Development of the Community Mental Health Care Support System Using Computer Network

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Abstract

Recently, there is a problem of the mental health in Japan that how long-stay inpatient's social rehabilitation promotion should be realized so the inpatient who increased in number rapidly in the 1960s can leave hospital. In order that we may solve the problem, we made the Community mental health care support system using computer network which can be used by various facilitis of community mental health. In the Community mental health care support system using computer network, the information of healthy and diagnostic for maintaining the mental health after leaving psychiatric hospital are recorded using a personal mental health database with time series . Furthermore, how to prevent a sick relapse can be considered now by using the conference sheet which used the functioning and disability model of ICF.

Key Words:

community mental health; computer network; rehabilitation facility coordination

Introduction

By the Mental Hygiene Act made in 1950, the measure centering on a mentally disordered person's hospitalization medical treatment has been taken in Japan. And a part of the Mental Hygiene Act was revised in 1961, private psychiatric hospitals began to increase in number, and the number of beds in private psychiatric hospitals increased rapidly from about 40,000 floors to about 260,000 floors in 1975 after 1955. (Fig. 1) [1], [2]

Consequently, as compared with other advanced nations, the number of beds in psychiatric hospitals in Japan increases overwhelmingly compared with a foreign country, and has beds in psychiatric hospitals of about 330,000 now. This is to have about twenty percent of the total number of beds in all hospitals in Japan. Furthermore, although the average inpatient days in psychiatric hospitals are decreasing gradually from 1985, they are still protracted compared with other medical fields, it is about 370 days in 2002.[3]

However, psychiatric treatment by community care is advanced from 1987. And 'new' psychiatric drugs is convincingly more effective than 'typical' psychiatric drugs in reducing symptoms of schizophrenia. So, spychiatric disease is stopping being the illness which cannot heal up easily.[4]
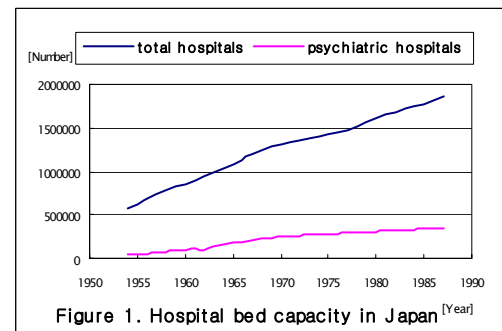

Figure 1. Hospital bed capacity in Japan [Year]

Now, it is pointed out to a problem of the psychiatry medical treatment in Japan that how long-stay inpatient's social rehabilitation promotion should be realized so the inpatient who increased in number rapidly in the 1960s can leave hospital.[5]

Since the life function is falling, the patient who was long stay in psychiatric hospital is difficult to become independent and support himself. Therefore, they returns to community through the following social rehabilitation facilities. The "Residential care facility" which performs fundamental life training towards acquisition of knowledge required for independence. The "welfare home" which people of the disabled person who does not have the place in which it lives although it is use as preparation of social rehabilitation. The "group home" in which people of the disabled person who cannot live at a house lead community life by several persons. And so on.

If the model simplified as the state of the moral medical treatment in such present Japan is shown, it will become as it is shown in Fig. 2.

Early intervention and prevention in schizophrenia

Schizophrenia is illness to be taken antipsychotics in order to prevent a recurrence, controlling clinical condition personally, and about 1% of world population has fallen schizophrenia. [6]

63.6% of the patient who is performing hospitalization medical treatment in mental disorder is the schizophrenia area. [7] It becomes an important point in continuing a community life to prevent the relapse of schizophrenia.

When there is at least one prodrome that Bonn Scale for the Assessment of Basic Symptoms (BSABS) investigated the prodrome of schizophrenia as indicated preventive intervention, it turns out that schizophrenia showed the symptoms of in 70% of probability. [8] In this way, if a certain prodrome can be discovered, it will become possible

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to shorten mental disease a duration of untreated psychosis (DUP) as much as possible by early preventive intervention.

It is thought that it is possible to prevent a recurrence and it is effective to share medical and welfare information when supporting mentally disordered persons.

