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OCCUPATIONAL THERAPY IN HOSPITAL BASED CARE IN THE NETHERLANDS



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voor onderzoek van de
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**Occupational therapy in hospital based
care in the Netherlands**

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ter verkrijging van de graad van doctor aan
de Vrije Universiteit te Amsterdam,
op gezag van de rector magnificus
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door

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geboren te Eindhoven

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Contents

Chapter 1:	INTRODUCTION	1
1.1	Introduction on occupational therapy	1
1.2	Research questions	3
1.3	Structure of the thesis	4
1.4	References	5
Chapter 2:	OCCUPATIONAL THERAPY: HISTORY AND REVIEW OF SURVEY STUDIES	7
2.1	Introduction	7
2.2	History of occupational therapy	7
2.3	Definition of occupational therapy	14
2.4	Worksettings of occupational therapists	16
2.5	Persons referring patients to occupational therapy	17
2.6	A characterization of patients treated by occupational therapists	18
2.7	Interventions used by occupational therapists in daily practice	22
2.8	Conclusions	23
2.9	References	25
Chapter 3:	INTER-RATER AND INTRA-RATER RELIABILITY OF THE OCCUPATIONAL THERAPY DIAGNOSIS	27
3.1	Abstract	27
3.2	Introduction	27
3.3	Methods	30
3.4	Results	33
3.5	Discussion	36
3.6	References	39
Chapter 4:	DIAGNOSTIC FINDINGS AND TREATMENT GOALS IN OCCUPATIONAL THERAPY IN HOSPITAL BASED CARE	43
4.1	Abstract	43
4.2	Introduction	43
4.3	Methods	46
4.4	Results	50
4.5	Discussion	60
4.6	References	62

Chapter 5:	FACTORS AFFECTING THE CHOICE OF TREATMENT IN OCCUPATIONAL THERAPY PRACTICE IN HOSPITAL BASED CARE	65
5.1	Abstract	65
5.2	Introduction	66
5.3	Methods	68
5.4	Results	71
5.5	Discussion	77
5.6	References	80
Chapter 6:	OCCUPATIONAL THERAPY IN HOSPITAL BASED CARE IN THE NETHERLANDS	83
	A comparison of occupational therapy in general care (nursing homes, rehabilitation centers and general hospitals) and psychiatric care	
6.1	Abstract	83
6.2	Introduction	84
6.3	Methods	85
6.4	Results	89
6.5	Discussion	96
6.6	References	97
Chapter 7:	OCCUPATIONAL THERAPY FOR PATIENTS WITH CHRONIC DISEASES:	101
	CVA, rheumatoid arthritis and progressive diseases of the central nervous system	
7.1	Abstract	101
7.2	Introduction	102
7.3	Methods	103
7.4	Results	106
7.5	Discussion	111
7.6	References	112
Chapter 8:	GENERAL DISCUSSION	115
	SUMMARY	123
	SAMENVATTING	141
	DANKWOORD	161
	CURRICULUM VITAE	162

1 INTRODUCTION

1.1 Introduction on occupational therapy

The profession of occupational therapy was founded at the beginning of this century in the United States of America. The founders of the profession had different backgrounds i.e. a physician, architect, social worker, psychiatrist, teacher of arts and crafts, and a nurse. The profession was at first practiced in psychiatric hospitals and moved gradually to other settings such as rehabilitation centers, nursing homes and general hospitals. Within the Dutch health care system occupational therapy is a young profession, it was introduced after the second World War.

The definition of occupational therapy provided by the World Federation of Occupational Therapists is as follows: 'Occupational therapy is a health discipline which is concerned with people who are physically and/or mentally impaired, disabled and/or handicapped, either temporarily or permanently. The professionally qualified occupational therapist involves the patients in activities designed to promote the restoration and maximum use of function with the aim of helping such people to meet the demands of their working, social, personal and domestic environment and to participate in life in its fullest sense' (1993, p.6).

Occupational therapy has the last few years been one of the fastest growing professions-allied to medicine in the Netherlands. In the period 1990-1994 the number of employed occupational therapists has increased with approximately 30% (NIVEL, NZi, Osa, 1995) into a total of 1500. Although the profession is growing rapidly, it is still in an early stage of the professionalization process: the body of knowledge of the profession has neither been thoroughly described nor tested. As a result this body of knowledge is not easily accessible, neither for occupational therapists themselves nor for other professionals. In order to give insight into the profession's body of knowledge, it is necessary to describe and analyze the current practice of the profession. A description and analysis of the current practice serves several purposes. On the one hand, a description and analysis of the present practice leads to the explication of the knowledge gathered through clinical experience of the occupational therapists. Furthermore, a description of the present practice of the profession is a prerequisite for the improvement of the practice. If insight

in the current practice is obtained it can serve as a starting point for further research and for the development of protocols or peer review. Finally, in order to be able to set priorities and to be able to evaluate future changes in occupational therapy practice, a description of the present practice is essential.

The overall goal of this thesis is to give a quantitative description of occupational therapy practice in hospital based care in the Netherlands, based on a survey study in occupational therapy practice in the Netherlands.

The occupational therapy diagnosis and occupational therapy treatment goals are at the center of the present thesis. Both occupational therapy diagnosis and treatment goals are concerned with the consequences of diseases. For example if a person has had a stroke and is referred to the occupational therapy department, therapy is not aimed at curing the stroke. Occupational therapy does concern the consequences of the stroke for daily living activities, such as disability in walking or personal hygiene.

The International Classification of Impairments, Disabilities and Handicaps (ICIDH; WHO, 1980) provides a systematic classification of the consequences of disease. In the present study the occupational therapy diagnosis and occupational therapy treatment goals were based on the ICIDH. This classification provides a unifying common framework and a common language which may facilitate communication and understanding between health professionals (van Bennekom and Jelles, 1995). Since occupational therapists do not have a standardized diagnostic system to describe the functional deficits of their patients, a registration form for the occupational therapy diagnosis was developed for this study, using the terminology of impairments, disabilities and handicaps. The ICIDH is regarded as an excellent starting point for the classification of assessment and observation findings of occupational therapists (Mather, 1993, Mathiowetz, 1993; Townsend, Ryan and Law, 1990). Besides, several models on occupational therapy -for example the model of human occupation (Reed and Sanderson, 1992) and the model of occupational performance developed by the Canadian association of occupational therapists (CAOT, 1991)- show great resemblance with the ICIDH. So the ICIDH provides an internationally recognized document, complementary to the occupational therapy models for practice (Townsend et al., 1990).

Based on the occupational therapy diagnosis the occupational therapist chooses certain treatment goals. These treatment goals are a subset of impairments, disabilities and handicaps; treatment is primarily aimed at this

subset. The treatment goals indicate what the therapist and patient want to achieve with the treatment and guide the choice of interventions.

The way in which the occupational therapist tries to reach the treatment goals is determined by the "health care program" (Reed and Sanderson, 1992). These health care programs indicate with which intention therapy is carried out. The occupational therapist can choose out of five programs i.e. prevention, development, recovery, environmental adaptation and maintenance. For example if disabilities in personal care are chosen as a treatment goal the occupational therapist can choose to teach a patient to carry out activities with one hand (thus developing new abilities: developmental program) or he can teach the patient to carry out personal care activities with the use of aids (environmental adaptation program).

1.2 Research questions

The following research questions are being examined in this thesis:

1. Is it possible to assess the occupational therapy diagnosis in a reliable way, using an ICDH-based registration form?
2. (a) Which types of patients are treated by occupational therapists and who has referred these patients? (b) Which occupational therapy diagnoses and treatment goals are chosen in occupational therapy practice and is it possible to identify combinations of occupational therapy diagnoses and combinations of treatment goals?
3. (a) Which interventions are applied in occupational therapy practice? (b) Is the application (choice) of interventions dependent on treatment goals and healthcare programs?
4. Is there a difference in the practice of the profession in general and in psychiatric care with regards to treatment goals, occupational therapy interventions and health care programs?
5. Is there a difference in treatment for three types of chronic diseases treated most frequently by occupational therapists, with regard to treatment goals, occupational therapy interventions and health care programs?

1.3 Structure of the thesis

This thesis starts with an introduction (Chapter 1), in which occupational therapy and the research questions are introduced.

A description of the development and current status of occupational therapy worldwide is given in chapter 2. This provides a general frame of reference for the next chapters of this thesis. First a short history of the profession and of definitions of the profession is given. This is followed by a description, based on a literature search, of the current knowledge about the practice of occupational therapy. An overview is given of worksettings of occupational therapists, types of patients treated by occupational therapists, interventions used by occupational therapists and finally the relationship with referring physicians.

Before starting the survey study, the reliability of the assessment of the occupational therapy diagnosis was tested. The first objective of this study was to determine the intra-rater and inter-rater reliability of the occupational therapy diagnosis. The study is described in chapter 3. The reliability study was carried out both in a psychiatric hospital and in a rehabilitation center. In the psychiatric hospital the inter-rater reliability and in the rehabilitation center the intra-rater reliability was determined.

The survey study was conducted in the four most important work settings of occupational therapists in the Netherlands i.e. nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. The results are described in chapter 4 until 7.

The second objective of this study is to give a description of the patients treated by occupational therapists in the Netherlands and to get insight in the occupational therapy diagnoses and treatment goals. In chapter 4, a quantitative description of these aspects is given. Furthermore, it was investigated whether the large variety in the occupational therapy diagnoses and in treatment goals could be reduced to a limited number of combinations. With this reduction of data, the core of occupational therapy treatment goals, both in general and psychiatric care, is identified.

In Chapter 5 the third objective of the study will be addressed. In this chapter the contents of the therapy will be described. A quantitative description of the interventions is given. In addition it is determined to what extent the choice of

interventions depends on treatment goals and health care programs. In this way it is analyzed why specific interventions are chosen.

Occupational therapy was introduced in the Netherlands through two different routes: through rehabilitation centers and through psychiatric hospitals. The professionals were first organized in two different professional organizations, which merged into a new profession "ergotherapie" (occupational therapy). The fourth objective of this study is to identify differences in the practice of the profession in general care and in psychiatric care. In chapter 6, treatment goals, interventions and health care programs in both settings are compared. Also the various general health care settings (nursing home, rehabilitation center and general hospitals) are compared to each other.

The number of patients suffering from a chronic disease is increasing in the Netherlands (RIVM, 1994). Patients with chronic diseases are a major part of the patient population treated by occupational therapists. The fifth objective of the study (chapter 7) is to describe occupational therapy in terms of treatment goals, interventions and health care programs for three types of chronic diseases treated most frequently by occupational therapists i.e. progressive neurologic diseases, cerebro vascular accident and rheumatoid arthritis. This description may serve as a first attempt to define occupational therapy profiles for these patient groups.

At the end of the thesis, a general discussion (chapter 8) and summary is given. The chapters 3 to 7 of this thesis have been written as separate articles and have been published (chapter 3 and 6), accepted for publication (5 and 7) or submitted for publication (chapter 4).

1.4 References

Bennekom van C.A.M., Jelles F. 1995. Rehabilitation Activities Profile, the ICDH as a framework for a problem-oriented assessment method in rehabilitation medicine. Dissertation, Vrije Universiteit Amsterdam. Diemen: Papyrus.

Canadian Association of Occupational Therapists, 1991. Occupational Therapy Guidelines for Client-centred Practice, CAOT/I'ACE Publications, Toronto.

Mather J.H. 1993. The problem of functional assessment: Political and Economic Perspectives. American Journal of Occupational Therapy, 47, p.240-246.

Mathiowetz V. 1993. Role of physical performance component evaluations in occupational therapy functional assessment. *American Journal of Occupational Therapy*, 47, p.225-230.

NIVEL, NZi, OSA, 1995. *Arbeidsmarkttrapportage Zorgsector*, NIVEL, Utrecht.

Reed K.L., Sanderson, S.N. 1992. *Concepts of Occupational Therapy*, third edition, Williams & Wilkins, Baltimore.

Rijksinstituut voor Volksgezondheid en Milieuhygiëne, 1994. *Public Health Status and Forecasts. The health status of the Dutch population over the period 1950-2010*. SDU, 's Gravenhage.

Townsend E., Ryan B. & Law M., 1990. Using the World Health Organization's, *International Classification of Impairments, Disabilities and Handicaps* in occupational therapy. *Canadian Journal of Occupational Therapy*, 57, p.16-25.

World Federation of Occupational Therapists 1993. *Minimum Standars for the Education of Occupational Therapists*.

World Health Organisation 1980. *The International Classification of Impairments Disabilities and Handicaps*. Geneva.

2 OCCUPATIONAL THERAPY: HISTORY AND REVIEW OF SURVEY STUDIES

2.1 Introduction

In order to put our research project on the characteristics of occupational therapy practice in the Netherlands into perspective, a literature study was carried out on occupational therapy worldwide. We will review *survey studies* regarding several aspects of occupational therapy practice: type of work settings of occupational therapists; persons referring patients to occupational therapy; types of health problems treated by occupational therapists; and the characteristics of the treatment given by occupational therapists i.e. type of interventions.

A computerized search was carried out in Medline and Data Star searching studies from 1982 up to 1996. Besides, a manual search was carried out in five occupational therapy journals (the American Journal of Occupational Therapy, the Canadian Journal of Occupational Therapy, the Australian Occupational Therapy Journal, the British Journal of Occupational Therapy and the Dutch Journal of Occupational Therapy (Nederlands Tijdschrift voor Ergotherapie), from 1989 to 1996. Both the computerized and manual search led to the conclusion that very little research has yet been carried out on general characteristics of the profession. In this chapter, after starting with an historical overview of the development of occupational therapy and a definition of occupational therapy, we will summarize these studies.

2.2 History of occupational therapy

In this section, the history of occupational therapy will be described. This description is based on information in several articles and books, as will be indicated.

Development in the USA

Occupational therapy's earliest roots are found in the moral treatment paradigm with mentally ill persons of the 18-19th century (Bockoven, 1971, Kielhofner, 1992). A central premise of the moral treatment was allowing persons to participate in the various tasks and events of everyday life to restore them to more normal functioning by participating in creative and

recreational activity with others. One of the earliest founders of OT in the USA was a psychiatrist J. Hall. He received a grant in 1906 from the Procter Fund of Harvard University to "assist in the study of the treatment of neurasthenia" by progressive and graded manual occupation (Reed, 1986). This was the first grant funded research project on the use of occupation as a means of treating patients. In 1910 he developed a therapeutic program, "a work cure", to take the place of the commonly prescribed bedrest for chronically ill patients (Levine, 1987). He developed a sanatorium in Marblehead Massachusetts and began to validate the success of his work cure. Two other physicians Adolf Meyer and William Rush Dunton also became interested in curative occupations. Both searched for ways to humanize the care of chronically ill patients. Dunton applied the work cure to his patients at the Sheppard and Enoch Pratt Asylum in Townson, Maryland as early as 1895. He came to believe in the curative effect of goal directed activity. He wrote a book in 1906 with Susan E. Tracy (a nurse) in which he described an occupational training course for nurses. In 1913 S. Tracey initiated a program of manual arts. Her program was the first course in the USA designed to prepare instructors for patients' activities (Peloquin, 1991).

In 1917 six persons ("the founders": a physician, architect, social worker, psychiatrist, teacher of arts and crafts and a nurse) gathered to found the National Society for the Promotion of Occupational Therapy. This society was a gathering of specialists who supported the wide use of occupation as a curative service (Peloquin, 1991). They enhanced the idea " that man, through the use of his hands as they are energized by mind and will, can influence the state of his own health" (Reilly, 1962). It was felt that the new discipline needed the prestige of the medical profession, so for the first thirty years it was almost exclusively led by physicians (Woodside, 1971).

In 1918 at an annual meeting of the society Dunton outlined the effectiveness of occupational therapy in treating shell shock and he addressed the need for occupational workers in the war effort. Eleanor Clark Slagle developed habit training through occupation. Small groups of patients (severely regressed and chronically ill) followed a carefully designed schedule that included self care and personal hygiene, occupational class, walks, meals in small groups, recreational activities and physical exercise (Peloquin, 1991). The goal of occupational therapy was defined by Barton in 1920 as follows: "the making of a person that is a productive individual". The name of the society was replaced by the "American Occupational Therapy Association (AOTA)" in 1923.

At first occupational therapy was oriented at chronically ill psychiatric patients; psychiatry was the predominant practice area. The First World War, a severe polio epidemic in 1916, industrial accidents and the widening use of the automobile all contributed to the need for new methods of treating residual disabilities (Woodside, 1971). Occupational therapy then emerged from two sources. Its philosophical roots extend back to the time of moral treatment for the mentally ill. Its more concrete roots extend from the First World War, when large numbers of the wounded needed an active rehabilitation program. The concepts of occupational therapy in rehabilitation was 'one of using crafts to reactivate the minds and motivation of the mentally ill and the limbs of the veterans, starting them on the way to vocational training' (Woodside, 1971; Bissel & Mailloux, 1981; Strickland, 1991).

The Depression in the USA (1929 - 1941) contributed to the changes in health care delivery. It had also a substantial impact on the occupational therapy profession. Occupational therapy survived using strategies such as group therapy to provide treatment to large number of patients. The values of the moral treatment philosophy were no longer important for the AOTA; on the contrary: an orientation on physical medicine became the central issue. The focus of occupational therapy became on physical factors. Little emphasis was on psychological and social aspects of treatment (Levine, 1987).

During the period from 1942 up to 1960 the most significant event influencing occupational therapy was the growth of the rehabilitation movement (Mosey, 1971). Largely because of new drugs and surgical techniques the rehabilitation movement grew and occupational therapy became allied to it. Existing institutions were not able to deal with the large number of returning disabled veterans during World War II. There was a new demand for occupational therapy services. During the years between 1942 and 1960 occupational therapists borrowed techniques from other disciplines. They were involved in prosthetic training, making orthotic devices, Activities of Daily Living (ADL) training, progressive resistive exercises, vocational evaluation and training, some experimentation with neuromusculature facilitation techniques, therapeutic use of self, trying to formulate psychodynamics on the basis of patients' art work and using groups (Mosey, 1971). Emphasis of the work of occupational therapists was on technique rather than on theory.

The years 1960 -1970 are characterized by technological progress. By the end of World War II , the main focus of occupational therapy is at the area of physical medicine. Occupational therapy roles had become narrowly defined,

specialized and controlled. According to Diasio (1971) "Therapists often dealt with only part of patients needs, part of his activity needs, parts of his body - but not all his needs as a human being". In the 1960's the profession questioned these role dilemmas. In these years occupational therapists defined function and dysfunction as their professional parameters of concern. The orientation on physical medicine was pushed into the background. Therapists once again started working directly in the community. According to Diasio (1971) it was time for occupational therapists to become the "generalists in activities" once again. In this period the first attempt for theoretical models on occupational therapy was made. The basis for theory development and research started (Christiansen, 1991). The occupational therapy work force grew 170% between 1966 and 1978, and the demand for occupational therapy was far larger than the supply (Acquaviva, 1986).

The changing health care system in 1980-1990 brought challenges and opportunities for occupational therapy. Various authors have argued that the previous goal of health care -survival- was being replaced with concern for how individuals will be able to live effectively. Due to the increase of chronic illness and demographic changes, occupational therapists primarily work with people who will never be cured (Yerxa, 1995). Especially the role of occupational therapists in home health care is growing (Devereaux and Walker, 1995; Acquaviva, 1986; Stoffel and Gwinn, 1989; Pentland, Krupa, Lynch and Clark, 1992). According to Kielhofner (1992), 'since the early 20th century no other profession has focused on people's ability to engage in their daily occupations with skill and satisfaction'. There's a re-apply of the moral treatment paradigm in several areas of caring for ill and disabled persons. The occupational therapist views individuals as integrated beings in which no area of function can be isolated as a separate entity, but viewed as a part of the total make-up (CAOT, 1991). It seems that 'the occupational therapy has begun to return to many of its original themes to recapture its identity and a more holistic orientation' (Kielhofner, 1992, p.44).

Development in Europe

In 1925 the first American trained occupational therapist started working in the United Kingdom. After World War II the profession has spread itself over other European countries such as France, Sweden, Denmark, Netherlands and Germany. The development of the profession in the UK shows great resemblance with the development of occupational therapy in the USA. Therefore it will be discussed only briefly.

Hagedorn (1995) has given an overview of the development of occupational therapy in the United Kingdom. Milestones of the development are shown in box 2.1.

Box 2.1: Milestones in development of occupational therapy in the United Kingdom

1925	First American-trained occupational therapist employed in UK, in Aberdeen
1930	Dr. Elizabeth Casson set up Dorset House, first occupational therapy training school in UK in Bristol (later transferred to Oxford)
1932	Scottish Association of Occupational Therapy founded
1936	English Association of Occupational Therapy founded
1938	British Journal of Occupational Therapy first published
1974	Scottish and English Associations of Occupational Therapy combined to form British Association of Occupational Therapists.

In the fifties occupational therapy was strongly oriented towards physical medicine; extensive and complex programs of graded therapy based on bio-mechanical principles were offered. In the sixties rehabilitation became the dominant model and the rehabilitation team became important in physical rehabilitation. Increased emphasis was on assessment and specific restoration of function, and more sophisticated physical rehabilitation equipment was developed. In the seventies therapy focused increasingly on providing immediate solutions to functional problems, facilitating discharge from hospital became the prime objective. In psychiatry group work took over from most forms of occupational therapy. In the eighties therapists were involved in community initiatives. The awareness that occupational therapy skills are particularly valuable in care in the community led to a considerable expansion in such posts. The role of occupational therapists in institutions was reduced to 'discharge technicians'. There were serious staff shortages in all fields of occupational therapy. Interest in and awareness of models of practice and frames of reference grew. In the nineties the practice is being refocused on the occupational needs and competencies of the individual. There are still staff shortages in all fields of occupational therapy. Practice generally follows the trends set in the late eighties. There is increasing interest in theory, models of practice and research.

Development in the Netherlands

Occupational therapy in the Netherlands has started in psychiatric hospitals. In the thirties occupation was used in a therapeutic way in these institutions to re-educate the patients by giving them more responsibility. Occupation was used as therapeutic means. The profession was called "arbeidstherapie".

During World War II members of the government left the country and became acquainted with occupational therapy in the UK. Occupational therapy in the UK was aimed at patients with physical disabilities and/or psychiatric diseases. In 1946 the first department of occupational therapy was created in the rehabilitation center in Doorn. Two more rehabilitation centers: "Stichting Revalidatie Centrum Twente" in Enschede (1952) and "de Hoogstraat" in Leersum (1953) started a department of occupational therapy. Occupational therapy was practiced in a way similar to the American-English model. The emphasis was on the rehabilitation of war veterans and physically disabled persons (NVAE, 1974). This kind of occupational therapy was introduced in the Netherlands as "arbeidstherapie" also. However, in the Netherlands already a discipline "arbeidstherapie", aiming at the therapeutic value of occupation for psychiatric patients, existed in psychiatric hospitals. Thus, two professions with the same name have developed independently from each other.

The first school of "arbeidstherapie" was started in 1954 in Amsterdam. In 1959 a school of "ergotherapie" was started in Huizen. These schools trained students to treat both patients with physical disabilities and patients with psychiatric diseases. The students that graduated from the school in Amsterdam founded the Dutch Association of "Arbeidstherapie" in 1957 and the students graduating from the school in Huizen founded the Dutch Association of "Ergotherapie" in 1969. In 1970 a school of "arbeids-ergotherapie" was started in Hoensbroek. Both professional associations have worked together to characterize the contents of both professions "arbeidstherapie" and "ergotherapie". In 1972 both associations decided to join into a common association: the Dutch association of "arbeids-ergotherapie", which became "ergotherapie" in 1978.

Presently, the profession of occupational therapy is regulated by the Act on the allied-health professions (Wet op de paramedische beroepen, 1963). To this act a special regulation was added, the Occupational Therapy Decree (Ergotherapeutenbesluit, 1981) which defines the work of an occupational therapist as follows:

1. to investigate if and to what extent the patient, as a consequence of a disorder, is restricted in carrying out activities which are a part of daily

- living and work and investigating the means to be used to remove this disability;
2. making the patient carry out activities as meant under 1 which are directed at reducing the disabilities meant under 1 with or without the aids provided to him;
 3. giving advise to the patient in respect of a suitable living or working environment and the necessary facilities.

According to the Act on the allied-health professions, occupational therapists work after referral of a physician. The form of the referral is a written order which has to contain the medical diagnosis.

With the Act on allied-health professions the title 'ergotherapeut' and the profession are protected. Only persons with a diploma 'ergotherapie' may use the title and practice the profession. The diploma is given to persons who have passed the exams and have taken the oath of confidentiality (Ergotherapeutenbesluit, artikel 3). Occupational therapists who want to practice the profession have to register with the Chief Inspectorate of Public Health (Inspectie voor de Gezondheidszorg). An employer is not allowed to engage a non-registered occupational therapist.

Legal changes for the allied-health professions are expected at the end of 1997. A new act 'wet Beroepen in de Individuele Gezondheidszorg (BIG)' (Act on professions in the individueal health care) was adopted in 1993. This act contains regulations on how the professions in individual health care should be carried out. The goal of this new act is to improve the quality of the professions in individual health care and to protect the patients from incompetent professionals. The act is based on the principle of the protection of professional titles (e.g. 'ergotherapeut'); the former principles of protection of both the title and the profession will be abandoned. The act is introduced in parts and it is expected to be introduced for the allied-health professions at the end of 1997.

Occupational therapy will be regulated by the so called 'artikel 34 regeling' (regulation article 34). This means that the education of occupational therapy is legally regulated and the title 'ergotherapeut' is legally protected. Only persons who have passed successfully the education of occupational therapy may call themselves occupational therapist. Another aspect of this 'artikel 34 regeling' concerns the registration. Occupational therapists no longer have to register with the Chief Inspectorate of Public Health.

In January 1996, a total of 2414 occupational therapists were registered with the Chief Inspectorate of Public Health, and 1621 of them were actually practicing the profession (Harmsen and Hingstman, 1997). Most occupational therapists are working in hospital based care and only few occupational therapists are working in private practice and/or home health care (see section 2.4 for further information on worksettings of occupational therapists). The demand for occupational therapists has outreached the supply of therapists for several years. In 1994 a new school of occupational therapy was started in Rotterdam. There are now three schools of occupational therapy in the Netherlands (Amsterdam, Hoensbroek and Rotterdam). The total intake of students has increased from 180 (in 1993) unto 390 (in 1996).

Occupational therapists work primarily in salaried service in institutions. Occupational therapy is reimbursed in many different ways. In certain institutions (so called 'AWBZ institutions') occupational therapy can be part of the treatment package. In hospitals, occupational therapy can be financed on the basis of regulations applying to special budgets. For ambulatory patients, occupational therapy is most frequently reimbursed as part of a certain form of combined treatment (daytime-treatment in recognized nursing-homes or rehabilitation centers). However, in rehabilitation centers it is also possible that occupational therapy is reimbursed as a single form of treatment.

There is a growing number of projects, especially in nursing-homes, in which occupational therapy in home health care (at a patient's home) is reimbursed. Certain private insurance companies have specific regulations for refunding this kind of occupational therapy. Public insurance companies reimburse occupational therapy at home on the basis of a pilot project. This pilot project was started in July 1996 and ends in December 1997. On the basis of the experiences with occupational therapy at home in this one and a half year a legal regulation will be issued. This legal regulation will make it possible for public insurance companies to reimburse occupational therapy at home. It can be expected that private insurance companies will also follow this regulation.

