term care that is not always offered by their families. In this context, institutionalization has become an alternative for families (Joshua 2017; Burke & Werner 2019).

Globally, there are different types of long-term care institutions (LTCIs) for older adults, with different denominations but common characteristics. These institutions are collective residences for older adults, with or without the need for assistance in activities of daily living (ADLs) or with behavioral problems. The function of LTCIs is to supply homes where the resident can have protection, citizenship, freedom, family support, and the chance to preserve functional status (Onder et al. 2012; Sanford et al. 2015; WHO 2017; Trinkoff et al. 2020).

To verify the quality of care offered by LTCIs, many types of assessments have been developed and applied to guide the choices of residents or the investments by local governments (Spasova et al. 2018; Scheffelaar et al. 2019; Milte et al. 2019; Wagner et al. 2020; Sion et al. 2020), and the use of multiple dimensions and indicators for assessment is recommended (Gilissen et al. 2017; Dyer et al. 2019).

To construct evaluation instruments, it is vital to have a theory to direct the research, guide what will be evaluated, and guide how something will be measured. The choice of the theoretical framework to achieve this requires in-depth knowledge of the topic being studied (Adom et al. 2018; Collins et al. 2018; Varpio et al. 2019). According to the World Health Organization (WHO), a definition of quality must be effective, efficient, accessible, patient-centered, fair, and safe (WHO 2006). The mapping of theoretical models used by researchers to assess the quality of care in LTCIs systematizes the theory employed and contributes to the comparison of them and the choice of the theoretical framework for the design of future studies. Therefore, the objective of this study was to map the theoretical frameworks used to define and assess the quality of care in LTCIs.

2. Methodology

The present study is a scoping review conducted according to the methodological guidelines of the Joanna Briggs Institute Reviewers Manual (Peters et al. 2015). This type of research map key concepts, summarize theories and clarify the conceptual limits and gaps in the scientific literature (Levac et al. 2010; Tricco et al. 2016; Munn et al. 2018). The Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist was employed in this review.

The following methodological steps were followed: (1) identification of the research problem, (2) development of the eligibility criteria, (3) definition of the search strategy, and (4) qualitative synthesis of the results (Armstrong et al. 2011; Peters et al. 2015).

2.1 Research problem identification

This research was conducted due to the need to identify theoretical models to evaluate the quality of care in the context of LTCIs. The PCC framework (population, concept, and context) structured the construction of the research question. Meanwhile, the population included institutionalized older adults, the concept refers to the theoretical models used to guide the assessment of the quality of care, and the context was the LTCIs themselves (Peters et al. 2015). Therefore, the research question was defined as follows: What theoretical models have been used to define and assess the quality of care for older adults in LTCIs?

2.2 Development of eligibility criteria

The eligibility criteria for inclusion in our analysis were (1) studies in English, Portuguese, and Spanish; (2) original studies with a quantitative or qualitative approach; (3) studies that presented a theoretical model for assessing the quality of care in an LTCI, and (4) studies conducted in an LTCI. There was no time limit restriction for studies. Editorials, book chapters, dissertations, and conference abstracts were excluded.

2.3 Search strategy

The search was carried out between July 2020 and February 2021 in the following electronic databases: Web of Science, PubMed, LILACS, and Scopus. The search strategy included descriptors indexed in the Medical Subject Headings (MESH) joined by Boolean AND and OR. The descriptors were separated into four blocks (quality of care, LTCI, older adults, and theoretical model) and the search strategy was adapted according to each electronic database (Table 1). A manual search was also carried out by consulting the list of references of the included articles.