If the information on a healthy state or a morbid state is recorded collectively in time series, it will become possible to build the information system to the person. This is advocated with the concept of personal health database (PHDB). It is the personal mental health database which applied this to mental health.
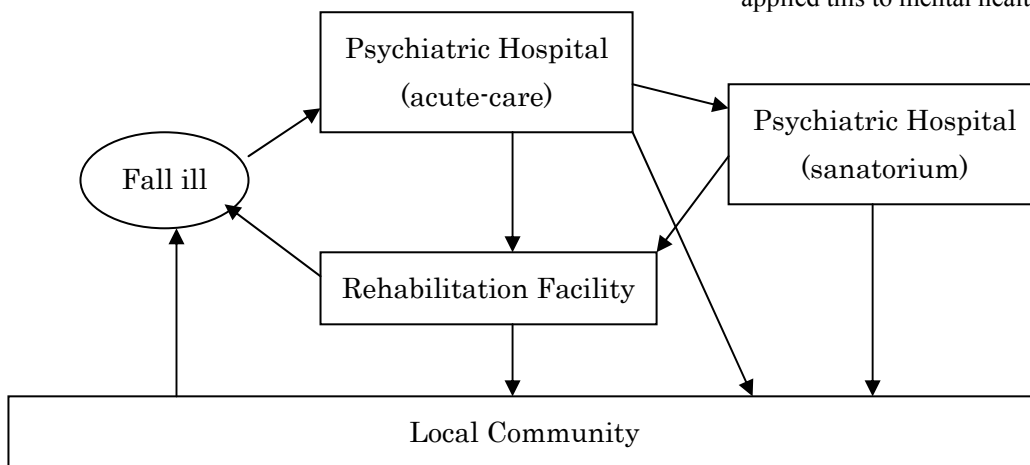

Fig.2. Model of community mental health in Japan.

Mental health personal health datadase system form mental disease

In case medical treatment is generally performed, various medical staff descriptions concerned with the medical treatment write down the information which could be known about illness there in a chart, the information currently written there is made reference, and the medical treatment plan etc. is defined. When illness heals up and medical treatment is completed, the information about the illness is not filled in after that.

However, with the psychiatric disease which is mainly concerned with schizophrenia, it is rare that illness recovers completely and medical treatment completes it, and, in many cases, the state which is not sick continues as a maintenance of remission. And after leaving hospital, record of "health" state is uniquely performed with each facilities, such as a social rehabilitation facility, and day care, visit nursing, etc, rather than being related with "illness". Moreover, the exchange of the information between those facilities is performed in forms, such as a leaving hospital summary and a report.

In the case of such a mental health, if medical and welfare information is recorded separately, it will not be employed efficiently effectively. It is because it is connected with early intervention and prevention in illness to interpretation the change in the healthy morbid state from a state. In Crisis Triage Rating Scale (CTRS) for an evaluation measure for judging urgent hospitalization regionally[9], there is the basis of three factors: dangerousness, support system, and motivation or ability to cooperate. But it is hard to judge them that the information on a healthy state or a morbid state is not known.

Making the data sheet for mental health and use the components of ICF

Treating a mentally disordered person is not curing illness completely. It is the following three points. Social rehabilitation, sick recurrence prevention, reservation of the quality of a life. The Community mental health care support system is not a system which supports the inpatient in psychiatric hospital fundamentally. It is the system which supports the mental health consumer which lives in community after leaving hospital, associating with illness.

The Community mental health care support system does not necessarily carry out the monitoring of the change of laboratory data, picture information, etc. like an ordinary medical information system.

Therefore, different data from an ordinary medical information system is inputted. It is a resource for social rehabilitation, body function and structure for recurrence prevention, the contents of daily life activities for quality of life and variant of enviromental factors, etc. And in order to catch what the state of these disordered has become, the disorder structure model of ICF was used. The disordered structure model of ICF is shown in Fig. 2. [12]

Body functions and structure are the physiological functions of body and mental systems (including side effects of an antipsychotics). Activity is the execution of a task or action by an individual (including how to take a train is not learned, unexperienced). Participation is involement in a life situation (including estriction by execution of a social role). And there are an environmental factors which affects many individual functions, and an personal factors by the personal character.

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An input of each of these items creates a conference sheet. And a user and the staff can determine how the problem is solvable if it carries out in which portion a problem is.
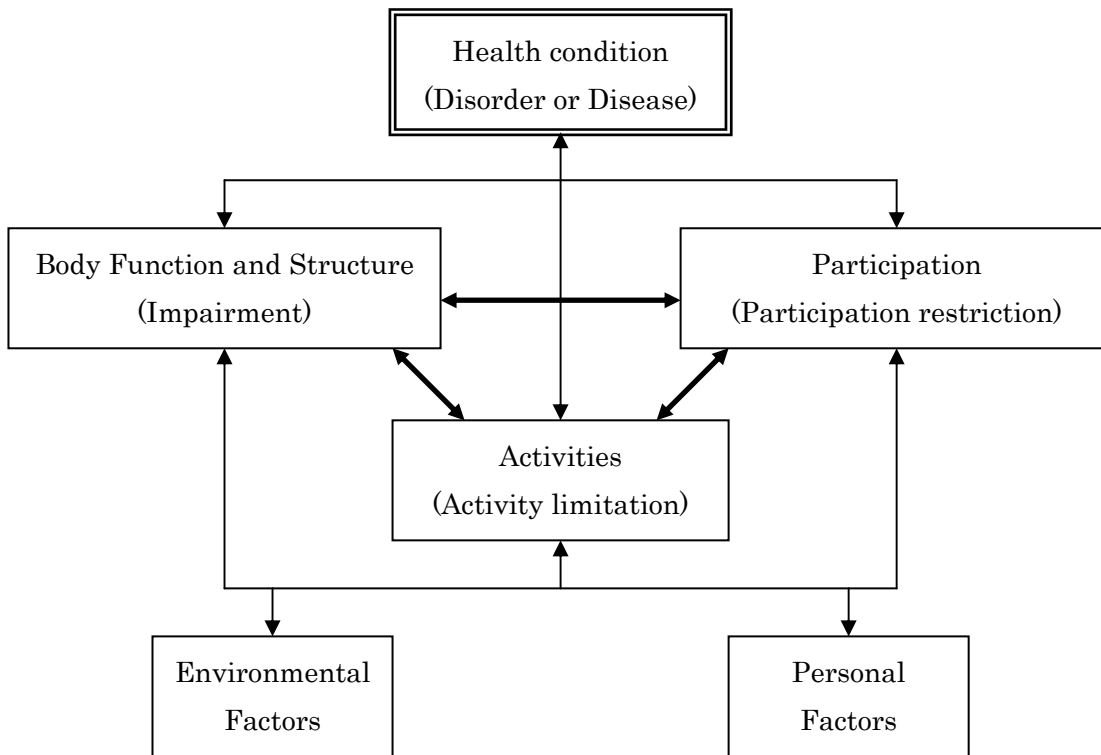
Fig.3.   Model of Functioning and Disability (ICF) [12]

