How to Invent the Autonomous Rehabilitation Method  
(Takizawa method)

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Abstract

The author invented the autonomous rehabilitation program and applied to the United States Patent office as ‘Method for managing exercise for function recovery and muscle strengthening.’ It was patented under United States Patent number 7153250 in 2006 and named the ‘Takizawa method’. It enables all the patients in the group to rehabilitate in individual correspondence, including the elderly and handicapped, which require extensive physical therapy to recover, improve and/or strengthen a body’s impaired functions simultaneously through the supervision of just one physical therapist. The importance of this patent has increased today since the effect to the cerebral function of motivative exercise has become clearer. In addition, it contributes to the continuance of independence for elderly people and disabled elderly who show a remarkable increase in every country in the world recently and will continue in the future. This research clears how to invent and the outline of the contents of this invention to do.

Keywords: Motivative exercise, Autonomous rehabilitation, Method, Observation, Invention

1. Introduction

The author invented the autonomous rehabilitation program and applied it to the United States Patent office as ‘Method for managing exercise for function recovery and muscle strengthening’. It was patented as the United States Patent number 7153250 in 2006 and named the ‘Takizawa method’. It enables individuals, including the elderly and handicapped, which require training to recover, improve and/or strengthen a body's impaired functions. The view of the method patent in the USA differs from Japan Patent Office and it was not patented in Japan.

The features of this invention are the following 3 points: 1. This system enables one physical therapist to rehabilitate multiple patients simultaneously and individually. 2. A doctor and a physical therapist build up contents of training patients and chart entries are simplified by using the control system; 3. Therefore, anyone can carry out the treatment anywhere on the condition that constant instruction is received.

2. Purpose

The importance of this patent increased today since the effect to the cerebral function of motivative exercise becomes clear1,2). And it contributes to acquire life independence of the elderly people and disabled elderly3,4,5,6). It becomes very important because they show increase remarkably in every country in the world recently and in the future7). This research aims to clear how to invent and shows the outline of the contents of it.

3. Method

The author has recognized that the rehabilitation method which the physiotherapist, Kyoko Takizawa, a mother, was utilizing is a system since 1987. In order to endorse this method, the author was requesting her to disclose information that she had been insisting. But she didn’t do so making the reason that she had been said to have had a hand from God in her cures. Six years after beginning the request, the author received the release of the rehabilitation medical records (RMR) in 1994. The release was performed by obtaining permission of the head of a hospital and hiding personal information. The RMR of 193 inpatients become data by using the personal computer PC98 by NEC Corporation and the database “Hayabusa/Falcon”. Upon careful consideration, the proposal of the

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therapist performing rehabilitation was to differentiate each patient by which 10,000 types of techniques exist. Then, the preparations, which assigned the numerical code to No. 10000 from 1001 for every different technique, were prepared. The training was labeled: 1. Bedside training given the level of No. 1000, 2. Upper-limbs training of wheelchair-seated position given the level of No. 2000, 3. Leg training of wheelchair-seated position given the level of No. 3000, 4. Standing position training given the level of No. 4000, 5. Gait training given the level of No. 5000, and 6. Others given the level of No. 6000 with evaluation by listening and observation. By assigning numerical codes in the read hand writing in Fig. 1, the author clarified the contents of her rehabilitation. Then the author arranged the contents and summarized them in the claim.

Fig. 1. Data printed sheet from RMR finished inputting. The numbers in red were added for systematizes and/or methodized about each exercise in order to arrange the contents and to summarize them in the claim.
4. Result

The entry's numerical value was checked, and after the total investigation was conducted. Fig. 2 shows the actual sight checked. Fig. 3 shows the contents of the patent by the observation study.

Fig. 2. Training scene demonstrating the Takizawa Method rehabilitation.

Fig. 3. The Takizawa Method training by using the devices which were shown in the administration list (I) based on the motivative exercise.

A illustrates the plantar flexion / dorsal flexion exercise of the ankle. B illustrates the reciprocating motion in a cross direction of the knee. C illustrates the autonomous weight exercise. D illustrates the upper extremities exercise. E illustrates using the hot pack. F illustrates the body trunk training named “Konnichiwa.” G illustrates the walk-training using the parallel bars. H illustrates the training using a walker with a modified sled. J shows an administration list that is set by the exercise administrator (Planner) J shows the second list as the conducted list and K. is a helper for patients.

Fig. 3. The Takizawa Method training by using the devices which were shown in the administration list (I) based on the motivative exercise.
4.1. Brief summary of the patent;

A method includes: providing an exercise administration list (Fig.3I) containing a name column, an exercise group column, and an exercise date column in the second list(Fig.3J); identifying an exercise person in need of exercise and a group of exercises (Fig.3A-H) for the person based on the exercise administration list; appointing an exercise administrator for managing exercise; confirmation by the exercise administrator of exercise working contents for the exercising person based on the exercise administration list; arrangement of the devices used for performing the exercise working contents by the exercise administrator (Planner); confirmation of the exercise date; and thereby the exercise administrator (Helper) exercises and/or helps the exercising person (Patient, shown in Fig.2 and 3) for function recovery and muscle strengthening.

