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Developing Skills in Intra-Workplace Rehabilitation Education: I

Fukumi Hiragami

Research Institute of Health and Welfare, Kibi International University, Okayama, Japan
Email: hiragami293@gmail.com

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Abstract

Japan has an advanced healthcare system, on par with any developed country; at the same time, it is challenged by a rapidly aging population. In line with other countries, medical and paramedical training differs from college or university to when the graduates start working in the hospital wards; it seems like a new career to freshmen. Rehabilitation draws together the most varied professional teams treating patients from a range of specialists, and physical therapists generally receive very little intra-workplace skills training. The aim of this paper is to develop the first of a two-part educational model that is useful for the professional development of therapists working in rehabilitation medicine, by incorporating, at least, Shared Decision-Making and Narrative-Based Medicine. The most productive systems of analysis are Bloom's psychomotor taxonomy and the Japanese DIKW system. The Japanese DIKW model of "*chishin*", which is based on Data, Information, Knowledge, and Wisdom, is similar to the professional attitude and rehabilitative mindset in the healthcare system, the convalescent rehabilitation wards. The individual, departmental, and hospital levels could all benefit from aspects of these systems. Rehabilitative medicine in Japanese terms is presented as a holistic medical care that heals the body and mind and restores dignity, such as personality and self-confidence, and it is also a place where unique Japanese cultural concepts such as "*Ikigai*" (reason to live) and "*Omotenashi*" (hospitality) can be nurtured as professional awareness.

Keywords

Rehabilitation Skills, Work-Based Education, DIKW, Narrative-Based Medicine (NBM), Shared Decision-Making (SDM)

1. Introduction

Conceptual frameworks [in medical education] represent ways of thinking about

a problem, a study, or ways of representing how complex things work. They can come from theories, models, or best practices. Conceptual frameworks illuminate and magnify one's work. Different frameworks will emphasize different variables and outcomes and their inter-relatedness [1] (p. 312).

There is an urgent need in Japan, as elsewhere, for viable intra-workplace educational models, highlighted during COVID-19 and in general across medical areas and specialties. The Japanese Association of Rehabilitation Medicine was founded in 1963 to promote the advancement of medicine and dissemination of knowledge concerning rehabilitation [2], so the discipline is well-grounded. The primary focus of this paper is on newly qualified physical therapists, including physiatrists, and occupational therapists. With the continued supply of newly qualified therapists who have been deprived of clinical training and education opportunities due to the COVID-19 pandemic, intra-workplace education now also needs to cover responses to these new, virus-related issues that were not previously significant [3]. Furthermore, there are restrictions on teaching time. Systematic learning and passive education are complex. Rapid advances are being made in studies of learning methods where therapists learn autonomously without being stressed or pressured so they can be given responsibility for patient care [4] [5] [6].

There is a need for therapists to have "knowledge" of medical information and to be "able" to practice rehabilitation using that information; to provide services for the patient sitting in front of the physical therapist or other practitioners, understanding their complete situation is vital. Student physical therapists' medical knowledge can be evaluated via written examinations, especially at the beginning of their training, but knowledge for practical rehabilitation can only be acquired by actually taking charge of patients, which is procedural knowledge. For example, the mini-CEX, a practical exam that is taken several times over the course of the first year of residency, would appear to be a commonly used, reliable form of assessment [7].

On the one hand, to effectively practice rehabilitation treatment, "skills" that give therapists the ability to follow stepwise procedures efficiently and effectively are essential. However, "rehabilitation skills" may be confused with Japanese "skills" and not evaluated. The best Western models are presented in the body of this paper, but the contribution made by the Japanese language and practices are discussed too; these are exemplified in the following paragraphs. The literature review yielded common components with those found in previous studies conducted primarily in the US and Europe, while there is also an emphasis on the features that reflect the ethical climate of Japan and shared values in Asian countries, such as a *sense of harmony* (e.g., respect for the rules and humility), an *insight into one's life*, and the *will to act upon it* (e.g., an ability to accomplish goals).

The Japanese word "技能" is translated into English as "skill", but the Japanese word is broader and deeper, generally indicating *abilities acquired through practice and training*, *including education and attitudes*, which could be consi-

dered closer to English "competence". However, once more, the Japanese word for "competence" does not correspond exactly with English "competence". The Japanese concept of competence is often referred to as *Gimu* or *Giri* which translates to *duty* or *obligation* [8]. In Japanese culture, competence is tied to fulfilling one's responsibilities and obligation to society, etc. There is not the meaning of personal achievement or success—the Western orientation—but the meaning of duty and obligation. There is a strong emphasis on the importance of humility and respect for authority figures. One's level of competence may be determined by how well one understands and follow the rules and expectation set by one's superiors.