System specification

Local area network by the cable was built between a psychiatric hospital (use doctor, nurse, psychiatric social worker, etc.), day care center, visiting nurse, center for supporting community life, residential care facility, B tyep welfare home, and each.

Intranet is constituted by the WWW/Mail server, the file server, and the server for Internet connectivities. A WWW server and a file server are not connectable from the Internet. In the server for Internet connectivities, IP address by the IP masquarade was changed and it has connected with the Internet via a fire wall. All of these servers are operating by Linux.

Only the personnel of each registered institution can access a database system, and ID and a password are given to each. Basic information of consumers are managed by the file server, and only the registered personnel access it, and it can check the contents now.

The consumer can see a data sheet through the personnel of each facilities, and can receive direct conference about rehabilitation and a life functional improvement.

About shared medical informatics; legal problem

The confidentiality of information of medical information is defined law for the purpose of securing the reliance of a patient to a medical staff. Also in it, medical staff for mental health is formed as an express provision, and when people's secret which could be known in business has been leaked, they have to get heavy guilt compared with other medical fields.[13]

Surely, in the field of mental health, the importance of confidentiality of information is explained in the point of stigma, a confidential relation between physician and patient, privacy, and autonomy. It is related especially with cure and protection of the confidential relation between prejudice, and a physician and a non-physician becomes important. So, in case medical information is treated, we must be careful about privacy protection and security. In the United States, only psychotherapy record is specially made applicable to protection in the field of moral medical treatment in Health Insurance Portability and Accountability Act (HIPAA).[14]

Psychotherapy record is not contained in the information inputted by the Community mental health care support system .

Moreover, generally, in one hospital, in order that various medical staff may treat as the same medical group, performing share-ization of patient information is admitted.[15]   But, when there is no consent of a patient, sharing the patient information between other medical facilities is not admitted.

In those points, when the Community mental health care support system is used, it is indispensable to take an understanding and consent about which medical institution,

social rehabilitation facilities, and rehabilitation facilities share information to a consumer.

Association for assertive community treatment

Now, a Japanese mental health care management system is a brokering model. Therefore, it is making from the Community mental health care support system using computer network supposing applying with a brokering model. While a psychiatric care manager contacts the person in charge of each facilities, it considers on which portion emphasis is put, such as clinical, rehabilitation, and welfare.

Such a brokering type mental health care management system is effective in performing a community care to the mentally disordered person of a degree comparatively slightly or middle. However, it is said that a brokering type mental health care management system is inadequate for performing a serious mentally disordered person in community care.[16] And the assertive community treatment (ACT) attracts attention for performing a serious mentally disordered person in community care recently.

ACT is a method effective care plan for serious mentally disordered persons in community. [17] ACT consists of teams by many varieties medical and welfare staffs which can be accessed for 24 hours every day, and all staff shares the responsibility for a care, and all staff has a certain relation to each consumer. The consumer of ACT lives at a house rather than uses a social rehabilitation facilities. So, as for almost all services, the staff goes to a consumer's house directly.

In ACT, cooperation and share information by many varieties medical and welfare staffs are very important. Consequently, it is decided whether a care will be successful. And such a situation is the employment method of the ideal of the Community mental health care support system using computer network. In the future, introduction of ACT will be expected also in Japan. Utilizing the Community mental health care support system using computer network is then expected.

Conclusion

The Community mental health care support system using computer network was developed as a tool for promoting community mental health care.

In the future, the Community mental health care support system using computer network applies. And we want to accumulate the basic data of communitu mental health care in Japan.

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