Quality Indicators for Stroke Patients at Home-based Care

Indikator Kualitas untuk Pasien Stroke di Perawatan Berbasis Rumah

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ABSTRACT

One of several methods to identify the level of performance is using quality of care indicators. Even though many quality indicators of health care have been announced, those which specify in home care services are limited in that none of them describe the stroke patients' condition. The purposes of this study was to identify what components can be used as a determinant of the quality of home care services for stroke patients. It was a qualitative study used a literature review with quantitative analysis. Google Scholar, EBSCO, ProQuest and PubMed database websites were searched for articles and information. The results found from through articles which reviewed, most of the quality of home care indicators were classified as outcome indicators, while the rest as a process indicator, and none as structure indicator. It can concluded that outcome indicators are still a major concern in developing quality indicators of home care. Further investigation is required for developing an instrument that is appropriate for assessing the quality of home care service for stroke patients which contain a complete three components of the quality of care.

ABSTRAK

Salah satu metode untuk mengidentifikasi tingkat kinerja adalah dengan menggunakan indikator kualitas. Meskipun banyak indikator kualitas pelayanan kesehatan telah dipublikasikan, namun indikator yang khusus digunakan untuk menilai pelayanan home care sangat terbatas, bahkan tidak ada yang spesifik untuk pasien stroke. Tujuan penelitian ini adalah untuk mengidentifikasi komponen-komponen yang dapat digunakan untuk menilai kualitas pelayanan home care bagi pasien stroke. Penelitian ini merupakan penelitian kualitatif dengan review literatur menggunakan analisis kuantitatif. Google Scholar, EBSCO, ProQuest dan Pubmed menjadi database website untuk penelusuran artikel dan informasi. Hasil review menunjukkan bahwa kebanyakan indikator kualitas home care teridentifikasi sebagai indikator outcome, sisanya sebagai indikator proses, dan tidak ada indikator struktur. Dapat disimpulkan bahwa indikator outcome masih menjadi perhatian banyak ahli dalam penyusunan indikator kualitas home care. Kajian lebih lanjut dibutuhkan untuk mengembangkan instrumen yang tepat guna mengkaji kualitas pelayanan home care bagi pasien stroke secara lengkap yang meliputi tiga komponen kualitas perawatan.

INTRODUCTION

In the context of functional dependencies, home care is a significant alternative treatment for stroke patients. The main role of the home care provider is to teach skills to the family/caregiver and to give informal support. Caregivers are responsible for continuing treatment that has been taught by the medical team (Gratao et al., 2013). Home care aims to help many people with different levels of dependence to stay at home rather than being treated in a hospital for an extended period of time (Ajlouni et al., 2015). In providing care, homecare should be in accordance with the needs of patients, for which all teams must be able to work together to reduce the caregiver's burden, so the caregiver can better play a role in disease prevention and health promotion.

Quality of care services is the critical aspect that ensures the patient safety, therapeutic effect, patients' comfort and pleasure, and it also saves time, power, effort, energy, cost and material. Therefore, it leads to the best quality care, with an ease of doing and an ability to adapt to changes (Sale, 1996; Stalpers et al., 2016). The assessment of service quality consists of the structure, process and outcome of the provision of home care (Donabedian, 1988). To have quality home care and meet the corresponding demands of the times, the care providers must be able to adapt to the complexity of the patient's needs and the type of service (Nakrem, 2015).

Quality in the interpersonal perspective can be measured by the degree of adherence to social values. In the home care setting, a nurse should assess the holistic care and patient-centered care with regard to the value of patients and families (Nakrem, 2015). Interpersonal relationships are considered as an essential natural factor and interpersonal skills are considered as professional competences needed to carry out patient-centered care so that high quality of service can be achieved.

One method to identify the level of performance is using quality indicators, which are defined as a marker that indicates whether there is potential for poor service or bad outcomes (Bos et al., 2007). Quality indicators measure the care provider's performance in terms of quality of care that is given. Its function provides a quantitative basis for monitoring and evaluating the services. The evaluation report can be used to identify any deficiency in service and to measure the quality as objective as possible (Stalpers et al., 2016).