Unlike the Japanese concept of "competence", the Western concept does not emphasize obligations and responsibilities, but rather on self-reliance and individual achievement. It is focused more on skills, knowledge and abilities leading to personal success and recognition often in a particular area. People who are competent in their field are often highly regarded and respected.

In another example, the Western concept of "competency-based education" [9] (CBE) is very different from the Japanese concept. In the Western context, CBE is a student-centered approach that focuses on specific skills and knowledge. Students can move at their own pace, but they must demonstrate mastery or high standards on procedures. There are clear learning objectives and rigorous assessments; the core is improving the relevance and effectiveness of education. The Japanese concept of CBE is known as "jissen-kai" or "practical learning" [10]. It emphasizes the development of practical skills used in real-life situations; this aligns with the Japanese work-oriented structure and focus on vocational training [11].

In this paper, rehabilitation "skills" refer, at least, to methods and procedures for providing rehabilitation services learned through experience with medical cases; however, it has a more profound meaning here.

The Japanese concept of *wisdom* is deeply rooted in their cultural and philosophical traditions. Known as "Chie" [12] it is the understanding gained through experience and knowledge. But it is more than expertise and knowledge, but primarily involves acquiring values such as empathy, compassion, humility, and trustworthiness. Wisdom is often associated with a sense of balance and harmony; cultivating the right values, attitudes and behaviors that contribute to a harmonious and positive social environment. Chie is regarded as an important part of personal and societal development.

In Western culture, wisdom is often associated with individual knowledge, experience, and critical thinking. The emphasis is on *personal* reflection, analysis, and rational decision-making. This emphasis seems to have developed from Greek philosophy. In Japanese culture, wisdom is more often associated with the ability to understand and use the experience and knowledge of others. The emphasis is on learning from, and respecting tradition, culture, and the wisdom of the community; there is an emphasis on balancing the desires of the individual and the needs of the group.

Rehabilitative medicine may be considered as holistic medical care that heals the body and mind and restores dignity, such as personality and self-confidence, and it is also a place where unique Japanese cultural concepts such as "*Ikigai*" (reason to live) and "*Omotenashi*" (hospitality) can be nurtured as professional awareness.

1.1. The Educational Model for Rehabilitation Therapists

The aim of this paper is to develop the first of a two-part educational model that is useful for the professional development of therapists who work in rehabilitation medicine. To begin, a care model of the knowledge necessary for an individual learner's rehabilitation practice is discussed.

Figure 1 below is based on a care model developed in the context of individualized rehabilitation for adults aged 80 years and over [13]; it may be considered a model to help find the optimal answer to the question: "What should we do, here and now, with this specific patient to optimize their rehabilitation outcomes?" The content of the care model can be grouped broadly into two sections to facilitate learning. The upper section concerns current conditions, and the lower section covers the courses of action, including pre-hospitalization predictions; from this, the following concrete information may 1) bed situation, including the medical history, history of present illness (HPI), diagnosis, physical findings, examination findings, image findings, and course pre- and post-hospitalization parameters, 2) psychological aspects, including self-management, independence, awareness of being ill, disposition, hobbies, the reason for being, enjoyment, and sense of values, 3) the experiential front, including the life history prior to the illness, family history, and nursing situation, and (4) disability/injury circumstances, including motor functions, cognitive functions, and activities of daily living. (See Figure 1) The information in these four dimensions serves as a reference, allowing care models to be elaborated or simplified as necessary.

