

III-2. Empirical research elucidating more effective rehabilitation

Next, we will consider more effective stroke rehabilitation programs. Strokes were targeted as they will likely become more important in health and long-term care for our super-aged society due to being the greatest cause of becoming bedridden, and being the target disorder for planning medical coordination in the 2008 Revised Medical Care Law.

Here, we will discuss our empirical research, which has been cited in the stroke treatment guidelines jointly published by five academic societies²⁷⁾. This shows the effects of increasing early rehabilitation and the amount of training, involvement with rehabilitation specialists, regularly holding case conferences (care management), and case registration databases used to verify these effects. These research projects were health services research rather than being medical research, or research on technological systems rather than individual technology. This research should be enhanced in Japan in the future.

III-2-1. Early rehabilitation

The guidelines²⁷⁾ recommend and advise starting rehabilitation from an early period. This is because disuse of physical and mental functions reduces overall functions including muscle and cardiopulmonary functioning. Disuse syndrome is even more dangerous than it is generally considered. However, disuse syndrome may occur or recovery speed may be slowed even for patients who engage in rehabilitation due to an insufficient amount of rehabilitation training²⁸⁾. Furthermore, one can also confirm the relationship whereby a greater amount of walking leads to faster recovery time (muscle cross-sectional area variation)²⁹⁾.

Many observational studies have also found that even in consideration of age, degree of independence in activities of daily living (ADL) and amount of daily training, shorter days from onset to the first day of rehabilitation leads to higher rates of ADL improvement and daily improvement^{30;31;32;33)}. However, these results alone could probably be explained by the fact that rehabilitation is started earlier after onset when recovery is faster. Therefore, some studies utilizing data about which calendar day/holiday patients were hospitalized have been conducted. For example, patients who are hospitalized on the weekend, during the Golden Week holiday or the New Year's holiday, when there are few staff available due to it being a holiday, tend to start rehabilitation later or undergo less training. When this fact is utilized to verify the effects of early rehabilitation, it has been found that patients hospitalized on weekends with low early rehabilitation implementation rates exhibited lower ADL improvement rates³⁴⁾. Furthermore, patients who underwent little rehabilitation during the early stage of hospitalization not only had poor outcomes as evaluated by the modified Rankin Scale (mRS), but also a higher mortality rate³⁵⁾.

Thus, despite this evidence being accumulated, the date of hospitalization in recovery rehabilitation wards currently exceeds 30 days after onset³⁶⁾, indicating that the care currently being offered is far from "early rehabilitation." A study of acute cerebral infarction patients in Diagnosis Procedure Combination (DPC) participating hospitals (n=38,947 pa-

tients) found that the rehabilitation implementation rate was 47.8%, indicating that approximately half of patients do not undergo rehabilitation³⁰⁾.

It is anticipated that policies to promote and achieve early rehabilitation such as making it mandatory to place rehabilitation staff at acute hospitals will reduce the number of individuals who require long-term care.

III-2-2. Will increasing the amount of training improve outcomes?

One means of enhancing rehabilitation care is increasing the amount of training. Increasing the amount of training has empirically been said to increase effects. However, as more evidence has been gathered, this issue has also been discussed at educational lectures held by the Japanese Association of Rehabilitation Medicine³⁷⁾.

(1) Three background factors for the amount of training being focused on³⁷⁾

The first factor is “rediscovering” disuse syndrome. The second factor is questions regarding the validity of medical fees. In Japan, the maximum daily limit for medical fees for training is 2 hours. In contrast, guidelines in the United States indicate that to be eligible to participate in a full-scale rehabilitation program, the patient must be able to withstand at least 3 hours of physical exercise and training³⁸⁾. Thus, the upper limit in Japan does not even reach the lower limit in the United States. The third factor is the demonstration of “greater recovery brought about by increased training” as evidence-based medicine (EBM)^{38;39;40)}.

(2) Enhancing rehabilitation effects by increasing the amount of training

Let us give a simple introduction of the evidence. Firstly, progressive resistance training (PRT), in which the amount of resistance is gradually increased, improves muscle strength and walking speed⁴¹⁾. Increasing the amount of hemiplegic arm training of stroke patients by constraint induced movement therapy which forces them to use their hemiplegic arm is effective for functional recovery in the hemiplegic arm of both acute phase patients⁴²⁾ and chronic phase patients⁴³⁾. Effectiveness for both acute and chronic patients has been demonstrated in randomized controlled trials (RCTs), which are considered to offer the highest quality evidence.

The effectiveness of increasing the intensity of training for stroke patients has already been investigated with many RCTs. Meta-analysis of the results has demonstrated that good outcomes for nervous and muscular function⁴⁴⁾ as well as for ADL were achieved after 3 months in a group that underwent intensive rehabilitation.

In Japan, a program involving high density (large amount) training on consecutive days including weekends and holidays significantly improved ADL during hospitalization compared to before the program had been introduced^{45;46)}. Rehabilitation has also been demonstrated to have psychosocial effects such as for depression^{47;48)}.