Table 1. Search strategy on the electronic databases

Database	Keywords
Web of Science	("quality of care"[All Fields] OR "quality of healthcare"[All Fields] OR "quality of health care"[All Fields] OR "quality indicator*"[All Fields] OR "quality measure*"[All Fields] OR "quality assess*"[All Fields] OR "quality evaluation"[All Fields]) AND ("nursing home"[All Fields] OR "nursing homes"[All Fields] OR "homes for the aged"[All Fields] OR "residential care home"[All Fields] OR "long term facilit*"[All Fields] OR "homes nursing"[All Fields] OR "residential care"[All Fields] OR "residential care institutions"[All Fields] OR "long-term care"[All Fields] OR "long-term care"[All Fields] OR "care home"[All Fields]) AND ("elder"[All Fields] OR "elder*"[All Fields] OR ("aged"[MeSH Terms] OR "aged"[All Fields]) OR "geriatric*"[All Fields] OR "gerontol*"[All Fields] OR "older adult*"[All Fields] OR "aging"[All Fields]) AND ("theoretical model"[All Fields] OR "theoretical framework"[All Fields] OR "theory"[All Fields] OR "measure*"[All Fields] OR "models theoretical"[All Fields] OR "theoretical study"[All Fields] OR "conceptual model"[All Fields] OR "conceptual framework"[All Fields])
PubMed	("quality of care"[All Fields] OR "quality of healthcare"[All Fields] OR "quality of health care"[All Fields] OR "quality indicator*"[All Fields] OR "quality measure*"[All Fields] OR "quality assess*"[All Fields] OR "quality evaluation"[All Fields]) AND ("nursing home"[All Fields] OR "nursing homes"[All Fields] OR "homes for the aged"[All Fields] OR "residential care home"[All Fields] OR "long term facilit*"[All Fields] OR "homes nursing"[All Fields] OR "residential care"[All Fields] OR "residential care institutions"[All Fields] OR "long-term care"[All Fields] OR "long-term care"[All Fields] OR "care home"[All Fields]) AND ("elder"[All Fields] OR "elder*"[All Fields] OR ("aged"[MeSH Terms] OR "aged"[All Fields]) OR "geriatric*"[All Fields] OR "gerontol*"[All Fields] OR "older adult*"[All Fields] OR "aging"[All Fields]) AND ("theoretical model"[All Fields] OR "theoretical framework"[All Fields] OR "theory"[All Fields] OR "measure*"[All Fields] OR "models theoretical"[All Fields] OR "theoretical study"[All Fields] OR "conceptual model"[All Fields] OR "conceptual framework"[All Fields])
Scopus	(("quality of care" OR "quality of healthcare" OR "quality of health care" OR "quality indicator" OR "quality measure*" OR "quality assess*" OR "quality evaluation")) AND (((("Nursing Homes" [mesh] OR "Homes for the Aged" [mesh] OR residential AND care AND home*[title/abstract] OR "long AND term AND facilit*" OR "homes, AND nursing" OR "residential AND care" OR "residential AND care AND institutions" OR "long-term AND care" OR "long AND term AND care" OR "care AND home*"))) AND ((elder* OR aged OR geriatric* OR "older

	AND adults" OR "aging"))) AND (("theoretical model") OR ("theoretical framework") OR ("theory") OR ("measure") OR ("models theoretical") OR ("theoretical study") OR ("conceptual model") AND ("conceptual framework"))
LILACS	(("quality of care" OR "quality of healthcare" OR "quality of health care" OR "quality indicator" OR quality measure* OR "quality assess*" OR "quality evaluation")) AND (((("Nursing Homes" OR "Homes for the Aged" OR residential AND care AND home* OR long AND term AND facilit* OR "homes, AND nursing" OR "residential AND care" OR "residential AND care AND institutions" OR "long-term AND care" OR "long AND term AND care" OR "care AND home*"))) AND ((elder* OR aged OR geriatric* OR "older AND adults" OR "aging"))) AND (("theoretical model") OR ("theoretical framework") OR ("theory") OR ("measure") OR ("models theoretical") OR ("theoretical study") OR ("conceptual model") AND ("conceptual framework"))

Source: Authors.

### 2.4 Qualitative summary of results

Relevant studies were initially identified. The software Microsoft Excel® was used to identify and exclude duplicate articles. Two independent researchers (BLCV and ACM) selected the studies. The titles and abstracts were read for an initial screening, and the selected articles were read in full by both researchers. Disagreements about inclusions were discussed between the two researchers until a consensus was reached; if consensus could not be reached, disagreements were discussed with another researcher. According to the guidelines of a scoping review, an assessment of the quality of the selected articles was not carried out.