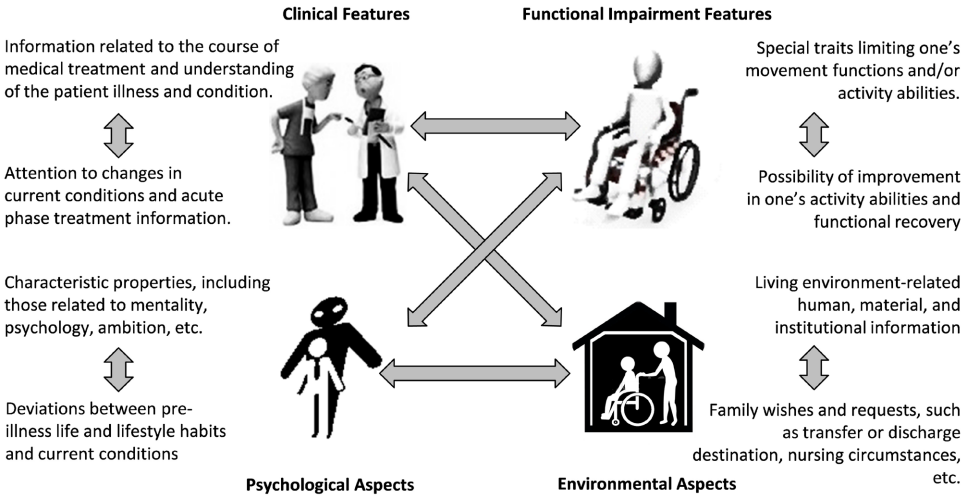

Figure 1. Knowledge necessary for an individual learner's rehabilitation practice: a care model.

For the Eastern concepts of mind-body *unity* [14], or mind-body *oneness*, we need to clarify the correlation between activity and body in rehabilitation medicine [15]. By acknowledging the patient as a whole person and treating their bodies, minds, and spirits simultaneously, holistic rehabilitation allows patients to reconnect with themselves, their illness, their families, and their emotions in a deep and meaningful way. It is essential to treat our patients as people and not merely as sufferers or patients.

1.2. Medical Insurance Constraints and Mindset

Changes in Japanese medical insurance policies have affected the quantity and organization of rehabilitation interventions for inpatients, the outcome of rehabilitation medical treatment is to get patients to return home as soon as possible [16]. Patients are forced to leave the hospital early (after an average of two months), making it difficult to continue adequate rehabilitation [17] [18]. Therefore, the colloquial term "rehabilitation refugee" has been coined and the limitations and challenges of time-limited rehabilitation has been widely documented particularly by the late Japanese immunologist Tomio Tada [19] [20]. In cases where it is difficult to return home because one cannot live alone, the patient may be admitted to a facility; however, it the wait-time for such facilities is several months to a year. Patients are covered by long-term care insurance when they leave the hospital; they will use the long-term care insurance service and receive support such as home helpers. However, the burden of long-term care on the family inevitably increases [21].

The author has led clinical conferences in student and professional education for over 20 years [22]-[27]. From that experience, a keen realization has developed concerning the necessity for providing concrete knowledge and skills necessary for practicing rehabilitation, as well as making learning goals explicit. Rehabilitation learning goals result in a *rehabilitation mindset* that fosters professional awareness. Kondo (2017: preface) says:

A rehabilitation mindset is not simply responding to the ailments and symptoms of the patient in front of you but having the readiness of a rehabilitation professional to see through the *entirety of the life of the person* experiencing the disability or injury and carry out reconstruction in a way that will work with their life moving forward [28], with *clear and precise learning goals* resulting. (Own emphasis added)

However, *intra-workplace education models* and materials with a *rehabilitation mindset* as a learning goal are virtually nonexistent in Japan; furthermore, instructional methods focusing on rehabilitation procedural knowledge and rehabilitation skills are also rare. Hence, fostering a rehabilitation mindset is to be aimed as a key aim, bearing in mind Japan's aging population.

Rehabilitation medical treatment has the highest number of medical professionals who interact with an individual patient during their medical treatment (such as physical/occupational/speech and language therapists, neuropsycholo-

gists, rehabilitation nurses and social workers, and prosthetists/orthotists). But, if professionals do not share a common awareness and common language, the team will not develop a *rehabilitation mindset.* This is the professional awareness not just of an individual but of the entire organization and the hospital; this concept is examined later in this paper.

1.3. Broader Education Models: Bloom and DIKW

Due to the paucity of rehabilitation-specific frameworks and learning models, examples of these from the wider educational literature are presented here. The basic idea of emphasizing *educational objectives* was given its clear exposition as early as 1949 by Tyler, an American, who argued that curriculum design should be determined by explicit objectives expressed in terms of changes learning was supposed to produce in students' behavior. Tyler was followed by Bloom who developed a taxonomy of educational goals in the cognitive domain (Bloom, 1956 [29]). He classified the objectives into *knowledge*, *skills*, and *attitudes* and stressed that they should be communicable [30].