2.3 Definition of Occupational Therapy

The first formal definition of occupational therapy was written in 1922 by H.A. Pattison as 'any activity, mental or physical, definitely prescribed and guided for the distinct purpose of contributing to and hastening recovery form disease or injury' (Pattison, 1922; cited in Hagendorn, 1995). These concepts were reaffirmed in 1923 by H.J. Hall. His definition states that "occupational

therapy provides light work under medical supervision for the benefit of patients convalescing in hospitals or in their homes. The handicrafts are used not with the idea of making craftsmen of the patients, but for the purposes of developing physical and mental effectiveness at a time when courage and initiative are at low ebb" (Hall, 1923; cited in Peloquin, 1991). The definition of the Boston School of Occupational Therapy in 1924 says that: "occupational therapy aims to furnish a scheme of scientifically arranged activities which will give, to any set of muscles or related parts of the body in cases of disease or injury, just the degree of movement and exercise that may be directed by a competent physician or surgeon" (Dunton, 1928; cited in Levine, 1987).

The World Federation of Occupational Therapy (WFOT) was founded in 1952. The aims of this federation are to stimulate the unity and development of the profession and to stimulate international contacts on occupational therapy. The WFOT has given several definitions of occupational therapy throughout the years:

1958:

'Occupational therapy is a rehabilitative procedure guided by a qualified occupational therapist who, under medical prescription uses self-help, manual, creative recreational and social educational, prevocational and industrial activities to gain from the patient the desired physical and/or mental response' (WFOT 1958, p.3).

1963:

'Occupational therapy is a medical directed treatment of the physically and/or mentally disabled by means of constructive activities designed and adapted by qualified occupational therapists to promote the restoration of useful function' (WFOT 1963, p.3).

1971:

'Occupational therapy is a form of medical treatment which is concerned with people who are physically and/or mentally sick and are disabled either temporarily or permanently. The professional qualified occupational therapist involves the patient in activities designed to promote the restoration and maximum use of function with the aim of helping such people to meet the demands of their working, social and domestic environment, and to participate in life in its fullest sense' (WFOT 1971, p.4).

1991:

'Occupational therapy is a health discipline which is concerned with people who are physically and/or mentally impaired, disabled and/or handicapped, either temporarily or permanently. The professionally qualified occupational therapist involves the patients in activities designed to promote the restoration and maximum use of function with the aim of helping such people to meet the demands of their working, social, personal and domestic environment and to participate in life in its fullest sense' (WFOT 1991, p.5).

The definitions of occupational therapy reflect the development of the profession through the years. The earliest definitions emphasize the use of activities. The goals of the profession are described from a holistic point of view. The first change in the definitions came in 1924, when the orientation on physical medicine was emphasized. Terms as muscles, degree of movement and exercise indicate the involvement of the profession in physical medicine. Up till 1971 occupational therapy is viewed as a discipline closely allied to medicine. In 1971 occupational therapy is still viewed as a medical treatment but attention is paid to environmental factors that influence the functioning of the patients. In 1991 occupational therapy is no longer seen as a form of medical treatment but as a health discipline. It is also added that occupational therapists are concerned with the consequences of diseases (impairments, disabilities handicaps) instead of with people that are physically and/or mentally sick. From 1971, the patient is at the center of the occupational therapist's focus. The therapist "helps the patient to meet the demands of their environment". The patient determines the direction of the treatment.

2.4 Worksettings of occupational therapists

Research on the type of work setting of occupational therapists is not available. Data presented in this paragraph are mainly drawn from membership survey studies collected by the professional associations.

More than 90% of the practicing occupational therapists are female (CAOT, 1992; Driessen and Dekker, 1994; Allen et al, 1988). The majority of the occupational therapists in England, Canada and USA is working full-time: 62%, 64%, 67% respectively (Allen et al, 1988; CAOT, 1992; Reed and Sanderson, 1992).

Table 2.1: Overview of type of worksettings of OT's in four different countries

	Canada (CAOT, 1992)	U.K. (Kelly, 1994)	Netherlands (Driessen, 1994)	USA* (Reed, 1992)
General Care (in/out patients)	57%	41%	76%	43%
Community care/private practice	23%	13%	5%	11%
Psychiatric care (in/out patients)	11%	17%	12%	7%
Schools/education	5%	13%	3%	18%
Other	4%	16%	4%	7%
Total	100%	100%	100%	86%

* Only percentages for ten most common sites are given by American Occupational Therapy Association.

General care: hospital, physical rehabilitation departments/centers, nursing homes.

Psychiatric care: psychiatric hospital/center.

Schools/education: School (system), day care center.

Table 2.1 shows that the various countries resemble each other with regard to the worksettings of occupational therapists, though there are differences also. The percentages of occupational therapists working in general care is the largest in the Netherlands. The percentage of occupational therapists working in community care/private practice is the largest in Canada. In the UK and in the USA relatively more occupational therapists are working in schools. Thus the profession, in all countries, is mainly practiced as hospital based, institutional care and relatively few therapists work at schools or in community care.

2.5 Persons referring patients to occupational therapy

Only few articles give information on the referral to occupational therapy. In the United Kingdom two survey studies on occupational therapy in private practice and in community care give information on the referral of patients. Referral in the UK and in the USA, can originate from a number of sources: a medical practitioner, another health care professional, a relative or carer, or the patient (Hagedorn, 1995, Reed and Sanderson, 1992). A survey study on private practice (Cossar, 1992) shows that the referrals come from four different sources: self referrals, lawyer for defendants, lawyers for plaintiffs

and medical insurance companies. In a survey on the primary health care team (Bumphrey, 1992) it was found that referrals are received from various sources, both from medical practitioners and from other health care workers. In the Netherlands the referral to occupational therapy should, as is regulated by law, originate from a medical practitioner. The relationship with the referring specialist was investigated in a survey study (Driessen and Dekker, 1994). Occupational therapists were asked from which specialist they received referrals. Table 2.2 shows the three most frequently mentioned disciplines by the occupational therapist as referring physician.

Table 2.2: Disciplines mentioned by occupational therapists as referring physician

Referring physician	%*
Rehabilitation specialist	53
Nursing home physician	37
General practitioner	36

* Percentages add up to more than 100% since occupational therapists could indicate more referring physicians.

Besides the referring physicians, occupational therapists indicated that in daily practice patients were also 'referred' to occupational therapy by other disciplines such as psychologist, physical therapist, nurse or family and friends. These 'initiators' indicate that a patient needs occupational therapy services and mention this to the occupational therapist. The occupational therapist then takes care of a formal referral by a physician.

2.6 A characterization of patients treated by occupational therapists

Only a few survey studies were found that reported on the types of patients, in terms of medical diagnosis, treated by occupational therapists. The results of a member survey of the AOTA were reported by Reed and Sanderson (1992). In this survey occupational therapists indicated which diagnoses were frequently seen. The five most frequently mentioned diagnoses of this survey are shown in table 2.3. Stroke is seen most frequently in daily practice followed by developmental delay/learning disabilities and cerebral palsy.

Table 2.3: Diagnosis seen frequently in occupational therapy in the USA
(Reed and Sanderson, 1992)

Diagnosis	% of patients
Stroke	28.2
Developmental delay/Learning disabilities	16.5
Cerebral Palsy	11.7
Hand injury	7.2
Schizophrenic disorders	6.1
Mental retardation	6.1

In a study on the appropriate provision and usage of prescribed equipment (Keating et al, 1989) the medical diagnosis of the patients was investigated. Table 2.4 shows how patients were distributed over the diagnoses. Most patients suffered from a stroke, followed by orthopedic diseases and arthritis.

Table 2.4: Diagnosis of patients in a survey on the use of prescribed equipment (Keating et al.1989)

Diagnosis	% of patients
Stroke	39
Orthopedic	23
Arthritis	13
Neurological	7
Amputee	6
Oncology	2
Other	10
Total	100

Bumphrey (1989) describes the types of patients treated by occupational therapists in home health care. Table 2.5 shows which types of patients are seen by the occupational therapist. In home health care most patients seen by the occupational therapist suffered from arthritis.

Table 2.5: Diagnosis of patients in home health care (Bumphrey, 1989)

Diagnosis	% of patients
Arthritis	27.6
General medicine/surgery	21.6
Neurology (incl CVA)	17.4
Trauma/orthopedics	15.7
"Old age"	7.6
Mental illness	5.9
Other	4.3
Total	100.0

The results of the survey studies show that the distribution of diagnoses in the survey studies differ according to the purpose and setting of each study. In the USA an overview of the (five) most frequently seen diagnoses was given. Therefore, this study might provide representative information on the diagnoses of patients treated by therapists in the USA. The study of Keating et al. (1989) was restricted to the provision and use of equipment. This means that only certain groups of patients, with physical disabilities, were included in the study. In the study of Bumphrey (1989) it was investigated what type of patients were treated in home health care. This is also a specific group of patients.

To get further insight in types of medical diagnoses of patients treated by occupational therapists, a manual search was performed through five volumes of occupational therapy journals: American Journal of Occupational Therapy (AJOT), British Journal of Occupational Therapy (BJOT), Canadian Journal of Occupational Therapy (CJOT), Australian Occupational Therapy Journal (AOTJ), and Nederlands Tijdschrift voor Ergotherapie (NTET). The results show which diagnoses were written about in the journals.

Table 2.6: Occurrence of articles on medical diagnoses in general care

Medical diagnosis	Netherlands		Other countries		Total	
	N	%	N	%	N	%
Elderly/dementia	6	11	56	13	62	13
CVA	9	16	49	11	58	12
Developmental retardation			41	9	41	9
Brain injury	8	15	30	7	38	8
Hand injury	4	7	33	8	37	8
Cerebral Palsy			24	6	24	5
Spinal cord injury			23	5	23	5
Gross/fine motor skills	4	7	14	3	18	4
Arthritis/Rheumatoid	4	7	12	3	16	3
Trauma upper extremity	4	7	7	2	11	2
Other, e.g. pain, cancer, amputees, HIV, burns	9	16	64	14	73	15
Adults, general	5	10	45	10	50	10
Children, general	2	4	37	9	39	8
Total	55	100	435	100	490	100

Table 2.6 shows that the top five of medical diagnoses in the Netherlands and in the other countries are rather similar. The diagnoses CVA, dementia, brain injury and hand injury occur in both categories in the top five of diagnoses. It was also investigated which psychiatric diagnoses were discussed in the journals. Table 2.7 shows that in the field of psychiatry mainly general articles were written both in the Netherlands and in the other countries. In the other countries attention is also paid to specific diagnoses such as depression, bulimia and addiction.

Table 2.7: Occurrence of articles on psychiatric diagnoses and mental retardation

Psychiatric diagnosis	Netherlands		Foreign countries		Total	
	N	%	N	%	N	%
Psychiatry General	9	82	47	47	56	50
Depression			8	8	8	7
Bulimia/anorexia			7	7	7	6
(Drugs) addiction			7	7	7	6
Multiple Personality Disorder	1	9	2	2	3	3
Schizophrenia			2	2	2	2
Mental retardation	1	9	28	27	29	26
Total	11	100	101	100	112	100

2.7 Interventions used by occupational therapists in daily practice

Few studies have investigated which interventions are used in occupational therapy practice. All studies were carried out with a specific purpose and the results are influenced by this specific purpose. In the results of a survey on the growth of private practice in the United Kingdom (Cossar, 1992) the services of the occupational therapy are explicated: Activities of daily living assessments, advice on planning of and adaptation to domestic property, provision of aids to disabled living, wheelchair and or seating assessments, litigation assessments (compensation claims). In the study by Hassal (1992) the activities of the occupational therapists in the United Kingdom on post discharge visits from hospital based occupational therapists were described. Table 2.8 shows the interventions used by the occupational therapists. Most interventions in post discharge visits concerned the instructions on the use of aids or to the delivery or assessment of aids.

Table 2.8: Interventions of hospital based occupational therapists on post discharge visits (Hassal, 1992)

Type of interventions	%
Teach use/deliver/assess aids	51
Monitor high risk discharge	12
Assess for adaptations	8
Psychological/emotional support	7
Work with carers, i.e. transfers	5
Treatment of ADL	3
Other	14
Total	100

De Jonge and Vanclay (1989) have investigated which interventions were used by occupational therapists in Australia. The therapists could report their use of interventions on a specified list. Table 2.9 shows the five interventions that were most frequently reported as "used a lot" by occupational therapists. The interventions were daily living tasks, assistive devices, counseling, sensory motor tasks, and social games.

Table 2.9: Top five of interventions reported as "used a lot" by occupational therapists (De Jonge and Vanclay, 1989)

Type of interventions	%
Daily living tasks	46.8
Assistive devices	38.9
Counseling	26.4
Sensory motor tasks	22.9
Social games	20.9

A survey on group work in occupational therapy in the USA (Duncombe and Howe, 1985) shows to what extent groups were used. From the respondents 60% used groups in treatments and 40% did not use groups. All responding therapists working in psychiatric hospitals and in community mental health centers used groups. The type of groups were divided in activity groups (54%), verbal groups (24%), both type of groups (22%). Examples are exercise groups, cooking groups, ADL groups, arts and crafts groups.

2.8 Conclusions

The history of the profession shows that occupational therapy has developed from various sources. Occupational therapy started as a profession working with mentally ill persons, from a moral treatment point of view, and its major emphasis was on the therapeutic use of crafts. The profession then became strongly oriented towards the medical profession, and physical medicine in particular. In that time, the focus of occupational therapy was on physical factors. The latest change of the profession had its onset in the eighties. It seems that occupational therapy is returning to many of its original themes, the holistic approach to the patients is a central issue in the development of the profession. The development of the profession in other countries shows great resemblance to the development in the USA.

The definitions of occupational therapy mirror the development of the profession. In the definitions the profession has changed from a medical form of therapy to a health discipline with the patient as the central issue.

In most countries occupational therapists are working in general care, though in Canada a relatively large number of therapists is working in community care/private practice. In the USA and UK relatively many therapists work in schools/education. The referral to occupational therapy differs between countries, due to legal regulations. In the Netherlands -according to the law-

only physicians can refer a patient to occupational therapy; in the UK and in the USA everyone can apply directly for occupational therapy services and everyone can refer a patient to occupational therapy services.

Only few studies describing the current practice of occupational therapy have been found. Most of these survey studies describe a specific part of the current practice, for instance occupational therapy in home health care or in private practice. It was found that for the description of the medical diagnoses no standardized classifications were used. As a result it is difficult to compare the findings of the studies with each other.

The diagnoses of patients treated by occupational therapists differ between the studies depending on the specific purpose and setting of each study. Nevertheless it can be concluded that cerebro vascular accident is a disease that is frequently seen by occupational therapists.

The interventions used by the occupational therapists are very diverse. All studies report on the use of assistive devices and the use of ADL activities as an intervention in occupational therapy practice.

Overall, it can be concluded that very little information is available on the practice of the profession. In the Netherlands no survey studies were carried out to describe the practice of the profession. The following chapters will give a quantitative description of occupational therapy practice in hospital based care in the Netherlands.

2.9 References

- Acquavia, F.A. 1986. AOTA's Ad hoc commission on occupational therapy manpower. *American Journal of Occupational Therapy* 40, p.455-457.
- Allen, F., Graham, J., Hiep, M., Tonkin, J. 1988. Occupational therapy 1981-1986. Trends and implications. *Australian Occupational Therapy Journal*, 35, p.155-164.
- Bissel, J.C., Mailloux, Z. 1981. The use of crafts in occupational therapy for the physically disabled. *American Journal of Occupational Therapy*, 35, p.369-374.
- Bockoven, J.S. 1971. Legacy of moral treatment 1800's to 1910. *American Journal of Occupational Therapy*, 25, p.223-226.
- Bumphrey, E.E. 1989. Occupational therapy within the primary health care team. *British Journal of Occupational therapy*, 52, p.252-255.
- Canadian Association of Occupational Therapy, 1991. Occupational therapy Guidelines for Client Centred Practice. Toronto: CAOT/ACE Publicationa.
- Canadian Association of Occupational Therapy, 1992. Membership Data. Unpublished information.
- Cossar, A. 1992. The growth of private practice in occupational therapy in Great Britain. *British Journal of Occupational therapy*, 55, p.157-161.
- Christiansen, C. 1991. Research: Looking back and ahead after four decades of progress. *American Journal of Occupational therapy*, 45, p.391-393.

- Devereaux, E.B., Walker, R.B. 1995. The role of occupational therapy in primary health care. *American Journal of Occupational Therapy*, 49, p.391-396.
- Diasio, K. 1971. The modern era 1960-1970. *American Journal of Occupational Therapy*, 25, p.237-42.
- Driessen, M.J. 1997. Occupational therapy at home. *Home and Community Care International* 1997, 1, p.9-12.
- Driessen, M.J., Dekker, J. 1994. *Ergotherapie in de Nederlandse gezondheidszorg*. Utrecht: NIVEL.
- Duncombe, L.W., Howe, M.C. 1985. Group work in occupational therapy: a survey of practice. *American Journal of Occupational Therapy*, 39, p.163-170.
- Ergotherapeutenbesluit, *Staatsblad* 569, 25 juni 1981.
- Hagedorn, R. 1995. *Occupational Therapy: Perspectives and Processes*. London: Churchill Livingstone.
- Harmsen, J., Hingstman, L., 1997. Cijfers uit de registratie van ergotherapeuten. Utrecht: NIVEL.
- Hassal, J. 1993. Why do hospital-based occupational therapists carry out post discharge home visits with elderly people? *British Journal of Occupational Therapy*, 56, p.325-329.
- Jonge, D. de, Vanclay, F. 1989. Personal identity, legitimacy and the teaching of treatment media. *Australian Occupational Therapy Journal*, 36, p.200-211.
- Keating, N., McLean, D., Quinsy, K. 1989. Survey of appropriate provision and usage of prescribed equipment - the clients' perspective. *Australian Occupational Therapy Journal*, 36, p.131-135.
- Kelly, G., Drummond, A. 1994. BJOT Readership Survey: Results. *British Journal of Occupational Therapy*, 57, p.183-184.
- Kielhofner, G. 1992. *Conceptual foundations of occupational therapy*. Philadelphia: F.A. Davis Company.
- Levine, R.E. 1987. The influence of the arts and crafts movement on the professional status of occupational therapy. *American Journal of Occupational Therapy*, 41, p.248-253.
- Mosey, A.C. 1971. Involvement in the rehabilitation movement 1942-1960. *American Journal of Occupational Therapy*, 25, p.234-236.
- Nederlandse Vereniging van Arbeids-Ergotherapeuten. 1974. *Beroepsomschrijving Arbeids ergotherapeut*. Zaandam: NVAE.
- Peloquin, S.M. 1991. Occupational therapy service: Individual and collective understandings of the founders (part 1). *American Journal of Occupational Therapy*, 45, p.352-359.
- Peloquin, S.M. 1991. Occupational therapy service: Individual and collective understandings of the founders (part 2). *American Journal of Occupational Therapy*, 45, p.733-744.
- Pentland, W., Krupa, T., Lynch, S., Clark, C., 1992. Community integration for Persons with Disabilities: Working together to make it happen. *Canadian Journal of Occupational Therapy*, 59, p.127-130.
- Reed, K.L. and Sanderson, S.N. 1992. *Concepts of occupational therapy*, Williams and Wilkins, Baltimore.
- Reed, K.L. 1986. Tools of practice: Heritage or baggage? *The American Journal of Occupational Therapy*, 40, p.597-605.
- Reilly, M. 1962. Occupational therapy can be one of the great ideas of the 20th Century. *American Journal of Occupational Therapy*, 16, p.1-9.
- Rerek, M.D. 1971. The depression years 1929 to 1941. *American Journal of Occupational Therapy*, 25, p.231-233.
- Stoffel, S.A., Gwin, C.H. 1989. Home health care revisited: Challenges for the future. *American Journal of Occupational Therapy*, 43, p.499-502.

- Strickland, L.R. 1991. Directions for the future-occupational therapy practice than and now, 1949 - Present. *American Journal of Occupational Therapy*, 45, p.105-107.
- Wet op de Paramedische Beroepen. *Staatsblad* 113, 21 maart 1963.
- World Federation of Occupational Therapists, 1958. Establishment of a programme for the education of occupational therapists. Edingburgh, Scotland: Council of WFOT.
- World Federation of Occupational Therapists, 1963. Education of the occupational therapist. Glasgow, Scotland: Council of WFOT.
- World Federation of Occupational Therapists, 1971. Minimum standards for the education of occupational therapists. Glasgow, Scotland: Council of WFOT.
- World Federation of Occupational Therapists, 1991. Minimum standards for the education of occupational therapists. Glasgow, Scotland: Council of WFOT.
- Woodside, H.H. 1971. The development of occupational therapy 1910-1929. *American Journal of Occupational Therapy*, 25, p.226-230.
- Yerxa, E.J. 1995. Who is the keeper of occupational therapy's practice and knowledge? *American Journal of Occupational Therapy*, 49, p.295-299.

3 INTER-RATER AND INTRA-RATER RELIABILITY OF THE OCCUPATIONAL THERAPY DIAGNOSIS¹

3.1 Abstract

A registration form for the occupational therapy diagnosis was developed. The form was based on the International Classification of Impairments, Disabilities and Handicaps (ICIDH). The reliability of the assessment of the occupational therapy diagnosis, using this form, was determined. Fifty patients from a psychiatric hospital and fifty-seven patients from a rehabilitation center participated in this study. Reliability was determined using two measures: the percentage of agreement and Cohen's kappa. Findings of this study indicate that the reliability of the assessments of functional deficits of the patients by occupational therapists is satisfactory to very good. In the rehabilitation center all items and in the psychiatric hospital 88% of the items had a kappa value higher than 0.40. This implies that the registration form can be used in survey research.

3.2 Introduction

Occupational therapists aim at improving the abilities of their patients. According to Rogers and Holm (1991) the occupational therapy process can be divided into two stages "The first stage involves the sensing and defining of a patient's functional problem and is accomplished through assessment(s). The second stage focuses on the resolution of problems and is accomplished through intervention and reassessment. The first stage ends in a problem statement or a series of problem statements that describe the functional deficits toward which occupational therapy intervention is directed" (p.1045). This process of obtaining and interpreting data necessary for treatment is referred to as the occupational therapy diagnosis.

Occupational therapists have no standardized diagnostic system to describe the functional deficits of their patients. The International Classification of Impairments, Disabilities and Handicaps (WHO, 1980) is regarded as an

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excellent starting-point for the classification of assessment and observation findings of occupational therapists (Mather, 1993; Mathiowetz, 1993; Townsend, Ryan & Law, 1990). In this classification the abilities of the patient are described in terms of impairments (consequences of disease at the structure/ function level), disabilities (consequences of disease at the level of the person) and handicaps (consequences of disease at the social level). These three categories are each subdivided into a number of subcategories. Impairments and disabilities both consist of nine subcategories and handicaps consist of seven subcategories (see Table 3.1). For impairments and disabilities, each subcategory consists of several items.

Table 3.1 Comparison of the ICDH with the Human Occupations Model and the Model of Occupational Performance

ICIDH	Human Occupations Model*	Model of Occupational Performance**
Impairments	Performance areas	Performance components
Intellectual	Motor	Spiritual
Other psychological	Sensory	Physical
Language	Cognitive	Sociocultural
Aural	Intrapersonal	Mental
Ocular	Interpersonal	
Visceral		
Skeletal		
Disfiguring		
Generalized sensory and other		
Disabilities	Occupational areas	Areas of occupational performance
Behavior	Self-care	Self-care
Communication	Leisure	Leisure
Personal care	Productivity	Productivity
Locomotor		
Body disposition		
Dexterity		
Situational		
Particular skill		
Other activity restrictions		
Handicaps	Environment areas	Environment areas
Orientation	Social	Social
Physical independence	Cultural	Cultural
Mobility	Physical	Physical
Occupation		
Social integration		
Economic self-sufficiency		
Other		

* Reed and Sanderson, 1980.

** Department of Health and Welfare and the Canadian Association of Occupational Therapists, 1983, 1986.

Two well known models in occupational therapy practice are the human occupations model (Reed & Sanderson, 1980) and the model of occupational performance (Health and Welfare Canada and Canadian Association of Occupational Therapists, 1983, 1986). They both show great resemblance with the ICDH. In both models three categories are distinguished. The human occupations model includes the following categories: occupational performance, subdivided into performance areas (motor, sensory, cognitive, intrapersonal and interpersonal functions), and occupational areas (selfcare, productivity and leisure activities). The third category includes environment areas (performance in social, physical and cultural environment). The model of occupational performance includes performance components (spiritual, physical, socio cultural and mental components), areas of occupational performance (self care, leisure and productivity activities) and environment areas (performance in social, cultural and physical environment).

Impairments, as listed in the ICDH, resemble the performance areas of the human occupation model and when combined with performance components, describe the functions of the individual. Disabilities seem to correspond with occupational areas and the areas of occupational performance and describe the activities an individual performs, whereas handicaps correspond to occupational role performance and describe the performance of an individual in the society (see Table 3.1; see also Townsend, 1990).

The ICDH provides an internationally recognized document complementary to the occupational therapists model for practice (Townsend et al, 1990). However, using the ICDH in its complete form is time-consuming and impractical (Bangma, 1985; Lankhorst, Hoppener and van der Kraaij, 1985) and not all items in the ICDH are relevant to occupational therapy practice. Therefore the relevant items must be selected and if necessary modified. Another problem with the ICDH is the Handicap section which has been criticized for being poorly developed and ambiguous to score (Colvez and Robine, 1986; Hirs, 1986). Because handicap is an important item within the occupational therapy diagnosis, it must be made more appropriate for occupational therapy practice.

On the basis of the ICDH, the adaptation of the ICDH for paramedics (Heerkens, Brandsma, Lakerveld-Heyl and Mischner-van Ravensberg, 1991) and the Dutch profile of occupational therapy, derived from the human occupations model (Dutch association of occupational therapy, 1988), a registration form has been developed to assess the functional deficits of patients. This registration form was developed because of the intention to conduct a survey-study on occupational therapy practice in the Netherlands. However, prior to conduct of the survey it was important to investigate whether assessments of occupational therapists with this registration form are

reliable. The present study was designed to test the inter- and intra-observer reliability of the assessment of diagnostic data based on clinical observations and examinations by occupational therapists.

As a brief introduction to occupational therapy in the Netherlands, the field of work of Dutch occupational therapists is summarized: most therapists (85,3%) work in institutional care such as nursing homes, rehabilitation centers and psychiatric hospitals. Only a few therapists (6,5%) work in ambulatory care or have a private practice. The remaining 8,2% of the therapists works either in education or in other fields of work. Occupational therapists in the Netherlands differ from other countries as the United Kingdom or Federal Republic of Germany because the Dutch therapists work almost exclusively in institutions (Koster, Dekker and Groenewegen, 1991).

3.3 Methods

Design

Since 85% of all working occupational therapists are working in institutional care it was obvious that the registration form should be tested there and should include both general and mental health care. It was decided to test the form in a psychiatric hospital and in a rehabilitation center. The inter-observer study was conducted in the psychiatric hospital with two therapists who independently of each other examined a series of patients. The intra-observer study was conducted in the rehabilitation center. Because of time and scheduling problems it was not possible to do an inter-observer study in the rehabilitation center. Instead, patients were examined by one occupational therapist at two different times.

Registration form

A standard registration form was developed to assess the abilities of the patient. In a manual, definitions and examples were given of all items in the registration form. The registration form contained three main categories; impairments, disabilities and handicaps. Because the emphasis of occupational therapy practice is on disabilities and handicaps, impairments were assessed in a limited way only.

For the impairment category, from the nine subcategories of impairments listed in the ICIDH, four were chosen because they were regarded most relevant. These four subcategories were: motor, sensory, cognitive and psychological impairments. Each category consisted of several items with a total of 20 items (Table 3.2). The impairments were recorded as present or

absent, and for motor and sensory impairments the location was recorded as well.

For the disabilities category, the nine disability subcategories listed in the ICDH were all regarded relevant to occupational therapy practice. The nine subcategories were subdivided into several items with a total of 29 disabilities (Table 3.3). The severity of the disabilities was recorded on a three point scale; this scale was derived from a four-point scale by joining the scores "2" and "3" (Van den Berg and Lankhorst, 1990; Jiwa Boerrigter, van Engelen and Lankhorst, 1990). This modification was made because the therapists indicated that they had difficulty making the distinction between "some help" (score 2) and "a lot of help" (score 3) on the four-point scale.