Information was then extracted from the selected studies using a table in Microsoft Excel® with the following information: author, year of publication, the country where the research was conducted, objectives, sample composition, variables used, data collection method, and dimensions of quality of care used to assess the quality of care in LTCIs. Theories were identified as multidimensional, when indicated in articles with that denomination or when citing the dimensions used to assess quality; structure–process–result, when the author used that term or indicated the study to follow Donabedian theory; person-centered, when it was described as based on consumer preference or satisfaction; and worker-centered, when the evaluation involved the worker's action on residents' well-being.

3. Results

A total of 1,216 studies were retained; 7 were duplicated. Of the studies, 1,204 were screened by reading the titles and abstracts, and 80 were screened by reading the full texts. Five more studies were selected from the references of the articles selected for a complete reading (Figure 1).

Figure 1. Search and exclusion flow diagram.
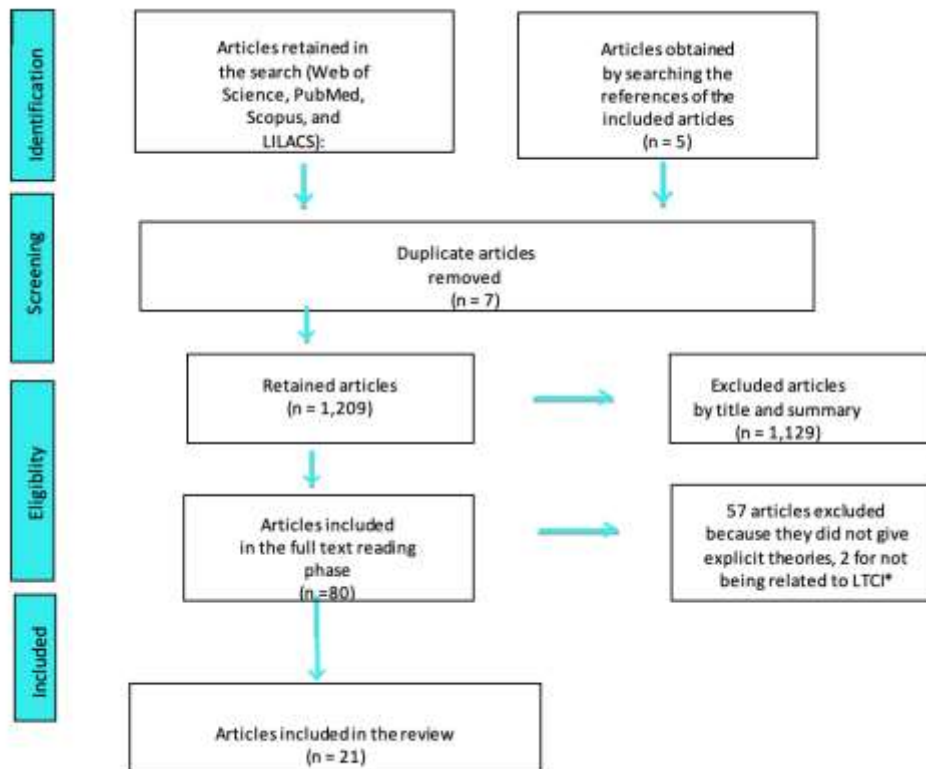
*LTCI – Long-term care institutions. Source: Joanna Briggs Institute Reviewers Manual (Peters et al. 2015) modified by the authors.

The search sequence, including and excluding criteria, was described in the flow chart (Figure 1). The selected articles were separated according to the theories used. Table 2 shows the information about the author(s), research site, type of study, objectives, sample composition and variables. After screening and applying the elegibility criteria, 21 articles were included in the review, most of which were cross-sectional (n = 13) and qualitative (n = 6); only two were longitudinal. Most studies were conducted in a single country, most often in the United States (n = 10), the United Kingdom, Denmark, Finland, Israel, Lebanon, and Switzerland. There were five multicenter studies: one involving the Czech Republic, Finland, France, Germany, Italy, Israel, the Netherlands, and the United Kingdom; another involving Denmark, Iceland, Italy, and the United States; another involving the United States and Finland; another involving the United States, Canada, and Iceland; and another involving the United States and Iceland (Table 2).