In the original work on taxonomies (tables and then pyramids), three sets of objectives were decided on—the educational, affective, and *psychomotor*; however, in 1966, the larger guiding committee felt that there was little call for publishing the psychomotor set in schools and colleges, but it was kept on record; but would appear to have strong relevance to physical therapy and physiatry, especially to our posited model. Further analysis of this psychomotor model is presented in the partner paper: it is merely presented here [31] as an illustration (See **Figure 2**).

Wisdom is a highly valued attribute in Japanese culture and may be seen as a natural outcome of knowledge. Joseph-Williams *et al.* (2014: 1) point out that: "whenever we…develop…a framework for developing systems, it is critical to have a shared understanding of the style, design elements and building blocks that we are working with."

The Data-Information-Knowledge-Wisdom (DIKW) system, of uncertain origin, much esteemed in Knowledge Management circles, has been represented

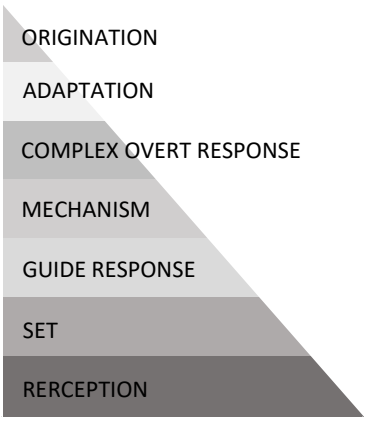

Figure 2. Bloom's psychomotor taxonomy (Wikipedia).

as yet another pyramid, partly because purveyors hold that there is far more data than knowledge in contemporary life. DIKW applies to *systems* and is included here because of its close relation to the Japanese model of rehabilitation. (See Figure 3) These models are now discussed in detail and applied to the context of rehabilitation medicine.

2. Discussion

2.1. Three Models

About 65 years ago, based on behaviorist principles, Bloom and his colleagues developed a taxonomy (table) of learning objectives. Bloom [29] considered his early effort to be a starting point: ideally, each major field should have its own taxonomy in its own language—more detailed, closer to the special language, and thinking of its experts, reflecting its own appropriate sub-division and levels of education, with possible new categories, combinations of categories, and omitting categories as appropriate. (Wikipedia)

Given this, we might have expected a medical taxonomy to have been developed: it has not been. However, a particular pyramid of *learning objectives* appeared and proliferated in psychology and educational textbooks and websites everywhere. A revised version came out in 2001 [30], with the top two terms swapped around, and the nouns changed to verbs or gerunds, reworked by the original team; it is our view that it is now used so widely that it has lost much of its meaning.

We posit that the rehabilitation educational model prototyped in Paper II matches the seven categories of psychomotor performance. In other words, the seven categories are parallel to the perspectives of seven evaluations. Even simple tasks such as carrying a tray involve a wide range of skills as analyzed by Simpson [31]. The general or specific work of the trainee physical therapist is not going to be broken down into such small subcategories as Simpson lays out; but analysis shows that the psychomotor domain is highly complex and essential for such work. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution. In research, one could use these seven points as tools for evaluation; one could create a checklist to self-assess the reports of the cases one has experienced.

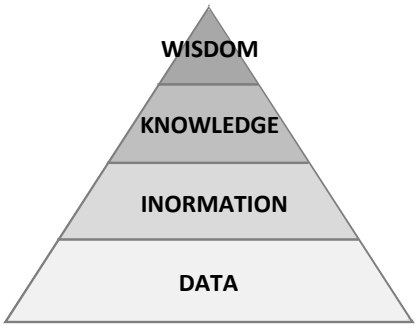

Figure 3. The data-information-knowledge-wisdom system, represented as a pyramid.

Since we are also focusing on the functioning of *teams* in hospitals, we need to turn to Knowledge Management Systems (KMS) as well. There are specialists/consultants, registrars, sisters, nurses, physical therapists, occupational therapists, pathology technicians, X-ray departments, and others. KMS are information technologies designed to support knowledge creation, sharing and use in an organization; the purpose is for supporting decision-making, innovation, and strategic planning. There are at least five different sets of systems, of which two seem relevant here: collaboration tools, and learning management systems. Increased productivity, improved decision-making, and better innovation capacity are also benefits of using KMS [32].