The purpose of developing quality indicators is to identify the clinical areas that are needing improvement and to provide a measurement for quality care provision (Bos et al., 2007). In order to evaluate the effectiveness of home care interventions, standards of performance assessment are required for documenting the changes that occur in patients (Hirdes et al., 2004). The aims of this review are firstly to find out what methods can be used to assess the quality of home care that patients received and secondly to identify the currently existing quality indicators that are evidence based and are used to monitor and to evaluate stroke patients in home care setting.

MATERIAL AND METHODS

Data source

An article search process was conducted from January to May 2016, through the Google Scholar database, PubMed, Proquest, and Ebsco. The key words used in the search for the articles were "quality indicator", "quality of care", "quality homecare", "home care evaluation" "quality of health care" and "stroke patient" using the Boolean word "AND".

Study selection

Selection of the articles was based on the research objective that discusses quality indicators for home care services, especially in patients with chronic diseases, with a focus on stroke patients. Homecare is conducted by a multidisciplinary team, and quality evaluation of home care programs is taken from patients, families and caregivers. The published articles were taken from 2007 to 2016, are only in English language, full text, and include both qualitative and also quantitative researches. Three reviewers performed the eligibility assessment independently.

Data extraction

The number of articles that was obtained using the above keywords were 205 articles. Then after the initial selection based on the appropriate title and abstract, only 51 articles were considered. Based on the inclusion and exclusion criteria, finally there were only three articles that could be analyzed. Analysis of the articles was conducted by using the content analysis method, without any statistical test. The process of extracting articles can be seen in the workflow chart in Figure 1. The authors classified indicators according to the dimension of quality of care as structure, process, or outcome indicators (Donabedian, 1988).
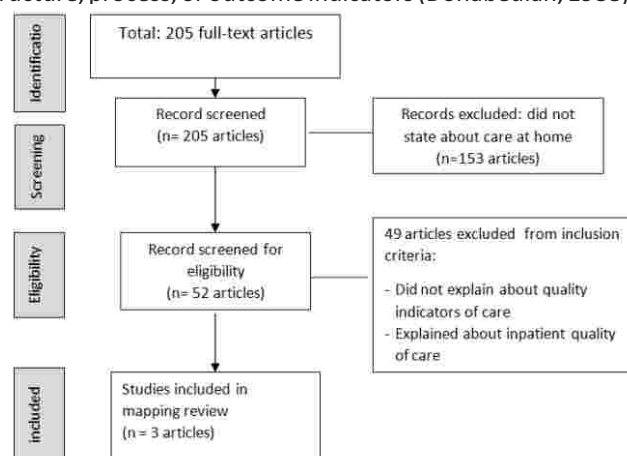

Figure 1.
PRISMA flow diagram for the search and selection of studies for review

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RESULTS

General description

Article searching was completed over a 5 month period, and as a result 205 articles related to the home care quality indicators were found. Finally only 3 articles from critical appraisal processes were selected that are apropriate with inclusion criteria. However, there were no articles that discussed home care quality indicators specifying stroke condition. Over all, the three selected articles used a common instrument from Hirdes et al. who had earlier developed the quality indicators instrument for home care provision (Hirdes et al., 2004).

Quality of care indicators in home care service include 23 items that are divided into clinical, functional and social outcomes. Instrumental Activity Daily Living (IADL) as part of functional indicators becomes a centre of attention in home care because most of the home care population experience decline in their IADL. Whereas clinical indicators consist of physical and mental states such as mood condition, and procedural indicators can be seen for example from flu vaccination awareness. Feeling alone and distress are social indicators that also commonly happen in patients (Foebel et al., 2015).