(3) Empirical research of the effectiveness of the amount of training and rehabilitation

There is clearly a relationship between the amount of training and effectiveness of rehabilitation (within a certain range). Thus, is the amount of training in Japan truly sufficient? In 2003, the Japanese Association of Rehabilitation Medicine conducted a “study on effectiveness of rehabilitation and medical treatment fees”³²⁾. With the data provided by this survey, we independently conducted a secondary analysis of the relationship between daily amount of training and ADL improvement rate^{49;50)}.

Subjects for analysis comprised 1,446 patients (mean age: 66.0 years). Mean Barthel Index (BI; ADL scale with a maximum score of 100 points, with 0 indicating total dependent) score of 50.4 points upon hospitalization and 72.4 points upon discharge, with a home discharge rate of 70%. The mean number of days after onset for the initial day of rehabilitation was 55.6 days and the mean daily amount of training was 56 minutes when calculated as “PT + OT + training exceeding the maximum allowed for medical fees + amount of voluntary/additional self-exercise by the patient or family.”

Multiple regression analysis was performed to clarify whether the ADL improvement rate (daily) increases with a greater amount of training even when controlled for confounding factors. The results suggested that the more the amount of training increased, the greater the ADL improvement rate.

III-2-3. Involvement of specialists and regular conferences

We also investigated whether “the involvement of rehabilitation specialists (board-certified physiatrist of the Japanese Association of Rehabilitation Medicine) enhances outcomes such as ADL improvement rates or home discharge rates”⁵¹⁾. The results of multivariate analysis (multiple regression analysis/logistic regression analysis) indicated that, for example, if cerebral infarction patient groups are limitedly analyzed, groups for which there was specialist involvement exhibited significantly good outcomes for daily ADL improvement rates and home discharge rates.

Another hypothesis verification is “whether hospital groups at which case conferences are held regularly have better outcomes”⁵²⁾. Matched pair analysis was also conducted in addition to the aforementioned multivariate analysis. Pairs with similar conditions (matches) for a maximum of eight confounding factors (including age, primary disease, hospital days after onset until first day of rehabilitation and Barthel Index upon hospitalization, etc.) were created and compared in the regular conference group and non-regular conference group. Comparison under the eight conditions with altered matching conditions indicated that for all conditions, outcomes were better for the regular conference group. Statistically, for example, for the degree of ADL improvement (during hospitalization) improved significantly with six of the eight conditions and daily ADL improvement rate improved with four of the conditions in the regular conference group.

III-2-4. Database development

The aforementioned analyses demonstrating that early rehabilitation, training amount,

specialist and regular conferences bring about good outcomes are only possible if patient data at multiple facilities where different programs are conducted is pooled. Large-scale data is required to verify more multilateral hypotheses and to constantly monitor care quality.

In countries such as the United States, large-scale databases (or data banks) have been developed since the 1980's: for example, the Uniform Data System for Medical Rehabilitation (UDSMR)⁵³⁾, for which 13 million rehabilitation patients have been registered, and the NINDS Stroke Data Bank.

In Japan from the end of the 1990's, various large-scale data banks of case data have been jointly developed by multiple facilities led by academic societies and similar. These data banks contain a large number of cases, including acute phase stroke⁵⁴⁾, unruptured cerebral aneurysms⁵⁵⁾, external head trauma⁵⁶⁾, ICU-acquired infections⁵⁷⁾ and influenza⁵⁸⁾ in addition to rheumatism (approximately 6000 cases at 25 facilities)⁵⁹⁾, acute myocardial infarction (1183 cases at 20 facilities)⁶⁰⁾ and perinatal period (16,299 cases at 40 facilities)⁶¹⁾.

We formed a research team with the aid of specialists from the Japanese Association of Rehabilitation Medicine and engaged in the development of a multicenter data bank for rehabilitation patients.

It required approximately 5 years to develop this data bank. With a 2005-06 Health Labour Sciences Research Grant, we first developed a data bank for stroke rehabilitation patients^{62;63)}. We recruited participating facilities and provided a generally available database that could be downloaded from the Internet at <http://rehabdb.umin.jp>⁶⁴⁾. In 2012, four rehabilitation-related groups established the Japanese Association for Rehabilitation Database (JARD), and there are currently over 30,000 registered patients from approximately 80 hospitals. Evaluation conducted by comparing expected functional independence measure (FIM)⁶⁵⁾ predicted from status upon hospitalization with actual FIM score upon discharge indicated reproducibility in the finding that at facilities with specialists or high training amounts, there were more patients exhibiting improvement than predictive value, and a significant difference for treatment outcomes was noted between hospitals (Figure 5)³³⁾.

III-3. Achievements in evaluation of care quality in long-term care services

Next, we will consider long-term care services. As the amount of long-term care increased, evaluation of care quality has become required. Here, we will introduce and discuss an evaluation study of care quality in both visiting care (day care/services) and facilities care (special elderly nursing homes).

