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Original Paper

Interaction Model of Mental Disability (IMMD) based on ICIDH

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Abstract

I propose an "Interaction Model of Mental Disability (IMMD)". Several models based on ICIDH are being proposed and tested around the world focusing on different aspects of disability. Though ICIDH is an inclusive model in health services, social security, insurance, education, and so on, the remarkable point of IMMD is to visualize the mutual relation of mental disability (impairment, disability and handicap) and other factors (environmental factors, personal factors). IMMD is a practical rehabilitation model based on ICIDH and has a conference sheet designed for a conference among the professionals and a counseling sheet designed for an interview and consultation with the user. IMMD has made possible the following kinds of cooperation: 1) cooperation between user and professionals; 2) cooperative approach by various professions concerned with health, medical treatment and welfare; 3) cooperation between professionals and non-professionals (e.g., family, friend, helper, partner, assistant, and so on). The conference sheet is used in order to obtain a consensus on a rehabilitation approach among various professions, and the counseling sheet is used to know the user's thoughts and hopes, to have the same goal with the user, and to aid the user in reality orientation.

Introduction

The major shift in medical concern from the treatment of acute disease to chronic disease and/or serious residual management has brought with it a need for early medical and/or social rehabilitation focusing on the quality of life of people with disability. Not only the treatment of a disease but also functional management of daily living, therefore, has become the goal of rehabilitation. This change has brought with it a recognition of the need for a classification of "disabilities" that systematically groups consequences associated with health conditions. As for historical background, the International Classification of Impairments, Disabilities, and Handicaps (ICIDH) [1] was first issued in 1980 by the World Health Organization for trial purposes. ICIDH is a classification of disabilities that systematically groups consequences associated with health conditions. ICIDH has been used to collect data to evaluate health care delivery, policy and financing. ICIDH is therefore useful for its educational value in raising awareness of the consequences of various health conditions, and of people's rights to participate in society. However, in daily psychiatric clinical contexts, it has not been found useful as a clinical rehabilitation tool.

In Japan, Ueda introduced a model for a corrected ICIDH [2,3]. Structure models for mental disability have been discussed in the psychiatric domain for a long time under the influence of the Ueda model [1]. Although a few models [4-6] have been proposed to explain and classify disability in the psychiatric domain,

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there is not yet enough agreement to establish a common language and concept. After the 1988 and 1995 revision of the Japanese Mental Health Law, it has become very common among rehabilitation workers and other sectors to argue about models for mental disability [7-9]. Here I propose an "Interaction Model of Mental Disability (IMMD)" as a practical rehabilitation model, and present a conference sheet and a counseling sheet to apply the IMMD to rehabilitation practice.

Transition and Problem of a Model of Disablements

The 1988 and 1995 revision of the Japanese Mental Health Law has begun to create rapid changes in the rehabilitation and medical treatment of mental patients. The new Law is characterized by its special emphasis on the human rights of the mentally ill, their rehabilitation and social participation. In order to facilitate the participation of people with disability, early rehabilitation and cooperation among health, medical treatment and welfare workers are very necessary. Hence, a common classification of "disability" (a model of disability) enabling communication about health conditions among various disciplines is required.

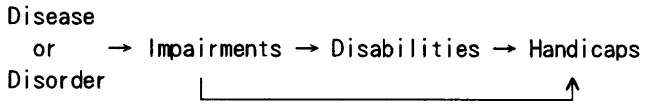


Fig. 1 Disablement phenomenon as depicted in ICIDH 1980.

ICIDH is helpful in distinguishing between impairments, disabilities and handicaps as separate concepts, and is useful for health care practice, administration, research, education and policy. But the following problems have been pointed out:

· Impression given by this model: it is a medical model that has labeled disease or disorder a "disability".

· Representation in the figure: the arrows linking disease or disorder, impairments, disabilities and handicaps in Figure 1 have been interpreted as representing a "causal model" and an indication of change over time, so this representation implies a unidirectional flow from impairment, to disability, to handicap.

· Effects of personal factors and environmental factors: personal factors such as abilities of the individual, and environmental factors, play an important role in the disability process because of their interactions with all three dimensions of the classification; therefore, their effects should be shown in a figure.

· Content: it is difficult to differentiate clearly between impairments and disabilities.

· Terminology: there are several conflicting views concerning the terminology, especially, the words "handicaps" and "disabilities" which are found to have negative connotations.