Meanwhile, Mofina uses 22 items as quality of home care indicators, which are divided into 2 groups, namely prevalence and incidence (Mofina, 2010). The prevalence of quality of home care indicators consists of inadequate meals, weight loss, dehydration, no medication review by medical doctor, Activity Daily Living (ADL)/rehabilitation potential and no therapies, falls, social isolation, delirium, negative mood, disruptive or intense daily pain, inadequate pain control, neglect or abuse, any injuries, no influenza vaccination, and hospitalization. Moreover, bladder incontinence, skin ulcers, ADL impairment, impaired locomotion in home, cognitive decline and difficulty in communication are the incidences of quality of home care indicators. Based on content analysis, the studies' characteristics and types of indicators used in this review are shown in Table 1 and Table 2 below.

Table 1. The articles characteristics

Articles	Research design	Methodology	Data collection*	Sample size	Number of quality indicators	Selection criteria§
Foebel et al.2015 (Foebel et al., 2015)	Prospective	Quantitative	Questionnaire	1.354	23 indicators	Guidelines
Mofina, AM.2010. (Mofina, 2010)	Prospective	Quantitative	Questionnaire	111.804	21 indicators	Guidelines
Bos et al.2007. (Bos et al., 2007)	Cross-sectional	Quantitative	Questionnaire	65	16 indicators	Guidelines

* instrument used to gather the data from respondents
§ source of data instrument

Table 1 shows that the three articles used a quantitative analysis method for gathering the data. Two studies represent experiences made in Europe (Bos et al., 2007; Foebel et al., 2015) and the other one in the USA (Mofina, 2010). According to study design, two are prospective studies (Mofina, 2010; Foebel et al.,

2015) and one is a cross sectional study (Bos et al., 2007) but all of the selected studies aim to assess the quality of care given to home care patients. All indicators proposed were taken from previously established, generally accepted and considered reliable guidelines.

From the 3 studies, the number of quality indicators is different among them. Thirty items are related to outcome quality indicators, one is a process indicator and none as structure indicator (Table 2). All of them adopt the same instrument, the Home Care Quality Indicators (HCQIs) that is downgraded from the Minimum Data Set HCQIs instrument. Indicators that are stated in HCQIs have a strong relationship with the quality of home care services statistically. The main characteristic of all of the studies is the quality of care assessment and not the approach to the validity of home care quality indicators (Mofina, 2010).

Table 2.
Categorization of HCQIs based on structure, process and outcome indicator

Item of indicators	S	P	O	Author
1. ADL improvement			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
2. ADL decline			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
3. Bladder incontinence decline			√	(Foebel et al., 2015)(Mofina, 2010)
4. Bladder incontinence improvement			√	(Foebel et al., 2015)(Mofina, 2010)
5. Cognitive improvement			√	(Foebel et al., 2015)
6. Cognitive decline			√	(Foebel et al., 2015)(Mofina, 2010)
7. Communication improvement			√	(Foebel et al., 2015)
8. Communication decline			√	(Foebel et al., 2015)(Mofina, 2010)
9. Falls			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
10. IADL improvement			√	(Foebel et al., 2015)
11. IADL decline			√	(Foebel et al., 2015)
12. Any injuries			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
13. Mood improvement			√	(Foebel et al., 2015)
14. Mood decline/ negative mood			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
15. Pain not controlled			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
16. Pain improvement			√	(Foebel et al., 2015)
17. Daily severe pain			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
18. Continued caregiver distress			√	(Foebel et al., 2015)
19. Alone and distresses			√	(Foebel et al., 2015)
20. Used to go out			√	(Foebel et al., 2015)
21. No flu vaccine in last 2 years			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
22. Hospitalization and emergency departement use			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
23. Weight loss			√	(Foebel et al., 2015)(Bos et al., 2007)(Mofina, 2010)
24. Neglect or abuse			√	(Bos et al., 2007)(Mofina, 2010)
25. Inadequate meals			√	(Bos et al., 2007)(Mofina, 2010)
26. Social isolation			√	(Bos et al., 2007)(Mofina, 2010)
27. No assistive device among clients with difficult locomotion			√	(Bos et al., 2007)(Mofina, 2010)
28. Delirium			√	(Bos et al., 2007)(Mofina, 2010)
29. No medication review by at least one physician		√		(Bos et al., 2007)(Mofina, 2010)
30. Dehydration			√	(Bos et al., 2007)(Mofina, 2010)
31. Skin ulcers			√	(Mofina, 2010)