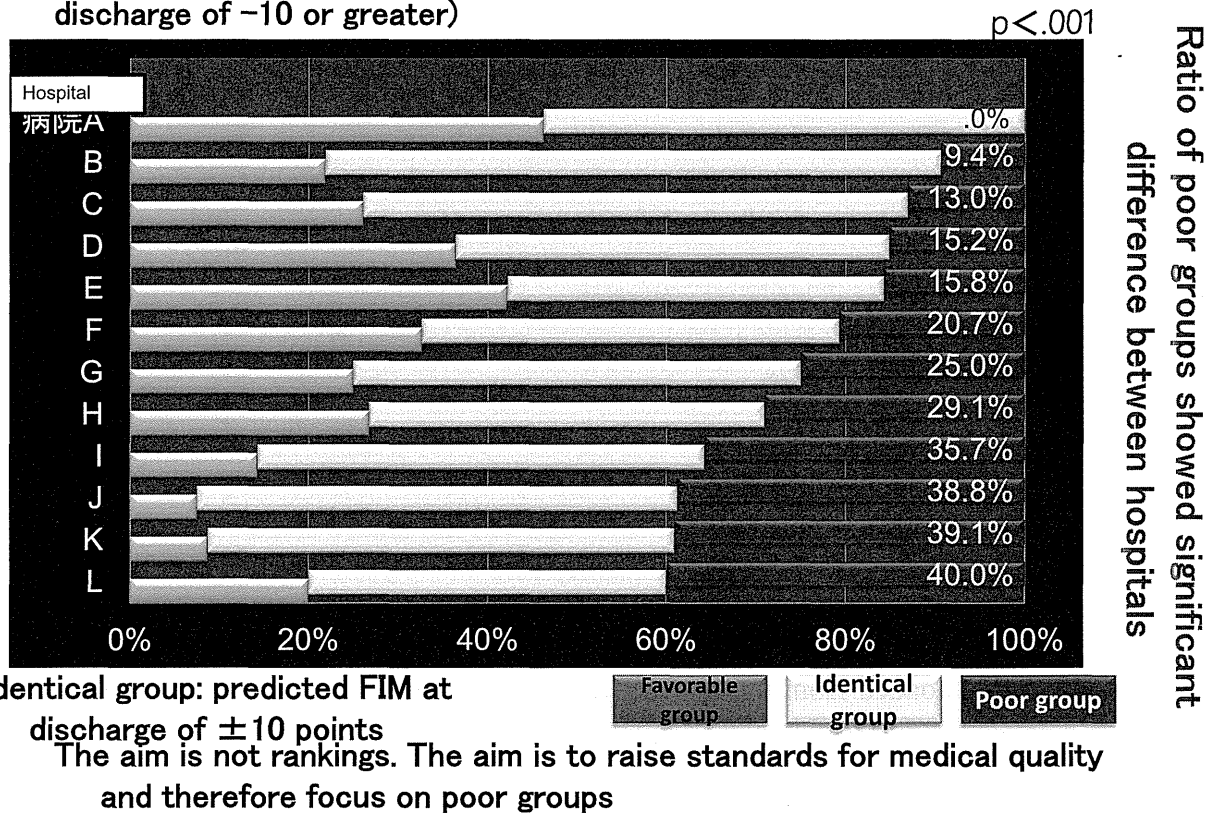
III-3-1. Changes in use frequency of visiting care services before and after introducing new preventive services, and subsequent outcomes

With the revision of the Long-Term Care Insurance Act in 2006, some people limited their use due to, for example, converting to bundled payment for visiting care services. Although some people in the field voiced concerns that more people might become "home-bound", actually increasing the number of elderly with exacerbated long-term care require-

Figure 5

Treatment outcome benchmarks at recovery-phase rehabilitation hospital wards

In order from those with few poor groups (predicted FIM at time of discharge of ≥ 10 or greater)



ment, a committee of the Ministry of Health, Labour and Welfare reported that compared to before the introduction of new preventive services, groups of patients with exacerbated long-term care requirement decreased and effectiveness of care prevention was noted. However, critically reviewing the method of analysis, the possibility of “a reverse relationship of cause and effect” could not be denied. Therefore, we used a method of analysis that we believed to be more appropriate for such and conducted a follow-up study to verify the effectiveness of the new care prevention programs.

From approximately 288,532 person-months’ worth of long-term care insurance benefit payment receipt data over 2 years from seven insurers (municipalities) between April 2005 and March 2007 (approximately 12,000 people \times number of months of observation of each person), we extracted data from 432 people who had utilized the preventive day care/services since before the introduction of new preventive programs and switched from requiring support to requiring support level 1 during the observation period. These subjects were divided into three groups according to whether the number of times services were used decreased, did not change, or increased after the introduction of new preventive services, and elements such as rates of exacerbation of the required care level were compared.

The results showed that after switching to requiring support level 1, the number of times

of preventive services used decreased to 42% (180/432) and the mean number of usages also significantly decreased. Looking at preventive services overall, only a small percentage of subjects in the decreased usage group exhibited exacerbation, however, unlike in the report by the committee of Ministry of Health, Labour and Welfare, this was not a statistically significant difference.