4.2. The patent Claim published as following;

A method for controlling rehabilitation and muscle power strength training, comprising:

(i) providing at least one first list having columns each including:
one of said columns for a name of said trainee who is an old and/or physically impaired person in need of individual rehabilitation by physical therapy, and two or more of said columns for kinds of exercises defined by at least a name of each exercise and number of repetitions or duration of each exercise, said exercise being selected from the group consisting of: exercises of upper extremities and number of repetition, exercises of a body trunk and number of repetition, exercises of lower extremities and number of repetition, exercise with a hot pack or hot packs, length of enforcement time period and place, exercises with parallel bars and number of repetition, and exercises with steps and number of repetition;

(ii) planning for a trainee kinds of exercises defined by at least a name of each exercise and number of repetition or duration of each exercise for rehabilitation and muscle power strengthening;

(iii) filing the first list by :indicating a name of said trainee in the column for trainee, and indicating kinds of exercises for said trainee defined by the name of exercise and the number of repetition or duration in each of said columns for kinds of exercises;

(iv) providing a second list having columns including: at least one of said columns for one or more trainees' names including the one specified in the first list, at least one of said columns for dates for performing the exercises specified in the first list, at least one of said columns for at least one manager's name, wherein said manager is to fill the second list and to indicate, supervise or assist rehabilitation and muscle power strengthening of the one or more trainees specified by the manager to perform the exercises;

(v) filling the second list by indicating one or more trainees' names including the one specified in the first list, indicating a date of performing the exercises specified in the first list, and indicating at least one manager's name; and

(vi) managing the exercises specified in the first list for the trainee and confirming or arranging a date of performing the exercises in said second list.

5. Conclusion

The author invented ‘Method for managing exercise for function recovery and muscle strengthening’ that named the Takizawa Method by observing the rehabilitation technique in which had been carrying out by physiotherapist Ms. Kyoko Takizawa, my mother.

She did not admit that her experience was a method in accordance with a fixed rule, but ignored the request of the author to disclose the RMR over a six year period. This was not unrelated to the pursuit by the author had been a politician.

She said, “Your job is politics. Don’t stick your nose into my job.” In order to exploit this stubborn posture of which she was convinced that she could treat patients who had been compelled to accept own disabilities by the concept of the previous rehabilitation medicine, the author had to devote himself to the conception of improving rehabilitation medicine by methodizing one’s experience. This enabled this invention.

The number of aged disabled requiring care who had been treated full service of rehabilitation medicine had more than doubled with 4,690,000 in April, 2009 from 2,180,000 in April, 2000 in Japan. Those who need care after rehabilitative treatment were increasing in numbers sharply.

The joint guideline committee, which consists of 5 scientific societies, such as the Japanese...
Association of Rehabilitation Medicine, and 3 research groups of the MHLW published the Stroke Treatment Guidelines of 2004 related to the method of treatment for the stroke rehabilitation medicine and medical treatment, training technique, etc., which put weight in either the handedness change of the unaffected side or priority to function improvement of the paralysis side for the hemiplegia. It cannot be said that validity was enough; it was shown that more research was needed for these in the future. Though this expression is deleted without showing any reasons now and has been changed, it is suggested that the restructuring of the rehabilitation medical treatment must be necessary.

The treatment results and the above noticed study result show that it is necessary to develop the new rehabilitation method. This invention including the motivative exercise is autonomous rehabilitation exercise for the user, and the labor saving for the organization. It is easy to introduce with low cost and its introduction did not have any bad influence on the users. This invention seems to correspond to the necessity for human beings and the welfare policy in many countries.

6. Discussion

Dr. Yoshiko Morita reported the effect of this method at the Japanese Association of Rehabilitation Medicine and it became the base of the patent application.

Dr. Hideo Kijima published the rehabilitation trial for the acquirement of walking form bedridden at the bedridden elderly hospital. This became the foundation of the Japanese Biophilia Rehabilitation Academy (BRA). The author fought the mayoral election to "establish the society which does not produce a bedridden person" from the intention "our society would be ruined if Rehab medicine isn’t restructured" in 1996. He saw this and heard my murmur "it will be earlier if I am a doctor", and offered cooperation. Then he had become the first chairman of BRA.

Moreover, there was the ex-chairman of the board of directors, Siro Kanai, MD. of The Japanese Clinical Orthopedic Association to the starting cooperator of BRA. He was in agreement with the opinion that only the spread of this technique by this invention enables sustainable the aged society. He had an opportunity to participate in the enrichment of the Fujisawa training meeting shown in Fig. 2, and is a coauthor of the paper. A word which he had said, even now, "we, medical doctors had to notice this method" remains in my heart. The BRA in Japan held 17 conferences, and the international (I)BRA held 10 conferences and 3 workshops. A facilitator existed at each conference supervised in order to realize the author’s belief.

The IBRA is still small-scale. Although an example connecting with Vatican, Rome, Italy is mentioned, 2,040 million believers are in Christianity. One began and the Twelve Apostles blessed us, and it has developed today.

The “Revolution of Hope began. Begin with No. 1. Learning from history, an important movement is born from the efforts of a small group.” It is expected that the result of this patent distribution forms a foundation so that many people in the world can keep and/or reacquire their independent lives, even if people developed disabilities and/or became advanced in age.

Acknowledgement

The increased population in the elderly people and disabled elderly has become a serious social problem all over the world today. This invention can prevent the Aging crises, which is conducted to by the situation. I appreciate from the bottom of my heart that I could have the chance to invent this, which can contribute to the continued improvement in human beings’ welfare and the prevention of the Aging crises.

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