The last category concerned handicaps. Because the six subcategories in the ICDH were not well developed, the ICDH was combined with another classification developed in the Netherlands, the Groningen Social Disabilities Schedule (GSBS-2; Wiersma, de Jong, Ormel & Kraaijkamp, 1990). Some handicap items were derived from the ICDH (orientation, mobility) and some from the GSBS-2 (household role, family role), and the others were a combination of both (physical independence, social role, occupational role) (Table 3.4). The handicaps were recorded on a three point scale, which was derived from the GSBS-2.

Therapists

Two therapists participated in the inter-observer study (psychiatric hospital), a female therapist aged 28 and a male therapist aged 30. They both received additional training and they both had four years of working experience. Nine therapists participated in the intra observer study (rehabilitation centre), six female and three male therapists, aged between 27 and 41 years. Most therapists (55%) had had additional training. The average working experience was 4 1/2 years (minimum 1 year, maximum 13 years)

Procedure

The data collected by occupational therapists were based on regular clinical observations and examinations. It was stressed that the therapists should not adapt their standard routines because of the study. The therapists received a brief period of training in use of the registration form, together with written information about its use. All participating therapists filled out the form for three patients. When the form for the first patient was filled in the therapists had a discussion about the items. After filling in the form for three patients the first author discussed the problems they experienced. The reliability study was carried out in the period March-June 1991. All patients referred to occupational therapy could participate in this study.

In the inter-observer study, the patients were observed for three weeks after admission. After these three weeks, the two therapists completed the registration form independently. It was agreed that the disabilities in personal care would not be assessed because in this hospital it was the task of the nursing staff to observe problems in this area.

In the intra-observer study, each therapist completed the form twice, the first time at least one month after admission, and the second time at least seven and at most ten days after the first time. To ensure that the therapists did not refer to or remember their first rating two agreements were made. First, when the form was filled out it was handed in immediately with the head of the department. Second, it was agreed that at least after one week and at most after two weeks the form was filled out for the second time. In this way the possibility that therapists remembered their first rating was minimised.

Analysis

Two measures were obtained to determine the degree of agreement between pairs of observations: percentage of agreement (which we considered satisfactory if the percentage of agreement was more than 80%) and Cohen's kappa (Cohen, 1960). Cohen's kappa corrects for chance agreement. The maximum value of kappa is 1, but this is seldomly achieved. Interpretation is assisted by the terminology of Fleiss (1981) (see also Van Triet, Dekker, Kerssens and Curfs, 1990). Accordingly, a kappa value of more than 0.75 indicates an excellent degree of agreement, a kappa value between 0.40 and 0.75 is 'fair to good' (which we designated as satisfactory) and a kappa value less than 0.40 indicates a low level of agreement.

Some impairments, disabilities or handicaps were identified only among a few patients, so that the frequency distribution appeared to be skewed. This skewness may lead to an increased standard error and a fluctuating value of kappa (Fleiss, 1981; Schouten, 1985; Soeken and Prescott, 1986; van Triet et al, 1990). To our knowledge there are no criteria for relating kappa to the skewness of observations. In the absence of such criteria we adopted the following rules. If an item (impairment, disability or handicap) was recorded in fewer than 10% (or more than 90%) of the patients, kappa was not determined. If an item was recorded in more than 10% of the patients but fewer than 20%, (or more than 80% but less than 90%) of the patients, kappa was computed but has to be interpreted carefully. If an item was recorded in more than 20% (or less than 80%) of the patients, kappa was calculated and interpreted.

3.4 Results

Patients

In the psychiatric hospital, of all patients referred to occupational therapy during the time of the study, seven patients were excluded: five patients could not be treated by the occupational therapists owing to the severity of the disorders; two patients because they stayed for too short a time. In the rehabilitation centre no patients were excluded.

In the psychiatric hospital 50 patients (20 men, 30 women) participated in the study. The medical diagnosis of the patients was classified with the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-3-R, 1987). Most patients referred to occupational therapy exhibited mood disorders (58%). The average age of the patients is 48 years (sd 18 years).

In the rehabilitation centre 57 patients (19 men, 38 women) participated in the study. Their medical diagnosis was classified with the International Classification of Diseases, 9th revision, Clinical modification (ICD-9-CM, 1980) Most patients referred to occupational therapy exhibited diseases of the circulatory system (64%) and/or diseases of musculoskeletal and connective tissue (40%)². The average age of the patients is 55 years (sd 17 years).

Intra-observer reliability

Kappa values and percentage of agreement are shown in Tables 2, 3 and 4. The percentage of agreement was higher than 80% for all items, except one. This one item (handicap in household role) had a percentage of agreement of 75%.

Thirty-five items (64%) were assessed for more than 20% of the patients. The value of kappa was higher than 0.75 for 57% (20 items) of the items, and between 0.40 and 0.75 for the remaining 43% (15 items) of the items.

Only five items (11%) were assessed for more than 10% but fewer than 20% of the patients. The value of kappa for three items (60%) was higher than 0.75, and for two items (40%) between 0.40 and 0.75.

Five items (11%) were assessed for fewer than 10% of the patients and 8 items (14%) were not assessed for any of the patients. Kappa was not computed for these items.

No items were assessed for more than 80% of the patients.

² Percentage of diagnostic entries is larger than 100% because the patients can be diagnosed on several items.

Table 3.2 Inter- and Intra-Observer Reliability of Impairments

Impairments	Rehabilitation intra-observer		Psychiatry inter-observer	
	kappa	% of agreement	kappa	% of agreement
Motor impairments				
Skeletal impairment of structure	0.70	89	-	-
Skeletal impairment of function	0.70	93	0.75	92
Amputation	1.00	100	-	-
Coordination	0.85	93	0.91	96
Other motor impairments	-	-	-	-
Sensory impairments				
Sensory awareness	0.88	95	-	-
Proprioception	0.69	96	-	-
Pain	0.79	89	0.46 ¹	92
Other sensory impairments	-	-	-	-
Cognitive impairments				
Impairment of intelligence	-	-	0.41 ¹	90
Impairment of memory	0.70 ¹	95	0.85 ¹	96
Impairment of thinking	*	98	0.88	96
Other cognitive impairments	1.00	100	*	100
Intrapersonal impairments				
Impairment of consciousness	-	-	*	94
Impairment of emotive and volitional functioning	*	98	#	100
Impairment of behaviour patterns	-	-	0.72	72
Impairment of perception	-	-	0.80	92
Impairment of attention	0.81 ¹	96	0.65	78
Other intrapersonal impairments	-	-	-	-

- impairment confirmed with no patients.

kappa value could not be calculated.

* impairment confirmed in fewer than 10% of the patients.

1 impairment confirmed in 10 - 20% of patients.

Table 3.3 Inter- and Intra-Observer Reliability of Disabilities

Disabilities	Rehabilitation intra-observer		Psychiatry inter-observer	
	kappa	% of agreement	kappa	% of agreement
Disabilities in personal care				
Excretion	0.93	93	-	-
Personal hygiene	0.84	93	-	-
Dressing	0.86	93	-	-
Feeding	0.78	89	-	-
Domestic disabilities				
Doing shopping	0.93	91	0.52	78
Preparing food	0.84	88	0.39	76
Household activities	0.73	88	0.72	86
Maintenance environment	0.89	93	0.63	82
Locomotor disabilities				
Balance	0.80	91	0.78 ¹	96
Transfers	0.68	84	0.57 ¹	90
Walking	0.77	88	0.89	96
Traversing	0.71	89	0.73	86
Transport	0.64	86	0.62	78
Situational disabilities				
Endurance	0.66	88	0.63	84
Awareness disabilities				
Disability relating to location in time and space	*	98	0.65	82
Knowledge acquisition disability	0.94 ¹	98	0.26	60
Personal safety disability	0.45	84	0.58	76
Disabilities in relations				
Cooperation	*	93	0.27	66
Functioning as a member of a group	*	96	0.53	76
Other disabilities in relations	*	95	0.50	78
Particular skill disabilities				
Cognitive	0.81	91	0.62	86
Psychological	0.81	91	0.68	84
Communication disabilities				
Talking and understanding speech	0.78	93	0.53	84
Reading	0.82 ¹	95	0.51	88
Writing	0.81	91	0.75	92
Social disabilities				
Playing games	0.59 ¹	89	0.34	70
Hobbies	0.66	82	0.45	82
Sports	0.69	88	0.55	82
Occupation	0.89	93	0.57	88

- disability was not scored.

* disability confirmed in fewer than 10% of the patients.

¹ disability confirmed in 10 - 20% of the patients.

Table 3.4 Inter- and Intra-Observer Reliability of Handicaps

Handicap	Rehabilitation intra-observer		Psychiatry inter-observer	
	kappa	% of agreement	kappa	% of agreement
Orientation	-	-	-	-
Physical independence	0.76	88	0.59	80
Mobility	0.69	82	0.52	70
Social role	0.73	86	0.60	80
Occupational role	0.69	80	0.69	80
Household role	0.60	75	0.65	88
Family role	0.45	82	0.68	82

Inter-observer reliability

Kappa values and percentage of agreement are shown in Tables 2, 3 and 4. The percentage of agreement was 80% or more for 31 items (72% of the items), between 70 and 80% for 10 items (23%) and below 70% for 2 items (5%).

Thirty-five items (70%) were assessed for more than 20% of the patients. The value of kappa was higher than 0.75 for 17% of the items (6 items), and between 0.40 and 0.75 for 72% of the items (25 items). There were four items (11%), (preparing food, knowledge acquisition, cooperation and playing games) with a kappa value below 0.40.

Only five items (10%) were assessed for more than 10% but fewer than 20% of the patients. The value of kappa for two items (40%) was 0.75 or more, and for three items (60%) between 0.40 and 0.75.

Two items (4%) were assessed for fewer than 10% of the patients, 8 items (16%) were not assessed for any of the patients and one item (impairment of emotive and volitional functions) was assessed for all patients. Kappa was not calculated for these items.

No items were assessed for more than 80% of the patients.

3.5 Discussion

In this study the reliability of the assessment of the occupational therapy diagnosis using a registration form was determined. The intra-observer

reliability was tested in a rehabilitation center and the inter-observer reliability in a psychiatric hospital. For almost all items both the percentage of agreement and the value of kappa were satisfactory to good in the intra- and inter-observer study.

However, the results in the rehabilitation center, the intra-observer study, were better. In the rehabilitation centre only one item (handicap in household role) had a percentage of agreement of 75%. In the psychiatric hospital twelve items, (i.e. two impairment, nine disability and one handicap item 28%), had a percentage of agreement below 80% and four disability items had a kappa value below 0.40. Two explanations can be given for the difference between rehabilitation center and psychiatric hospital. Firstly, in the intra-observer study one important factor, the therapist, was kept constant. Therefore, the results of an intra-observer study are generally better than the results of an inter-observer study. Thus, differences in percentage of agreement and the kappa value may be due to the difference in design. Secondly, in the psychiatric hospital there was a difference in the information that the therapists had about the participating patients. This difference in information was caused by the different topics of group therapy, given by the participating therapists. For instance, one therapist was counselling a "domestic group" and therefore had more or different information about the disability "preparing food" compared to the other therapist. The same explanation accounts for the disabilities in "cooperation" and "playing games". The low agreement on the remaining disability "knowledge acquisition" cannot be explained on these grounds.

The percentage of agreement and kappa value were calculated on a three point scale for the disability and handicaps items. So the therapists had to agree on the severity of the disability or handicap and this might be the reason that some disability and handicap items had a low percentage of agreement and kappa score. In an additional analysis the reliability was determined based on the presence or absence of the disability and handicap items (a two point scale). In this analysis only 3 items in the inter rater study and only one item in the intra rater study had a percentage of agreement lower than 80%, and the kappa value was lower than 0.40 for two items in the inter-rater study. Thus, using a two-point scale, the reliability of the assessment is even higher.

To improve the registration form, some changes can be made. The modification of the registration form was based on the evaluation with the participating therapists or unsatisfactory kappa values. Although these adaptations were not tested in another reliability study, we want to explain

them here, because there were only a few small changes. The modified registration form is shown in appendix 3.1.

Appendix 3.1 Modified registration form

Category	Subitems
Impairments	
Motor impairments	Skeletal impairment of structure, skeletal impairment of function, amputation, coordination, other motor impairments.
Sensory impairments	Sensory awareness, proprioception, pain, other sensory impairments.
Cognitive impairments	Impairment of memory, impairment of thinking, neuropsychological function deficit, other cognitive impairments.
Intrapersonal impairments	Impairment of emotive and volitional functioning, impairment of behaviour patterns, impairment of perception, impairment of attention, impairment relating to location in time and space.
Disabilities	
Basic skills****	Motor skills, cognitive skills, psychological skills, interactional skills
Communication	Talking, understanding, reading, writing.
Endurance	Physical and psychological endurance.
Locomotor	Transfers, walking, traversing, transport.
Personal care	Excretion, personal hygiene, dressing, feeding.
Domestic***	Moderate household activities, heavy household activities, preparing meals, care of dependants, maintenance environment.
Specific skills	Handling physical environment*, budgeting.
Leisure activities	Includes sports, hobbies and playing games**
Relation	Making and maintaining contact with other individuals*, functioning within a group**.
Handicap	
Physical independence	
Mobility	
Social role	
Occupational role	
Family/household role**	

* New item

** Old items are combined

*** Category is restructured

**** New category with old items

In the *impairment section* the items intelligence and consciousness were removed from the form because they did not occur in many patients. The item "disability relating to location in time and place" was added to the intra-personal impairments because both the therapists and the classification for paramedics (Heerkens et al, 1991) considered it an impairment instead of a disability.

In the *disability section* several items were combined because of low kappa values and because the therapists indicated that the difference between these items was rather vague. The following items were combined: disability in cooperation was combined with the disability in functioning as a member of a group³, disability in playing games was combined with hobbies and sports⁴. The category domestic disabilities was restructured so that the difference between moderate and heavy household activities was clear. A new item (handling physical environment) was added to the registration form, because the therapists regarded this as an omission.

In the *handicap section*, the handicap in family role and handicap in household role were combined because therapists were having problems in distinguishing between these two categories⁵.

The overall conclusion which can be drawn from the study is as follows. The reliability of the assessment of the occupational therapy-diagnosis -based on the ICIDH- is satisfactory to good for almost all items. This implies that the registration form can be used in survey research.

3.6 References

- American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders*, Third Edition, Revised. Washington DC.
- Bangma, .D. (1985). Use of the ICIDH in the period 1983-1985. *Working paper WHO 24-28 June 1985*. Voorburg.
- Berg, J. van den; Lankhorst G.J. (1990). Inter-rater and intra-rater reliability of disability ratings based on the modified D-code of the ICIDH. *International Disability Studies 12*, 20-21.

³ For the combined items, the kappa value was 0.76; the percentage of agreement was 88%.

⁴ For the combined items, the kappa value was 0.61; the percentage of agreement was 88%.

⁵ For the combined items, the kappa value was 0.61; the percentage of agreement was 84%.

- Chief Inspectorate of public health (1990). *Beroepsuitoefening van ergotherapeuten, verslag van een onderzoek 17 - 21 april 1989 (Practice of profession of occupational therapists, a research, 17 - 21 april 1989)*, Rijswijk.
- Cohen, J. (1960). A coefficient for agreement for nominal scales. *Educ. Psychol. Maes.*, 20, 37-46.
- Colvez, A.; Robine, J.M. (1986). Problems encountered in using the concepts of impairment, disability and handicap in a health assessment survey of the elderly in Upper Normandy. *International Rehabilitation Medicine*, 8, 18-22.
- Dekker, J.; Driessen M.J.; Gisbergen, M. van (1991). Programmering van toekomstig onderzoek op het gebied van enkele paramedische beroepen (*Program of future research for some paramedical professions*) Utrecht, NIVEL.
- Department of National Health and Welfare and the Canadian Association of Occupational therapists. (1983). *Guidelines for the client-centred practice of occupational therapy*. (H39-33/1983E) Ottawa, ON: Department of National Health and Welfare.
- Department of National Health and Welfare and the Canadian Association of Occupational therapists. (1986). *Intervention guidelines for the client-centred practice of occupational therapy*. (H39-100/1986E). Ottawa, ON: Department of National health and Welfare.
- Dutch association of Occupational therapy (NVE) (1988). *Het beroepsprofiel (Profile of the profession)*, Administratief Centrum Delft.
- Fleiss, L. (1981). *Statistical Methods for Rates and Proportions*, 2nd ed. New York: John Wiley.
- Heerkens, Y.F.; Brandsma, J.W.; Lakerveld-Heyl, K.; Mischner-van Ravensberg, C.D. (1991) *Verslag fase 1: voorstel voor aanpassing van de classificatie stoornissen en de classificatie beperkingen van de ICIDH (Proposal for adaptation of the classification of impairments and the classification of disability from the ICIDH, National Institute for research and postgraduate education in physical therapy (SWSF))*. Amersfoort.
- Hirs, W.M. (1986). Meeting of principal investigators for testing the classification of impairment, disabilities and handicaps. *Tijdschrift voor Sociale Gezondheidszorg*, 2, 53-54.
- ICD-9-CM (1980). *International Classification of Diseases 9th revision, Clinical Modification*. Volume 2 Diseases Alphabetic Index (2nd edition).
- Jiwa Boerrigter, H.; Engelen, H.G.M. van; Lankhorst, G.J. (1990). Application of the ICIDH in rehabilitation medicine. *International Disability Studies* 12, 17-19.
- Koster, M.; Dekker J.; Groenewegen P.P. (1991). *The position and education of some paramedical professions in the United Kingdom, the Netherlands, the Federal Republic of Germany and Belgium (Physiotherapy, Speech therapy, Occupational therapy, Orthoptics Chiropody)*. NIVEL, Utrecht, the Netherlands p.118-141.
- Lankhorst, G.J.; H+ppener, M.G.W.C.; Kraaij, J.E. van der (1985). Preliminary experiences with WHO's International Classification of Impairment Disabilities and Handicaps. *International rehabilitation Medicine*, 7, 70-72.
- Mather J.H. (1993). The problem of Functional Assessment: Political and Economic Perspectives. *American Journal of occupational therapy* 47, 240 - 246.
- Mathiowetz, V. (1993). Role of Physical Performance Component Evaluations in Occupational Therapy Functional Assessment. *American Journal of Occupational therapy* 47, 225 - 230.
- Reed, K., Sanderson, S.R. (1980). *Concepts in occupational therapy*. Baltimore; Williams & Wilkins.
- Rogers, J.C; Holm, M.B. (1991). Occupational therapy diagnostic reasoning: a component of clinical reasoning. *American Journal of Occupational therapy* 45, 1045 - 1053.

- Schouten, H.J.A. (1985). *Statistical measurement of interobserver agreement*. (dissertation). Utrecht, drukkerij Elinkwijk.
- Soeken, K.L.; Prescott, P.A. (1986). Issues in the use of Kappa to estimate reliability. *Medical Care*, 24, 733-741.
- Townsend, E; Ryan, B; Law, M. (1990). Using the World Health organisation's international classification of Impairments Disabilities and Handicaps in occupational therapy. *Canadian Journal of Occupational Therapy* 57, 16 - 25.
- Triet, E.F. van; Dekker, J.; Kerssens, J.J.; Curfs, E.Chr. (1990). Reliability of the assessment of impairments and disabilities in survey research in the field of physical therapy. *International Disability Studies*, 12, 61-65.
- Wagstaff, S. (1982). The use of the International Classification of Impairments Disabilities and Handicaps in rehabilitation. *Physiotherapy* 68, 233-234.
- Wiersma, D.; Jong, A. de; Ormel, J.; Kraaijkamp, H.J.M. (1984, 1986). *The Groningen Social Disabilities Schedule: Manual for the use of the instrument for assessing disabilities in social functioning, including questionnaires and scoresheet*. Department of Social Psychiatry of the University of Groningen.
- World Health Organisation (1980). *International Classification of Impairments, Disabilities and Handicaps*, Geneva.

4 DIAGNOSTIC FINDINGS AND TREATMENT GOALS IN OCCUPATIONAL THERAPY IN HOSPITAL BASED CARE¹

4.1 Abstract

Data on general client characteristics, occupational therapy (OT) diagnoses and treatment goals were analyzed for 1051 clients referred to OT. A registration form was used in which OT diagnosis could be registered in terms of impairments, disabilities and handicaps; it could also be registered whether treatment goals were directed towards impairments, disabilities and handicaps. The clients were divided into two groups: general health care clients (nursing home, rehabilitation center, general hospital, n=944) and psychiatric health care clients (psychiatric hospital and psychiatric institution, n=107).

A description is given of the data on OT diagnosis and treatment goals, in both client groups. In order to reduce the large amount of information, a principal component analysis was carried out. In general health care clients, the 19 categories of treatment goals were reduced to 7 dimensions; for clients in psychiatric health care, the 19 categories of treatment goals were reduced to 6 dimensions. It appeared that most differentiation in treatment goals occurred at the level of disabilities. In addition, treatment goals were most frequently chosen at the level of disabilities. Thus, it is concluded (i) that the emphasis of OT treatment goals is on disabilities, both in general and psychiatric health care.

The present, empirical data based on the ICDH were compared with the theoretically derived Model of Occupational Performance. From this comparison, it is concluded that (ii) the empirically derived treatment goals in terms of the ICDH correspond rather well to the theoretically derived model of occupational performance.

4.2 Introduction

Occupational treatment starts officially , at least in the Netherlands, with the referral of a client by a physician. Normally this referral is accompanied by a

¹ M.J. Driessen, J. Dekker, G.J. Lankhorst, J. van der Zee, submitted.

medical/psychiatric diagnosis. Occupational therapists can not start their treatment on the basis of this diagnosis because occupational therapists are concerned with the consequences of diseases, instead of the disease itself.

The medical/psychiatric diagnosis establishes certain information concerning a client's overall abilities and disabilities. Depending on the therapist's knowledge of and experience with this and similar diagnoses, he/she has a knowledge of the nature and severity of disabilities to be expected with this diagnosis. Although the medical/psychiatric diagnosis may guide occupational therapy treatment process, it usually provides not enough information on the occupational functioning of the client. Therefore occupational therapy treatment cannot start on the basis of this diagnosis and additional assessments and observations should be carried out by the occupational therapist. So, each occupational therapy treatment starts with assessing the functional problems of the client. The process of observing, assessing and interpreting data necessary for treatment is called the occupational therapy diagnostic process (Rogers and Holm, 1991). The integration of assessment information is called occupational therapy diagnostic findings in this study. In the Canadian profile of occupational therapy (CAOT, 1996) this is called the occupational profile of the client. Based on the occupational therapy diagnostic findings the treatment goals are chosen. A treatment goal can be defined as a purpose or aim of a client's program or therapist's activities (CAOT,1991).

In this study a registration form based on an internationally accepted classification i.e. the International Classification of Impairments Disabilities and Handicaps (ICIDH; WHO, 1980) was developed. The ICIDH captures the functional consequences of disease, which is in contrast with the International Classification of Diseases that captures the diseases (Granger,1985; Colvez& Robine, 1986; Hirs, 1986; Wiersma, 1986; Badley and Lee, 1987). The ICIDH was developed to define, classify and measure disablement viewed as a loss of performance in daily activities (Townsend et al., 1990). The disablement is stratified hierarchically into three increasing levels; impairments², disabilities³ and handicaps⁴ (Wood, 1980). The occupational therapy diagnostic findings

² Impairment is any loss or abnormality of psychological, physiological or anatomical structure or function resulting of any cause.

³ Disability is any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being.

⁴ Handicap is a disadvantage for an individual resulting from an impairment or disability, that limits or prevents the fulfillment of a role that is normal (depending on age, sex and social and cultural factors) for that person.

in the registration form consists of a list of impairments, disabilities and handicaps which serves as a checklist. The occupational therapist marks in the list which items are affected. With these diagnostic findings a profile of the occupational functioning of the client in terms of the ICDH is obtained. Through the use of an accepted classification, uniformity of language among occupational therapists will improve and there is a possibility to compare data with other (inter)national studies, using the same classification (Polatajko, 1992). Like Borst and Nelson (1993), we believe that a commonly understood terminology would facilitate communication and discussion both among occupational therapists and other professionals.

Given several models of occupational therapy it seems clear that occupational therapists aim at improving the occupational performance i.e. self care, productivity and leisure of their clients within the context of occupation-person environment (Hopkins, 1988; CAOT, 1991; Rogers and Holm, 1991; Reed and Sanderson, 1992; CAOT, 1996). Although it is said that the main focus of occupational therapy is on occupational performance, it is not known whether this is empirically true. Therefore the first goal of the present study is to give a quantitative description of the occupational therapy diagnostic findings and treatment goals in clients referred to occupational therapy services. In the Netherlands, as well as in other countries, no quantitative data seem to be available on the occupational therapy diagnostic findings and treatment goals. The quantitative description is intended to further the understanding of the occupational therapy diagnostic findings and the treatment goals derived from these findings.

It can be expected, however, that the quantitative description will yield a large amount of data with no easily identifiable relationships. Therefore a method was sought that would enable to reduce this diversity. The second goal of the present study, therefore, is to give insight in possible relationships between the items of the occupational therapy diagnostic findings and between the treatment goals. It is investigated whether particular items are diagnosed together or whether particular treatment goals are chosen together. With statistical analysis an attempt is made to reduce the information from the occupational therapy diagnostic findings and treatment goals into a limited number of dimensions. Here, we adopt a strategy first used by Kerssens and Curfs (1993). In a study on physical therapy, these authors successfully reduced the information on nine type of interventions into three main dimensions. In the present study a similar approach will be used to get insight in the relationships between the items of the occupational therapy diagnostic findings and the treatment goals.

Finally, the results will be compared in a qualitative way with the Model of Occupational Performance (CAOT, 1991). This model includes ideas originally described by Reed and Sanderson (1992), Townsend et al. (1990) and Martini, Polatajko and Wilcox (1995) state that the model of occupational performance and the ICDH are complementary in that the ICDH categorizes the lack of ability (i.e. disablement) while the model categorizes ability (i.e. occupational performance). By comparing the present results with the model of occupational performance, the degree of correspondence between the empirically and theoretically derived models will be assessed (see Krefling, 1985).

In summary, the goals of the present study are (1) to give a quantitative description of occupational therapy diagnostic findings and treatment goals in clients referred to occupational therapy, (2) to give insight in the relationships between the items of the occupational therapy diagnostic findings and the treatment goals and (3) a qualitative comparison of the present results with the Model of occupational performance.

4.3 Methods

Design

A survey study on occupational therapy in the Netherlands was carried out. Data were collected from January 1992 to March 1993. A total of 49 randomly chosen departments of occupational therapy (143 therapists) participated in the study. Each department decided prior to the study for how many patients the registration form would be filled in. The four fields where occupational therapists were working most hours per week were included in the study; that is nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. Excluded were institutions for mentally handicapped, treatment of children, private practices, and other kinds of treatment in ambulatory care. General characteristics of the participating occupational therapists are shown in table 4.1. A comparison of these data with data from a representative sample of occupational therapists working in the Netherlands (Driessen et al, 1993) did not indicate any substantial differences.