The samples employed in the selected articles were LTCIs (Gustafson et al. 1990; Phillips et al. 1997; Saintfort et al. 1995; Rantz et al. 2000; Grabowski 2001; Rantz et al. 2002; Fleishman 1998; Weech-Maldonado et al. 2004; Laberge et al. 2008; Goodson et al. 2008; Thomas et al. 2012), residents and family members (Rantz et al. 1999), family members only (Thompson et al. 2012), residents only (Frijters et al. 2013; Malley et al. 2019; Kang et al. 2011; Kajonius & Kazemi 2016; Abbott et al. 2018), LTCI`s administrators (Nasser; Doumit et al. 2011; Lowe et al. 2003) and LTCI`s workers (Winsløw; Borg, 2008).

The theoretical models used were structure–process–results, multidimensional, person-centered, and work-centered.

Table 2 Characteristics of included studies' author(s), place of research, type of study, objectives, sample composition, and variables, separated by theoretical model

Author(s)	Research location	Type of study	Aim(s)	Population/sample	Variable(s) / quality indicator(s) used	Dimensions	Data collection method
Multidimensional model							
Gustafson et al. 1990	United States	Qualitative	To develop an instrument for assessing quality in LTCIs	75 LTCIs in Wisconsin, 18 in New York, and 18 in Massachusetts	Direct resident care, care process, recreational activities, diet, and relationship with family or community	Did not relate the dimensions of quality	Empirical model validation using multiattribute utility (MAU), with the creation and use of the Quality Assessment Index (QAI) as a summary measure of quality, with comparability of scores between LTCIs
Phillips et al. 1997	Denmark, Iceland, Italy, and the United States	Cross-sectional	To evaluate and compare quality using secondary data obtained using the Resident Assessment Instrument (RAI)	All LTCIs in the United States, 65 from Denmark, 11 from Iceland, and 16 from Italy	Muscle contracture, pressure ulcers, untreated depression, physical restraint, use of psychotropic drugs, little or no physical activity, falls, and weight loss	Did not list the dimensions	Secondary RAI data
Saintfort et al. 1995	United States and Finland	Cross-sectional	To assess the relationship between the concept and quality measures with organizational characteristics	104 LTCIs	Resident care, recreational activities, facilities, and diet	Variety and adequacy of medical services, and characteristics of the facilities; quality of care planning	Application of the QAI instrument and collection of organizational characteristics
Rantz et al. 1999	United States	Qualitative	To discover the dimensions that define the quality of care from the point of view of home care consumers	16 LTCI residents and 80 family members	Teamwork and care	Team, care, family involvement, communication, environment, home, and cost	Focus group

Rantz et al. 2000	United States and Iceland	Qualitative	To validate the Observable Indicators instrument of Nursing Home Care Quality (QIC)	109 LTCIs in the United States and 11 LTCIs in Iceland	Interaction, individual care, workers, environment, security, and social environment	Interaction, individual care, LTCI`s workers, environment, security, and social environment	Exploratory study and focus groups
Grabowski 2001	United States	Longitudinal	To assess how the reimbursement of Medicaid influences quality	15,067 LTCIs participating in the On-Line Survey, Certification, and Reporting (OSCAR) system	Registered nurses and number of nurses per 100 residents, medication errors, urethral catheters, feeding tube, physical restraint, and number of disabilities according to the Medicaid certification process	Did not list the dimensions	OSCAR data, Bureau of Health Professions' Area Resource File, the State Data Book on Long-Term Care Program and Market Characteristics, and 1996 data from HCFA (Health Care Financing Administration) area wage indexes
Rantz et al. 2002	Canada, Iceland United States	Qualitative	To translate and validate the questionnaire (QIC)	12 LTCIs in Iceland, 1 LTCI in Canada, and 20 LTCIs in the United States	Care, communication, workers, and environment family involvement, home, and care	Assistance and communication work team, environment, family involvement, house, and central focus on care	Consultation with evaluators for validation and application in LTCIs
Thompson et al. 2012	Finland	Cross-sectional	To report advanced end-of-life quality concepts in LTCIs	1,282 family members of terminally ill residents of 85 LTCIs	Proportion of residents with advance directives (living wills, orders not to resuscitate, those not to be hospitalized, and those without dietary restrictions), in hospice, hospitalized or sent to an emergency room, and in feeding tubes	The LTCI itself, administrative leadership, culture, and care practices	The LTCI itself. Interview with family members of residents who died and lived permanently and for at least 14 days at LTCIs and whose relatives participated in the care of these residents