In contrast to the results of the committee, the exacerbation rate (15.2%) and exacerbation onset rate (0.025) of the decreased usage group was 4.5- to 5-fold that of the increased/maintained usage group, which exhibited results of 3.4% and 0.005 respectively, demonstrating a statistically significant difference.

Thus, it appears that decreased usage of day care/services may have lowered the amount of physical activity, leading to progression of disuse and an increase in the number of individuals who exhibited exacerbation. It is calculated that the decreased usage of day care/services has led to exacerbation in approximately 20,000 individuals throughout Japan. It is roughly estimated that an increased provision of care by the reform could be amounting to approximately 13 billion yen. When using a different method of analysis from that utilized by the committee, different results were obtained. We anticipate stricter program evaluation such as reproducible verification made possible with the utilization of big data owned by insurers and multilateral program evaluation research.

III-3-2. Evaluation of care quality in special elderly nursing homes

We will also present a care quality evaluation that we have implemented for special elderly nursing homes, which are one of the most important facility care services and have the longest history in care quality evaluation.

(1) Achievements of care quality evaluation⁶⁶⁾

Activities for care quality evaluations for special elderly nursing homes in Japan began in the late 1980's. The stages of development can be broadly divided into three parts: (1) the beginnings of service evaluation—late 1980's, (2) systemization of service evaluation—1990's, and (3) the diversification of service evaluation—2000's and onward.

Most of the previous evaluation methods were check sheet-based using evaluation items. The evaluation items focus more on structure/progress elements than outcomes, therefore, the achievement of organizational level activities such as “the presence or absence of implementation of training” has been evaluated rather than user level elements such as “the presence or absence of pressure ulcers.”

Outside of Japan, the evaluation of care quality using quantitative indices has been progressing^{67;68;69)}. For example, in the United States, the objective and quantitative indices of quality measures (long-term care: 14 items, short-term care: 5 items) and quality indicators (24 items) were developed from the assessment tool, Minimum Data Set (MDS), and inter-facility comparison of care quality in nursing homes has been conducted. The results have been made widely available to the general public, and steady improvements in quality have also been observed since the introduction (American Health Care Association 2011).

Looking at the state of activities being conducted overseas, it appears that also in Japan, 1) enhanced outcome evaluation, 2) the development of objective and quantitative indices and 3) the operation as a system are required.

(2) Care quality evaluation at special elderly nursing homes—attempts to use data of certification of requiring long-term care

In the revision of the Long-Term Care Insurance Act, care quality evaluation has been the focus of attention. Therefore, we aimed to develop care quality evaluation indices that could be used to make comparisons between special elderly nursing homes. In consideration of costs for data collection, we created indices from existing official data, which is made up of individual certifications of requiring care level and of eligibility for benefits from long-term care insurance.

Firstly, we developed 11 indices that could be created from the data of the certification and verified the reliability and validity of these indices. Next, we verified criterion-related validity between evaluation using these indices and the evaluation by three visiting surveyors who were blinded to evaluation results of indices.

A. Care quality index development

The certification data of requiring long-term care provided by 40 insurers was combined with benefits provision data, by which used facility is detected. We analyzed 4,923 people (91 facilities) who were using special elderly nursing homes at the two time points of June 2007 and November 2008. Care quality was evaluated using 11 indices according to the rate of maintenance or improvement in required care level one year later. We investigated the extent of differences between facilities and the correlations between indices⁷⁰⁾.

The results indicated that the maintenance or improvement rates for the more comprehensive indices of required care level, degree of being bedridden and degree of dementia independence were all approximately 76%. Difference between maximum values (facilities with high maintenance or improvement rates) and minimum values (facilities with many individuals exhibiting exacerbation) ranging from approximately 21 points (the rate of walking) to approximately 74 points (the rate of contracture) were observed. Many indices showed a difference of approximately 40 points. Excluding the index of proportion of those without pressure ulcers in both of the two time points, the other 10 indices were highly correlated with each other and showed significant positive correlations.

Of the 11 indices created, the maintenance or improvement rate of required care level could be used as a comprehensive index, and the rate of meal intake and urination/excretion could be used as specific indices.

The following items need to be discussed. When creating indices, who should be included into the subject of the evaluation and to what extent should users' attributes be adjusted? When utilizing existing data for care quality evaluation, there is the advantage of no additional efforts needed in gathering data for evaluation. However, it requires the development of simplified data handling methods for accumulating and creating longitudinal data, and

furthermore, to construct a management system for the effective utilization of evaluation results within nursing homes.