Table 4.1 Characteristics of occupational therapists working in the different institutions

	Nursing home (n=21)	Rehabilitation center (n=15)	General Hospital (n=9)	Psychiatric Hospital (n=4)	Total
Number of therapists	38	72	24	9	143
Gender					
Female	100%	82%	92%	100%	93.5%
Male	-	18%	8%	-	6.5%
Mean age (years)	32.2	31.2	35.2	30.0	32.2
Experience (years)	2.8	3.1	3.8	3.2	3.2

Registration form

To investigate characteristics of the participating clients a standard registration form was used (Driessen et.al, 1995). This registration form consisted of three sections. The *first* section concerned client characteristics (i.e. gender, type of insurance, age), referral characteristics, medical/psychiatric diagnosis and complaints of the client. The *second* section concerned the occupational therapy diagnostic findings (see table 4.2 for main categories). This diagnosis was based on the ICDH. The intra-rater reliability of the occupational therapy diagnostic findings was tested in a rehabilitation center and the inter-rater reliability was tested in a psychiatric hospital, and appeared to be satisfactory to good: in the rehabilitation center all items and in the psychiatric hospital 88% of the items had a kappa value higher than 0.40. In this second section therapists also had to fill out the treatment goals they had chosen. Treatment goals were derived from the diagnosed impairments, disabilities and handicaps. The occupational therapist could choose a main category as a treatment goal (see table 4.2). For example if locomotor disabilities were diagnosed, the occupational therapist could indicate that the treatment goal was (or was not) directed towards locomotor disabilities. Therapists were allowed to indicate up to a maximum of five goals. Data on client characteristics, occupational therapy diagnostic findings and treatment goals were filled out after the observational period, up to approximately two weeks after the first session.

Table 4.2 Main categories in the registration form

Impairments	Disabilities	Handicaps
Motor	Basic skills	Physical independence
Sensory	Communication	Mobility
Cognitive	Endurance*	Social Role
Intrapersonal	Locomotor	Occupational Role
Other	Personal care Domestic Specific skills** Leisure Relations	Family/household Role

* Physical and psychological endurance

** Handling physical environment and budgeting

The *third* section concerned characteristics of the treatment (length, intensity), the therapeutic means that were used and achievement of the chosen goals and was filled out at 16 weeks after the first session or earlier when treatment was finished.

Procedure

We intended to include at least 1000 clients in the study. All clients referred to the occupational therapist could participate in the study. The number of clients registered by each department was agreed upon prior to the start of the survey. The total number of clients to be registered in each setting was intended to be in proportion to the number of shifts worked within that setting (Chief Inspectorate of Public Health, 1990). The four fields of work where the occupational therapists were working most hours per week were chosen. This implied that most clients should be registered in the nursing homes (38%), followed by rehabilitation centers (32%), general hospitals (20%) and psychiatric hospitals (10%).

Analysis

Data were analyzed in two steps. At first the frequency of the main categories of the occupational therapy diagnostic findings and treatment goals was determined. In the registration form the items on disabilities and handicaps were registered on a three point scale: score 1 'independent', score 2 'some

help' and score 3 'dependent'. In the analysis all data on disabilities were dichotomized by joining score 2 and 3 into one group.

Secondly (in order to reduce information) the relationship between the items of the occupational therapy diagnostic findings and between the treatment goals was determined. This analysis was done separately for occupational therapy diagnostic findings and treatment goals at the level of impairments, disabilities and handicaps.

The association among the items of the occupational therapy diagnostic findings and treatment goals was computed using principal component analysis (PCA). As both occupational therapy diagnostic findings and treatment goals deal with discrete (dichotomized) variables, a specific form of PCA was used that allows for all levels of analysis (principal components analysis by means of alternating least squares, PRINCALS) (van den Berg, 1988, van de Geer, 1993, Kerssens and Curfs, 1993). With this analysis it is possible to transform a number of variables into a smaller number of new variables (dimensions).

The variance of each dimension is given in terms of the eigenvalue of each dimension. The number of dimensions necessary to describe the variables is related to the eigenvalues of the dimensions. In this study it was accepted as a standard that the eigenvalue of a dimension must be greater than 1 divided by the number of variables i.e. main categories in this study. (van den Berg, 1988, van de Geer, 1993). As some treatment goals did only occur in a few clients it was decided to exclude treatment goals which were registered in less than 10% of the clients: low frequent categories tend to create outliers in the results (van den Berg, 1988).

In this study 5 main categories at the level of impairments appeared, so the eigenvalues had to be larger than $1:5 = 0.20$. At the level of disabilities, 9 main categories were distinguished; so the eigenvalue should exceed $1:9 = 0.11$. The handicap level consisted of 5 main categories, so the eigenvalue should be more than $1:5 = 0.20$ to be accepted.

The strength of a the relation of variables with the computed dimension is given as component loadings of variables. If the component loading was more than 0.50 or less than

-0.50, the relationship between the variables and the dimension was considered relevant (van den Berg, 1988; van de Geer, 1993).

4.4 Results

Clients

In this study 1051 clients were included, 944 clients in general health care institutions and 107 clients in psychiatric hospitals. Their characteristics are shown in Table 4.3. Both in general and psychiatric health care approximately 60% of the participating clients were women. The mean age was the highest in general health care. Admission to an institution at the start of occupational therapy was registered in half of the clients. About one third of the clients were living alone, the rest lived with others.

Table 4.3 Characteristics of clients in the study (n=1051)

Characteristics	Clients with physical disabilities (n=944)	Psychiatric clients (n=107)
Gender		
Male	40.3%	40.2%
Female	59.7%	59.8%
Age		
Mean (years, SD)	60.8 (SD 20.9 years)	38.4 (SD 13.7 years)
Insurance		
Health insurance fund	76.2%	86.9%
Private insurance	23.6%	13.1%
No insurance	0.2%	-
Housing conditions*		
At home (with adaptations)	45.9%	47.7%
Institution**	51.1%	50.5%
Other	1.2%	1.8%
Living conditions		
Single	33.1%	30.0%
With others***	66.9%	70.0%

* Housing conditions during time of treatment

** Old people's home, nursing home, hospital, rehabilitation center, psychiatric hospital

*** With parents, children, partner, others and combinations

Medical and Psychiatric diagnosis

The medical diagnosis of the clients in general health care was classified with the International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM, WHO, 1995). Table 4.4 shows that most clients referred to occupational therapy services had a disease of the circulatory system

(31.7%). Almost all clients in this group (97.7%) suffered from a stroke. In 3.4% of the clients no medical diagnosis was given.

The psychiatric diagnosis of the clients in the psychiatric hospital was classified with the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-3-R, APA, 1987). Table 4.4 shows that most clients had schizophrenic (36.4%) or depressive (23.4%) disorders. No psychiatric diagnosis was given for 2.8% of the clients.

Table 4.4 Medical/Psychiatric Diagnosis of clients (N=1051)

Diagnosis	%
Medical diagnosis (ICD-10-CM) (n=944)	
Diseases of the circulatory system (9*)	31.7
Diseases of the musculoskeletal system and connective tissue (13*)	21.4
Diseases of the nervous system (7*)	16.7
Injury, poisoning and certain other consequences of external causes (19,20 +)	16.5
Other (1,2,3,4,5,6,8,10,12,17,18*)	10.3
No diagnosis	3.4
Psychiatric Diagnosis (DSM-3-R) (n=107)	
Schizophrenia	36.4
Depressive disorders	23.4
Psychotic disorder	10.3
Personality disorders	8.4
Other	18.7
No diagnosis	2.8

* Number refers to the chapter in ICD-10-CM

Referral

In nursing homes, most clients (68.1%) were referred by a nursing home specialist and 16.9% of the clients were referred by a general practitioner. In rehabilitation centers, the large majority of the clients were referred by a rehabilitation doctor (85.8 %). Referrals to occupational therapy service in general hospitals were most frequently given by a rehabilitation doctor (54.6%), a neurologist (17.6%) or a rheumatologist (7.8%). In the psychiatric hospitals most clients were referred by a psychiatrist (56.2%). Approximately 40% had no referral of a specialist, they were "referred" by their mentor (e.g. nurse or group leader).

Diagnostic findings and treatment goals at the level of impairments

Clients in general health care

Table 4.5 shows that motor and sensory impairments were diagnosed in most clients, 94.1% and 68.3% respectively. Cognitive and intrapersonal impairments were diagnosed less frequently (35.3% and 34.3%). Table 4.5 shows that the emphasis of treatment goals was on motor impairments. This item was chosen as a treatment goal for 48.3% of the clients. It was calculated which part of all treatment goals were at the level of impairments. The results are shown in table 4.6. It appeared that 23% of all treatment goals in general health care were at the level of impairments.

PRINCALS analysis⁵ was carried out with treatment goals which were chosen for more than 10% of the clients. This means that motor, sensory and cognitive impairments were included in the analysis. These three treatment goals could be reduced to two dimensions. In Table 4.7 the results are given. The three treatment goals showed the following relation: the first dimension showed a combination of treatment goals directed at motor impairments and at sensory impairments. Treatment goals directed at cognitive impairments were independent. This implied that treatment goals at the level of impairments showed a sensory-motor dimension and a cognitive dimension.

Clients in psychiatric health care

As can be seen in Table 4.5 intrapersonal impairments are diagnosed in almost all clients (98.1%). Cognitive impairments were diagnosed with 67.3% of the clients and motor and sensory impairments were diagnosed with approximately 20% of the clients. Table 4.5 shows that the emphasis of treatment goals is on intrapersonal and cognitive impairments. Of all treatment goals, 23% were at the level of impairments (see table 4.6).

PRINCALS analysis was carried out with treatment goals directed at intrapersonal and cognitive impairments because only these two occurred in more than 10% of the clients. Table 4.8 shows that the two treatment goals were reduced to one dimension. This means that this dimension showed a combination of cognitive and intrapersonal impairments as treatment goals.

⁵ At first it was tried to reduce data on the diagnostic findings with PRINCALS. However no meaningful reduction of data could be achieved. This applied to the analysis at the level of impairments, the analysis at the level of disabilities and the analysis at the level of handicaps. Almost all frequently diagnosed items appeared to cluster on a single dimension. In this way data were reduced but the resulting dimensions had no meaning for occupational therapy practice. Therefore data reduction was carried out with treatment goals. The most likely explanation of the failure to reduce the data on the diagnostic findings is, that these diagnostic findings occurred in many clients: this would explain that these diagnosed items all clustered on a single dimension.

Table 4.5 Impairments, disabilities and handicaps diagnosed and chosen as a treatment goal

	Clients in general care (N=944)		Clients in psychiatric care (N=107)	
	Diagnosed %	Treatment goal %	Diagnosed %	Treatment goal %
Impairments				
Motor	94.1	48.3	24.3	5.6
Sensory	68.3	15.4	18.7	1.9
Cognitive	35.3	14.0	67.3	34.6
Intra personal	34.3	5.5	98.1	55.1
Other impairments	0.4	2.0	0.2	4.7
Disabilities				
Basic skills	84.2	31.8	98.1	72.0
Communication	47.2	8.2	43.0	4.7
Endurance	65.4	14.4	77.6	20.6
Locomotor	78.4	41.2	19.6	1.9
Personal care	73.6	48.2	33.6	12.1
Domestic	74.3	35.2	60.7	15.0
Specific skills	52.0	12.3	29.0	7.5
Leisure activities	63.5	20.3	81.3	51.4
Relation	27.9	0.6	86.0	25.2
Handicaps				
Physical independence	61.0	24.3	59.8	18.7
Mobility	75.5	26.0	34.6	2.8
Social role	49.0	5.9	92.5	45.8
Occupational role	66.6	19.3	83.2	47.7
Family/household role	38.9	4.7	78.5	9.3

Table 4.6 Distribution of treatment goals at the level of impairments, disabilities and handicaps.

	Impairments	Disabilities	Handicaps	Total
General care	23%	56%	21%	100%
Psychiatric care	23%	48%	29%	100%

Table 4.7 Principal components analysis on treatment goals for clients in general healthcare. (n=944)

Treatment goals directed at	Loadings			
	Dimension 1	Dimension 2	Dimension 3	Dimension 4
Impairments				
Motor	<u>-.831</u>	.112		
Sensory	<u>-.831</u>	-.079		
Cognitive	.026	<u>.993</u>		
Eigen value	.441	.335		
	Dimension 1	Dimension 2	Dimension 3	Dimension 4
Disabilities				
Basic skills	.460	.418	-.449	.084
Endurance	.024	-.458	<u>-.584</u>	-.099
Locomotor	<u>-.552</u>	.014	-.355	-.035
Personal care	<u>-.613</u>	.072	.279	.486
Domestic	.008	<u>-.704</u>	-.201	.397
Specific skills*	<u>.542</u>	-.225	.361	.445
Leisure activities	.004	-.406	.382	<u>-.653</u>
Eigen value	.170	.157	.151	.148
	Dimension 1			
Handicaps				
Physical independence	.558			
Mobility	.551			
Occupational role	<u>-.727</u>			
Eigen value	.381			

* Specific skills = handling physical environment and budgetting

Table 4.8 Principal components analysis on treatment goals for clients in psychiatric health care. (n=107)

Treatment goals directed at	Loadings		
	Dimension 1		
Impairments			
Cognitive	<u>.756</u>		
Intrapersonal	<u>.756</u>		
Eigen value	.571		
	Dimension 1	Dimension 2	Dimension 3
Disabilities			
Basic skills	-.092	<u>-.593</u>	.355
Endurance	.390	<u>-.463</u>	.463
Personal care	<u>-.627</u>	-.247	-.415
Domestic	<u>-.499</u>	<u>.599</u>	.325
Leisure activities	<u>.560</u>	<u>.515</u>	.210
Relation	<u>.579</u>	-.030	<u>-.628</u>
Eigen value	.242	.209	.176
	Dimension 1		
Handicaps			
Physical independence	<u>-.699</u>		
Social role	<u>.738</u>		
Occupational role	<u>.714</u>		
Family/household role	.165		
Eigen value	.392		

Diagnostic findings and treatment goals at the level of disabilities

Clients in general health care

All disabilities were diagnosed and most of them in a great number of clients. Table 4.5 shows that disabilities in basic skills, personal care, domestic activities and locomotor disabilities were diagnosed in more than 70% of the clients. Table 4.5 also shows that these four disabilities were also most often selected as a treatment goal. Disabilities in personal care was chosen mostly, followed by locomotor disabilities, domestic disabilities and disabilities in basic skills. It was calculated which part of all treatment goals were at the level of disabilities. As shown in table 4.6, it appeared that 56% of the treatment goals were chosen at the level of disabilities.

PRINCALS analysis was carried out with treatment goals occurring in more than 10% of the clients. This means that disabilities in communication and in

relations were not included in the analysis. The seven remaining treatment goals could be reduced to four dimensions. Table 4.7 shows the results of this analysis. The relevant goals on the first dimension had opposite signs; negative loadings for locomotor disabilities and disabilities in personal care and a positive loading for disabilities in specific skills. This means that if treatment goals were directed at locomotor disabilities and disabilities in personal care, it is not likely that disabilities in specific skills will be chosen as a treatment goal and vice versa. The other three dimensions consisted of domestic disabilities (dimension 2), disabilities in endurance (dimension 3) and disabilities in leisure activities (dimension 4). This means that each of these disabilities is chosen as a treatment goal independently of other goals. Disabilities in basic skills showed a strong relationship with the first dimension, the component loading was almost .50.

Clients in psychiatric health care

All disabilities were diagnosed and most of them frequently. Table 4.5 shows that disabilities in basic skills, relation, leisure activities and physical and mental endurance were diagnosed for more than 75% of the clients. Table 4.5 also shows that disabilities in basic skills and disabilities in leisure activities were most often selected as a treatment goal. It appeared that 48% of all treatment goals were at the level of disabilities (see table 4.6).

PRINCALS analysis was carried out with treatment goals occurring in more than 10% of the clients. This means that disabilities in communication, locomotor disabilities and disabilities in specific skills were not included in the analysis. The six remaining treatment goals could be reduced to three dimensions. Table 4.8 shows the results of this analysis. The relevant items on the first dimension had opposite signs. This means that in cases where disabilities in personal care and domestic disabilities were chosen as a treatment goal it is not likely that disabilities in leisure activities and relations will be chosen and vice versa. The second dimension also showed opposite signs. This means that if disabilities in basic skills are chosen as a treatment goal it is not likely that domestic disabilities or disabilities in leisure activities will be chosen and vice versa. Dimension 3 consisted of disabilities in relation (dimension 3). This means that disabilities in relation was chosen independently of other goals (or on dimension 1 in combination with disabilities in leisure activities).

Diagnostic findings and treatment goals at the level of handicaps

Clients in general health care

All handicaps were diagnosed. Table 4.5 shows that a handicap in mobility was diagnosed most frequently, followed by a handicap in occupational role

and a handicap in physical independence. Treatment goals were mostly directed at these handicaps also. It was calculated which part of all treatment goals were at the level of handicaps. Table 4.6 shows that 21% of all treatment goals were chosen at the level of handicaps.

PRINCALS analysis was carried out with treatment goals occurring in more than 10% of the clients. This means that a handicap in social role and a handicap in family/household role were not included in the analysis. Table 4.7 shows that the treatment goals could be reduced to one dimension. The opposite sign means that treatment was either aimed at a handicap in mobility and physical independence or at a handicap in occupational role.

Clients in psychiatric health care

Table 4.5 shows that except for handicap in mobility, all handicaps were diagnosed in more than 60% of the clients. Treatment goals were mainly aimed at a handicap in social role and a handicap in occupational role. Of all treatment goals 29% were at the level of handicaps (see table 4.6).

PRINCALS analysis was carried out with treatment goals occurring in more than 10% of the clients. This leaves a handicap in mobility and a handicap in family/household role out of the analysis. Table 4.8 shows that the three treatment goals could be reduced to one dimension. Treatment was directed at a handicap in occupational and social role or at a handicap in physical independence.

Comparison of the independent dimensions of treatment goals with the Model of Occupational Performance⁶

The model of occupational performance⁷ and the ICIDH are complementary in that the ICIDH categorizes the lack of ability (i.e. disablement) while the model categorizes ability (i.e. occupational performance). The *ICIDH* considers a sequential relationship between impairments and/or disabilities and handicaps. In the ICIDH only at the handicap level the environmental influence is captured in the definition. At the other two levels i.e. impairments and disabilities, the definitions only aim at the individual. This means that at

⁶ The comparison of the ICIDH and the Model of Occupational Performance in this chapter differs from the comparison in chapter 3. Due to the comments of an anonymous reviewer we reconsidered the comparison of the ICIDH and the Model of Occupational Performance. We choose to make some changes in the comparison and this is motivated in the text.

⁷ Occupational performance i.e. activities carried out by the client in the areas of self-care, productivity and leisure, predicated on the interaction of the individual's mental, physical, socio-cultural and spiritual performance.

these two levels, the influence of the environment is not addressed. The *model of occupational performance* enhances the thought that both occupational performance components (individual) and the environment (conditions for occupation) determine the occupational performance areas (the areas of occupation; self care, productivity and leisure). The occupational performance areas are thought to be influenced by the environment.

In the ICDH the definition of both impairments and disabilities is at the level of the individual whereas in the model of occupational performance the performance components are at the level of the individual. This means that the impairments and disabilities in the ICDH, are comparable to the definition of the occupational performance components; both are at the level of the individual. The same analogy goes for the definition of the handicap level in the ICDH. This level includes the influence of the environment and is therefore analogous to the occupational performance area's from the model of occupational performance. Both handicap level and occupational performance area's, consider the individual's ability to perform as determined by the interaction of the individual's characteristics and the environment. In table 4.9, the results of the present study ('the empirical model') are compared to the model of occupational performance.

In *general care* at the level of impairments and disabilities six independent dimensions were found. In the model of occupational performance, four performance components were distinguished. The empirical model showed a larger differentiation at the level of physical performance components. The following dimensions were distinguished at this level in the empirical model: motor and sensory impairments, disabilities in personal care, in specific skills, in endurance, in leisure, locomotor disabilities and domestic disabilities. The mental performance components were analogous to the cognitive impairments in the empirical model. At the level of occupational performance, the model of occupational performance distinguishes three area's. The empirical model showed one independent dimension with the following characteristics: physical independence and mobility or occupational role.

In *psychiatric care* at the level of impairments and disabilities four independent dimensions were obvious. The largest differentiation in the empirical model occurred at the level of physical performance components. The following patterns were distinguished at this level in the empirical model: disabilities in leisure, in basic skills, in personal care and domestic disabilities. The mental performance components correspond to the cognitive and intrapersonal impairments in the empirical model. At the level of occupational performance, three areas were distinguished. The empirical model showed one independent dimension with the following characteristics: physical independence or social role and occupational role.

Two items from the model of occupational performance do not correspond to the dimensions in the empirical model i.e. sociocultural and spiritual performance components. One dimension of the empirical model does not correspond to any of the items of the model of occupational performance i.e. disabilities in relation.

Table 4.9 Comparison of the Model of Occupational Performance and the empirically derived dimensions of treatment goals based on the ICDH

Model of occupational performance	General health care independent dimensions	Psychiatric health care independent dimensions
Performance components	Impairments and disabilities	Impairments and disabilities
* Physical	* Motor AND Sensory	
	* Locomotor AND personal care OR Specific skills	* Domestic AND leisure OR Basic skills
	* Domestic	* Leisure AND relations OR Personal care
	* Endurance	
	* Leisure	
* Mental	* Cognitive	* Cognitive AND Intrapersonal
		* Relation
* Sociocultural		
* Spiritual		
Areas of occupational performance	Handicaps	Handicaps
* Self care	* Physical independence AND mobility OR	Physical independence OR
* Productivity	Occupational role	Social role AND occupational role
* Leisure		

4.5 Discussion

The aim of this study was to describe and analyze data on occupational therapy diagnostic findings and treatment goals and to investigate whether the empirical data found in this survey represent the profession as a whole by comparing them with the model of occupation.

The clients in this study in *general health care* (from nursing homes, rehabilitation centers and general hospitals) could be characterized as follows: most clients were female, insured by health insurance fund and living with others. The mean age of the clients was high which was caused by the large number of clients treated in nursing homes. A medical diagnosis was given for almost all clients. The clients were in different diagnostic groups, however most of them exhibited chronic (progressive) diseases. Most treatment goals were chosen at the level of disabilities. For example disabilities in personal care and locomotor disabilities

The clients in *psychiatric health care* (from psychiatric hospitals or psychiatric institutions) could be characterized as follows: most clients were female, insured by health insurance fund and living with others. A psychiatric diagnosis was given for almost all clients; schizophrenia occurred most. Most treatment goals were chosen at the level of disabilities, for example disabilities in basic skills and in leisure activities.

In both groups most clients were insured by health insurance fund (76,2% of general health care clients and 86.9% of psychiatric health care clients). This is a high percentage compared to national data (CBS, 1993) where only 61.3% is insured by health insurance fund.

Impairments, disabilities and handicaps were frequently diagnosed in both client groups. There was a large difference between the number of diagnosed items and the number of chosen treatment goals. Many items were diagnosed but not chosen as a treatment goal. This means that occupational therapists specifically choose treatment goals for their clients; for example disabilities in leisure were diagnosed with approximately two-third of all patients, only with one fifth of these patients it was chosen as a treatment goal. Occupational therapists gain a broad view of the occupational functioning of the patient but are very specific in the choice of the treatment goals.

The association among the diagnosed items was analyzed but no meaningful reduction could be achieved. This was probably due to the fact that for many patients almost all items were diagnosed. However on the basis of treatment goals, a meaningful reduction to a limited number of dimensions could be achieved. For both client groups the largest number of dimensions occurred at the level of disabilities. Apparently, the differentiation among treatment

goals is larger at the level of disabilities than at the level of either impairments or handicaps. It was also found that treatment goals were most frequently chosen at the level of disabilities. Thus, both the frequency and the differentiation among treatment goals point to the disability level as the main focus of occupational therapy. In a similar study on physical therapy, it was found that physical therapists chose their treatment goals primarily at the impairment level and in a lesser degree at the level of disabilities (Dekker, van Baar, Curfs, and Kerssens, 1993). Physical therapists are primarily concerned with impairments; occupational therapists are concerned with goals at all three levels, but the disability level seems to be the primary one.

To enhance the interpretation, the present results were compared to the Model of occupational performance. The empirical model and the theoretically derived model of occupational performance were found to match rather well. The empirically derived dimensions of impairments and disabilities correspond rather well with the performance components of the model of occupational performance. The same applies to the empirically observed dimensions of handicaps and the areas of occupational performance in the theoretical model. With regards to only one empirical dimension (disabilities in relation) and two items of the theoretical model (sociocultural and spiritual performance components), a discrepancy between the empirical and theoretical model was found. Finally, leisure was categorized as a disability in the empirical model, while in the theoretical model it is considered as an area of occupational performance. Despite these minor discrepancies, it can be concluded that the empirically derived dimensions of treatment goals correspond rather well with the theoretically derived model of occupational performance.

The comparison also shows that - although empirical data were gathered from a non occupational therapy point of view, i.e. the ICIDH - the results show great resemblance with the model of occupation. This leads to the conclusion that the ICIDH is a useful classification for describing the core of occupational therapy practice. In other words, defining the occupational therapy treatment goals in terms of the ICIDH is a valid approach towards describing occupational therapy practice. In further research this terminology can be used. An advantage of using the ICIDH above a specific occupational therapy terminology is that the results are also interpretable for other healthcare professionals and the results can be compared to other studies conducted by physical therapists or rehabilitation specialists for example. Using the same terminology leads to uniform language in health care, which will improve communication between disciplines.

In summary, it can be concluded (1) that occupational therapy treatment goals are mainly at the level of disabilities; although impairments and handicaps are

relevant also. And (ii) that the empirically derived treatment goals in terms of the ICDH correspond rather well to the theoretically derived Model of Occupational Performance.

4.6 References

- American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders*, Third Edition, Revised, Washington DC.
- Badley E.M. & Lee, J. (1987). Impairment, disability, and the ICDH model I: the relationship between impairment and disability, *International Journal of Rehabilitation Medicine*, 8, 113-124.
- Berg, G.M., van den. (1988). *Getting started with PRINCALS*. Department of Data Theory, University of Leiden, Netherlands.
- Borst, M.J., Nelson, D.L. (1993). Use of Uniform Terminology by Occupational Therapists. *The American Journal of Occupational Therapy*, 47,7, p.611-618.
- Centraal Bureau voor Statistiek (Netherlands Central Bureau of Statistics) 1993. *Statistical Yearbook of the Netherlands 1993*. The Hague, Netherlands: SDU publishers.
- Chief inspectorate of Public Health (1990). *Practice of the profession of occupational therapy*. Rijswijk, Netherlands.
- Dekker, J., van Baar, M.E., Curfs, E.Chr., Kerssens, J.J., (1993). Diagnosis and treatment in Physical Therapy: an investigation of their relationship. *Physical Therapy*, 73 568-576.
- Canadian Association of Occupational Therapists (1991). *Intervention Guidelines for the client-centered practice of occupational therapy*. Ottawa.
- Canadian Association of Occupational Therapists (1996). Profile of occupational therapy practice in Canada. *Canadian Journal of Occupational Therapy*, 63, 79-95.
- Colvez, A., Robine. J. (1986). Problems encountered in using the concepts of impairment, disability and handicap in a health assessment survey of the elderly in Upper Normandy. *International Rehabilitation Medicine*, 8, 18-22.
- Driessen, M.J., Dekker, J., van der Zee, J., Lankhorst, G.J., (1993). Ergotherapeuten: werksituatie en taakuitoefening (Occupational therapists: practice of profession). *Nederlands Tijdschrift voor Ergotherapie*, 22 75-82.
- Driessen, M.J., Dekker, J., Lankhorst, G.J., van der Zee, J. (1995). Inter-rater and intra-rater reliability of the occupational therapy diagnostic findings. *The Occupational Therapy Journal of Research* 15, 259-274.
- Dutch association of Occupational Therapy (NVE). (1990) *Lijst van Instellingen waaraan verbonden een afdeling ergotherapie*. (List of institutions with an Occupational therapy department). Administratief Centrum, Delft, Netherlands.
- Geer van de, J.P. (1993). *Multivariate Analysis of Categorical Data: Applications (Advanced quantitative techniques in the social sciences)*. Newbury Park. Sage Publications.
- Granger C.V. (1985). Outcome of comprehensive medical rehabilitation: An analysis based upon the impairment, disability, and handicap model. *International Rehabilitation Medicine*, 7, 45-50.
- Hirs W.M. (1986). A composite of reactions to the ICDH by Dutch statistical agencies. *International Rehabilitation Medicine*, 8, 26-27.