Frijters et al. 2013	Czech Republic, Finland, France, Germany, Italy, Israel, the Netherlands, and the United Kingdom	Longitudinal	To explain and discuss quality indicators related to the interRAI Long Term Care Facility instrument (interRAI-LTCI)	3,761 LTCI residents during initial data collection and 2,686 during the second collection	Behavior problems, depression, incontinence, urinary tract infection, inadequate pain management, pressure ulcers, activity level, use of antipsychotics, falls, loss of cognition, catheter, and weight loss	Did not list the dimensions	Assessments and data collections performed by trained nurses
Malley et al. 2019	United Kingdom	Cross-sectional	To investigate the association between process (experience) and quality of life (QoL), what is most important for determining QoL, and whether it is influenced by the characteristics of the user	14,172 people aged over 65 years living in LTCIs	Safety, positive experience, and effectiveness	Safety, positive experience, and effectiveness	Quiz, including derived QoL questions from the Adult Social Care Outcomes Toolkit (ASCOT); care experience and user characteristics
Structure–process–result model							
Fleishman 1998	Israel	Cross-sectional	To explain the conceptual model of regulation, assessment, and follow-up (RAF)	220 LTCIs with 13,100 residents	Care provision system, technical–professional aspects, client–professional relationship, and cost	Structure, work process, and results	Survey data pertaining to older adults from the Aged of the Ministry of Labor and Social Affairs
Weech-Maldonado, et al. 2004	United States	Cross-sectional	To relate the structure–process–results theory and direct or indirect workteam effects on care results	1,135 LTCIs in five US states	Physical restraint use, antipsychotics, incidence and worsening of pressure ulcers, cognitive decline, and mood decline	Structure, work process, and results	Minimum Data Set data Plus (MDS +), OSCAR and structure, work process, and results

Laberge et al. 2008	United States	Cross-sectional	To compare features of veterans LTCIs and community LTCIs	192 veteran LTCIs and 24,360 community LTCIs	Structure – minimum number of trained nurses, qualified staff, registered nurse ratio, and hours per resident Process – prevalence of feeding tube, mobility restriction, and internal catheterization Results – decreased cognitive decline, and pressure ulcers	Structure, work process, and results	OSCAR data from 1999 to 2002
Goodson et al. 2008 *	United States	Cross-sectional	To use a methodology to aggregate quality indicators and to reveal the relationship between various quality measures and how they affect quality in general	234 LTCIs	Key factors that affect quality: Number of certified caregivers, bedridden, physical restraint, the QIC questionnaire; Number of beds; whether one accepts Medicare residents; if one is part of a network of nursing homes; number of hours of assistants and nurses and per resident; number of disabilities; Center for Health Systems Research and Analysis (CHSRA) at the University of Wisconsin – Madison - Quality Indicators	Structure, work process, and results	Secondary data with QIC research results from the National Institute of Nursing Research of the National Institutes of Health and primary data from CHSRA at the University of Wisconsin – Madison
Kang et al. 2011	United States	Cross-sectional	To assess the impact of the geographical location of rural LTCIs	12,507 residents of 1,174 LTCIs	Hospital admission in 90 days after switching to LTCI, vaccination status, especially for pneumonia, severe or moderate pain in the last 7 days	Structure, work process, and results	Data from the 2004 National Nursing Home Survey
Nasser; Doumit et al. 2011	Lebanon	Qualitative	To establish a set of measurable criteria for LTCIs	Two panel discussions, one with 19 and 13 participants	Types of LTCIs, financing, health services, services offered, activities (social, spiritual, physical and mental), structures, and rights of older adults	Structure, work process, and results	Discussion panel between administrators, caregivers, and specialists
Thomas et al. 2012	United States	Cross-sectional	To examine the relationship between LTCI classifications on patient safety culture and care process and results.	3,557 LTCIs	Structure – patient safety Process – physical restraint Results – drop in residents	Structure, work process, and results	Questionnaire distributed to LTCI directors; 2008 Nursing Home Survey on PSC (patient