In the last decade, some articles [10-14] have been devoted to the study of a collection of the ICIDH and

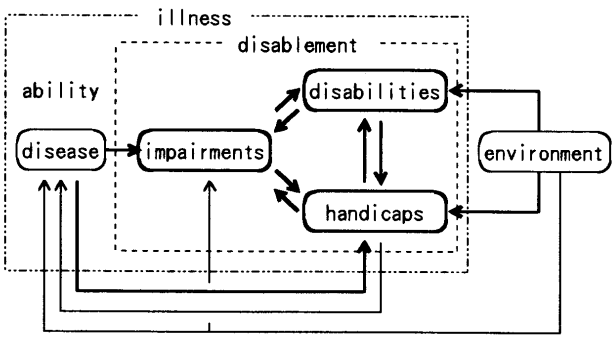


Fig. 2 Structure Model of psychiatric disease and disability (Yamane, 1996).

to a better usage of this classification in occupational therapy and/or in the psychiatric domain.

To solve some of the problems mentioned above, I, too, have presented some structure models for psychiatric disease and disability (Figure 2) [15,16] in which personal factors such as abilities of the individual, environmental factors, and peculiarities of mental disability are reflected.

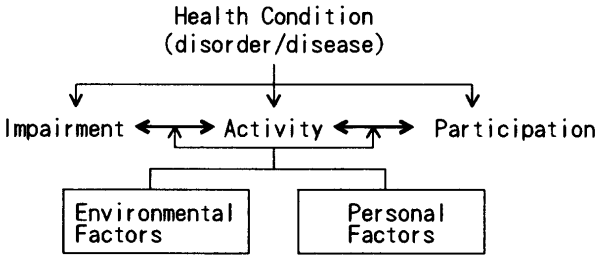


Fig. 3 Current understanding of interactions within the ICIDH-2 dimensions 1998 (Beta-1 Draft).

The World Health Organization held its annual conference on the revision of the ICIDH in 1995, hosted by the WHO Collaborating Centre in Paris, France, Centre Technique National d'Etudes et de Recherches sur les Handicaps et les Inadaptations, (CTNERHI) [17]. The overall phenomenon was visualized as Figure 3 in the ICIDH-2: A Manual of Dimensions of Disablement and Functioning Beta-1 Draft for Field Trials [18]. I also participated as one of the expert monitors in a consideration of the Beta-1 Draft for Field Trials. I pointed out the following problems with the Beta-1 Draft [19]:

· ICIDH-2 is expressed in neutral terms as far as possible without undue weight on negative terms; however, it includes one negative term "impairment" (The term "impairment" is changed to "Body Functions and Structure" in Beta-2 Draft).

· It does not adequately reflect the interaction among disabilities.

· There is some confusion in terms because it gives the words "activity" and "participation" a specially defined meaning instead of their commonsense meanings.

· The relations and meanings that the arrows showing the effects of "Environmental Factors" and "Personal Factors" in Figure 3 in the ICIDH-2 Beta-1 Draft are still vague.

ICIDH-2 will be completed by the end of the year 2001 following the results of the field trials of Beta-2 Draft, which are just starting. Now, various models based on the model in the ICIDH and ICIDH-2 Beta-1 Draft are being proposed and tested around the world focusing on different aspects of disability for various purposes [12,15,16,20-23].

Characteristics and Limitations of the Principal Models

Let us first analyze the characteristics and limitations of the principal revision models of the ICIDH.

The Canada model (ICIDH-PR model) [11,12] is an explanatory model of the consequences of disease and trauma. The Canada model highlights the creation of handicaps as the situational result of an interactive process between the characteristics of a person's impairments and/or disabilities and the social and environmental obstacles in a given situation [2,4]. The newest Canada model [12] shows the mutual relation of personal factors (organic systems and capabilities), environmental factors and life habits, but the interaction of impairments and disabilities is not shown and the figure is a little complicated.

The Yamane model [15,16] visualizes the interaction among disabilities and the effects of environment and personal ability, but is not sufficient.

In the Hirosaki (Arizuka) Model [20], a person's capability in good health and his or her handicaps before

falling ill are considered. Though this model shows the mutual relation of disabilities and other factors and is useful in groping toward a concept of disability, the figure is too complicated for clinical use.

It is characteristic of the Ueda model [2,3] to pick up an illness that is subjectively experienced as a disability. The Ueda model has caused a lively discussion on both sides in Japanese psychiatric circles. In the revised model [21], Ueda explains that disabilities influence each other, but the vectors in the figure do not show the bi-directional relations among disabilities. In criticism it is said that the vector to show the relations among mental disabilities should be bi-directional, because the reverse influence in mental disability is larger than Ueda thinks [5,8,22].