- Hopkins, H.L. (1988). *Current basis for theory and philosophy of occupational therapy*. In H.L. Hopkins & H.D. Smith (Eds). *Williard and Spackman's Occupational Therapy* (7th edition), 38-42. Philadelphia: J.B. Lippincott.
- Kerssens, J.J., Curfs, E. Chr. (1993). *Extramurale Fysiotherapie* (Physiotherapy in Primary Care). Thesis, NIVEL, Utrecht, Netherlands.
- Krefting, L.H., (1985). The use of conceptual models in clinical practice. *Canadian Journal of Occupational Therapy*, 52, 173-178.
- Martini R., Polatajko, H.J., Wilcox A. 1995. ICIDH: a potential model for occupational therapy. *Occupational Therapy International*, 2, p.1-21.
- Netherlands Central Bureau of statistics (CBS) (1993). *Statistical yearbook of the Netherlands 1993*. The Hague, SDU publishers, Netherlands.
- Polatajko, H.J. (1992) Naming and framing occupational therapy: A lecture dedicated to the life of Nancy B. *Canadian Journal of Occupational Therapy*, 59,189-199.
- Reed, K., Sanderson, S.R. (1992). *Concepts of occupational therapy. Third edition* Baltimore; Williams & Wilkins.
- Rogers, J.C., Holm, M.B. (1991). Occupational therapy diagnostic reasoning: component of clinical reasoning. *American Journal of Occupational Therapy*, 45, 1045-1053.
- Townsend, E., Ryan, B., & Law, M. (1990). Using the World Health Organization's International Classification of Impairments Disabilities and Handicaps in occupational therapy. *Canadian Journal of Occupational Therapy*, 57, 16-25.
- Townsend, E., Banks, S. (1992). Exploring client centered practice. *The National*, 9, 5-8.
- Wiersma D. (1986). Psychological impairments and social disabilities: On the applicability of the ICIDH to psychiatry. *International Rehabilitation Medicine*, 8, 3-7.
- Wood, P.H.N. (1980). The language of disablement: a glossary relating to disease and its consequences. *International Journal of Rehabilitation Medicine*, 2, 86-90.
- World Health Organization (1980). *International Classification of Impairments Disabilities and Handicaps*, Geneva.
- World Health Organization (1995). *International Classification of Diseases*, 10th revision. Geneva.

5 FACTORS AFFECTING THE CHOICE OF TREATMENT IN OCCUPATIONAL THERAPY PRACTICE IN HOSPITAL BASED CARE¹

5.1 Abstract

Objective

The aim of this article was twofold: to describe the occurrence of treatment goals, health care programs and type of interventions chosen by occupational therapists and to investigate relationships between treatment goals, health care programs and interventions.

Methods

A survey on occupational therapy practice was carried out in the Netherlands. A registration form based on the International Classification of Impairments, Disabilities and Handicaps (ICIDH) was filled out for 944 patients. This registration form consisted of three sections (i) patient characteristics, (ii) occupational therapy diagnosis and treatment goals in terms of ICIDH, and (iii) treatment characteristics. The patients were treated by occupational therapists working in nursing homes, rehabilitation centers or general hospitals. A total of 143 therapists, working in 49 departments of occupational therapy, participated in this study.

Results and Conclusion

Relationships existed between treatment goals and health care programs on the one hand and interventions on the other hand. Treatment goals and health care programs independently determined the choice of interventions in occupational therapy practice; the choice of interventions was not dependent on specific combinations of goals and programs. Based on these results, several profiles of occupational therapy treatment were identified.

¹ M.J. Driessen, J. Dekker, G.J. Lankhorst, J. van der Zee.
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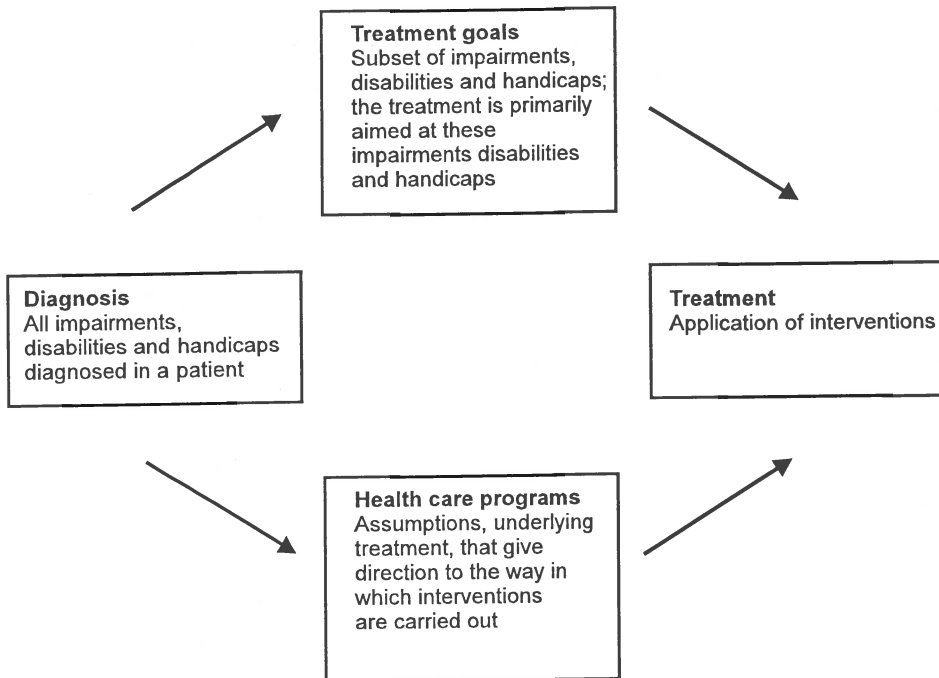
5.2 Introduction

Apart from an enumerative description of possible interventions used by occupational therapists¹⁻¹¹ there seems to be no information on which specific interventions are actually used to treat functional deficits of patients and why these interventions are chosen.

The repertoire is wide and there is still a lack of agreement among occupational therapists about types of treatment which they should be involved in. Such conflict may be due to inadequate knowledge about the activities actually being used in practice and to a deficit in knowledge about the reasons why specific activities are chosen. Discussions are based on what occupational therapists think they do rather than upon known facts. Therefore, it is useful to study interventions used by occupational therapists and the factors which influence the selection of interventions.

The occupational therapy treatment process starts with an intake. This is followed by (several) assessments and observations to determine the functional capacity of the patient. Furthermore information is gathered on the future expectations; this is based on the medical diagnosis, information from patient and family on what they want to achieve with the occupational therapy treatment and from other disciplines. On the basis of this multitude of information the occupational therapist and patient together determine which treatment goals will be chosen. Treatment goals can be chosen at the level of impairments (e.g. motor impairments), disabilities (e.g. disabilities in personal care) or handicaps (e.g. handicap in occupational role)^{12,13}. In this phase also the direction of the therapy is determined. Five types of programs, which determine the direction of the therapy, can be distinguished¹⁴: prevention-, development-, recovery-, adaptation- and maintenance- program. With each treatment goal, a different program can be chosen. For example, with the treatment goal motor impairments, the developmental program can be chosen and with self care disabilities the recovery program can be chosen. With the choice of a certain healthcare program it is explicitated which assumption is underlying with the treatment goal. This means that the choice of interventions depends on both the treatment goals and the programs (see figure 5.1).

Figure 5.1: The relationship between diagnosis, treatment goals, health care programs and interventions



In the Netherlands a survey study on occupational therapy practice was carried out. The present study draws upon data from this survey study. The objective of the present study is twofold. One goal is to describe quantitative aspects of the treatment: the occurrence of treatment goals, health care programs and interventions. The other goal is to investigate relationships between treatment goals, health care programs and interventions. Several hypotheses on these relationships were formulated.

First, hypotheses on the expected relationships between treatment goals and interventions were formulated. In occupational therapy practice, the aim of the use of games (e.g. peg board), or arts and crafts (e.g. wood working) is to normalize impairments. With these interventions impairments such as muscle strength, motor control, range of motion can be treated. It therefore can be expected that leisure activities (play, arts and crafts) are used to achieve treatment goals at the level of impairments. Splint making is an important

technique carried out by the occupational therapist. A person needs a splint to prevent further deformity, reduce the risk of additional injury or to alleviate pain¹⁴. For example a resting splint may be used to keep the wrist and hand in a functional position and to avoid stretching extensor tendons at the wrist. Therefore it appears that splints are also chosen to achieve treatment goals at the level of impairments. Thus it can be hypothesized that treatment goals at the level of impairments predict the use of leisure activities and the use of splints.

Advice/instruction is a well known intervention in the occupational therapy treatment. The intervention advice/instruction is expected to be frequently used with treatment goals at the level of disabilities and/or handicaps. Advice and instructions concerning adaptations are used to promote independence and quality of life¹⁵. Since independence and quality of life are reflected in therapy as goals at the level of disabilities and handicaps, we expect advice/instruction to be associated with goals at the level of disabilities and handicaps.

Secondly, hypotheses on the expected relationships between health care programs and interventions were formulated. According to Hagedorn¹⁵ activities are used as remedial agents to enable, enhance or empower occupational performance. She states that if an activity is chosen in the intervention phase the therapist aims at improving or (further) developing a persons abilities or performance to the demands of the activity. According to the CAOT¹⁶ activity is the stimulus to all components of occupational performance and the means by which self care, productivity and leisure are developed or enhanced. It therefore was expected that the recovery- and developmental programs are associated with activities being chosen as interventions. In addition, it is recommended that if it is not possible to further improve the impairments (e.g. strength, range of motion, balance) nor is it possible to gain further improvement in occupational functioning, occupational therapy will focus on adaptation to the dysfunction or disability by means of advice and instruction¹⁷. This means that the adaptation program will be related to the intervention advice/instruction.

5.3 Methods

Design

A survey study on occupational therapy in the Netherlands was carried out. Data were collected from January 1992 to March 1993. A total of 49 randomly chosen departments of occupational therapy (143 therapists) participated in

the study. Each department decided prior to the study for how many patients the registration form would be filled in. The four fields where occupational therapists were working most hours per week were included in the study, that is nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. Excluded were institutions for mentally handicapped, treatment of children, private practices, and other kinds of treatment in ambulatory care. In the present study only the data of patients in general health care will be analyzed. The number of patients (n=107) registered in the psychiatric hospitals was too small to analyze their data.

The participating institutions were randomly selected from a list of institutions where occupational therapists are working, compounded by the Dutch organization of occupational therapy¹⁸. General characteristics of the participating occupational therapists were compared with data from a representative sample of occupational therapists working in the Netherlands¹⁹. The results indicated that there were no substantial differences.

Registration form

To investigate characteristics of the participating patients a standard registration form was used. This registration form consisted of three sections. The first section concerned patient characteristics (i.e. gender, type of insurance, age), referral characteristics and medical diagnosis. The second section concerned the occupational therapy diagnosis (see appendix 5.1). The occupational therapy diagnosis was based on the International Classification of Impairments, Disabilities and Handicaps²⁰, and proved to be reliable¹². The intra-rater reliability of the occupational therapy diagnostic findings was tested in a rehabilitation center and the inter-rater reliability was tested in a psychiatric hospital, and appeared to be satisfactory to good: in the rehabilitation center all items and in the psychiatric hospital 88% of the items had a kappa value higher than 0.40. In this second section therapists also had to fill out the treatment goals they had chosen. Treatment goals were derived from the diagnosed impairments, disabilities and handicaps. The occupational therapist could choose a main category as a treatment goal (see left column of appendix 5.1). For example if locomotor disabilities were diagnosed, the occupational therapist could indicate that the treatment goal was (or was not) directed towards locomotor disabilities. In this section the therapists also had to fill out the treatment goals, with a maximum of five. The third section concerned characteristics of the treatment (length, intensity), the therapeutic interventions and health care programs that were chosen. This section was filled in either at 16 weeks (end of registration period) or at the end of the treatment if the treatment was finished earlier. In the registration form a matrix was made in which the therapists could choose two

interventions and two programs with each treatment goal. The interventions were: self care activities; productivity activities; leisure activities; instruction and advice; group therapy; splints; and other interventions. The original list of interventions in the registration form was longer. This list of interventions was reduced by combining specific intervention items as follows. *Self care* is defined as :those activities or tasks which are done routinely to maintain the person's health and well-being in the environment¹⁶. The following items from the registration form were joined into this category: personal care, locomotor and communication activities. *Productivity* is defined as: those activities or tasks which are done to enable the person to provide support to the self, family and society through the production of goods and services¹⁶. The following items of the registration form were put together into this category: domestic and occupational activities. *Leisure* is defined as: the components of life which are free from work and self-care activities. The following items in the registration form were joined: leisure, arts and crafts and play activities. The *advice/instruction* category consists of the items advice/instruction on sitting and standing, on the use of aids and on the adaptation of the home(environment). The *group therapy* category consists of two items on task and personal problem oriented therapy.

The health care programs were adopted from Reed and Sanderson¹⁴ and consisted of five items: prevention-, development-, recovery-, environmental adjustment- and maintenance-program.

Procedure

As described in a previous article, a total of 1051 patients were included in the survey study on occupational therapy in the Netherlands¹³. In the present article a selection was made out of this group. All patients referred to the occupational therapist in the participating nursing homes, rehabilitation centers and general hospitals were selected, excluding the patients referred to occupational therapy in psychiatric hospitals.

Analysis

The relationship between treatment goals/health care programs and interventions was analyzed by means of logistic regression²¹. Data were analyzed in two steps: firstly main effects were calculated and secondly the interaction effects were determined. The main effects show the contribution of treatment goals and healthcare programs to the use of an intervention. For each intervention a total of eighteen main effects were calculated. The interaction effects show the contribution of each treatment goal attached to a specific program, to the use of an intervention. For each intervention, eighty-three interaction effects were calculated. Significance of the overall test

for logistic regression indicates that treatment goals and/or health care programs have predictive value for the use of an intervention. The exponents of the regression coefficients (Odds ratio) are measures of the strength and direction of the relationship. An Odds ratio higher than 1 indicates a positive relationship: the chance that the intervention was chosen to achieve a treatment goal/health care program is higher than the chance that the intervention was chosen without trying to achieve that treatment goal/health care program. The higher the odds ratio, the stronger the relationship. An odds ratio less than 1 indicates a negative relationship: the chance that the intervention was used to achieve a treatment goal/health care program is lower than the chance that the intervention was used without trying to achieve that treatment goal/program. In order to facilitate the interpretation of odds ratio's between 0 and 1, we chose to present the inverse odds ratio in the tables. To test that the odds ratio is not equal to 1, the Wald statistic was used. This statistic has a Chi-square distribution. The level of significance was set at 0.05.

Only the interventions that were applied to more than 10% of the patients were included in the logistic regression analysis. This means that the intervention "group therapy" is not included in this analysis. Also the intervention "other" is not included because the activities grouped in this category are so diverse that the interpretation of the results is very hard. The treatment goals included in the analysis were derived from the results obtained in previous research¹³. The treatment goals that occurred in more than 10% of the patients were chosen.

5.4 Results

Patients

The analysis concerned 944 patients. Most patients were female (60%). The mean age of all patients was 61 years. Most patients were insured with the Health insurance fund (76%). The same number of patients was treated in inpatient care or treated in day care facilities (50%).

The medical diagnosis of the patients was classified with the International Classification of Diseases, 10th revision, Clinical Modification²². Most patients had a disease of the circulatory system (32%); followed by diseases of the musculoskeletal system and connective tissue (21%); injury, poisoning and certain other consequences of external causes (17%); and diseases of the nervous system (17%). Almost all patients with diseases of the circulatory

system suffered from a stroke (98%). For 3% of the patients no medical diagnosis was given.

Length and amount of treatment

The length of occupational therapy treatment was not prescribed by the referring physician for most patients (92,2%). The average length of treatment was 10 weeks (minimum 1 week, maximum 55 weeks, SD 9 weeks) and the average amount of occupational therapy treatment was 11 hours (minimum 30 minutes, maximum 100 hours, SD 12,5 hours). Only 23 % of the patients were treated at home.

In those treatments completed within the scope of the registration period, the occupational therapist indicated that in 67% of the patients a positive result was achieved at the end of treatment period. For one third (33%) of the patients treatment was not completed at the end of the registration period. Treatment was continued in the clinical setting with 25% of these patients and 44% were treated within day care facilities. About one quarter of these patients (22%) were referred to another institution to get further occupational therapy treatment.

Description of treatment goals, interventions and healthcare programs

Treatment goals

Table 5.1 shows which treatment goals were chosen by the occupational therapists. The following goals were chosen most frequently: treatment of disabilities in personal care and motor impairments, followed by locomotor and domestic disabilities. The treatment goals have been described in detail in previous research¹³.

Table 5.1: Impairments, disabilities and handicaps chosen as a treatment goal by occupational therapists

Treatment goals	%
Impairment	
Motor	48.3
Sensory	15.4
Cognitive	14.0
Disabilities	
Basic skills	31.8
Endurance	14.4
Locomotor	41.2
Personal Care	48.4
Domestic	35.2
Specific skills	12.3
Leisure	20.3
Handicap	
Physical Independence	24.3
Mobility	26.0
Occupational Role	19.3

The table shows the percentage of patients (n=944) in whom a particular treatment goal was chosen. The sum of these percentages is more than 100%.

Interventions

Table 5.2 shows the occurrence of interventions that were chosen by the occupational therapists. A total of 5507 interventions were chosen with the treatment goals by the therapists. Activities on self care and advice/instruction on aids were chosen most frequently. More than 60% of all interventions consisted of activities of personal care, and advice/instruction given by occupational therapists.

Table 5.2: Interventions chosen by occupational therapists

Interventions	% patients (N=944)	% interventions (N=5507)
Activities		
Personal care	69.5	27.8
Productivity	46.8	15.6
Leisure	44.2	15.7
Advice/Instructions	69.7	32.8
Group therapy	6.1	1.7
Splinting	12.3	2.9
Other	16.7	3.6

The column '% patients' shows the percentage of the patients to whom the various interventions were applied. The sum of these percentages is more than 100%.

The column '% interventions' shows which part an intervention has in the total of the interventions. The sum of these percentages is 100%.

Health care programs

The health care programs are shown in table 5.3. A total of 4917 programs were chosen with the treatment goals by the occupational therapists. The adaptation and recovery program were chosen most frequently. The adaptation program was chosen in more than two third of the patients, while the recovery program was chosen in more than half of the patients.

Table 5.3: Health care programs chosen by occupational therapists

Programs	% patients (N=944)	% interventions (N=4917)
Prevention	23.2	9.1
Development	44.4	20.3
Recovery	56.1	28.7
Adaptation	69.5	32.1
Maintenance	25.8	9.8

The column '% patients' shows the percentage of the patients to whom the various programs were applied. The sum of these percentages is more than 100%.

The column '% programs' shows which part a program has in the total of the programs. The sum of these percentages is 100%.

Relationships between treatment goals, interventions and healthcare programs²

Table 5.4 shows the occurrence of interventions with treatment goals and health care programs. An example will illustrate how to interpret the data in this table. With regard to the intervention 'activities on self care', it can be concluded that they were most often chosen to achieve the following treatment goals: motor impairments, locomotor disabilities, disabilities in personal care and domestic disabilities. With this intervention the programs adaptation, recovery and development were most often chosen.

The main effects for data of table 5.4 were analyzed with logistic regression. The results are shown in table 5.5. This analysis was carried out to test the relationship of treatment goals/health care programs with interventions. All overall tests were significant. Thus, the use of an intervention was dependent on which treatment goal/health care program was chosen. The table shows both the positive (odds ratio's) and negative (inverse odds ratio's) relationships between the goals/programs and the interventions.

It can be seen that self evident relationships existed between the three groups of activities and the treatment goals e.g. activities on self care were significantly related to disabilities in personal care. However, other -more meaningful- positive relationships³ were found also: activities on self care were also applied with cognitive impairments; activities on productivity were applied with disabilities in basic skills, in endurance and in specific skills; leisure activities were applied with motor and cognitive impairments, with domestic disabilities and with disabilities in specific skills. Advice/instruction was applied with disabilities in personal care, with locomotor and domestic disabilities and with handicaps in mobility and occupational role. Splinting was applied with motor and sensory impairments. With three interventions - activities on self care, on productivity and on leisure- a positive relationship existed with the developmental and recovery program; whereas the advice/instruction showed a positive relationship with the prevention-adaptation- and maintenance program.

Table 5.5 also shows some negative relationships. A negative relationship means that the chance that the intervention was used in order to achieve a

² This analysis was also carried out only for the group of patients whose treatment was completed at the end of the registration period, but the results showed no substantial differences.

³ A positive relationship means that the chance that the intervention was used in order to achieve a treatment goal is higher than the chance that the intervention was used without aiming at achieving that specific goal.

treatment goal is lower than the chance that the intervention was used without aiming at achieving that specific goal. For example, the chance that splinting is used in order to achieve a treatment goal concerning cognitive impairments is 25 times lower than without trying to achieve that goal.

Interaction effects between each treatment goal, each health care program and each intervention were determined. Only twelve out of eighty-three interaction effects were significant. Since only very few significant interaction effects were found, they are not discussed.

Table 5.4: Treatment goals and health care programs chosen by occupational therapists with each intervention (N=944)

	Activities on selfcare %	Activities on productivity %	Activities on Leisure %	Advice/ instructions %	Group therapy %	Splinting %	Other %
Treatment goals							
Impairments							
Motor	32.7	24.5	27.5	29.2	3.4	11.1	9.5
Sensory	8.8	7.8	8.8	8.6	1.4	4.6	3.7
Cognitive	11.8	5.8	8.3	5.9	1.1	0.0	3.3
Disabilities							
Basic skills	21.1	16.5	15.8	22.4	2.0	3.9	5.8
Endurance	8.1	8.4	5.8	11.3	0.1	1.8	2.1
Locomotor	33.4	18.1	16.3	50.1	2.2	1.8	5.1
Personal care	43.3	20.9	20.3	35.2	2.3	3.2	6.8
Domestic	26.1	31.9	17.4	28.1	2.5	2.9	5.8
Specific skills	8.6	8.8	6.9	7.5	1.3	2.3	3.3
Leisure	13.6	10.2	16.5	14.3	1.8	1.9	3.8
Handicap							
Physic indep	21.1	9.6	9.3	16.7	1.3	1.1	3.3
Mobility	21.3	10.5	9.5	21.1	1.6	1.2	2.7
Occup. Role	10.1	15.5	9.8	13.8	1.9	2.7	4.2
Health care programs							
Prevention	14.1	12.0	9.3	18.1	2.0	4.7	4.2
Development	35.1	24.4	25.0	29.8	4.1	3.1	9.5
Recovery	42.4	30.7	32.4	36.0	4.6	8.6	10.1
Adaptation	50.8	33.6	30.2	54.7	4.3	6.9	11.5
Maintenance	18.1	12.5	12.0	20.1	1.9	3.1	6.3

Table 5.5: Main effects of logistic regression analysis on treatment goals/health care programs and interventions

	Activities on selfcare	Activities on productivity	Activities on leisure	Advice/ instructions	Splinting
Treatment goals					
Impairments					
Motor			2.60	- 1.53	10.85
Sensory					1.76
Cognitive	3.16		2.01	- 2.81	-25.38
Disabilities					
Basic skills		1.64			
Endurance	-1.74	1.94			
Locomotor	3.49			3.07	-3.53
Personal care	8.09			1.64	
Domestic		55.52	1.44	1.98	-1.82
Specific skills		3.88	1.74		
Leisure			18.72		
Handicap					
Physic indep	3.33				-2.32
Mobility	2.82			1.72	
Occup. role		12.65		2.09	
Health care programs					
Prevention					
Developmental	2.75	1.65	2.27	1.99	-2.62
Recovery	2.41	1.83	3.00		
Adaptation					
Maintenance					
Constant	-2.14#	-3.32#	-3.00#	-0.70#	-2.73#
	Model X ² : 377.53 (df=18)	Model X ² : 646.05 (df=18)	Model X ² : 368.91 (df=18)	Model X ² : 255.03 (df=18)	Model X ² : 234.09 (df=18)

Only significant odds-ratio's are shown, in order to facilitate interpretation.

5.5 Discussion

The aim of this study was twofold: to describe characteristics of occupational therapy treatment and to analyze the relationship between treatment goals/health care programs and interventions.

Hypotheses on the relationship between treatment goals interventions and health care programs were formulated at the beginning of the study. For the *relationship between treatment goals and interventions* it was expected that treatment goals at the level of impairments predicted the use of leisure activities and the use of splints. The relationship between (motor and cognitive) impairments and leisure activities and between (motor and sensory) impairments and splints was confirmed. It was also expected that the treatment goals at the level of disabilities and handicaps would predict the use of advice/instruction as an intervention. Five treatment goals at the level of disabilities and handicaps showed a relationship with the advice/instruction intervention (locomotor- and domestic disabilities and disabilities in personal care and handicap in mobility and in occupational role). The hypotheses concerning *the relationship between health care programs and interventions* were confirmed. Both the recovery and developmental program predicted the use of the three "activity" interventions. The adaptation program predicted the use of the intervention "advice/instruction".

Various self evident relationships between treatment goals and interventions were found. For example domestic disabilities predict the use of activities on productivity; and disabilities in personal care predict the use of activities on self care. These self evident relationships indicate the need to further explicate interventions. With a further specification of interventions, factors affecting the choice of these interventions may come into focus.

Some negative relationships were found, mainly between goals and interventions. Such negative relationships were found for activities on self care, advice/instruction and splinting. These negative relationships mean that occupational therapists clearly specify which interventions are *not* chosen to achieve these treatment goals. For instance, advice/instruction was not chosen as an intervention to achieve treatment goals concerning motor and cognitive impairments.

These results lead to the overall conclusion that the choice of interventions by occupational therapists can -to a certain extent- be explained by the treatment goals and health care programs. Treatment goals and health care programs independently determine the choice of interventions. The combination of a specific treatment goal with a specific program does not seem to have an additional effect on the choice of interventions: almost no significant interaction between treatment goals and programs were found.

Based on the relationships found in this study several profiles of occupational therapy treatment can be distinguished. These profiles not only specify what occupational therapists do to achieve certain treatment goals, they also indicate what the underlying direction of the intervention is (i.e. what healthcare program is applied). This leads to the following profiles: The

interventions "*activities on self care*" and "*activities on productivity*" are mainly chosen to achieve treatment goals at the level of disabilities and handicaps, whereas the intervention "*activities on leisure*" is mainly chosen to achieve treatment goals at the level of impairments and disabilities. The application of all three types of activities is based on the developmental and/or recovery program. The intervention "*advice/instruction*" is chosen to achieve treatment goals at the level of disabilities and handicap and the treatment is based on the prevention, adaptation or maintenance program. This means that occupational therapists choose for "*advice/instruction*" in order to adapt the environment to the level of occupational functioning of the patient or to maintain the level of functioning of the patient or to prevent a (further) loss of functioning. The intervention "*splinting*" is used to achieve goals at the level of impairments.

A critical note can be made with regard to the registration form used in the present study. With our registration form, only the deficits in present occupational functioning are assessed. According to Reed and Sanderson¹⁴, the initial screening carried out with a patient, should aim at assessing the individual person's occupational performance in terms of general capacities and deficits in the occupational areas, both present and past. However in our registration form only the deficits and not the abilities of the patients in the present were registered. Besides, only the observation of the therapist is involved. The involvement of the patient in the goal setting for therapy is not specifically explicitated in the registration form. This information is assumed to be of great importance for the planning of the occupational therapy treatment. In future research these aspects should be added to the registration form. As an example the Canadian Occupational Performance Measurement¹⁶ should be mentioned.

In addition, it should be noted that our study concerns clinical judgment. We have described which interventions are actually being used in practice; and we have analyzed why these interventions are chosen. Our study does not concern the appropriateness of the choice of interventions: we do not know whether the choice of interventions was appropriate. Our study does indicate the reasons for choosing an intervention. The results of our study may contribute to the definition of occupational therapy, in particular the reasons for choosing interventions. It can be concluded that both treatment goals and health care programs explain which interventions are applied in occupational therapy. Since a number of self-evident relationships exist, the interventions need further investigation and explication in future research. This applies in particular to "*activities*". Furthermore, the process of setting treatment goals should be addressed and explicitated in future research. This will contribute to

the understanding of which factors determine the choice of interventions in occupational therapy.