							safety culture), the Online Survey, Certification, and Reporting Database, and the Minimum Data Set (MDS)
Kajonius & Kazemi 2016	Switzerland	Cross-sectional	To test empirically the Donabedian model	95,000 seniors in 324 cities	Structure – income per older person, workers, and training Process – respect, information, general satisfaction, and influence on the workteam	Structure, work process, and results	Swedish data from the annual national elderly survey (National Board of Health and Welfare 2012).
Consumer-Centered or Person-Centered model							
Lowe et al. 2003	United States	Cross-sectional	To measure consumer satisfaction in LTCIs	50 health directors from different American states	Consumer satisfaction	Consumer satisfaction	Questionnaires by email
Abbott et al. 2018	United States	Cross-sectional	To identify preferences for consumers living in LTCIs	255 older adults in LTCIs and 528 older adults using community-based services	Preferences. Regular contact with family, choosing what to eat, listening to music one likes, regular contact with friends, watching television, having privacy, going outdoors, giving gifts, choosing time of day for bathing, and off-site activities	Preferences. Psychosocial preferences and family involvement	Analysis of secondary data obtained from PELI responses (Preferences for Everyday Living Inventory)
Worker-centered model							
Winsløw; Borg, 2008	Denmark	Cross-sectional	To investigate the relationship between workplace resources and quality of care in LTCIs	7,500 workers care from 36 municipalities	Possibilities to develop at work, influence, leadership, presence, meaning at work, commitment, and clarity of the worker's role	Work process	Standardized questionnaire

Source: Authors.

3.1 Theoretical models

We identified 10 studies that used the multidimensional model; eight that used the structure–process–result model (more popularly known as the Donabedian model), two were based on the person-centered model, and one was based on the work environment. One study related the two theories that it employed (multidimensional and structure–process–result). Articles were published between 1990 and 2019.

The articles that used multidimensional models addressed several dimensions of care, including residents and family members, workers and managers, the LTCI`s physical structure, the quality of care, the involvement with the family, and the community. Studies that used the Donabedian model (structure–process–result) assessed the results of the research to verify the quality of care. Meanwhile, studies that adopted the person-centered model considered well-being and quality of life as indicators of good quality. Finally, those that employed the workplace-based approach considered the psychosocial incentive of workers as a key to efficient care at LTCIs.

3.2 Dimensions of theoretical models for quality assessment and measurement using indicators

In the structure–process–result model, the dimensions involved several indicators. The structure assessment verified the number of beds (vacancies) at the LTCIs and the qualification of workers (n = 5), as well as the final medical cost per older adult (n = 2). The work process emphasized communication (n = 2) and an adequate number of workers (n = 2). The expected results were defined using indicators referring to the patients' clinical conditions, such as whether they had experienced pressure ulcers, falls, incontinence, infections, cognitive decline, and weight loss.

The dimensions cited in the multidimensional model were care, health status, functional status, well-being, medical services, care planning, work team, family involvement, communication, environment, cost, security, social environment, administrative leadership, culture, positive experience, and effectiveness. The indicators used in these studies were professional performance in providing care (n = 5), family involvement (n = 3), user satisfaction (n = 2), structure (n = 4), recreational activities and social interaction (n = 3), and cost (n = 1).