The Nakazawa model (a spiral model) [22] tried to depict "the difficulty of living" [5]. At the meeting of the Japanese Association of Psychiatric Rehabilitation, a heated argument was exchanged around the Nakazawa model and the Ueda model [13]. This model is a concept model to show how the difficulties of living are created.

The Ohashi model [23] tried to describe many different patterns of the interaction of environmental factors. This model is made up of 9 image figures. It is unique and helpful to image an individual situation of disability, but is difficult to put to practical use.

All these models attempt to revise the "Mother Model" in the ICIDH and ICIDH-2 focusing on different aspects of disability according to the purpose of each. All the models have their strong points and shortcomings.

Necessity for a Clinical Rehabilitation Model of Mental Disablements

It has been suggested that WHO should show an authorized "Mother Model" in a revised edition of ICIDH such as Figure 3 and introduce various models based on the "Mother Model" [25-27]. I also agree with this suggestion. In order to apply a model of disability to psychiatric rehabilitation practice, it is necessary to consider the characteristics of mental disabilities.

Compared with other kinds of disability such as physical ones, there are some special characteristics in mental disability [5,6,8,16,22] as follows:

(1) A mental disability is not an after effect of disease, and coexists with disease.
(2) Secondary disorders will possibly arise.
(3) Disabilities are relatively distinct but interactive.
(4) Disabilities are influenced by environments, especially by the human environment.
(5) There is an interaction between disability and personal factors.
(6) Disabilities reversibly change by the influence of the passage of time.

In addition to these:

(7) The naming of a disease in mind or body function actually causes a social prejudice and discrimination [5.27.28].

These characteristics and problems of mental disability are seen as the factors that make the treatment and rehabilitation of people with mental disability difficult [5]. Especially (7) is a problem peculiar to mental illness. In the view of many observers, the prejudice against mental illness lies at the bottom of the resistance many have in accepting the mentally ill person in the community [28].

The medical model treats "disability" as a problem directly caused by disease, a disease that requires medical treatment and care by professionals. The rehabilitation model, however, treats "disability" as an interaction between personal health conditions and social environment from the viewpoint of the quality of personal life. Therefore, the management of mental disability requires a comprehensive biopsychosocial approach.

For example, the following approaches are required for the above-mentioned seven special characteristics of mental disabilities:

· Both the treatment of disease and the rehabilitation of disability in daily living should be performed to (1) at the same time.

· Shorten hospital time by early treatment and rehabilitation to (2).

· Cut the vicious circle of interactive relations among disabilities and a multidisciplinary team approach is necessary to (3).

· A social action like environmental modification is required to (4).

· Use personal talent, ability and capability to (5).

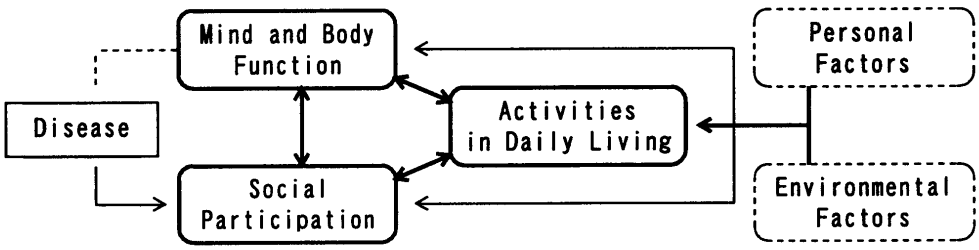
· Approach allowing for either recovery or recurrence to (6).

· Offer a correct knowledge of disease and disability to (7).

IMMD: A Practical Rehabilitation Model of Mental Disability

I propose an "Interaction Model of Mental Disability (IMMD)" (Figure 4) as a rehabilitation model, which is fundamentally based on the ICIDH-2 Beta-1 Draft [18]. It visualizes the characteristics of mental disability. This model is a revised model of the structure model of psychiatric disease and disability that I presented in 1996 and 1997 [15,16]. IMMD is a practical rehabilitation model that is constructed in the three dimensions of "Mind and Body Function", "Activities in Daily Living" and "Social Participation" and with the two contextual factors of "Personal Factors" and "Environmental Factors".