5.6 References

1. Duncombe, L.W., Howe, M.C. Group Work in Occupational Therapy: A survey of Practice. *The American Journal of Occupational Therapy* 1985;39; 3: 163 - 170.
2. Reding, M.J., McDowell, F. Stroke Rehabilitation. *Neurologic clinics* 1987;5;4: 617 - 623.
3. Kunstaetter, D. Occupational therapy treatment in home health care. *The American Journal of Occupational Therapy* 1988;42; 8: 513 - 519.
4. Neistadt, M.E., Seymour, S.G. Treatment activity preferences in adult physical dysfunction settings. *The American Journal of Occupational Therapy* 1995;49;5:437-443.
5. Bumphrey, E.E. Occupational therapy within the primary health care team. *British Journal of Occupational Therapy* 1989;52;7: 252 - 255.
6. Smith, S. How Occupational Therapy staff spend their work time. *British Journal of Occupational Therapy* 1989;52;3:82 - 87.
7. Taylor, E., Humprey, R. Survey of Physical Agent Modality Use. *The American Journal of Occupational Therapy* 1991;45;10:924 - 931.
8. Taylor, E., Manguno, J. Use of treatment activities in occupational therapy. *The American Journal of Occupational Therapy* 1991;45; 4: 317 - 322.
9. Cossar, A. The growth of private practice in Occupational therapy in Great Britain *British Journal of Occupational Therapy* 1992;55; 4: 157 - 161.
10. Grocholski-Plescher, B. "Mobile Ergotherapie" für Rheumakranke: Entwicklung des Dienstes, Inanspruchnahme und Versorgung mit Hilfsmitteln und Schienen. *Zeitschrift für Rheumatologie* 1992;51; suppl1: 35 - 40.
11. Sparling, E., Clark, N., Laidlaw, J. Assessment of the demands by General Practitioners for a community psychiatric occupational therapist service. *British Journal of Occupational Therapy* 1992;55;5:193 - 196.
12. Driessen, M.J., Dekker, J., Lankhorst, G.J., van der Zee, J. Inter-rater and Intra-rater reliability of the occupational therapy diagnosis. *The Occupational Therapy Journal of Research* 1995;15:259-274.
13. Driessen.M.J., Dekker, J., Lankhorst, G.J., van der Zee, J., Occupational therapy diagnosis and treatment goals in hospital based care. Submitted.
14. Reed, K.L., Sanderson, S.N. Concepts of occupational therapy, third edition. Williams & Wilkins, Baltimore.1992.
15. Hagedorn, R. Occupational therapy: Perspectives and processes. Edingburgh.Churchill Livingstone. 1995.
16. Canadian Association of Occupational Therapy. Occupational Therapy Guidelines for client centred practice. Toronto, 1991.
17. Trombly, C. Anticipating the Future: Assessment of Occupational Function. *The American Journal of Occupational Therapy* 1993;47;3:253-257.
18. Dutch Association of Occupational Therapy. Institutions with an occupational therapy department. Delft, The Netherlands. 1991.
19. Driessen, M.J., Dekker, J., van der Zee, J., Lankhorst, G.J. Ergotherapeuten: werksituatie en taakuitoefening (Occupational Therapists: Practice of profession).*Nederlands Tijdschrift voor Ergotherapie* 1993; 21: 75-82.

chapter 5

20. World Health Organisation. International Classification of Impairments Disabilities and Handicaps, Geneva. 1980.
21. Norusis, M.J. SPSS/PC+ Advanced Statistics Version 5.0. Chicago SPSS Inc.1992.
22. World Health Organisation International Classification of Diseases 10th revision, Clinical Modification, Geneva. 1994.

Appendix 5.1: Items and sub-items/definitions of the occupational therapy diagnosis in the registration form

Items

Impairments	Sub-items
Motor impairments	Skeletal impairment of structure, skeletal impairment of function, amputation, coordination, other motor impairments.
Sensory impairments	Sensory awareness, proprioception, pain, other sensory impairments.
Cognitive impairments	Impairment of memory, impairment of thinking neuropsychological function deficit, other cognitive impairments.
Intrapersonal impairments	Impairment of emotive and volitional functioning, impairment of behavior patterns, impairment of perception, impairment of attention, impairment relating to location in time and space.
Other impairments	
Disabilities	Sub-items
Basic skills	Motor skills, cognitive skills, psychological skills, interaction skills
Communication	Talking, understanding, reading, writing.
Endurance	Physical and psychological endurance.
Locomotor	Transfers, walking, traversing, transport.
Personal care	Personal care, excretion, personal hygiene, dressing, feeding.
Domestic	Moderate household activities, heavy household activities, preparing meals, care of dependents, maintenance environment.
Specific skills	Handling physical environment, budgeting.
Leisure	Includes sports, hobbies and playing games.
Relation	Making and maintaining contact with other individuals, functioning within a group.
Handicaps	Definitions
Physical independence	The appearance and presentation of the individual, care for personal belongings, way of living in relationship to health.
Mobility	Capacity of an individual to move around inside and outside his home and environment.
Social role	Frequency and quality of contacts with good friends and relatives, taking steps to arrange leisure activities.
Occupational role	Functioning in daily work for example adaptation to daily routine, contact with colleagues. This item also includes household work.
Family/household role	To have emotional relations with family/household members, to undertake tasks which are important for the functioning of the family/group, contribute to the atmosphere in the family or in the group one lives in.

6 OCCUPATIONAL THERAPY IN HOSPITAL BASED CARE IN THE NETHERLANDS¹

A comparison of occupational therapy in general care (nursing homes, rehabilitation centers and general hospitals) and psychiatric care

6.1 Abstract

Objective

To investigate (1) whether differences in occupational therapy practice exist between general and psychiatric care and (2) whether differences in occupational therapy practice exist between general care settings. The four most common settings where occupational therapists work in the Netherlands (nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals) were studied.

Method

A total of 143 therapists, working in 49 occupational therapy departments, participated in this study. They collected data on 1051 patients. For each patient a standard registrationform, based on the International Classification of Impairments Disabilities and Handicaps (ICIDH) was filled out. This form contained information about (i) patient characteristics (ii) occupational therapy diagnosis and treatment goals in terms of ICIDH and (iii) treatment characteristics.

Results and Conclusions

Occupational therapy treatment goals and interventions showed clear differences between psychiatric and general care settings. The differences in occupational therapy practice across general care settings were small.

¹ . M.J. Driessen, J. Dekker, J. van der Zee, G.J. Lankhorst.
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6.2 Introduction

The profession of occupational therapy was founded at the beginning of this century in the United States of America. It developed as an answer to the need to re-activate people with psychiatric disorders or tuberculosis, enabling them to function independently in society. Therapeutic programs were offered, consisting of purposeful activities which aimed to develop attitudes and skills to meet the demands of daily life. In the USA the profession was initially practised in psychiatric hospitals and rehabilitation centers. Gradually, moved to other settings such as general hospitals and nursing homes.

Nowadays, in the USA, most occupational therapists work in rehabilitation centers and schools. Despite the American Occupational Therapy Association's specially developed curricula in psychiatric care for occupational therapists, the number of occupational therapists working in this area declined from 16% in 1986 to 11% in 1990 (Kleinman, 1992).

In the Netherlands, the profession started after World War II. British occupational therapists were employed to rehabilitate disabled war veterans. Most of them worked in rehabilitation centers, although some worked in psychiatric hospitals using occupation as a therapy for people with chronic psychiatric illnesses. Subsequently, occupational therapy was established in general hospitals, nursing homes, day care centers, schools, and private practice. Nowadays most hours per week are worked in nursing homes, followed by rehabilitation centers, general hospitals, and psychiatric hospitals. These four fields cover approximately 80% of all hours worked by all occupational therapists in the Netherlands (Chief Inspectorate of Public Health, 1990). This high proportion of hospital based care is in line with other countries such as Canada, United States of America, Great Britain and Australia (Allen, Graham, Hiep & Tonkin, 1988; Blom Cooper, 1991; CAOT, 1991; CAOT, 1992; Morris, 1989; Reed & Sanderson, 1992; Smith, 1989). In the Netherlands, as in other countries, there is a modest trend towards treatment at the patient's own home environment (Blom Cooper, 1991; Cossar, 1992; Driessen, Dekker, van der Zee & Lankhorst, 1993; Stoffel & Gwin, 1989).

The question arises if differences exist in these various settings. Although the basic philosophy of occupational therapy is not restricted to a certain field of work, nor to general or psychiatric care, it is possible that the profession is practiced in distinct ways in the different institutions. For example, treatment goals, therapeutic interventions or the focus of the treatment may differ. General hospitals probably can be expected to emphasize the recovery process, whereas rehabilitation centers might aim at the development of

(new) skills. Such differences have not been studied in the Netherlands, nor elsewhere.

Based on an extensive literature review, it can be concluded that almost no data has been gathered on these aspects, except in the USA several surveys were carried out in physical disability settings. These surveys showed that therapists spend a high proportion of their direct client contact time on exercise modalities such as active range of motion, neuromuscular facilitation, neurodevelopmental techniques and joint protection (Barris, Cordero & Christiaansen, 1986; Eliason & Gohl-Giese, 1979; Kunstaetter, 1988; Neistad, 1986; Pendleton, 1989; Taylor & Manguno, 1991). Besides the use of self care activities, only a few other functional activities are chosen as an intervention although the results from a recent survey in the USA showed that functional activities are offered more and more to patients in physical disability settings (Neistad & Seymour, 1995).

The goal of the present study is to compare practice in general care and in psychiatric care in the Netherlands. In addition, a comparison is made between practice in three fields of general care: nursing homes, rehabilitation centers, and general hospitals. Similarities and differences with regard to the following aspects will be analyzed: sociodemographic characteristics of patients, medical diagnosis, treatment goals, therapeutic interventions, and treatment programs.

6.3 Methods

Design

A survey study on occupational therapy in the Netherlands was carried out. Data were collected from January 1992 to March 1993. A total of 49 randomly chosen departments of occupational therapy (143 therapists) participated in the study. The four fields where occupational therapists were working most hours per week were included in the study, that is nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. Excluded were institutions for mentally handicapped, treatment of children, private practices, and other kinds of treatment in ambulatory care.

The general characteristics of the participating occupational therapists in terms of age, gender, years of experience and type of workplace were compared with data from a representative sample of occupational therapists working in the Netherlands (Driessen, Dekker, van der Zee & Lankhorst, 1993). No substantial differences were evident.

Registration form

To investigate the characteristics of practice a standard registration form was used. This registration form consisted of three sections; patient characteristics, occupational therapy diagnosis and treatment goals and treatment characteristics. The first and second sections were both filled in after the assessment period. The third section was filled in either at the end of treatment or at 16 weeks (end of study period). For each patient a registration form was filled out.

The *first section* concerned patient characteristics (i.e. gender, type of insurance, age), referral characteristics (who referred the patient to the occupational therapy service), and medical/psychiatric diagnosis. The *second section* concerned the occupational therapy diagnosis. This diagnosis was based on the International Classification of Impairments, Disabilities and Handicaps (WHO, 1980). The intra- and inter rater reliability of the occupational therapy diagnosis was tested prior to the start of the survey study in a rehabilitation center and in a psychiatric hospital, and appeared to be satisfactory to good (Driessen, Dekker, Lankhorst & van der Zee, 1995). In the rehabilitation center all items and in the psychiatric hospital 88% of the items had a kappa value higher than 0.40. Items with a kappa value below 0.40 were modified (see Appendix 6.1). Besides the diagnosis, the therapist also had to indicate a maximum of five treatment goals for therapy. These goals were derived from the diagnosed impairments, disabilities, and handicaps. For example if personal care disabilities were diagnosed, the occupational therapist could indicate that the treatment goal was (or was not) directed towards personal care disabilities. The treatment goals were picked of a list and they are shown in table 6.1.

Table 6.1 Treatment goals in the registration form

Impairments	Disabilities	Handicaps
Motor	Basic skills*	Physical independence
Sensory	Communication	Mobility
Cognitive	Endurance**	Social Role
Intrapersonal	Locomotor	Occupational Role
Other	Personal care	Family/household Role
	Domestic Specific skills***	
	Leisure Relation	

* Motor, cognitive, psychological and interactional skills

** Physical and psychological endurance

*** Handling physical environment and budgeting

The *third section* concerned characteristics of the treatment (length of the course of treatment, frequency), the therapeutic interventions, and health care programs that were used. For each treatment goal two interventions and two programs could be indicated. The interventions were: self care activities; productivity activities; leisure activities; instruction and advice; group therapy; splints; and other interventions. The original list of interventions in the registration form was longer. This list of interventions was reduced by combining specific intervention items as follows. *Self care* was defined as: those activities or tasks which are done routinely to maintain the person's health and well-being in the environment (Reed & Sanderson, 1992). The following items from the registration form were joined into this category: personal care, locomotor, and communication activities. *Productivity* was defined as: those activities or tasks which are done to enable the person to provide support to the self, family, and society through the production of goods and services (CAOT, 1991). The following items of the registration form were put together into this category: domestic and occupational (work) activities. *Leisure* was defined as: the components of life which are free from work and self-care activities (CAOT, 1991). The following items in the registration form were combined: leisure, arts and crafts, and play activities. The *advice/instruction* category consists of advice/instruction on sitting and standing, on the use of aids and on the adaptation of the home environment.

The *group therapy* category consists of task and problem oriented therapy. The category *splinting* consists of the making of splints and the category *other interventions* was not further specified.

The health care programs were adopted from Reed and Sanderson (1992) and consisted of five items: prevention-, developmental-, recovery-, environmental adjustment- and maintenance program. These programs can be considered as overall goals determining the direction of the treatment. With each treatment goal a specific health care program can be chosen, depending on which outcomes of treatment are aimed at. For instance if the 'prevention' program is chosen with domestic disabilities, the focus of the treatment could be on energy intake during the day or on principles of joint protection; however if the health care program 'development' is chosen, the focus of the treatment would be at the learning of new skills.

Procedure

We intended to include at least 1000 patients in the study. All patients referred to the occupational therapist could be included in the study. The number of patients to be registered by each department was agreed upon prior to the start of the survey. The total number of patients registered in each field of work was based on the number of hours worked by occupational therapists in these areas. This implies that most patients should be registered in the nursing homes (38%), followed by rehabilitation centers (32%), general hospitals (20%) and psychiatric hospitals (10%).

Analysis

The results were analyzed using descriptive statistics. The differences in treatment goals, interventions and healthcare programs between the settings were tested with the Chi square method ($\alpha=0.05$). This test was only applied if less than 20% of the cells had an expected frequency less than five and no expected value was less than 1 (Kirkwood, 1988). In order to evaluate the differences, a standard of 10% difference was applied: only the results that differed more than 10% between the settings are considered important and are discussed. Hiloglinear analysis (Norusius, 1992) was applied to test whether the differences between the general care settings were still present after controlling for age and gender of the patients.

6.4 Results

GENERAL CARE versus PSYCHIATRIC CARE

General characteristics of the patients

This study covers 1051 patients, 944 patients in general care (380 in nursing homes, 359 in rehabilitation centers, 205 in general hospitals) and 107 patients in psychiatric hospitals. The mean age of the the patient group was 61 years (minimum 15 years, maximum 94 years, SD 20 years). In general care the mean age was 63 years (minimum 15 years, maximum 94 years, SD 19 years) and in psychiatric care the mean age was 39 years (minimum 20 years, maximum 81 years, SD 14 years). There was a significant relationship between the setting and the age of the patients (Chi square=142.12, df=4, p=0.00). Data show that in general care most patients (61,2%) are older than 45 years and in the psychiatric hospitals most patients (92,3%) are younger than 45 years. There was no difference between the settings in terms of gender (male 40%, female 60%: in both settings).

Medical Diagnosis

The medical diagnosis of the patients in general health care was classified with the International Classification of Diseases, 10th revision, Clinical Modification (WHO, 1995). A total of 1203 medical diagnoses were recorded, an average of 1,27 diagnoses for each patient. The given diagnoses were grouped into five main groups which covered 74% of all diagnoses. The groups that were identified were: progressive neurological diseases (10,8%); cerebro vascular accident (35,8%); rheumatoid arthritis (7,1%); trauma of upper extremity (10,3%); trauma of lower extremity (9,9%) and other diseases (25,9%).

The psychiatric diagnosis of the patients in the psychiatric hospital was classified with the Diagnostic and Statistical Manual of Mental Disorders, Third edition, Revised (DSM-3-R, 1987). A total of 145 diagnoses were recorded, which means an average of 1,35 diagnoses for each patient. Most patients had a diagnosis of schizophrenia (36,4%) or depressive disorders (23,4%).

Occupational therapy treatment goals

For each patient a maximum of five goals could be chosen. The treatment goals were analyzed separately at the level of impairments, disabilities, and handicaps. For the 1051 patients, a total of 4032 treatment goals were identified, an average of 3,8 treatment goals for each patient (see table 6.2).

A significant difference was found between general and psychiatric care in treatment goals at all three levels (Impairments: Chi square=262.47, df=4, p=0.00; Disabilities: Chi square=356.63, df=8, p=0.00; Handicaps: Chi square=138.54, df=4, p=0.00)

Differences of more than 10% were found at all three levels as shown in Table 6.2. At the level of *impairments* a difference of more than 10% was found for four treatment goals. In psychiatric care, cognitive and intrapersonal impairments were emphasized, while in general care the motor and sensory impairments were chosen relatively often.

At the level of *disabilities*, differences of more than 10% were found for five treatment goals. It appeared that in psychiatric care the emphasis was on basic skills, leisure, and relationships whereas in general care locomotion and selfcare were emphasized.

At the level of *handicaps*, four treatment goals showed a difference of more than 10%. In psychiatric care, handicaps in social and occupational roles were emphasized, while in general care handicaps in physical independence and mobility were emphasized.

Table 6.2 Treatment goals directed at impairments, disabilities and handicaps

Treatment goals	General care %	Psychiatric care %
Impairments		
Motor	56.7	5.5
Sensory	18.0	1.9
Cognitive	16.4	33.9
Intrapersonal	6.5	54.1
Other	2.4	4.6
Total	100.0	100.0
Disabilities		
Basic skills	15.0	34.2
Communication	3.8	2.2
Endurance	6.8	9.8
Locomotor	19.4	0.9
Personal Care	22.8	5.8
Domestic	16.6	7.1
Specific skills	5.8	3.6
Leisure	9.6	24.4
Relation	0.2	12.0
Total	100.0	100.0
Handicap		
Physical independence	30.3	15.0
Mobility	32.4	2.3
Social role	7.4	36.8
Occupational role	24.1	38.3
Family/household role	5.8	7.6
Total	100.0	100.0

The percentages that are printed bold indicate a difference of more than 10%.

Interventions

With each treatment goal, two interventions could be indicated for each patient. A total of 6820 interventions were chosen. Analysis showed a significant relationship between the setting and the interventions (Chi square = 1565.61, df=6, p=0.00). A difference of more than 10% existed in four interventions. Characteristic interventions in general care were self care activities and advice/instruction, whereas for psychiatric care leisure and group therapy interventions predominate. This is presented in table 6.3.

Table 6.3 Treatment interventions in general and psychiatric care

Interventions	General care %	Psychiatric care %
Selfcare activities	27.9	12.0
Productivity activities	15.6	12.6
Leisure activities	15.9	35.8
Advice/instruction	31.7	5.0
Group therapy	1.8	29.2
Splinting	2.8	0.0
Other	4.3	5.4

The percentages that are printed bold indicate a difference of more than 10%.

Programs

With each treatment goal, two health care programs could be indicated for a particular patient. A total of 5954 programs were chosen and are summarized in Table 6.4. Analysis showed a significant relationship between the work setting and the type of program chosen (Chi square=109.18, df=4, p=0.00). Only for the developmental program a difference of more than 10% between the settings existed: this program was chosen more frequently in psychiatric care.

Table 6.4 Health care programs in general and psychiatric care

Health care programs	General care %	Psychiatric care %
Prevention	8.9	3.6
Development	20.6	31.1
Recovery	28.5	37.6
Adaptation	31.9	24.6
Maintenance	10.1	3.1

The percentages that are printed bold indicate a difference of more than 10%.

SETTINGS IN GENERAL CARE

General characteristics of the patients

A significant relationship between setting and age was observed between settings (Chi square=313.15, df=8, p=0.00). Data show that in nursing homes most patients (62,1%) are older than 75 years (mean age 77 years) ; in

rehabilitation centers and general hospitals most patients are younger than 75 years (respectively 92% and 80%; mean age 52 and 57 years respectively). A significant relationship existed between setting and gender of the patients (Chi square=21.83, df=2, p=0.00). It appeared that in nursing homes and general hospitals relatively more women were treated (respectively 66% and 64%), while in rehabilitation centers the proportion of men and women was equal (50%).

Medical Diagnoses

Five main groups of medical diagnoses covering 74% of all medical diagnoses were distinguished. There appeared to be a significant association between type of setting and medical diagnosis (Chi square=103.09, df=8, p=0.00). In the nursing homes the progressive neurological diseases, CVA and trauma of lower extremity occurred relatively frequently (respectively 54,9%; 48,2% and 50,0%), whereas in the general hospital rheumatoid arthritis and trauma of upper extremity occurred relatively often (respectively 46,3% and 48,5%). The rehabilitation center takes up a middle position with regard to the diseases: the emphasis is on CVA and trauma of upper extremity.

Occupational therapy treatment goals

At all three levels a significant relationship was found between setting and treatment goals (Impairments: Chi square=46.61, df=8, p=0.00; Disabilities: Chi square=110.45, df=16, p=0.00; Handicaps: Chi square=113.35, df=8, p=0.00). It also appeared that these differences were not due to age or gender differences between settings; after controlling for age and gender, the differences between settings were still significant (Likelihood Ratio Chi Square impairments 76.69, df=4, p=0.00; Likelihood Ratio Chi Square disabilities 387.66, df=12, p=0.00; Likelihood Ratio Chi Square handicaps 274.13, df=4, p=0.00).

Applying the standard of 10% difference at the level of impairments shows that in nursing homes the cognitive impairments are chosen relatively often (25,1%) by occupational therapists. At the level of disabilities there is a large difference (>10%) for one treatment goal: in nursing homes this treatment goal -personal care- is picked relatively often. At the handicap level, a large difference is evident for two goals: in nursing homes handicap in physical independence while in rehabilitation centers and general hospital handicap in occupational role is chosen relatively often. Table 6.5 shows the treatment goals chosen at all three levels.

Table 6.5 Treatment goals in nursing home, rehabilitation center and general hospital

Treatment goals	Nursing home %	Rehabilitation Center %	General hospital %
Impairments			
Motor	50.8	59.1	60.5
Sensory	12.2	23.0	18.1
Cognitive	25.1	13.2	10.2
Intrapersonal	8.9	4.4	6.5
Other	3.0	0.3	4.7
Total	100.0	100.0	100.0
Disabilities			
Basic skills	12.8	15.3	18.3
Communication	3.4	4.7	2.6
Endurance	5.4	8.3	5.9
Locomotor	22.2	18.4	16.5
Personal Care	32.1	14.5	24.4
Domestic	12.1	19.8	17.5
Specific skills	2.9	7.5	7.2
Leisure	8.7	11.2	7.5
Relation	0.2	0.3	0.3
Total	100.0	100.0	100.0
Handicap			
Physical independence	48.9	16.7	27.9
Mobility	32.8	29.2	38.2
Social role	7.3	9.4	3.6
Occupational role	8.4	36.5	24.2
Family/household role	2.6	8.2	6.1
Total	100.0	100.0	100.0

The percentages that are printed bold indicate a difference of more than 10%.

Interventions

For the interventions a significant relationship was found between setting and interventions (Chi square = 383.30, df = 12, p=0.00). It also appeared that these differences were not due to age or gender differences between settings; after controlling for age and gender, the differences between settings were still significant (Likelihood Ratio Chi Square 353.37, df=12, p=0.00). Large differences (>10%) were found for only two interventions. Table 6.6 shows

that in nursing homes self care activities and in rehabilitation centers, productivity activities were relatively often emphasized.

Table 6.6 Interventions in nursing home, rehabilitation center and general hospital

Interventions	Nursing home	Rehabilitation Center	General hospital
	%	%	%
Activities on selfcare	38.0	21.0	26.7
Activities on productivity	8.8	21.0	14.9
Activities on leisure	12.5	19.6	13.6
Advice/instruction	34.0	29.4	33.0
Group therapy	1.3	2.7	0.9
Splinting	1.6	1.8	6.6
Other	3.8	4.5	4.3

The percentages that are printed bold indicate a difference of more than 10%.

Health care programs

There was a significant relationship between setting and health care programs (Chi square = 124.54, df=8, p=0.00). These differences were not due to age or gender differences between the settings; after controlling for age and gender, the differences between settings were still significant (Likelihood Ratio Chi Square 115.77, df=8, p=0.00). Table 6.7 shows the programs chosen in the different settings. A large difference (>10%) in the choice of treatment programs was observed for one health care program. The recovery program was applied relatively often in general hospitals compared to nursing homes.

Table 6.7 Health care programs in nursing home, rehabilitation center and general hospital

Health care programs	Nursing home	Rehabilitation Center	General hospital
	%	%	%
Prevention	7.1	8.6	12.2
Development	19.1	24.8	13.9
Recovery	25.2	28.2	34.6
Adaptation	35.5	29.6	31.1
Maintenance	13.1	8.8	8.2

6.5 Discussion

The aim of this study was to describe and analyze the occupational therapy practice in the four largest worksettings of occupational therapists in the Netherlands, i.e. nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. The following aspects of occupational therapy practice were studied: sociodemographic characteristics of patients, medical diagnosis, occupational therapy treatment goals, therapeutic interventions, and treatment programs.

It can be concluded (1) that occupational therapy practice in psychiatric hospitals is substantially different from occupational therapy practice in general care and (2) that within general care occupational therapy practice differs only slightly between settings.

Psychiatric care versus General care

Occupational therapy practice in psychiatric and general care differs on all aspects. A characterization of occupational therapy practice in these settings can be made. In general care the following treatment goals were emphasized: motor and sensory impairments; locomotor and personal care disabilities; and handicap in physical independence and in mobility. In psychiatric care the following treatment goals were emphasized: cognitive and intrapersonal impairments; disabilities in basic skills, in leisure and in relationships; and handicap in social role and in occupational role. Also a characterization can be made for the interventions. In general care, selfcare and advice/instruction were emphasized whereas in psychiatric care leisure and group therapy were chosen relatively often. Only one difference was observed at the level of health care programs; in psychiatric care the developmental program was relatively often chosen.

Occupational therapy in general care

A characterisation of occupational therapy in general care shows a resemblance across all three settings. The differences between the settings are small with regard to treatment goals, therapeutic interventions, and treatment programs. Nevertheless some differences were observed. For instance in nursing homes, emphasis was placed on cognitive impairments, disabilities in personal care, handicap in physical independence, and selfcare activities; in rehabilitation centers productivity was chosen relatively often. One might argue that differences were obscured because the standard of 10% difference was too strict. However shifting the standard to 5% did not lead to more difference.

Because of the differences between general and psychiatric care, one could argue in favour of a certain degree of post graduate training for these settings. If an occupational therapist wants to change jobs from e.g. general care into a psychiatric hospital, it could be advisable that he or she completes a post graduate course on specific topics in psychiatric settings to guarantee the quality of the profession. For example if one starts working in psychiatric hospitals a course on group treatment could be followed; for all general care settings a course on advice/instruction on aids and environmental adaptations would be a prerequisite.