The person-centered model adopted user satisfaction and family involvement as dimensions. The indicators used in these studies were consumer satisfaction, preferences, regular contact with the family, choice of food, choice of music, regular contact with friends, watching television, having privacy, going outdoors, giving gifts, choosing the time of day to bathe, and activities outside the LTCIs.

The work-centered model only evaluated professional performance. The indicators used were the possibility of development at work, influence, leadership, meaning at work, commitment, and clarity of the worker's role.

Studies by Phillips et al. (1997), Frijters et al. (2013), and Grabowski (2001), despite conceptualizing the quality of care as complex and multidimensional, used indicators based on the structure–process–result model, RAI, interRAI-LTCI, and OSCAR, respectively. Nasser and Doumit et al. (2011) used the Donabedian model, listened to administrators, caregivers, and specialists, but was without the participation of older adults, which is not highly valued by this model.

Some studies have attempted to connect the variables used with actual improvement in quality of care. The variables that had a positive relationship with quality were the workers' psychosocial resources and favorable work environment (Winsløw; Borg 2008), individualized treatment, directing the focus of care to older adults (Abbott et al. 2018), quality of life (Malley et al. 2019), the work process and work teams (Kajonius & Kazemi 2016), and safety culture (Thomas et al. 2012).

4. Discussion

Measuring the quality of services offered at LTCIs has been a challenge worldwide. The lack of uniformity regarding the concept of quality for LTCIs and the use of multiple dimensions are just some of the difficulties faced. It is important to integrate the perspectives of older adult residents, family members, and professionals when investigating the concept of quality to build tools for assessing the quality of LTCIs (Nakren et al. 2008), because care in LTCIs involves several subjects as residents, workers and managers (Frytak et al. 2001).

In this regard, the multidimensional model assumes that the quality of care needs to involve multiple dimensions. Some studies carried out qualitative research seeking to understand the perceptions of quality from specialists, care providers, care users, and family members to establish these dimensions. The most cited dimensions were the environment, family involvement, human resources, home, individualized care, communication, and a central focus on residents, family, and the community (Gustafson et al. 1990; Rantz et al. 1999; Thompson et al. 2012). From this, the QAI (Gustafson et al. 1990) and OIQ were constructed for researchers, users, and regulators interested in observing and evaluating the quality of care in LTCIs, based on a multidimensional theoretical model (Rantz et al, 2000; 2002). The studies that used this model were more comprehensive, with multiple dimensions, with regard to the evaluation of care.

The use of the structure–process–result model was justified by the authors that employed the model by the need for an evaluation that would guarantee the delivery of good quality service to residents. It connects structure, process, and results as the key to achieving good quality, and each of these dimensions has several indicators. The structure involves material, human, and organizational resources; the process involves activities related to care itself; the results refer to the effect of care on the patient's condition (Fleishman 1988). The most common criticism regarding the use of the Donabedian model is that it is adapted from the industry that aims to produce objects and not services, without having as a central point the health and well-being of people (Unruh & Wan, 2004; Harrington et al. 2005), and that there is not enough detail to truly meet the needs of users or to develop a care plan (Degenholtz et al. 2014). In general, studies that support this model use fewer comprehensive variables than multidimensional models. None of the included studies evaluated family involvement or recreational activities. Many studies using secondary data and normally available tools are based on this theory, such as the Minimum Data Set (MDS) (Weech-Maldonado et al. 2004; Thomas et al. 2012) and OSCAR (Grabowski, 2001; Weech-Maldonado, et al. 2004; Laberge et al. 2008). Some authors, even without supporting this theory, used the same data. Generally, these tools are used to define financing and to compare the LTCI's quality services (Fleishman 1998; Laberge et al. 2008; Kang et al. 2011; Thomas et al. 2012; Weech-Maldonado et al. 2004).