The main features of IMMD are as follows: i) Although ICIDH is an inclusive model to be used in health services, social security, insurance, education, labor, legislation and other sectors, IMMD is a practical rehabilitation model designed for a conference among the professionals and an interview and consultation with the user (client). ii) IMMD visualizes the characteristics and problems of mental disability, especially the interaction among disabilities of which the three dimensions of the classification are relatively distinct but interactive. iii) The two contextual factors interact with all three dimensions of the classification. iv) It is conceived in neutral terms like "Mind and Body Function", "Activities in Daily Living" and "Social Participation", which are used with the easily comprehensible meanings of everyday usage, instead of "Impairments" (or "Body Functions & Structure" in the ICIDH-2 Beta-2 Draft), "Disability (or "Activity"



Mind and Body Function: the body structure and/or physiological and/or psychological function; **Activities in Daily Living:** every physical and mental activity that a person does at various levels in his/her daily living; **Social Participation:** person's involvement in society (interaction of impairments and activity limitation in daily living and contextual factors)

Fig. 4 Interaction model (Yamane, 2000). Remarkable points of this model are that it shows the interaction among three dimensions of the classification and two contextual factors, to visualize a structure of mental disability, and to show the disability as being not a consequence of the disease, but of the naming of the disease.

in the ICIDH-2 Beta-1 Draft)" and "Handicap (or "Participation" in the ICIDH-2 Beta-1 Draft)". In addition, v) it shows that the naming of a disease for a personal mind or body function frequently becomes a cause of social prejudice and discrimination. For example, the prejudice against mental illness has made the provision of housing in the community extremely difficult.

The following explanations are corrections of the definitions in the ICIDH-2 Beta-1 Draft. The term "Mind and Body Function" means the body structure and/or physiological and/or psychological functions. The negative aspect of "Mind and Body Function", formerly "impairment", indicates a loss or abnormality of body structure and/or physiological and/or psychological function at the level of body (biological organs and functions, including the brain). What is generally called "symptom" is synonymous with impairment. In addition, secondary malfunction and/or abnormality (e.g., side effects, physical strength declination due to long-term hospitalization) should be included.

The term "Activities in Daily Living", meaning functions at the level of the person, is used in the broadest sense to capture every physical and mental activity that a person does at various levels in his/her daily living, such as grasping, walking, seeing, communicating, remembering, interacting with others and so on. The negative aspect of "Activities in Daily Living", formerly "disability", is now called "Activity Limitations", that is, limitations caused by disability and handicaps. This term should include not only difficulty in any domain of the activities of individuals in daily living, but also things that the individual has not been able to do or experience because of disease, for example, deficiency in social skills in daily living, a role in a family, deficiency in occupational performance, in utilizing social resources, in skills of personal relations and so on.

The term "Social Participation", a person's involvement in society, means the interaction between impairments and activity-limitation in daily living, and contextual factors (environmental factors, personal factors). The negative aspect of "Social Participation", formerly "handicap", is called "Participation Restriction", a restriction that is caused by impairments, disability and the naming of the disease, and/or an individual's seriously deviant behavior in the community arising from the interaction of impairments and environmental factors. "Participation Restriction" includes restriction in income and a restriction in fundamental human rights, such as the difficulty and restrictions which he/she encounters when seeking employment, or looking for an apartment, or trying to make use of public institutions and amenities. This income restriction and other restrictions restrict the person's fundamental human rights.

In IMMD, the term "Disability" is used as a comprehensive term for the entire negative dimensions of "Mind and Body Function", "Activities in Daily Living" and "Social Participation".

"Environmental Factors" that influence functions from outside the individual consist of components of the natural environment (e.g. weather, animals and plants), the human-made environment (e.g. community facilities, locomotion, the built-environment), social-cultural environment (e.g. rules and regulations, laws, attitudes, customs, institutions) and other individuals (human environment). "Personal Factors" that influence the functions of the individual from inside consist of features in the person that include age, educational background, experiences, aptitudes, character style, taste, specialty and so on. In other words, we may say that the positive side of "Personal Factors" is individual ability including capability. These two contextual factors include both participation facilitators and inhibitors, and interact with one another.