The introduction of occupational therapy in general care occurred in the Netherlands rather separately from its introduction in psychiatric care. This separate introduction was not known in the countries where occupational therapy originated (USA and Great Britain) (Dutch Association of Occupational Therapy, 1988). It is possible that this has led to differences in the practice of the occupational therapy profession between general and psychiatric care in the Netherlands. Therefore, a comparison of occupational therapy practice in these settings in the USA and Great Britain would be of interest. This comparison would indicate whether the observed differences between occupational therapy practice in psychiatric and general care are a specifically Dutch phenomenon or more general in nature.

6.6 References

- Allen, F., Graham, J., Hiep, M., & Tonkin, J. (1988). Occupational therapy 1981 - 1986, Trends and implications. *The Australian Occupational therapy Journal*, 35, 155-164.
- American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders*, (3rd ed. revised). Washington D.C.
- Barris, R., Cordero, J., & Christiaansen, R. (1986). Occupational therapists' use of media. *The American Journal of Occupational therapy*, 40, 679-684.
- Blom Cooper, L. (1991). *Occupational therapy, an emerging profession in health care*. Report of a Commission of Inquiry. London, Duckworth.
- Canadian Association of Occupational therapy. (1991). *Occupational therapy guidelines for client centred practice*. Toronto. Canadian Association of Occupational therapists in co-operation with Health and Welfare Canada and the Canadian Government Publishing Centre, Supply and Services, Canada.
- Canadian Association of Occupational therapy. (1992). Membership Data. not published.
- Chief Inspectorate of Public Health. (1990). Beroepsuitoefening van ergotherapeuten, verslag van een onderzoek 17-21 april 1989 (Practice of profession of occupational therapists, a study 17-21 april 1989). Rijswijk, The Netherlands.
- Cossar, A. (1992). The growth of private practice in occupational therapy in Great Britain. *British Journal of Occupational therapy*, 55, 157-161.

- Driessen, M.J., Dekker, J., van der Zee, J., & Lankhorst, G.J. (1993). Ergotherapeuten:werksituatie en taakuitoefening (Occupational therapists: Practice of profession). *Nederlands Tijdschrift voor Ergotherapie*, 21, 75-82.
- Driessen, M.J., Dekker, J., Lankhorst, G.J., & van der Zee, J. (1995) Inter-rater and intra-rater reliability of the occupational therapy diagnosis. *Occupational Therapy Journal of Research*, 15, 259-274.
- Dutch Association of Occupational therapy. (1988). *Het beroepsprofiel (Profile of the Profession)*. Delft, The Netherlands.
- Eliason, M.L., & Gohl-Giese, A. (1979). A question for professional boundaries: Implications for education programs. *The American Journal of Occupational Therapy*, 33, 175-179.
- Kirkwood, B.R. (1988). *Essentials of medical statistics*. Oxford: Blackwell Scientific Publications.
- Kleinman, B.L. (1992). The challenge of providing occupational therapy in mental health. *The American Journal of Occupational therapy*, 46, 555-557.
- Kunstaetter, D. (1988). Occupational therapy treatment in home health care. *The American Journal of Occupational therapy*, 42, 513-519.
- Morris, L.V. (1989). Occupational therapy: A study of supply and demand in Georgia. *The American Journal of Occupational therapy*, 43, 234-239.
- Neistad, M.E. (1986). Occupational therapy treatment goals for adults with developmental disabilities. *The American Journal of Occupational therapy*, 40, 672-678.
- Neistad, M.E., & Seymour, S.G. (1995). Treatment activity preferences of occupational therapists in adult physical dysfunction settings. *The American Journal of Occupational therapy*, 49, 437-443.
- Norusius, M.J. (1992). *SPSS/PC + Advanced Statistics Version 5.0*. Chicago: SPSS Inc.
- Pendleton, H.M.(1989). Occupational therapists' current use of independent living skills training for adult inpatients who are physically disabled. *Occupational Therapy in Health Care*, 6, 93-108.
- Reed, K.L., & Sanderson, S.N. (1992). *Concepts of occupational therapy* (3rd ed.). Baltimore: Williams & Wilkins.
- Smith S., (1989). How occupational therapy staff spend their work time. *British Journal of Occupational therapy*, 52, 82-87.
- Stoffel, S.A., & Gwin, C.H. (1989). Home health care revisited: Challenges for the future. *The American Journal of Occupational therapy*, 43, 499-502.
- Taylor, E., & Manguno, J. (1991). The use of treatment activities in occupational therapy. *The American Journal of Occupational therapy*, 45, 317-322.
- World Health Organisation (1980). *International Classification of Impairments Disabilities, and Handicaps*. Geneva: WHO.
- World Health Organisation (1995). *International Classification of Diseases 10th revision, Clinical Modification*, Geneva: WHO.

Appendix 6.1: Modified occupational therapy diagnosis in the registration form

Category	Subitems
Impairments	
Motor impairments	Skeletal impairment of structure, skeletal impairment of function, amputation, coordination, other motor impairments.
Sensory impairments	Sensory awareness, proprioception, pain, other sensory impairments.
Cognitive impairments	Impairment of memory, impairment of thinking, neuropsychological function deficit, other cognitive impairments.
Intrapersonal impairments	Impairment of emotive and volitional functioning, impairment of behaviour patterns, impairment of perception, impairment of attention, impairment relating to location in time and space.
Disabilities	
Basic skills****	Motor skills, cognitive skills, psychological skills, interactional skills
Communication	Talking, understanding, reading, writing.
Endurance	Physical and psychological endurance.
Locomotion	Transfers, walking, traversing, transport.
Personal care	Excretion, personal hygiene, dressing, feeding.
Domestic***	Moderate household activities, heavy household activities, preparing meals, care of dependants, maintenance environment.
Specific skills	Handling physical environment*, budgeting.
Leisure activities	Includes sports, hobbies and playing games**
Relation	Making and maintaining contact with other individuals*, functioning within a group**.
Handicap	
Physical independence	
Mobility	
Social role	
Occupational role	
Family/household role**	

* New item

** Old items are combined

*** Category is restructured

**** New category with old items

7 OCCUPATIONAL THERAPY FOR PATIENTS WITH CHRONIC DISEASES

CVA, rheumatoid arthritis and progressive diseases of the central nervous system*

7.1 Abstract

Objective

A substantial proportion of the patients treated by occupational therapists have a chronic disease. The aim of this study was to describe the outlines of occupational therapy treatment for three specific groups of chronic diseases: Progressive Neurological Diseases, Cerebro Vascular Accident, Rheumatoid Arthritis.

Method

A total of 143 therapists, working in 49 departments of occupational therapy in the Netherlands were asked to complete a standard registration form based on the ICDH. This form consisted of three sections, (i) patient characteristics, (ii) occupational therapy diagnosis and treatment goals in terms of ICDH and (iii) treatment characteristics. The present study concerns 507 patients: 102 patients had progressive neurological diseases (PND), 338 patients had CVA and 67 patients had rheumatoid arthritis (RA).

Results and Conclusion

Each patient group was characterized by a specific treatment approach. Especially at the level of treatment programs, each group showed its specific approach. Besides the clear differences, similarities in approaches were found between the PND and RA group, e.g. total time spent on therapy differed largely between the PND and RA patients (both average of 6 hours) and the CVA patients (average of 14 hours).

* M.J. Driessen, J. Dekker, G.J. Lankhorst, J. van der Zee.
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7.2 Introduction

In 1990 in the Netherlands 3.4 out of 15 million people were diagnosed with a chronic disease. The ten most frequently occurring chronic diseases** are predicted to increase to 4.4 million in the year 2010, due to the expected growth of the number of chronic diseases and to the aging population¹.

The effects of chronic diseases can affect all areas of an individual's life, necessitating adjustments in life patterns and directions. Occupational therapy is an important service for patients with a chronic disease. It focuses on increasing the functional capacity of the patients by using ordinary activities of everyday living, (such as dressing, making a bed, taking a shower, typing, taking a bus). Research has also shown that the main focus of occupational therapy is on disabilities^{2,3}. This means that the functional capacity of patients is the point of action in therapy. The importance of stressing the patients' abilities is also expressed by patient associations, stating that they do not want to be judged for what they can not perform but they want their abilities to be the central focus of attention⁴. This point of view links up with the concepts of the profession of occupational therapy. The purpose of occupational therapy is to prevent handicap and to promote, maintain or restore occupational performance, health and spiritual well-being, using activities or tasks; specifically self-care, productivity and leisure^{5,6}.

However, knowledge is lacking on the specific characteristics of occupational therapy treatment for patients with specific diseases. This characterization can serve as a basis for standards of the profession and for the tuning of care with other disciplines. Knowing the characteristics of occupational therapy on the specific groups of chronic diseases makes it possible to further define the focus of OT.

Literature provides some information on the hypothesized direction of the occupational therapy treatment. With CVA patients occupational therapy aims at the *recovery* of sensorymotor and cognitive functions especially in the first year after the stroke when (spontaneous) recovery can occur. Interventions are chosen to stimulate this recovery process^{7,8}. With patients with progressive neurological diseases (PND) the aim is on *maintenance* of functional abilities⁷⁻¹¹. The problems in daily life for this patient group are mainly due to energy problems. An important aspect of occupational therapy treatment is to keep the patients functional level as high as possible through

** Top ten of most frequently occurring chronic diseases in the Netherlands: osteoarthritis, chronic non specific lung diseases, hearing problems, eczema, depression, coronary heartdisease, diabetes, cataract, CVA and dementia.

a variety of therapeutic interventions. *Prevention* is of importance for patients with RA meaning that principles of joint protection and energy intake during the day are included in the therapy program^{7,8,10,12}. Joint protection in combination with changing the patients attitude toward a strict schedule helps to prevent the (further) deterioration of joint(s) and promotes independent living.

The aim of this study is to describe the outlines of occupational therapy treatment for three groups of patients with a chronic disease: Cerebro Vascular Accident (CVA), progressive neurological diseases (PND) and Rheumatoid Arthritis (RA). These three patient groups were selected since they represent the three largest groups of patients with chronic diseases in our survey. The PND group consists of diseases such as Multiple sclerosis, Parkinson's disease, Amyotrophic Lateral Sclerosis. In this article the outlines of occupational therapy treatment for these three patient categories will be described and compared for the following items: general patient characteristics, treatment goals, interventions, treatment programs and length and intensity of treatment.

7.3 Methods

Design

A survey on occupational therapy in the Dutch health care system was carried out in the period from January 1992 to march 1993. Randomly, 49 institutions with a department of occupational therapy were chosen. A total of 143 therapists participated in this study. These therapists were working in nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals. These four fields cover most of the occupational therapy services in the Netherlands¹³. Occupational therapists also work in institutions for mentally handicapped, treatment of children, private practices and other kinds of treatment in ambulatory care. Because occupational therapy services in these fields are relatively small, these fields were not included.

The participating institutions were randomly selected from a list of institutions where occupational therapists are working, produced by the Dutch association of occupational therapy¹⁴. A comparison of the participating therapists with a representative sample of occupational therapists working in the Netherlands¹⁵ did not indicate any substantial differences.

Registration form

To investigate characteristics of the participating patients a standard registration form was used. This registration form consisted of three sections. The *first section* concerned patient characteristics (i.e. gender, type of insurance, age), referral characteristics and medical/psychiatric diagnosis. The *second section* concerned the Occupational Therapy diagnosis. The occupational therapy diagnosis was based on the International Classification of Impairments, Disabilities and Handicaps¹⁶. The reliability of the occupational therapy diagnosis appeared to be satisfactory to good³. In this second section therapists also filled out the treatment goals they had chosen. Treatment goals were derived from the diagnosed impairments, disabilities and handicaps. For example if disabilities in leisure activities were diagnosed, the occupational therapist could indicate that the treatment goal was (or was not) directed towards leisure disabilities. Therapists were allowed to indicate up to a maximum of five goals. The treatment goals are shown in table 7.1^{***}.

Table 7.1 Main categories of treatment goals in the study

Impairments	Disabilities	Handicaps
Motor	Endurance*	Physical independence
Sensory	Locomotor	Mobility
Cognitive	Personal Care Domestic Specific Skills** Leisure	Occupational Role

* Physical and psychological endurance

** Handling physical environment and budgetting

The *third section* concerned characteristics of the treatment (length, intensity), the therapeutic interventions and health care programs (overall goals) that were used. This section was filled in either at 16 weeks (end of registration period) or at the end of the treatment if the treatment was finished earlier. With each treatment goal at most two interventions and two health care programs could be chosen. With the interventions the occupational therapist

*** Actually the list of treatment goals in the registrationform was longer. The treatment goals shown in Table 1 are a reduction of the original list (see Driessen et al, submitted).

indicated which therapeutic activities were carried out and with the choice of the programs the therapist implied which outcomes of treatment were aimed at.

The interventions were: self care activities; productivity activities; leisure activities; instruction and advice; group therapy; splints; and other interventions. The original list of interventions in the registration form was longer. This list of interventions was reduced by combining specific intervention items as follows. *Self care* is defined as :those activities or tasks which are done routinely to maintain the person's health and well-being in the environment⁵. The following items from the registration form were joined into this category: personal care, locomotor and communication activities. *Productivity* is defined as: those activities or tasks which are done to enable the person to provide support to the self, family and society through the production of goods and services⁶. The following items of the registration form were put together into this category: domestic and occupational activities. *Leisure* is defined as: the components of life which are free from work and self-care activities. The following items in the registration form were joined: leisure, arts and crafts and play activities. The *advice/instruction* category consists of the items advice/instruction on sitting and standing, on the use of aids, on the adaptation of the home(environment). The *group therapy* category consists of two items on task and problem oriented therapy.

The health care programs were derived from Reed & Sanderson (1992). Five health care programs were distinguished: prevention-, developmental-, recovery-, environmental adjustment- and maintenance- program. These programs can be considered as overall goals determining the direction of the treatment. With each treatment goal a specific health care program can be chosen, depending on which outcomes of treatment are aimed at. For instance if the "recovery" program is chosen with disabilities in personal care, the accent of the treatment will be on exercises; however if the health care program "environmental adaptations" is chosen, the accent of the treatment will be on selection and use of adaptive devices and environmental adaptations.

Procedure

As described in a previous article, a total of 1051 patients were included in the survey study on occupational therapy in the Netherlands¹⁷. In the present article a selection was made out of this group on the basis of the medical diagnosis¹⁸. These diagnoses were CVA (ICD-10-CM, Chapter 9, 9.60-67), Rheumatoid Arthritis (ICD-10-CM, Chapter 13, 13.05-06), Progressive Neurological Diseases (ICD-10-CM, Chapter 7, 7.20; 7.31; 7.35; 7.37; 7.60; 7.61; 7.71)

Analysis

The results are described in terms of descriptive statistics. Differences between the three groups were tested with the Chi square method ($\alpha=0.05$). This test was only applied if less than 20% of the cells had an expected frequency less than five and no expected value was less than 1¹⁹. A standard was applied to determine the importance of the differences between the three patient categories. Only the results that showed a difference of 10% or more between the categories are considered important and are discussed. Hiloglinear analysis²⁰ was applied to test whether the differences between the three patient groups were still present after controlling for age and gender of the patients.

7.4 Results

Patients

The study concerned 507 patients: 102 patients with progressive diseases of the central nervous system, 338 patients with CVA and 67 patients with rheumatoid arthritis. General patient characteristics are shown in table 7.2. The distribution of age differed significantly among the three groups (Chi square=25.26,df=6,p=0.00). Patients with PND and with RA were more frequently younger than 65 years whereas patients with CVA were relatively frequently over 65 years old.

Also a significant relationship was found between the diagnostic groups and the in- or out-patient status (Chi square=47.69,df=2,p=0.00). CVA patients were relatively often inpatients while patients with PND and RA were relatively often outpatients. More than one OT session at home was relatively often applied to the PND group whereas for the other two groups only one treatment at home occurred relatively often (Chi square=6.71, df=2, p=0.03).

Table 7.2 also showed that impairments, disabilities and handicaps were frequently diagnosed in the three patient groups, by the occupational therapist. All disability and handicap items were diagnosed with more than half of the patients. At the level of impairments, for patients with RA, no cognitive impairments were diagnosed.

Table 7.2 General Characteristics of the three patient categories

	Progressive Neurologic Diseases (n=102) %	Cerebro Vascular Accident (n=338) %	Rheumatoid Arthritis (n=67) %
Age			
< 55 years	28.0	19.8	32.3
56-64 years	19.0	15.8	30.8
65-75 years	14.0	28.9	78.5
> 75 years	39.0	35.6	18.5
Gender:			
female	66.7	51.8	77.6
Hospital based care:			
inpatients	39.2	63.2	21.5
Treatment at home:			
at least two OT treatment sessions at home	64.5	36.1	45.0
Diagnosed impairments, disabilities and handicaps:			
Impairments			
Motor	88.2	95.3	100.0
Sensory	48.0	71.0	88.1
Cognitive	50.0	63.6	0.0
Disabilities			
Endurance	78.4	66.9	65.7
Locomotor	87.3	84.6	88.1
Personal care	84.3	83.4	83.6
Domestic	73.5	71.9	88.1
Specific skills	59.8	56.2	83.6
Leisure	63.7	73.1	70.1
Handicaps			
Physical independence	71.6	74.6	58.2
Mobility	86.3	87.9	73.1
Occupational role	66.7	64.5	79.1

Occupational therapy treatment goals

The three patient categories differed with regard to treatment goals. At the level of *impairments*, the diagnostic groups differed significantly (Chi-square=10.80, df=4, p=0.03). These differences were not due to age or gender differences between the diagnostic groups: after controlling for age and gender, the differences between the diagnostic groups were still

significant (Likelihood Ratio Chi Square = 52.03,df=4,p=0.00). Table 7.3 shows that in all three groups motor and sensory impairments were chosen most often. A large difference of more than 10% was found for motor impairments. With the RA patients this item was relatively often emphasized. A difference of more than 10% was also found for cognitive impairments: these were chosen in PND and CVA patients, not in RA patients.

At the level of *disabilities*, the diagnostic groups differed significantly (Chi square=39.53, df=10, p=0.00). These differences were not due to age or gender differences between the diagnostic groups: after controlling for age and gender, the differences between the diagnostic groups were still significant (Likelihood Ratio Chi Square=132.32, df=12, p=0.00). Three treatment goals showed a large difference (>10%) between the three patient categories. It appeared that with the PND group, locomotor disabilities were emphasized (compared with the RA group) whereas with the RA group domestic and specific skills were relatively often picked as a treatment goal (compared to the PND group).

Table 7.3 Impairments, disabilities and handicaps chosen as a treatment goal by occupational therapists

	Progressive Neurologic Diseases %	Cerebro Vascular Accident %	Rheumatoid Arthritis %
Impairments			
Motor	62.7	57.0	79.3
Sensory	14.0	16.0	20.7
Cognitive	23.3	27.0	0
Total	100.0	100.0	100.0
Disabilities			
Endurance	9.2	4.7	8.0
Locomotor	29.7	23.1	16.7
Personal care	29.7	33.7	27.3
Domestic	15.4	18.8	24.7
Specific skills	4.0	5.6	15.3
Leisure	12.0	14.1	8.0
Total	100.0	100.0	100.0
Handicaps			
Physical independence	40.2	52.0	41.3
Mobility	57.1	42.2	48.4
Occupational role	2.7	5.8	10.3
Total	100.0	100.0	100.0

The percentages that are printed bold indicate a difference of more than 10%.

At the level of *handicaps*, the diagnostic groups differed significantly (Chi square=28.34, df=4, p=0.00). These differences were not due to age or gender differences between the three diagnostic groups: after controlling for age and gender, the differences between the diagnostic groups were still significant (Likelihood Ratio Chi Square=45.63, df=4, p=0.00). A large difference (>10%) was found for two treatment goals. Table 7.3 shows that in the CVA group, handicap in physical independence and with the PND group handicap in mobility (compared to the CVA group) was chosen relatively often.

Interventions

With each treatment goal a maximum of two interventions could be chosen with a particular patient. The relationship between the three patient categories and the interventions was significant (Chi square=318.63, df=12, p=0.00). These differences were not due to age or gender differences between the three patient groups: after controlling for age and gender, the differences between the three patient groups were still significant (Likelihood Ratio Chi Square=282.82, df=12, p=0.00). Table 7.4 shows that large differences were found for three interventions. It appeared that with the CVA group self care and leisure activities and with both the PND and RA group advice/instruction was relatively often chosen as an intervention.

Table 7.4 Interventions chosen by occupational therapists in the three patient groups

	Progressive Neurologic Diseases %	Cerebro Vascular Accident %	Rheumatoid Arthritis %
Self care activities	27.3	35.7	23.1
Productivity activities	9.4	14.9	15.3
Leisure activities	9.7	20.4	5.2
Advice/Instruction	48.4	21.7	46.0
Group therapy	0.7	2.2	1.3
Splinting	1.6	0.9	5.4
Other	2.9	4.2	3.7
Total	100.0	100.0	100.0

The percentages that are printed bold indicate a difference of more than 10%.

Treatment programs

With each treatment goal two treatment programs could be chosen with a particular patient. The relationship between the three patient groups and the

chosen programs was significant (Chi square=353.94,df=8,p=0.00). These differences were not due to age or gender differences between the three diagnostic groups: after controlling for age and gender, the differences between the diagnostic groups were still significant (Likelihood Ratio Chi Square=130.62, df=8, p=0.00). Large differences between the three patient categories and the chosen programs were found for all programs (see table 7.5). It appeared that with the CVA group the programs development and recovery were chosen most often whereas with the PND group the adaptation and maintenance (compared to the CVA group) program was emphasized. With the RA group the prevention program was chosen relatively often.

Table 7.5 Treatment programs chosen by occupational therapists in the three patient groups

	Progressive Neurologic Diseases %	Cerebro Vascular Accident %	Rheumatoid Arthritis %
Prevention	12.8	3.5	20.6
Development	11.7	26.4	11.2
Recovery	15.3	35.0	23.1
Adaptation	42.5	28.3	33.3
Maintenance	17.7	6.8	11.8
Total	100.0	100.0	100.0

The percentages that are printed bold indicate a difference of more than 10%.

Length and intensity of treatment

Among the three groups, the average time spent on treatment differed. The average time spent on the treatment of PND and RA patients was 6 hours and for the CVA group it was 14 hours (Chi square =61.80, df=2, p=0.00). It should be noted that not all treatments were finished within the study period. In the RA group 14.9%, in the PND group 24.5% and in the CVA group 48.1% of the treatments was not finished.

There appeared to be significant differences for the groups both for the length and intensity of the treatment (respectively Chi square=18.34, df=6,p=0.00; Chi square=66.04,df=4,p=0.00). The length of treatment was longer than 10 weeks for most of the CVA patients, whereas for the other two groups treatment was relatively often less than ten weeks. The intensity of treatment given to the CVA group was relatively often more than twice a week whereas in the other two groups the intensity was most frequently twice or less a week.

7.5 Discussion

The aim of this article is to describe and compare the outlines of occupational therapy treatment for three patient groups with chronic diseases: PND, CVA and RA.

It can be concluded that there are large differences between the occupational therapy treatment of these groups. This means that there exists a specific approach towards PND, CVA and RA patients. At the level of treatment programs differences were most consistent: with all treatment programs a large (>10%) difference was observed.

With the CVA patient group the developmental and recovery program were chosen most often whereas with the PND group the adaptation and maintenance program were emphasized. With the RA group the prevention program was chosen relatively often. These findings are globally in line with literature findings. The information provided in literature indicates that with CVA patients the recovery of functions is stimulated^{7,8}, with the PND patients the maintenance of functional abilities is aimed at⁷⁻¹¹ and with RA patients prevention is of importance^{7,8,10,12}. Our findings confirm and extend the hypothesized a relationship between the treatment programs and the type of disease.

In addition to differences at the level of the treatment programs, large differences were also found at the level of treatment goals and interventions. These differences can be summarized by means of the following profiles of the three patient groups. With **PND patients** treatment goals focus on locomotor disabilities and on handicap in mobility. With regard to interventions, advice/instruction is emphasized and the programs adaptation and maintenance are chosen relatively often. A characterization of the treatment of **CVA patients** shows the following profile. At the level of treatment goals the accent is on handicap in physical independence. With regard to the interventions, self care and leisure activities are relatively often chosen. The programs development and recovery are chosen relatively often. The profile for the **RA patients** is characterized by the following aspects. With the treatment goals motor impairments, domestic disabilities and disabilities in specific skills are emphasized. The intervention that is chosen relatively often is advice/instruction and the program prevention is emphasized.

It should be noted that these profiles only consist of those items that showed a difference of 10% or more. Other interesting differences were observed but they failed to reach the 10% difference level. One example is the emphasis on handicap in occupational role and splinting in the RA group.

Although each group can be characterized with a specific approach, there also seems to be a resemblance between the PND and RA group on the one hand, as compared to the CVA group on the other hand. In the PND and the RA group there are similarities with regard to the following aspects: gender and living condition of the patients and the emphasis on advice/instruction as an intervention. In both groups the prevention, adaptation and maintenance programs are emphasized. Also the average time spent on treatment and the intensity of the treatment show similarities. It seems that the treatment of these two patient groups is largely based on the the concept of *care*. Since recovery is not possible with these two groups the accent of the treatment is on learning the patients to cope with their remaining abilities: in order to improve their occupational functioning. Assistive devices are valued for helping patients functioning as independently as possible, with as low efforts as necessary. With the CVA group the emphasis of the treatment is far more aimed at the recovery aspect, a *cure* oriented approach. This is mainly shown in the choice of programs and interventions. Interventions focus at activities; therapists aim at recovery and development of these activities, as indicated by the choice of programs. Patients receive an intensive form of treatment: more than twice a week and largely twice as long as the other two patient groups. This means that the treatment of CVA patients is relatively intensive and more expensive than the treatment patients of the other two groups. It can be concluded that different profiles exist for the occupational therapy treatment of PND, CVA and RA patients. However there seems to be resemblance on several aspects between PND and RA patients. Patients with chronic diseases are a substantial part of patients treated by occupational therapists. Because of the growth of the number of chronic diseases in the future, it is important for occupational therapists to define their occupational therapy profiles with these patients. Occupational therapists need to further specify their approach with these patients groups²¹ and herewith improve communication with other (occupational) therapists, patients and insurance companies. The results of this study can be of help for the further development of profiles for these three patient groups.

7.6 References

1. Rijksinstituut voor Volksgezondheid en Milieuhygiene. *Public Health Status and Forecasts*. The health status of the Dutch population over the period 1950 - 2010. SDU, The Hague, Netherlands. 1994.
2. Dekker, J. Application of the ICIDH in survey research on rehabilitation: The emergence of the functional diagnosis. *Disability and Rehabilitation*, 1995; **17**: 195-201.