The time-honored system of the ward sister handing over to the next shift of sisters and nurses is an early example of a Knowledge Management system. Information managers, too, have a pyramid, as we see in **Figure 3** below: Data, Information, Knowledge, and Wisdom emanating from an early (unattributable) source often referred to as DIKW.

This model is based on the belief that there is a great deal of data in the world compared to knowledge, which implies that knowledge is not basic. Instead, data is supposed to bootstrap itself into being information and so on upwards. It does not actually happen like that: after scanning highly regarded videos, freelance researchers may give good descriptions or definitions of each level but slip up when actually talking about their relationships with one another; presenters are just as likely to say that information helps you make inferences from the data. A table designed by Ackoff [33] provides definitions of data, information, knowledge, wisdom, and thoughtful update (See **Figure 3**).

There has been a Japanese modification of the knowledge pyramid by Takanashi [34], which he calls the *Chi Pyramid.* (See **Figure 4**). Valuable information in Japanese is called "Chi-shiki"; "Chi" is knowledge that can be used in combination with behavior, and "chisin" is the consciousness of people who can use wisdom in the optimum form. We might say then that we are in the age of managing

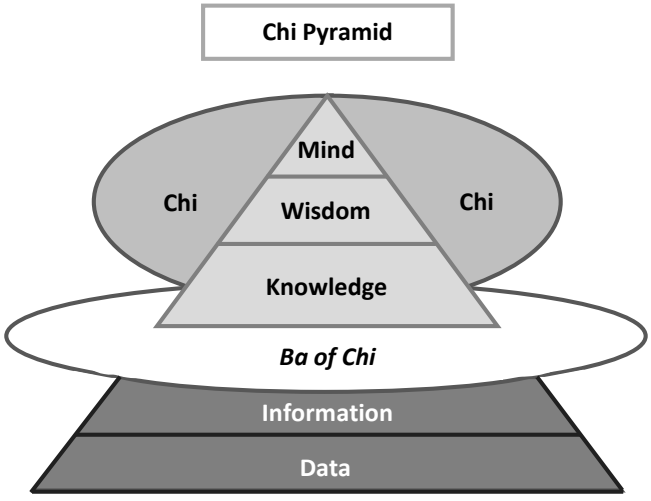

Figure 4. The Chi Pyramid.

Chi. The "Ba of Chi" (see the circular disc) is the place of Chi where we know information; it is like a forum or a square where discussions may take place. The top triangle is obtained through "Ba of Chi" within your brain and mind. The information and the data are outside of your brain. and therefore shown *below* the Ba of Chi. Figure 5 (see right) is the researcher's adaptation.

Knowledge is what you know about a certain thing; wisdom is the ability to know the reason and path of things and make appropriate decisions. True value only occurs when information is used as wisdom, not superficial knowledge.

Evaluating in rehabilitation means finding value; it is to think independently about information you have been given and judge what to do. Awareness to change the current situation, and this awareness gives birth to wisdom. This concept of wisdom has Japanese cultural characteristics that are different from those of West [34]. It is important to clarify these differences; for example, the Japanese word "ikigai" embodies an individual's "reason for living/sense of purpose" and is a unique concept in Japanese culture. It includes the three elements of *identity*, *independence*, and *autonomy* [35]. Commercial companies can exemplify further differences in the concept of wisdom between Japanese and Western cultures. As highlighted by Nonaka [36], the tools required to manage knowledge-creating companies (KCC) [37], as found in Japanese companies (J-KCC), are markedly different from those used in most Western companies. There is an interaction and exchange between *tacit* and *explicit* knowledge that Japanese companies are renowned for developing; in general, there is the setting of long-term goals, encouraging collaboration, and keeping open channels of informal communication in Japan.

Because of the unique values and morals alluded to above, it leads to the following "intelligence". Rehabilitation medical treatment is holistic medical treatment that heals the disabled body and mind and restores dignity, such as personality and self-confidence. Medical professionals must develop the "hospitality"