B. Comparison of care quality with blind visit surveys

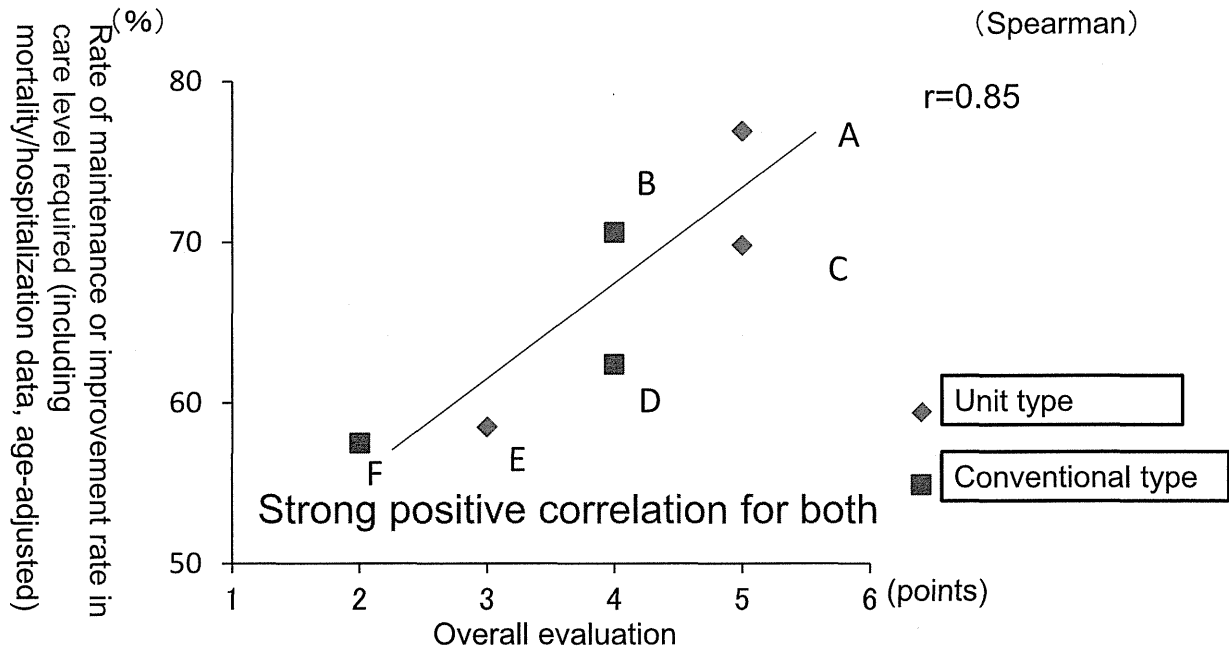
To investigate whether the index, maintenance or improvement rate of required care level could actually be used to evaluate the care quality of special elderly nursing homes, we investigated criterion-related validity. Evaluation results of 4-hour visit surveys by three individuals who have a detailed knowledge of elderly care were used as a reference for the criterion-related validity test, in which the correlations between these results and the rates of required care level indices created from the existing official data are examined⁷¹⁾. Six special elderly nursing homes for which insurers provided data related to long-term care insurance were targeted for the analysis. The indices of the rate of required care level for a total of 33 facilities was calculated and these facilities were divided into high, medium and low score groups. We then selected three facilities each from the high, medium and low score groups. The three visiting surveyors, who were blinded to (did not know) the indices score, evaluated care quality through 4 hours of observation and interviews at the target facilities. Evaluation by the surveyors covered care-related items such as meals, bathing, excretion, mobility and functional training care, along with other items such as the atmosphere between employees and users (elderly), and overall evaluation. These were assessed according to six ranks, which were very poor, poor, somewhat poor, somewhat good, good and very good. We then examined the correlation between the results of “overall evaluation” of care quality based on consensus among the surveyors and the rate of maintenance or improvement in requiring care level.

We found a moderate to high correlation coefficient ranging from 0.53 to 0.85 between care quality evaluation by surveyors and the indices of the rate of requiring care level (Figure 6).

As data related to certification for long-term care insurance has already been standardized and digitized, it is theoretically possible to calculate the indices, the rate of maintenance or improvement in requiring care level at all special elderly nursing homes throughout Japan. However, although we actually ask many insurers to provide data for long-term care insurance, we were not able to obtain the data for reasons such as the protection of personal information. New measures such as the utilization of data from general databases of long-term care insurance constructed by the government are necessary. If “big data” could be obtained, it would be simple to create multiple indices from such data, however, it would be necessary to confirm the validity of whether it reflected care quality. Based on the present results, it appears that when care quality evaluation by visiting surveyors is used as a reference there is high criterion-related validity for the index in regard to the rate of maintenance or improvement in requiring care level. As it is important that care quality evaluation indices are accepted by industrial bodies, we believe that further joint research involving facilities and validity test using data on more cases at more facilities is necessary.

Figure 6

Correlation between “overall evaluation” by visiting surveyors and “rate of maintenance or improvement in care-required level”



III-4. End-of-life care quality

Finally, we will present end-of-life care quality evaluation.