Type of indicators: S (structure) (n=0), P (Process) (n=1) and O (Outcome) (n=30)

As many as 31 quality of home care indicators were obtained from reviewed, which were categorized into none as structural indicator, 1 item as process indicator and 31 items as outcome indicators. Quality indicators are a measurement tool that has some advantages for monitoring and evaluating the governance, and management of supported daily functions and activities (Klazinga et al., 2001). Indicators serve as a quantitative based

instrument that guides clinicians, organizations, and planners to obtain improvement in care and in processes of care that are provided (Althabe et al., 2008).

The scope of service quality presently is not to focus on the performance of health workers, but more directed to the services received by patients or the public, so that the instrument used to assess the quality of service is also different depending on the scope of what will be examined (Donabedian, 1988). Quality indicators can be assessed through three approaches: structure, process and outcome (Donabedian, 1988). Structure indicators assess the organization as a main source of care, for example, facilities, equipments, human sources, and organization characteristics. Characteristics of organization include nursing and medical staff, teaching and research activity, supervision, performance and payment system. Process indicators review what the health professionals have given to the customers such as medical treatment, nursing care, rehabilitation program, health education, prevention program with involvement of patients themselves and their family. Outcome indicators measure individual or population health changes either desired or not. They can be used as a measure of knowledge, behaviour, and patient satisfaction. To date there is nothing better than these three components because of how the structure, and outcome-process are interconnected. Overall, process and outcome are considered valid measures of quality by the international medical community.

To evaluate the home care services for guaranteeing their quality, an accurate evaluation instrument is required. This instrument should be responsible for reliability and validity. This study found that the instrument that is used mostly is from the available guidelines. In depth interviews and face to face interviews are considered the best way to obtain the quality of service opinions and to identify any specific problems in health care. The interviewing process for gathering the information about the quality of home care can be obtained from the patient, the family/caregiver and health officer (Firbank, 2012).

In this review of three recent related studies, the authors found the common indicators that are used to measure the quality of home service care and their development. Most of them are outcome indicators. Through this review, the author has an overview of the most relevant aspects that should be observed when assessing home care while those that are more relevant with stroke care are limited. The guidelines method is used to select them even though little information has been described about their validation method.

The home care philosophy changes the patient's condition from being the receiver of care to becoming an independent patient (Parson et al., 2012). The outcome of home care service with a patient centered rehabilitation practice approach should be built with active participation from the patient and family.

There are basically 4 home care outcomes: Extended Activities of Daily Living (EADL), Activities of Daily Living (ADL), Quality of Life (QoL) and Cognitive Impairment (CI) status (Parsons and Parsons, 2012). The focus on postive outcomes emphasizes an intervention service that has the priority for quality home care provision (Gethin-jones, 2014).

Home care quality can be judged from the functional, clinical and social outcomes (Foebel et al., 2015). Functional indicators include eight components: IADL increased/decreased, increased or decreased ADL, cognitive decline/rising, and communication increased/decreased. Clinical indicators consist of 10 criteria: weight loss, falls, injury, severe pain, pain controlled, increased pain, improve/decrease mood, bladder function increase/decrease. With the same variables, Mofina separated them into the incidence and the prevalence of home care quality indicators (Mofina, 2010).

The three articles used quality indicators from one reliable source, Home Care Quality Indicators (HCQIs). Hirdes et al. developed the first generation of HCQIs from the Minimum Data Set tool, then this instrument was refined as the second generation of HCQIs by Foebel et al. (Hirdes et al., 2004; Foebel et al., 2015). Moreover, defining the core set of indicators should consider local values and family and patient preferences. The criteria for quality of service are different in each setting because it is influenced by many factors (Donabedian, 1988). Indicators of homecare quality that had been proposed by Bos et al. consisting of 16 components of HCQIs resulted in varying scores in some countries in Europe (Bos et al., 2007). Some components are more dominant than the other components although they are on the same continent. Some items also did not match the contexts between one country and another so additional research should involve an international effort to validate a universal or country specific instrument.