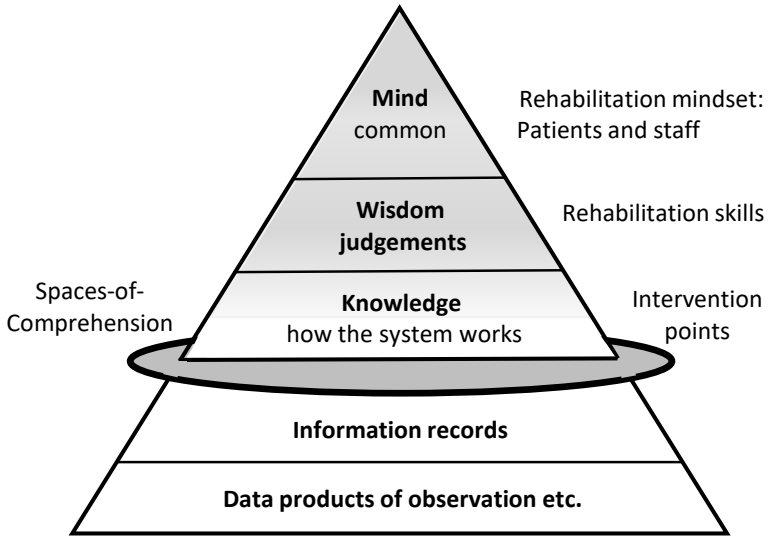

Figure 5. Adaptation of the Chi Pyramid.

to heal through their own education. This may be conceived as "hospitality of the heart" [38] which refers to an ongoing action of extending warmth, kindness, and generosity to others from a place of genuine caring; it involves creating a warm atmosphere, offering a listening ear and lending a helping hand.

As indicated by Ruitenberg [39] [40], medical education is more than clinical training, and there is a challenge in preparing "technicians" who can carry out medical procedures skillfully but also come to understand the meaning of illness in the context of a patient's and their family's life; they must be able to weigh conflicting principles of medical ethics in concrete and often emotionally challenging situations, and also have an appreciation of the moral burden associated with the social status and privilege of their profession. Nevertheless, although hospitality is arguably more challenging in medical education than in other education fields, it is widely considered a worthwhile framework and ethos [41].

"Valuable information: knowledge" becomes behavior that results in evaluation, and "knowledge leading to behavior: wisdom" results in intervention. When knowledge becomes wisdom, there is an experience of a change in awareness, leading to a change in action, resulting in new styles of individual patient interaction being learned, along with rehabilitation methods and skillful applications.

In wisdom becoming "cognition," behavior modification leads to a sense of something worth doing, self-awareness of the meaning of existence, and a sense of purpose; short, learning rehabilitation skills will foster professional awareness as a rehabilitation mindset.

2.2. Learning and Healing through Three Approaches

When the personal attributes of individual patients differ, such as their sex, age, and other demographic features, the responses of the medical care team will differ too. There are inevitably differences in their external environment and the internal causes of their disability, as well as social and cultural differences. With disability or injury location, the severity, and/or nature differ, unique disability or injury profiles exist. Symptoms differ for each patient, as do their clinical situations, including pathological conditions and idiosyncratic complaints. Much of this is reflected in **Figure 1**.

2.2.1. Narrative-Based Medicine

If individual diversity and complexity are considered, the therapist's studies will identify intervention points generally determined by each patient's residual abilities [13] [41]. Consequently, Narrative-Based Medicine (NBM) models may be developed that use a holistic approach incorporating the *physical*, *mental*, *psychological*, and *social* aspects of a patient's various challenges.

NBM is consciously named in opposition to Evidence-Based Medicine (an empiricist approach that leaves out the person and their story). It is a holistic approach that draws together the story told by the doctor, the patient, the test results and medical history [42] [43] [44] [45].

In the words of Greenhalgh and Hurwitz: "Narrative provides meaning, context, and perspective for the patient's predicament. It defines how, why, and in what way he or she is ill. It offers, in short, a possibility of understanding which cannot be arrived at by any other means." [42] It is not something that can be learned quickly and easily but through practice, with others, and by reflecting on cases. Kleinman [46] [47] calls it a stance of "empathetic witnessing" and all-encompassing attention.

Stories are part of being human. From our earliest years, we love to listen to stories; each of us has a story that shapes us; telling stories gives the consciousness of who we are. Stories are the business of the humanities, the social sciences, and the arts. NBM is the "application of narrative ideas to the practice of medicine". It stands in opposition to the biomedical model of medicine, where the illness is of central importance. The doctors change their focus from problem-solving to understanding the patient. We see it in primary care, patient-centered care, and holistic care. It is a collaborative process that is thought to heal [44] and has tried to pull together what is implied by and demanded of primary care. Insofar as NBM is like non-directive psychotherapy, it is clearly something that will have to be taught apart from biomedicine and over a period of time.