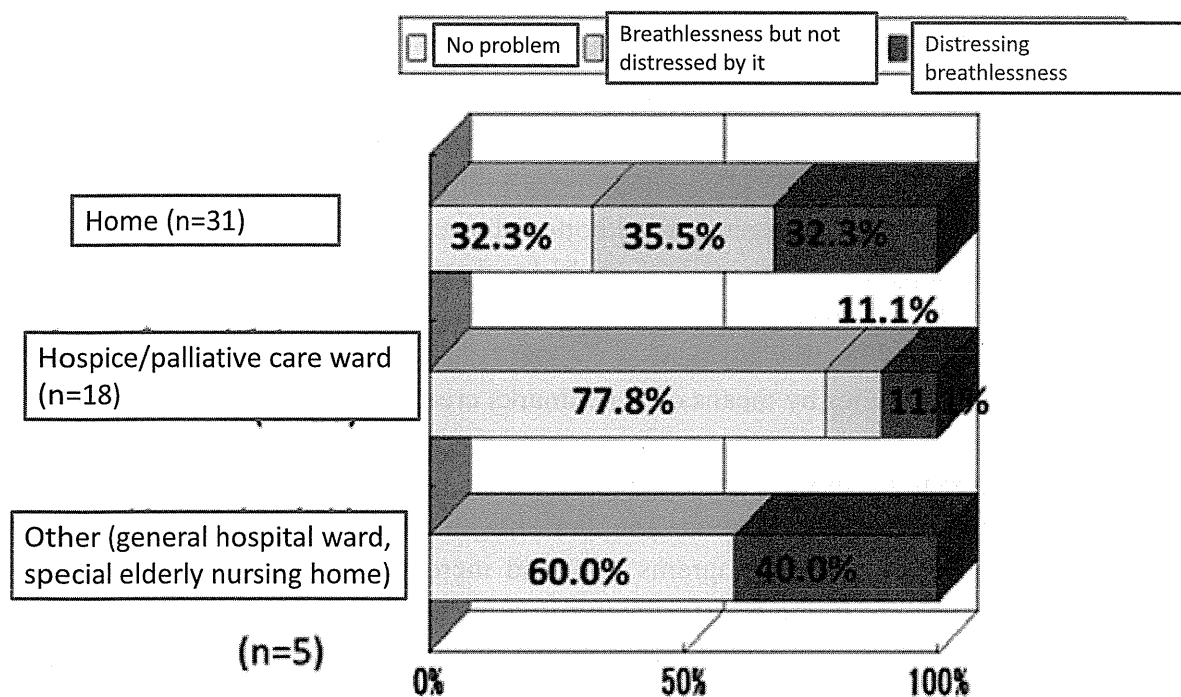
As the aging of society further progresses, the number of people who pass away is also increasing. In 2008, approximately 1.15 million people died in Japan. 30 years from then it is expected that this figure will increase by 1.5 times to approximately 1.7 million people per year^{10;72}.

It is difficult but not impossible to evaluate end-of-life care quality. For example, the Minimum Data Set for palliative care (MDS-PC) is utilized to demonstrate that even amongst cancer patients, the proportion of patients who experience breathlessness and distress during exertion differs according to the place of care⁷³. If this type of evaluation were made mandatory and databases were constructed, comparisons of different methods of care and inter-facility comparisons would also be possible.

IV. Possibilities and Future Challenges

We have reviewed our achievements in evaluation research of care quality from (1) health (care prevention) to (2) rehabilitation medicine, (3) long-term care and (4) end-of-life care. Based on the above, we will summarize the possibilities and future challenges in these fields.

Figure 7
Breathlessness upon exertion – Cancer (n=54)



IV-1. Possibilities for large-scale databases

Many of the studies that we have introduced were conducted using databases constructed with the participation of multiple municipalities or facilities. These databases had several advantages which cannot be obtained from databases created from single municipalities or facilities¹⁰⁾.

Firstly, as multiple municipalities or facilities participate, the recorded data is of a large scale, increasing statistical power. Secondly, it can be examined whether the results from single municipalities or facilities has enough universality to show reproducibility also in the results from the other municipalities or facilities. Thirdly, if comparisons are made between municipalities or facilities in consideration of the differences between the subjects such as of the resident, patient and admitted persons, treatment and care outcomes along with efficiency benchmarks (comparison using numerical indices) can be examined. Fourthly, controlled studies can be performed. In general, because the same intervention technology or program (protocol) is often commonly used at a certain municipality or facility, it is difficult to find control groups for single municipality or facility databases. To verify the effectiveness or efficiency, outcomes need to be compared between different programs (protocols) as controls. The acquisition of data from multiple municipalities and facilities makes it possible to conduct comparisons with such control groups.

IV-2. Five viewpoints for effectiveness evaluation

However, attention must be paid to the fact that simply establishing a large-scale database does not ensure meaningful evaluation. Based on our experience in many evaluation research projects, we will present five important viewpoints for the evaluation of health and long-term care policies and care: (1) evaluation to promote the management cycle, rather than ranking, (2) support of management-led bottom-up type evaluation, (3) frameworks for evaluation that mutually complements with multi-level analysis (macro, mezzo, micro) and multiple elements, (4) multi-dimensional/multilateral evaluation with multiple evaluation criteria and methods, and (5) management of comparisons and evaluations between multiple municipal bodies or agencies by means of benchmarks created using databases¹⁰.