In terms of the design, overall the researchers employed quantitative analysis methods. There are other considerations proposed that indicate a preference for the use of mixed methods when evaluating a home care program (Goldman et al., 2015). Several instruments and methods can be used together with surveys, patient outcomes, quality measurement, qualitative interviews, participant observation, and a pre/post evaluation process. But in practice barriers are often encountered such as the limited number of trained staff to perform multiple evaluation methods, the burden of the collection of data, and unexpected status changes.

Generally homecare stroke patients experience a lowered quality of life, specifically in interpersonal relationship domain, sleep, cognitive level, and mental health and pain, so the homecare purposes are to improve the quality of life, to motivate and to inform the patients of care options (Baumann et al., 2014). Mostly the home care patients after stroke experience decrease

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in their functional capacity within 3 months. Although the homecare is able to mitigate this condition, the main activity of homecare is to provide quality care for the patient rather than to facilitate the independence of that patient (Parsons and Parsons, 2012).

Psychological need is the most unmet need in home care, such as the desire to be accompanied, to do free time activities and to be free from psychological distress. The patients and family also complain about information that can not delivered by health employees. In contrast, physical needs mostly become the the main reason for interaction between caregiver and the patients (Andrea and Castillo, 2008). Therapeutic personal care given by a nurse can minimize the adverse events in home care (Wai and Sun, 2014) for example fall incidence, weight loss, urinary tract infection, caregiver distress, decrease in ADL, pressure ulcer, new emergency visit, new hospitalization and non adherence with medication.

The long term home care should be evaluated because it affects the patient's quality of life. In related research, the quality of life of post fracture patients with home care during the following 36 months (3 years) is reported to show decrease (Tarride et al., 2016). The quality of life in home care patients overall is mostly lowered (Baumann et al., 2014). Accordingly, there is a relationship between quality of care and patients' satisfaction; the lower the quality of care, the higher patients dissatisfaction is about accurate information, inter services coordination, financial support and access to health services in the community. As a result, stroke survivor satisfaction is a key to measure and improve the quality of home care.

A common characteristic of the selected studies is that most of the researches assess the quality of care. There is no study that mentioned about an evaluation of the validity of the quality indicators. As a result it is necessary to analyze the validity, reliability and applicability of each indicator to develop an instrument appropriate for providing home care for stroke patients.

The three studies chosen were conducted in Europe and the USA. As a result, the quality indicators are suitable with the home care situation in those countries. Some indicators may fit to a specific country or continent but not to others. So the home care quality indicators as explained in this study need further investigation when they will be applied in other countries and in different target populations.

CONCLUSION

Based on a thorough literature review, the most reliable components of quality of home care indicators are outcome indicators. This showed that structure and process indicators have no intention seriously. The quality indicators of home care are also still common to all patients, but no measure of quality of

care was available specifically for stroke patients. Further investigation is required for developing an instrument that is appropriate for assessing the quality of home care service for stroke patients based on the generally accepted indicators that have been declared reliable by the quality care concept.

List of Abbreviations

ADL: Activities of Daily Living
EADL: Extended Activities of Daily Living
HCQIs: Home Care Quality Indicators
IADL: Instrumental Activities of Daily Living

Ethics

Not applicable.

Consent to Participate

Not applicable

Competing interests

The authors declare that no competing interest exists.

Authors' contribution

NC participated in data collection process, arranged the design, carried out the review, coordination and drafted the manuscript. CE participated in analyzing the result and helped to draft the manuscript. IS contributed in study design, drafted the manuscript and reviewed the manuscript

Availability of Data and Materials

All articles reviewed as part of this systematic review have been included in the attached additional file (Table 3).

Additional materials

Additional file attached. Table 3: General characteristics and outcomes of included articles. The data available discusses study purposes, instrument for data collection, health officers involved in intervention and outcomes of articles included in the systematic review.

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