However, some techniques may also be taught, such as "neutrality" and "circular questioning." The first technique involves not rushing to conclusions but keeping the discussion open. Circular questioning refers to a three-part process where the doctor asks a question, the patient responds, and the doctor asks the question about what was said, keeping the narrative going. The therapist-practitioner will not direct the flow, and this requires good listening skills—picking up on cues. There are books and courses on NBM, but there seems to be a dearth of hard evidence on its use; this is probably because it would require the humanities or social science research methods. The scientific advances of medicine must be acknowledged, but the art of medicine needs to be developed.

Circular questioning follows the patient's train of thought and facilitates the unfolding of the narrative. This is done by picking up on words or phrases in the narrative and reflecting them back to the patient or using them in some way to clarify or encourage responses. This creates a loop of question-response-question (hence the concept of circularity) that keeps the narrative flowing. Circularity requires good listening skills and the ability to pick up on cues; it also requires the listener (*i.e.*, the professional) to be comfortable with following the narrative rather than trying to direct it.

Drawing on a number of sources, Zaharias [48] [49] [50] has suggested that the benefits of NBM include improving communication between patient and professionals, improving the quality of medical information (the accuracy of the patient history), a better understanding of how evidence can be interpreted in different ways (medicolegal understanding), the exposure of prejudices and fears in the clinician (encouraging self-reflection), improving and enriching the doctor-patient relationship (enhancing trust and empathy), fostering shared deci-

sion-making (co-construction), and improving relationships with colleagues and the effectiveness of the health team.

However, it should not be thought that NBM should be pitched against Evidence-Based Medicine; the two are not mutually exclusive. We need both: the narrative allows the doctor/practitioner to be a human and not just a scientist and enhances their practice as well as themselves [45].

2.2.2. Shared Decision-Making (SDM)

Medical staff set rehabilitation goals based on the clinical features and patient functional impairment features. These are discussed with the patient and the patient's family in the context of the psychological aspects and environmental aspects; this will lead to therapists and patients developing an understanding of rehabilitation content and training and exercise issues, resulting in congruent implementation [8] [16]. So, the shared decision-making (SDM) model is used in rehabilitation goal setting [51] [52]. It is the patient's right to be involved in making choices about their care. To decide, they need to know their options and what might happen if they do not want any treatment or care. Shared decision-making occurs when health professionals and patients work together: it puts the patient at the center of decisions about their own treatment and care. Advantages include improved patient satisfaction, better adherence to treatment plans and better long-term health outcomes.

Quaschning *et al.* [51] analyzed the effects of shared decision-making, empathy, and team interaction on patient satisfaction and their acceptance of treatment in a rehabilitation context. While we are not surprised that SDM leads to patient acceptance, it is also, in the specific context of this paper, that team interaction also leads to treatment acceptance.

However, this is not a bottom-up process initiated by patients, as busy doctors accustomed to making quick decisions will need encouragement and training in SDM. It has to be instituted at the highest level of the organization, whether this be social or health care. The need is so great that everybody cannot be taught these skills individually, so "training the trainer" workshops are advocated.

There are two explicit patient aids. The first is called *teach back*, where the professional, instead of simply asking "Do you understand?" rather obtain the patient to explain what they understand. The second is the *three-talk model*, where the professional introduces choice, describes the options inevitably by relying on patient inclination, and helps people explore their preferences and make decisions.

There has been a lot of research on SDM and hence even systemic reviews [52]. Unfortunately, the evidence for its efficacy is not strong, as much of the data are contaminated. It is, however, easier to assess to implement than NBM and is worth pursuing. As Légaré *et al.* [53] summarize:

It is uncertain whether interventions to improve the adoption of SDM are effective, given the low quality of the evidence. However, any intervention that actively targets patients, healthcare professionals, or both is better than none. Also,

interventions targeting patients and healthcare professionals together show more promise than those targeting only one or the other.

Nonetheless, NBM and SDM are central to the practice of holistic medicine, and the cross-disciplinary teams working in rehabilitation should have training in them as part of their curriculum, even if it is initially only rudimentary, prior to becoming fully integrated into medical culture. This leads to another important facet relevant to rehabilitation medicine, *i.e.*, teams.