Practical Use of IMMD: Conference Sheet and Counseling Sheet

IMMD is able to establish a common language for describing personal mind and body function, daily living, social participation, and all three negative dimensions of the classification. Consequently, it will be possible to change the paradigm from seeing a person with mental disability as the object of medical

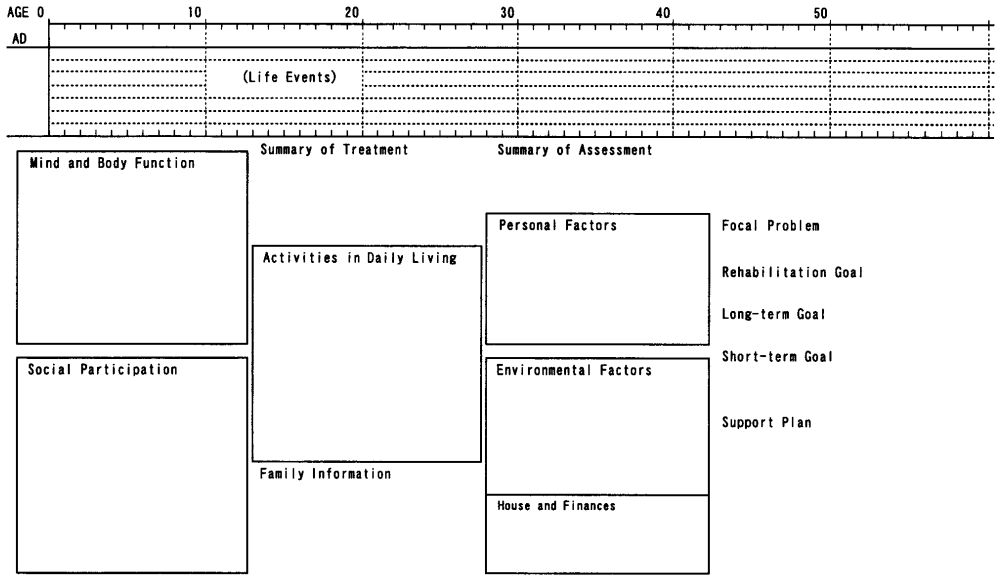


Fig. 5 Outline of conference sheet that is used for a conference to consider who among the professional team will support the user (client) and how the rehabilitation goal is to be attained.

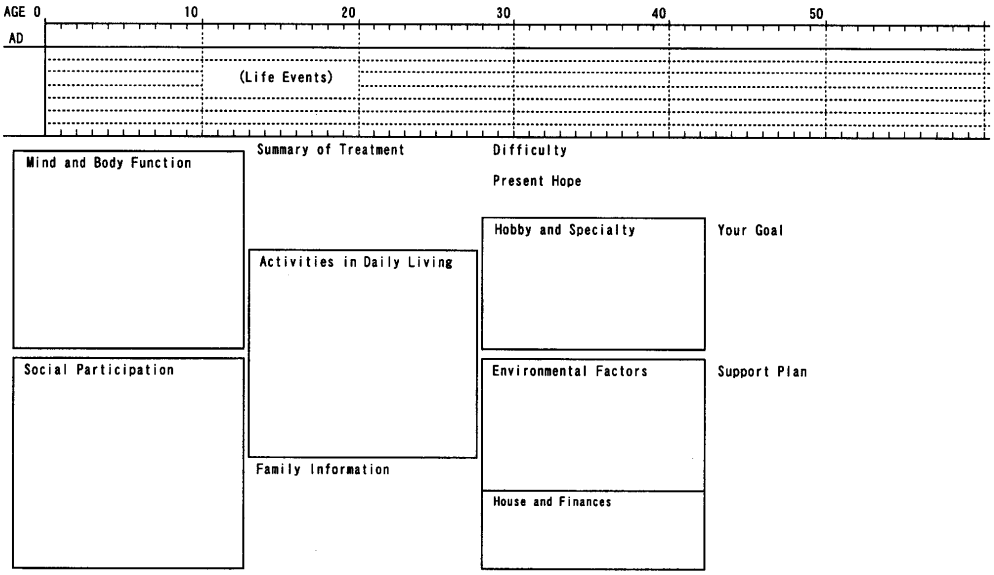


Fig. 6 Outline of counseling sheet that is helpful in knowing user's cognition about himself/herself and the user's thoughts and hopes. In empowering the client toward rehabilitation, it is useful to have a common support target with the user (client).

treatment, to seeing him or her as a person with whom we live together in the community.

The application of IMMD allows a better comprehension of the interaction among mind and body function, daily living, individual social participation and contextual factors, and consequently has made possible various types of co-operation. For example,

- cooperation between user and professionals
- cooperative approach by various professionals concerned with health, medical treatment and welfare
- cooperation between professionals and non-professionals (e.g., family, friend, helper, assistant, and so on).