IV-2-1. Evaluation to promote the management (PDCA) cycle, rather than ranking

Firstly, the objective is visualization. The aim of evaluation is to manage the methods of intervention (involving policies, programs etc.) and increase effectiveness, efficiency and equity. Evaluation equates to the checking part of the Plan-Do-Check-Action (PDCA) management cycle. The aim of evaluation should not be ranking, but rather “visualizing,” leading to challenges for actions toward new improvements and keys for overcoming the challenges.

IV-2-2. Support of management-led bottom-up evaluation

Next, let us consider who will lead these “visualization” initiatives. Even if forcing goals on staff with a top-down approach and making objective assessment using indices by external agencies such as researchers or central government, the results of evaluation which are unlikely to be accepted or utilized by management who may in fact exhibit opposition, would be of little significance. “Visualization” requires not merely evaluation, but management-led initiatives, problem-solving or ideas and attitudes that lead to subsequent quality improvement.

IV-2-3. Frameworks for evaluation that mutually complement multi-level analysis (macro, mezzo, micro) and multiple elements

Thirdly, evaluation frameworks must be comprehensive in each of the macro-mezzo-micro levels. In each level, frameworks grasping correlations between many components are necessary. If there is no framework that can grasp elements and interactive relationships as evaluation targets, there is the risk of conducting incorrect evaluation such as assessment indicating that “home care is economical,” which does not take into consideration cost burden to families (“cost shift”).

IV-2-4 Multi-dimensional/multilateral evaluation with multiple evaluation criteria and methods

The fourth issue is comprehensiveness in evaluation criteria and autonomy. As shown in figure 8, elements and criteria that are targeted for evaluation must be multifaceted, including (1) input (investment, resources), (2) processes, (3) environment, (4) individuals/action, (5) outcomes (effectiveness, results), (6) efficiency and (7) equity.

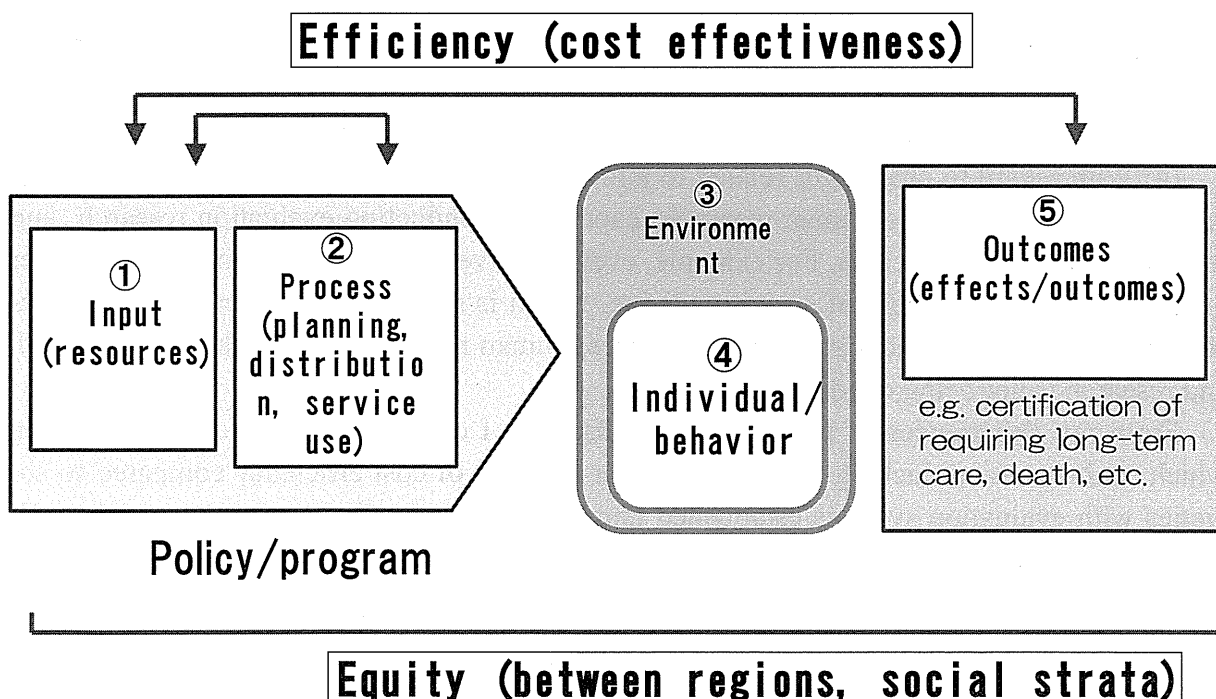
Furthermore, different evaluation standpoints lead to different quality or criteria for evaluation being emphasized. Accordingly, multidimensional evaluation with different viewpoints is also necessary.

IV-2-5. Management of comparisons and evaluations between multiple municipal bodies or agencies by means of benchmarks created using databases

An infrastructure for program evaluation based on the above principles could be provided by the database in which many management bodies such as facilities and municipal bodies participate. The construction of such a database would not necessarily offer perfect evaluation, but it could make multilateral evaluation possible. Furthermore, the participation of management in data collection or the process of development of evaluation indices could increase the likelihood of utilizing the evaluation with the agreement and understanding of management.