3. Teams

Fifty years ago, when ill, one would visit one's general practitioner, rarely a medical specialist, and almost never a team. Now practices have changed. First, the healthcare systems of many countries actively encourage (and often incentivize) multi-disciplinary teamwork. Second, the increasingly aging population in Western countries and Japan is associated with more frail, older people, and hence, larger numbers of patients with more complex treatment needs. Third, there is an increasing complexity of skills and knowledge required to provide comprehensive care to patients; fourth, this leads to the related point that even within health professions, there is increasing specialization, and hence, the fragmentation of disciplinary knowledge [54].

Assuming that policy requires us to work together, how easy would it be for us to build teams? The more democratic the team, the easier it is. If each member could vote for or censure any other member, tensions may not ensue. But around the world, medical students are junior to the newly qualified doctors, who are junior to the specialists; but qualified physical therapists may well consider themselves equal to doctors, as they as specialists in their own chosen profession [55]. Physical therapists may make suggestions doctors on diagnosis and treatment. Multi-disciplinary health teams are more different even than uni-disciplinary health teams. "These challenges include the contentious nature of shared professional roles and expertise, planning and decision-making while delivering quality patient care within complex contexts." (p. 9) [56]

From an analysis of reviews and then analyses of other analyses, Nancarrow *et al.* [56] came up with ten themes of a good interdisciplinary team. Some of these may overlap or facilitate others, but a few are worth special mention. There should be a clear team leader with a clear direction and management, democracy, sharing power, joint working, and autonomy when looking at shared leadership and management. In relation to climate, there should be a team culture of trust, nurturing consensus, and a need to create an interprofessional atmosphere. There should be a clear set of values while portraying a uniform and consistent external image.

Combining the three models of NBM, SDM, and interdisciplinary teamwork should result in a usable and flexible rehabilitation approach. It may lead to learning methods: first, a patient-focused and family participatory approach; second, a goal-oriented and issue-oriented approach; and third, an approach fo-

cused on rehabilitation with team medical care and multidisciplinary professional cooperation. The question arises whether or to what extent each, let alone all, of these is possible in practice, but they are worthwhile targets.

Professionals caring for rehabilitation patients have all the procedures they are learning, or can already do, clear in their professional minds. Most may constantly undergo formative evaluation. Learning to work with other professionals, either lower or higher in rank (or both) and being open and non-defensive means a great deal is going on—even without interacting with the patients, but performance levels are revealed, and self-learning occurs. There is a place for reflection and metacognition.

Through careful on-site listening and observation, valuable information for intervention points can be realized, and awareness changes. Reconstructing data and information into knowledge on-site may be said to be rehabilitation assessment learning [1] [2] [17].

In terms of cost-effectiveness, implementation is not feasible unless it is beneficial to the individual, the department, and the hospital. At the individual skill level, acquiring rehabilitation skills leads to growth and job satisfaction. At the organization/department level, team medical care is enhanced. At the hospital/overall level, it is the cultivation of leaders and the creation of a climate in which rehabilitation mindset and management philosophy are aligned.

Limitations

The main limitation of this study was the lack of specificity of some of the models discussed in the field of rehabilitation education; this is a result of a dearth of relevant literature. An additional limitation is the lack of empirical data to support some of the assertions made, which should be a focus of future studies in the field.

4. Recommendations

Nurses have a large number of autonomous tasks for which they are uniquely responsible, but worldwide, physical therapists can specialize in a range of different areas (e.g., physical and mental) and may be more autonomous than doctors. Nevertheless, as professionals, they need a great deal of clinical experience under professionally registered therapists [57]. Their education should take this into account. Mentorships in both professions are very important [58] and when good teambuilding exists, a large amount of incidental learning may occur. Interprofessional learning should be prioritized for this reason.

5. Conclusions

The *rehabilitation mindset* mentioned earlier may occur at three levels. The individual level reflects the ability to respond to a patient's ailments and symptoms. The organizational level concerns the ability of a professional to see through the complexity of rehabilitation to the entire life of the person expe-

riencing disability or injury. The hospital concerns managers' abilities to conduct reconstruction, working together with the individual's lifestyle, and extending into their future. The development of rehabilitation mindsets like this should facilitate the rapid advancement of holistic rehabilitation medical care.

In Japan, the most super-aged society globally, the construction of a system providing advanced rehabilitation medical care is an urgent issue. This article may be described as an ideal medical care model that considers differences in individual patients, providing each individual with optimum rehabilitation. Moving forward into the partner paper (II), we will apply tools being developed in multiple facilities and study their usefulness.

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Conflicts of Interest

The author declares no conflicts of interest.

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