I have designed and used a conference sheet (Figure 5) and a counseling sheet (Figure 6). These sheets have been designed to put normalization into action. The conference sheet is used for a conference among

Table 1 Qualifiers in IMMD

Common terms in model, conference sheet and counseling sheet	
Mind and Body Function	Body structure and/or physiological and/or psychological functions
Activities in Daily Living	All physical and mental activities at various levels in an individual daily living
Social Participation	Handicap and personal condition of participation in society (interaction of impairments and activity-limitation in daily life and contextual factors)
Personal Factors	Influential functions from inside of the individual: ability and capability to facilitate social participation, for example getting along (skills to have good relations with others), doing the job, being dependable, etc.
Environmental Factors	Influential functions from outside of the individual, both participation facilitators and inhibitors in the individual living environment: the natural environment (e.g. weather, amimals and plants), the human-made environment (e.g. community facilities, locomotion, the built-environment), sociocultural environment (e.g. rules and regulations, laws, attitudes, customs, institutions) and other individuals (human environment)
Terms in conference sheet and counseling sheet	
House and Finances	Individual financial condition and if he/she has a house
Summary of Treatment	Summary of each type of medical treatment (e.g. psychotherapy, drug treatment, rehabilitation approach) for the client
Summary of Assessment	Summary of physiological and/or psychological functions, activities of daily living, activities parallel to daily life, social skills and so on
Family information	Family construction, content, and extent of family cooperation
Focal Problem	The most important and effective target to treat, and support to be given by each expert on the team
Rehabilitation Goal	Goal of rehabilitation team for medical treatment and support
Long-term Goal	Goal to be achieved within 6 months (1 year at the longest)
Short-term Goal	Goal to be achieved within 1 month (3 months at the longest)
Support Plan	Rehabilitation program: treatment period, method and so on
Difficulty	The greatest trouble that the user (client) has now: sleeplessness, alienation from family, fearing to use a train because of the glances of others, and so on
Present Hope	User's hope: going back to school, finding work, beginning work again, making friends and so on
Your Goal	User's actual aims

the professionals, and the counseling sheet is used for an interview and consultation with the user (client).

Both conference sheet and counseling sheet have the same design except for a few items to be filled out (e.g., goal, plan). For the upper part of the conference sheet, there is a chronological table. In the chronological table, the events of the individual's life (e.g., growth history, educational background, job career, present illness, hospitalization, and medical treatment) are entered with no importance being given to "life cycle". The definitions of the main terms are as mentioned above (see IMMD: A Practical Rehabilitation Model of Mental Disability). The other qualifiers appear in Table 1.

The inside frame shows the individual's mind, body, and living condition, and is useful in considering how to deal with the case, and who will support the case in the professional team. The items of the chronological table and the frame inside the counseling sheet are similar to the items in the conference sheet. The differing point is that the content of the counseling sheet is entered by the user or in agreement with the user.

The contents of "Hobby and Specialty" correspond to the contents of "Personal Factors" on the conference sheet. It helps us to know how he/she sees himself/herself and the relation between himself/herself and his/her surroundings to enter the items on the chronological table and inside frame while having an interview with a user. The terms, "Difficulty", "Present Hope" and "Your Goal" in the counseling sheet, are based on the assumption that we get the user's own entry.

Practical Usefulness of the Conference Sheet and the Counseling Sheet

Over four years, I have gained experience in using the sheets (the conference sheet and the counseling sheet) at three day care facilities, two mental hospitals, one vocational aid center and one cooperative work place. I interviewed and asked questions from the questionnaires on those sheets, and received comments and impressions from 43 professionals, 64 users (clients) and 14 families.

The conference sheet was used for a conference among the professionals and for the planning of rehabilitation. The counseling sheet was used for an interview and consultation with the family and/or the user (client). The interview and answers to the questionnaire brought a total of 77 responses for the conference sheet and 96 (a total of 39 professionals, 11 families and 46 users) for the counseling sheet.

From the results of interview and questionnaire, I have found that IMMD and the sheets are useful for reinforcing a conference, accelerating a team approach, deciding the rehabilitation goal, knowing the user's thoughts and hopes, having the same goal with the user, educating the family, and empowering the user and family.

In this paper I have presented the transition from one approach to another and the problem of ICIDH, and analyzed the characteristics and limitations of the principal revision models of the ICIDH and then proposed an IMMD (a practical rehabilitation model of mental disability) and described the practical use of IMMD. Now that we have found that IMMD is useful as a practical model, the next step is to examine and prove the assessment function of the IMMD. I shall continue research and analysis to prove the assessment function of the IMMD in cooperation with various professionals.

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