If such research is continued in addition to repeatedly revising indices or systems based on evidence and opinions from management to frontline staff, it would be possible to set tar-

Figure 8
Five elements and two aspects of policy evaluation indices groups



gets or carry out planning based on evidence and to evaluate current status, process, outcome, cost effectiveness and “visualization.”

IV-3. Challenges in large-scale database development

Large-scale databases have the aforementioned significance and possibilities. However, there are several reasons why data banks have only been previously developed in some areas. These challenges also need to be overcome for the development of more large-scale databases, data management systems and the accumulation of health services research or program evaluation.

We will consider these challenges separately in the four categories: (1) development, (2) data collection, (3) utilization after data collection and (4) challenges related to human resources.

(1) Challenges related to development stage include development bodies and development costs. Independently gathering data involves cost, and it takes 10 years to gather data, develop indices, verify its validity and improve it. Therefore, it is difficult to conduct such continuous research for research groups funded by competitive short-term research grants. Bodies with long-term stable resources will be required to continue development after a prototype system is developed. In countries such as the United Kingdom, such development is conducted by the government.

(2) There are challenges related to data collection such as not being allowed to obtain such even in the case of existing data or individual identifiers necessary for longitudinal follow-up and measures for reducing the cost burden for participating facilities and municipalities⁵⁹. To effectively, efficiently and fairly use limited social security resources, the usage of data owned by municipal bodies etc. will allow little progress without legal support for data use even for public purposes.

(3) If data is not utilized after being gathered, data collection and evaluation will not continue. Good practice examples for utilization need to be gathered.

(4) With regard to challenges related to human resources, there are hardly any postgraduate schools that cultivate human resources capable of conducting evaluation research, and research funds are also scarce. For example, even in university medical schools, the number of faculty posts in the field of social medicine, which is responsible for health services research, is decreasing. Under such circumstances, human resources are not being cultivated, and research is not being conducted.

From my experiences of health services research, I consider that the current status in which evaluations are lacking is extremely poor in terms of cost efficiency compared to societies with evaluation systems established under initiatives by the national government. It is hoped that the challenges mentioned in this report will be overcome.

V. Conclusion

To allocate limited social security resources efficiently, the viewpoint of cost effectiveness analysis is essential. It requires the measurement of effectiveness as well as costs. However, health services research evaluating effectiveness (quality) of health, medical and long-term care has lagged in Japan. We have presented examples of health services research that we have been involved in and discussed achievements, potentials and future challenges of the “visualization” of quality and effectiveness.

Through health services research achievements, by utilizing existing data and adding independent data, the sort of quality evaluation presented in this report is possible. It was obvious that many programs for care prevention, rehabilitation medicine, long-term care and end-of-life care were moderately effective at best and sometimes less so. For acceptance of further burdens in increasing public healthcare and social security costs by Japanese citizens, it is essential to establish a framework that eliminates waste and improves care quality and equity by increasing health and long-term care costs. To do this, the “visualization” of effectiveness (quality), efficiency and equity is required. If costs are simply reduced uniformly without distinguishing between effective and ineffective programs/policies through evaluative research, it will engender the absence of care prevention and good rehabilitation medicine which will lead to an increase in people requiring long-term care and cause older individuals to suffer more during the end-of-life period. In healthcare, “pain” is different to the metaphorical pain of, for example, resisting the urge to buy a desired luxury item. It refers to literal “pain,” that deprives people of the most basic human right of “life.”

The full-scale development of “the era of evaluation and accountability” and “the era of visualization” in Japan requires the construction of large-scale databases in each field, accumulation of evaluation and management research using these databases and the development of management systems utilizing these visualizations and evidence produced.

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高齢者うつの地域診断指標としての社会的サポートの可能性—2013 年日本老年学的評価研究（JAGES）より—

佐々木由理, 宮國康弘, 谷友香子, 長嶺由衣子, 辻大士, 斎藤民, 垣本和宏, 近藤克則: 老年精神医学雑誌 26 (9):1019-1027, 2015

抄録

高齢者うつの地域診断指標に, 社会的サポートがなりうるかを検証した. 要介護認定を受けていない 65 歳以上を対象とした日本老年学的評価研究 (JAGES) の 29 市町村を分析対象とした (配布数 193,694, 回収率 71.1%). 目的変数を市町村のうつ (GOS 5 点以上) 割合, 説明変数を社会的サポートの授受割合とした. 市町村の高齢者うつ割合は 21.5~36.2%と約 15%ポイント (約 1.7 倍) もの地域差があり, これに社会的サポートの授受割合が関連したことから, 社会的サポートが高齢者うつの地域診断指標になりうる可能性が示唆された. また「家族や親戚以外」からのサポートの授受もうつと関連しており, 単独世帯の高齢者の増加が見込まれるなか, 周囲の人とのかかわりを増やし, サポートの授受ができる関係を促す環境整備が地域での高齢者のうつ予防に必要であると考えられた.

キーワード: 高齢者, うつ, 地域診断, 社会的サポート, 日本老年学的評価研究