In the person-centered model, the first study found that the quality of care is based on the person and his well-being, and quality of life is a frequently used indicator (Lowe et al. 2003). The second address the patient's holistic view, and his physical, mental and psychosocial health is considered to meet the individuality and desire of the person (Abbott et al. 2018). This model values individual preferences and is against the traditional biomedical care management model, in which the health professional defines the treatment without the patient's participation. Five principles govern this theoretical model: empowerment, respect, patient involvement, access, and support for appropriate treatment (International Alliance of Patients' Organizations, 2007). In general, there are criticisms from a person-centered organization because it is believed that it is not strongly oriented toward equity in health, since it is believed that to create equitable health systems, it is essential to analyze the perception of users and those involved, as well as the workers who have the potential to identify disparities in health care and who can contribute to increasing the quality of care (Cunningham et al. 2014; David et al., 2020).

The theoretical model that related the work environment was found only in one study (i.e., Winsløw and Borg 2008), being defined as the frequency at which workers perform actions for users, which promotes well-being and quality of life. This

raises the hypothesis that a sufficient number of workers with adequate qualification in an environment that favors the psychosocial aspects of these workers leads to the provision of a better quality of care (Lindolpho et al., 2020; Machado et al., 2020). A relationship was identified between psychosocial aspects (influence, possibilities of development, meaning of work, commitment, clarity of functions, predictability, and leadership) and quality of care (Winsløw; Borg 2008). Studies have shown that professional satisfaction is mediated by proactive behaviors (Khatri et al. 2016; Tourangeou et al. 2017; Backhaus et al. 2017) and that career and job satisfaction is related to the quality of service provided to the consumer (Spence et al. 2016). However, there was no evidence of an association between quality and payment for performance (Glickman et al. 2007).

The focus on just a few indicators may not substantially improve quality; several indicators are required for this to occur (Goodson et al. 2008; Thompson et al. 2012; Kontezka, 2019, Song et al. 2019; Minayo 2019).

With regard to theoretical models, most are incomplete or have not been created specifically to assess LTCIs. Difficult factors in the assessment are those intrinsic to older adults, such as age and genetic load, which cannot be controlled and affect clinical indicators (Unruh & Wan., 2004; Harrington et al. 2005). Another factor is related to the indicators themselves; generally, little has changed over time, not been validated, and not necessarily related to improvement in the quality of care (Young 2014; Medeiros et al. 2016; Kottner et al. 2018; Burke & Werner 2019; Armijo-Olivo et al. 2020).

For a good evaluation, it is necessary to search for concepts with a broad understanding (Bond et al. 2018) and choose the elements that will constitute the evaluation, assuming that the lowest quality is associated with inefficiency (Donabedian 1988). The evaluation, in general, should vary according to time, internal culture and also include qualitative aspects, although difficult to numerically measure (Adom et al. 2018, Collins et al. 2018, Varpio et al. 2019).

This review provides a comprehensive, relevant, and up-to-date view of the theoretical models used to assess LTCIs. A strong point of this study is that the quality models used to evaluate LTCIs drive advances in evaluation models with positive results. Additionally, multi-base and peer searching strengthen research. There is still a long way to go to improve the quality of care assessment processes in LTCIs, which attends a population that is growing rapidly in the world.

A multidimensional model with comprehensive dimensions including all those involved (consumers, residents, and family members, managers, and workers), with an outstanding assessment of worker and resident satisfaction, would be the best way to better capture the current moment of quality of care and what will be necessary to improve it.

5. Conclusion

Four theoretical models were used to assess the quality of care in LTCIs: multidimensional, structure–process–result, person-centered, and centered on the work-centered.

There are dimensions and some common indicators between models. The indicators of the model work and person-centered are also part of the multidimensional and Donabedian models.

The theoretical model influences the construction of evaluation systems. The more comprehensive the assessment, the more likely the quality will be achieved.

Multidimensionality must be considered when assessing the quality of care in LTCIs, which must be performed continuously.

More studies must be developed to evaluate the quality of care offered in LTCI based on quality theoretical frameworks, considering the several dimensions of the quality concept. In the same sense, there is a need to develop valid and reliable indicators to measure these quality aspects. In this way, the evaluative studies will improve the quality of care, health, and well-being of institutionalized older adults.

Declarations

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