3. Driessen, M.J., Dekker, J., Lankhorst, G.J., van der Zee, J. Inter-rater and Intra-rater Reliability of the Occupational Therapy Diagnosis. *Occupational Therapy Journal of Research*, 1995; **15**: 259-274.
4. Nationale Raad voor de Volksgezondheid. *Tussen cure en care*. Zoetermeer. Netherlands.1995.
5. Reed, K.L., Sanderson, S.N. *Concepts of Occupational Therapy*, Third edition. Baltimore, Williams & Wilkins.1992.
6. Canadian Association of Occupational Therapy. *Occupational Therapy Guidelines for client centred practice*. Toronto. 1991.
7. Spencer, E.A., *Functional Restoration-Specific Diagnosis*. in :Williard and Spackman's Occupational Therapy, sixth edition, edited by H.L. Hopkins and H.D., Smith. J.B.,Lippincot Company, Philadelphia. 1986.
8. Trombley, C.A. *Occupational Therapy for Physical Dysfunction, second edition*. William and Wilkins, Baltimore/London. 1983.
9. Grocholski-Plescher, B. Mobile Ergotherapie für Rheumakranke: Entwicklung des Dienstes, Inanspruchnahme und Versorgung mit Hilfsmitteln und Schienen. *Zeitschrift für Rheumatologie* 1992; **51**: 35-40.
10. Kielhofner, G. *A model of Human Occupation: Theory and Application*. Williams and Wilkins, Baltimore. 1985.
11. Reding, M.J., Fletcher Mc Dowell, M.D. Stroke Rehabilitation. *Neurologic Clinics* 1987; **5**: 601-630.
12. Kolarz, G. Nichtmedikamentöse Therapieverfahren in der Rheumatologie. *Z. Gesamte inn. Med* 1986; **43**: 641-643.
13. Chief Inspectorate of Public Health. *Beroepsuitoefening van ergotherapeuten, verslag van een onderzoek 17-21 april 1989 (Practice of profession of occupational therapists, a study 17-21 april 1989)*. Rijswijk, Netherlands. 1990.
14. Dutch Association of Occupational Therapy. Institutions with an occupational therapy department. Delft, The Netherlands. 1991.
15. Driessen, M.J., Dekker, J., van der Zee, J., Lankhorst, G.J., Ergotherapeuten: werksituatie en taakuitoefening (Occupational Therapists: Practice of profession). *Nederlands Tijdschrift voor Ergotherapie* 1993; **21**: 75-82.
16. World Health Organisation *International Classification of Impairments Disabilities and Handicaps*, Geneva. 1980.
17. Driessen.M.J., Dekker, J., Lankhorst, G.J., van der Zee, J., Occupational therapy diagnosis and treatment goals in inpatient care. *Submitted*.
18. World Health Organisation *International Classification of Diseases 10th revision, Clinical Modification*, Geneva. 1994.
19. Kirkwood, B.R. *Essentials of medical statistics*. Blackwell Scientific Publications, Oxford.1988.
20. Norsius, M.J., SPSS/PC+ *Advanced Statistics*, Version 5.0 Illinois, USA. 1992.
21. Church, P., Mitchell, Renvoiez, E. The Use of Clinical Care Profiles to Meet the Occupational Therapy Needs of Patients. *British Journal of Occupational Therapy*, 1994; **57**: 391-392.

8. GENERAL DISCUSSION

The foregoing chapters have provided information on the practice of occupational therapy in hospital based care in the Netherlands. This chapter will focus on the implications of the results for future research, for occupational therapy practice and education, and for health policy.

Implications for future research

Occupational therapy aims at the functional consequences of diseases, in terms of impairments, disabilities and handicaps. The results of this study show that these functional consequences can be assessed in a reliable - reproducible- way (*Chapter 3*), that certain dimensions can be distinguished in the treatment goals concerning functional consequences (*Chapter 4*) and that the treatment goals concerning these consequences (together with the health care programs) give direction to the treatment given by occupational therapists (*Chapter 5*).

Until now, discussions on the nature and core of the profession were largely based on opinions instead of empirical facts. A survey of occupational therapy practice was not available. The present study remedies this lack of information. Empirical data are now available, which may guide the future development of the profession.

However, although the results of the present study are quite useful, it is also clear that they are only the beginning of a research tradition in occupational therapy in the Netherlands. Several recommendations for future research on occupational therapy can be made.

The functional consequences of disease are usually assessed by occupational therapists in a non-standardized way. Almost no assessment methods that objectify and quantify the functional consequences of diseases are available for the profession. According to Gillette (1991) "the basic concepts of a profession should be reflected through the tests and measurements used in practice. For occupational therapy this means functional assessments of performance based on tests that measure change in occupational performance". This type of measurements suitable for occupational therapy practice should be developed and/or tested in future research. These measurements are then available to the therapists working in daily practice and they than can be used in future studies. Since the core of occupational therapy is on disabilities, the assessment methods should also

focus at this level. A few instruments that measure the functional consequences at the level of disabilities have been developed and validated in other countries. This concerns for example the Assessment of Motor and Process Skills (AMPS; Hensgens, 1995) and the Canadian Occupational Performance Measurement (COPM; CAOT, 1991). In the Netherlands - instead of developing new instruments- it should be studied whether these instruments are useful in the Dutch situation. The COPM shows great resemblance to the ICIDH. It provides information on the occupational performance of the patient at the beginning (input) and at the end of the treatment (output). A unique aspect of this measurement is that it gives the patients' perspective on his occupational performance. Since the patients' opinion is becoming more and more important in health care (Staatsblad, 1996), this instrument is most certainly worth to be investigated further. It is advisable to analyze whether this measurement can be taken as a starting point for the development of a similar measurement in the Netherlands.

In the present study no information has been obtained on how occupational therapists choose their treatment goals out of the large array of functional consequences which have been diagnosed. It is unclear which factors influence the decision making process of the occupational therapist with regard to the choice of the treatment goals. It can be assumed, considering the main goal of the profession, that the patients' priorities play a large role in this part of the occupational therapy process. At the start of occupational therapy treatment a patient indicates which aspects of daily living are of importance for him and which aspects he still wishes to fulfill in the future. However, apart from the patient's needs, the choice of interventions is probably also guided by the occupational therapist's professional knowledge. In addition the treatment setting (hospital based care or home based care) and legal regulations may affect the choice of treatment goals. In future research it should be investigated which factors affect the goal setting of occupational therapists.

The relationships that were found in this study between treatment goals, healthcare programs and interventions reflect the clinical experience of therapists. The role of the health care programs could be more explicated in future research (Trombly,1993). It is for example interesting to investigate whether the choice for a certain healthcare program affects the number of treatment sessions given. Similarly, it could be studied whether a person's occupational functioning is better as a result of, for example, the adaptation program rather than the recovery program.

Studies that measure the effect of certain interventions with a specific treatment goal and program (outcome studies) are very scarce. Future research should aim at determining the outcome of occupational therapy. In these future effect studies, the basic principles of occupational therapy should be taken into consideration. The Canadian Association of Occupational Therapists (CAOT, 1991) describes how these basic principles can be included in future effect studies. CAOT indicates that this means that the functional orientation of occupational therapy should guide the methodology of effect studies. Occupational performance is at the very heart of occupational therapy and it depends on three aspects (CAOT, 1991); the *functional ability* of the patients, i.e. what the patient is able to or can do in terms of functional activities; *functional performance* of the patient, i.e. what the patient does do and finally the *functional potential* of the patient i.e. what the patient would be able to do with therapy, assistive devices or other support. These aspects and moreover their relationship should be captured in the measurement of occupational therapy outcomes. This may be explained by an example (CAOT, 1991). For example, a man with an above elbow amputation, functioning in the area of meal preparation, may have the functional ability to prepare simple meals if all ingredients are in easy reach at the right side. He may have the functional potential to become completely independent in meal preparation if provided and trained with a prosthesis (enabling two handed activities). In terms of functional performance he may be completely dependent on his spouse who prefers to look after meal preparation. In occupational performance, meal preparation is not part of his role requirement and thus has no functional potential for therapy. Outcome measures should assess all aspects of occupational performance.

These remarks should be interpreted as a strong plea for supporting research projects on the occupational therapy diagnostic process and occupational therapy interventions. On the basis of this type of research the profession can rise above the level of knowledge based on experience.

Implications for occupational therapy practice and education

The survey study shows that occupational therapists choose treatment goals mainly at the level of disabilities. Comparing these findings to the findings in similar studies on other allied health professions, shows that occupational therapists are mainly concerned with the disabilities of their patients whereas physiotherapists and speech therapists are mainly concerned with the impairments of their patients (Dekker, 1995). This does not mean that occupational therapists choose their treatment goals solely at the level of disabilities, but they do focus at this level. It is of importance that the

implications of this finding are fully grasped in occupational therapy practice. For example, assessments and tests should focus at the level of disabilities. In the intake of patients, data should be gathered focussing at the disability level. From such an approach, the patients, colleagues and other professionals would be able to see the congruence among the purpose, assessments and practice of the profession. In this way the occupational therapists will be recognized as experts in the treatment of disabilities (Trombly, 1993).

The ICDH has proven to be a useful classification to describe the occupational therapy diagnosis. It is advisable to enhance the dissemination of the terminology of the ICDH in the professional group and in the basic training of occupational therapists. The use of the ICDH provides uniform terminology and therefore enhances better communication among occupational therapists and between occupational therapists and other disciplines. The empirical data on the occupational therapy diagnosis in terms of ICDH showed great resemblance to a theoretical model developed in Canada (*chapter 4*). The theoretical model uses "specific occupational therapy language", while the ICDH uses neutral language, useful for many professions. Both the professional association of occupational therapists and the schools of occupational therapy should indicate which terminology is to be preferred: a specific occupational therapy language, the neutral ICDH or a merging of both. Especially for the development of a uniform registration form in the professional group, it is important to decide which language should be used.

The comparison between general care and psychiatric care shows that the practice of the profession in these two fields is very different. The differences among the general care settings are very small. This means that changing jobs between general care settings could probably be accomplished without additional training. However changing from a general care based work environment to a psychiatric based work environment (or vice versa) is probably less easy: actual differences in therapeutic skills are required that possibly demand additional training. This survey was restricted to four types of work settings. Occupational therapists are working in many more fields, though; for example: schools, mental retardation and rehabilitation of children. Since the problems of patients in these latter fields are very different from the problems in the fields in the survey study, it is very well possible that specific therapeutic skills are required to work in these type of settings also. Occupational therapists are trained as generalists, but it appears that in several fields of work specialization is required. Schools of occupational

therapy should therefore consider to anticipate on the differences in practice, already in basic training. The basic training could be shortened to three years, the last year of training could aim at a certain specialization in a specific type of practice. This would be in line with training in other countries such as USA, Canada and Great Britain.

Occupational therapists were found to use different approaches to three groups of patients with a chronic disease (progressive neurologic diseases, cerebro vascular accident and rheumatoid arthritis). It seems that there is a certain degree of consensus among occupational therapists on the treatment of these three patient groups. The present findings could be the first step towards to the development of professional standards for these patient groups. The development of standards is an important aspect of the policy concerning quality assurance of the Dutch association of occupational therapy (NVE, 1996). According to this policy standards are developed by a small group of (regionally working) experienced occupational therapists and judged by a large group of experienced therapists (working nationwide). Since the group of patients with a chronic disease is relatively large in the patient population treated by occupational therapists, the development of standards for these patients has priority.

Implications for health policy

Due to demographic changes, the aging population and the expected increase of people with a chronic disease, in the near future many people may become dependent on home health care (care at the patient's home; "thuiszorg") or on admission to institutions (for example nursing homes). Furthermore, transmural care is rapidly developing (Ministry of Health, Welfare and Sports, 1996). This means that patients are discharged from hospitals "quicker and sicker" because of technological developments and cutbacks in the expenditures on health care. After discharge many patients still need some amount of help in their home environment. In the Netherlands traditionally, the accent in home health care has always been on taking over daily activities instead of assisting the patient in becoming as independent as possible (RVZ, 1996). However, the Dutch government stresses that care which improves the independence of people is of main importance in future health care. People should live in their own homes as long as possible. Therefore, the role of the occupational therapist in home health care can become very important since the independent functioning of patients in all daily living activities is at the very heart of the profession. Especially the occupational therapist, is very well capable of judging the (dis)abilities of the patient and determine if the patient

can (learn to) live independently, with or without aids in his home environment.

Traditionally occupational therapists worked in hospital based care. The last five years though occupational therapy in home health care has increased with approximately 75% even in absence of funding (Driessen et al, 1996; Driessen, 1997). The Dutch government is further supporting the growth of the profession by allocating a sum of money for occupational therapy in home health care. In addition changes in the legal system in the Netherlands are prepared. This means that occupational therapy services will be covered by the National health insurance from January, 1998 and herewith be accessible for all Dutch citizens. The implication of this new development is that occupational therapy should be integrated in home health care. At this moment most occupational therapists are working in hospital based care, many of them with older patients and/or patients with chronic diseases. It is of importance that their knowledge is also utilized in the form of easily accessible occupational therapy in home health care. It therefore is suggested to create (regional) collaborations of occupational therapists working in institutions, private practice or home care institutions, to treat patients in home health care. Depending on the specialization of the occupational therapist and the preference of the patient (for example, the patient may prefer to be treated by an occupational therapist from a nursing home or from a private practice), the choice for the most appropriate treatment can be made.

A rather new development of importance for the profession is the integrated, independent and objective assessments in future home health care. In this assessment staff members employed by independent organizations have to assess all types of care needed by a patient to be able to live independently at home and if this is no longer possible the staff member indicates that admission is necessary to a nursing home or home for the elderly. The Dutch government also stresses the importance of this development (Ministry of Health Welfare and Sports, 1996) which should be introduced in January 1998. The present assessments for the 'Wet Voorzieningen Gehandicapten' (WVG) and the assessments for the "AWBZ-aids" should also be integrated into this assessment (Ministry of Health Welfare and Sports, 1996). Occupational therapists already play a prominent role as advisor in the assessments for the WVG and are well-known with the (process of) advising on "AWBZ-aids. The role of the occupational therapists in this integrated, independent and objective assessment is as an advisor, who will use his occupational therapy expertise, and not as a therapist. This means that the professional organization of occupational therapy has to set the boundary

between 'advise' and 'therapy'. Where is the limit of 'advise' and where does 'therapy' take over ? It seems clear that occupational therapy expertise is needed in this new development and this may lead to another expansion of the profession of occupational therapy.

Finally, the profession is growing rapidly in the Netherlands. The intake of students has increased the last years from 180 (in 1993) to 390 (in 1997). Though the profession is growing rapidly and the demand for occupational therapists is still higher than the provision of occupational therapists there is a danger of training too many students. This means that -already in an early stage- it should be investigated whether the number of students is in line with the need for occupational therapists in the future. Otherwise unemployment among occupational therapists in the Netherlands will make its entry.

References

- Canadian Association of Occupational Therapy 1991. Occupational therapy guidelines for client-centred practice. Toronto: CAOT.
- Dekker J. 1995. Application of the ICDH in survey research: the emergence of the functional diagnosis. *Disability and Rehabilitation*, 1995, 17, 195-201.
- Driessen, M.J., 1997. Occupational therapy at home. *Home and Community Care International* 1997, 1, 9-12.
- Driessen, M.J., Harmsen, J., Dekker, J., Bosveld, W., Hingstman, L., 1996. Inventarisatie extramurale ergotherapie 1996. NIVEL, Utrecht.
- Gilette, N.P., 1991. The issue is: Research Directions for occupational therapy. *American Journal of Occupational Therapy*, 45, p.563-565.
- Hensgens J. 1995. Assessment of Motor and Process Skills. *Nederlands Tijdschrift voor Ergotherapie (Dutch Journal of Occupational Therapy)*, 23, 3-7.
- Ministry of Health Welfare and Sport 1996. Stand van zaken beleidsvoornemens thuiszorg. (Policy intentions for home care). Rijswijk: VWS.
- Nederlandse Vereniging voor Ergotherapie 1996. Kwaliteitsbeleidsplan 1996-2000. NVE, Utrecht.
- Raad voor de Volksgezondheid 1996. Strategische beleidsvragen zorgsector. Zoetermeer: RVZ.
- Staatsblad 1996. Kwaliteitswet Zorginstellingen (Quality-law for health care agencies). 's Gravenhage.
- Trombly 1993. Anticipating the future: Assessment of occupational functioning. *The American Journal of Occupational Therapy* 47, 253-257.

SUMMARY

INTRODUCTION

A description and analysis of the current practice of occupational therapy in hospital based care in the Dutch health care system was the subject of this survey study.

The relevance of this description is threefold. First occupational therapy is a young but very rapidly growing profession in the Netherlands. The body of knowledge of the profession has never been thoroughly described. The description of the core of occupational therapy practice leads to the explication of the knowledge in the current practice of occupational therapy. Second, knowledge of current practice is a prerequisite for the improvement of practice. It can serve as a starting point for further research and for the development of protocols or other quality assurance instruments such as peer review. Third, this description is essential for priority setting for example in future research or in the development of quality assurance instruments and the evaluation of future changes in the profession.

Before starting the survey study a literature search (*Chapter 2*) was carried out to describe the current status of the profession world-wide. This literature study showed that world-wide very little information is available on the practice of the profession.

Occupational therapy and the International Classification of Impairments, Disabilities and Handicaps (ICIDH)

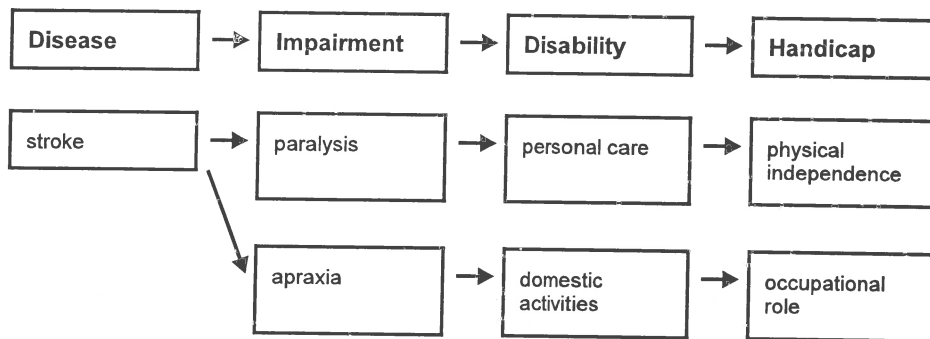
Both diagnosis and treatment in occupational therapy practice are concerned with the consequences of diseases. For example if a person has had a stroke and is referred to the occupational therapy department, occupational therapy is not aimed at curing the stroke ('disease'). Instead, occupational therapy is aimed at the consequences of the stroke for the daily living activities of the person such as disability in walking or personal hygiene. So the occupational therapist focuses on the consequences of disease for daily living activities. There is however no generally accepted occupational therapy terminology to describe these consequences.

In the present study, the description of the occupational therapy diagnosis was based on the ICIDH (i.e. the International Classification of Impairments,

Disabilities and Handicaps). The ICDH is a classification of the consequences of diseases. An advantage of using the ICDH above any specific occupational therapy terminology is that the results are also interpretable for other health care professionals and the results can be compared to other studies conducted by physical therapists or rehabilitation specialists. Using the same terminology promotes uniform language in health care which will improve communication between disciplines.

The ICDH was published by the World Health Organization in 1980. The ICDH classifies the consequences of disease at three levels. The first level concerns impairment: any loss or abnormality of psychological, physiological or anatomical structure or function (e.g. paralysis, pain, apraxia). The second level concerns disability: any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being (e.g. disability in personal care, in leisure, in domestic skills). The third level concerns handicap: a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfillment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual (e.g. handicap in occupational role, in mobility). The levels of the ICDH are illustrated in figure 1.

Figure 1: Levels of the ICDH



Based on the occupational therapy diagnosis, the occupational therapist chooses certain treatment goals. These treatment goals are a subset of impairments, disabilities and handicaps; treatment is primarily aimed at this subset. The treatment goals indicate what the therapist and patient want to achieve with the treatment and guide the choice of interventions.

The way in which the occupational therapist tries to reach the treatment goals is determined by the "health care program". These health care programs

indicate with which intention therapy is carried out. The occupational therapist can choose out of five programs i.e. prevention, development, recovery, environmental adaptation and maintenance. For example if disabilities in personal care are chosen as a treatment goal the occupational therapist can choose to teach a patient to carry out activities with one hand (developmental program) or he can teach to carry out personal care activities with the use of aids (environmental adaptation program).

RESEARCH QUESTIONS

The following research questions are being examined in this thesis:

1. Is it possible to assess the occupational therapy diagnosis in a reliable way, using an ICDH-based registration form?
2. (a) Which types of patients are treated by occupational therapists and who has referred these patients? (b) Which occupational therapy diagnoses and treatment goals are chosen in occupational therapy practice and is it possible to identify combinations of occupational therapy diagnoses and combinations of treatment goals?
3. (a) Which interventions are applied in occupational therapy practice? (b) Is the application (choice) of interventions dependent on treatment goals and healthcare programs?
4. Is there a difference in the practice of the profession in general and in psychiatric care with regards to treatment goals, occupational therapy interventions and health care programs?
5. Is there a difference in treatment for three types of chronic diseases treated most frequently by occupational therapists, with regard to treatment goals, occupational therapy interventions and health care programs?

These five questions have been investigated with the data from the reliability study and the survey study. The results have been described in Chapters 3 to 7.

RELIABILITY OF THE OCCUPATIONAL THERAPY DIAGNOSIS

Prior to the start of the survey, it was investigated if it is possible to assess the occupational therapy diagnosis in a reliable (reproducible) way, using a registration form based on the International Classification of Impairments,

Disabilities and Handicaps (*Chapter 3*). The contents of the list of items of the occupational therapy diagnosis in the registration form are shown in box 1. Fifty patients from a psychiatric hospital participated in the inter-observer reliability study and fifty seven patients from a rehabilitation center participated in the intra-observer reliability study. In the inter-observer study, the patients were observed for three weeks after admission. After these three weeks, two therapists independently completed the registration form. In the intra-observer study, each therapist completed the form twice, with an interval of seven to ten days. The reliability was assessed, using two measures: percentage of agreement and Cohen's kappa. A percentage of agreement of 80% or more was regarded as satisfactory; kappa was regarded to be satisfactory if it had a value of 0.40 or more. The results showed that the reliability of the assessments of the impairments, disabilities and handicaps is satisfactory to very good. In the rehabilitation center one item had a percentage of agreement below 80%, but all items had a kappa value higher than 0.40. In the psychiatric hospital 72% of the items had a percentage of agreement higher than 80% and 88% of the items had a kappa value higher than 0.40. The registration form was modified for those items with kappa values below 0.40. These items were joined into new items. These combined items all had a percentage of agreement higher than 80% and a kappa value higher than 0.40. The results implied that the registration form could be used in the survey.

Box 1: Items and sub-items of the occupational therapy diagnosis in the registration form

Items

Impairments	Sub-items
Motor impairments	Skeletal impairment of structure, skeletal impairment of function, amputation, coordination, other motor impairments.
Sensory impairments	Sensory awareness, proprioception, pain, other sensory impairments.
Cognitive impairments	Impairment of memory, impairment of thinking, neuropsychological function deficit, other cognitive impairments.
Intrapersonal impairments	Impairment of emotive and volitional functioning, impairment of behavior patterns, impairment of perception, impairment of attention, impairment relating to location in time and space.
Other impairments	
Disabilities	Sub-items
Basic skills	Motor skills, cognitive skills, psychological skills, interaction skills.
Communication	Talking, understanding, reading, writing.
Endurance	Physical and psychological endurance.
Locomotor	Transfers, walking, traversing, transport.
Personal care	Personal care, excretion, personal hygiene, dressing, feeding.
Domestic	Moderate household activities, heavy household activities, preparing meals, care of dependents, maintenance environment.
Specific skills	Handling physical environment, budgeting.
Leisure	Includes sports, hobbies and playing games.
Relation	Making and maintaining contact with other individuals, functioning within a group.
Handicaps	Definitions
Physical independence	The appearance and presentation of the individual, care for personal belongings, way of living in relationship to health.
Mobility	Capacity of an individual to move around inside and outside his home and environment.
Social role	Frequency and quality of contacts with good friends and relatives, taking steps to arrange leisure activities.
Occupational role	Functioning in daily work for example adaptation to daily routine, contact with colleagues. This item also includes household work.
Family/household role	To have emotional relations with family/household members, to undertake tasks which are important for the functioning of the family/group, contribute to the atmosphere in the family or in the group one lives in.

METHOD OF THE SURVEY STUDY (*Chapters 4-7*)

Participating occupational therapists

In the period January 1992 until March 1993, 143 therapists, working in 49 departments of occupational therapy, participated in this study. The Chief Inspectorate of Public Health in the Netherlands has investigated in which field occupational therapists were working in the Netherlands. The four fields where occupational therapists worked most shifts per week - i.e. nursing homes, rehabilitation centers, general hospitals and psychiatric hospitals - were included in this study. Excluded were institutions for mentally handicapped, treatment of children, private practices and other kinds of treatment in ambulatory care.

The participating institutions were randomly selected from a list of institutions where occupational therapists are working, compounded by the Dutch association of occupational therapy. General characteristics (age and gender) of the participating occupational therapists corresponded with data from a representative sample of occupational therapists working in the Netherlands.

Registration form

To investigate characteristics of the participating patients a standard registration form was used. This registration form consisted of three sections. The first section concerned patient characteristics (i.e. gender, type of insurance, age), referral characteristics and medical diagnosis. The second section concerned the occupational therapy diagnosis (see box 1). The occupational therapy diagnosis was based on the International Classification of Impairments, Disabilities and Handicaps. In this section the therapist also had to fill out the treatment goals. Treatment goals were derived from the diagnosed impairments, disabilities and handicaps. The occupational therapist could choose an item (see left column of box 1) as a treatment goal. For example if locomotor disabilities were diagnosed, the occupational therapist could indicate that the treatment was (or was not) directed towards locomotor disabilities. Therapists were allowed to indicate up to a maximum of five goals.

The third section concerned characteristics of the treatment (length, intensity), the therapeutic interventions and health care programs that were chosen. This section was filled in either at 16 weeks (end of registration period) or at the end of the treatment if the treatment was finished earlier. In the registration form a matrix was made in which the therapists could choose (a maximum of) two interventions and (a maximum of) two programs with each treatment goal.

The interventions that were studied were the following: self care activities; productivity activities; leisure activities; instruction and advice; group therapy; splints; and other interventions (see box 2).

Box 2: Interventions in the study

Interventions

Self care activities
 Productivity activities
 Leisure activities
 Advice/instruction on aids and adaptations
 Group therapy
 Splinting
 Other interventions

The original list of interventions in the registration form was longer. This list of interventions was reduced by combining specific intervention items as follows. *Self care* is defined as: those activities or tasks which are done routinely to maintain the person's health and well-being in the environment. The following items from the registration form were joined into this category: personal care, locomotor and communication activities.

Productivity is defined as: those activities or tasks which are done to enable the person to provide support to the self, family and society through the production of goods and services. The following items of the registration form were put together into this category: domestic and occupational activities.

Leisure is defined as: the components of life which are free from work and self-care activities. The following items in the registration form were joined: leisure, arts and crafts and play activities.

The *advice/instruction* category consist of the items advice/instruction on sitting and standing, on the use of aids, on the adaptation of the home(environment).

The *group therapy* category consists of two items on task and personal problem oriented therapy.

The category *splinting* consists of the making of splints and the category *other interventions* was not further specified.

With each treatment goal the occupational therapist could choose (a maximum of) two interventions and (a maximum of) two health care programs. These "health care programs" can be considered as overall goals determining the direction of the treatment. The programs were adopted from Reed and Sanderson (1992). Five programs were distinguished: prevention-,

development-, recovery-, environmental adaptation and maintenance-program (see box 3.).

Box 3: Health care programs in the registration form

Health care programs

Prevention
Development
Recovery
Environmental adaptation
Maintenance

The programs are described as follows by Reed and Sanderson: The *prevention* program is focused on keeping problems from happening or, if a problem has developed, to keep it from getting worse. The *developmental* program is designed for an individual who has not developed or learned the skills and tasks appropriate to chronological age. The *recovery* program aims at individuals who have lost skills due to illness or trauma but can be expected to regain some skills or relearn some activities. The *environmental adaptation* program is chosen when change and recovery within the individual have achieved a level of function that can be expected in the immediate or long range future. Further improvement in function however, can be expected if the external environment is changed to reduce barriers to performance. The *maintenance* program is applied when the patient is able to perform many skills independently but must continue to perform these skills in order to maintain health.

With each treatment goal the occupational therapist chooses one (or at most two) specific health care program, depending on which outcomes of treatment are aimed at. For instance if the "prevention" program is chosen with domestic disabilities, the focus of the treatment could be on energy intake during the day or on principles of joint protection; however if the health care program "development" is chosen, the focus of the treatment would be at learning new skills.

Procedure

The participating therapists received a brief explanation in the use of the registration form, together with a manual about its use.

All patients referred to the occupational therapist could be registered in the study. The number of patients registered by each department was agreed upon prior to the start of the survey. The total number of patients to be

registered in each setting was intended to be in proportion to the number of shifts worked within that setting. The four fields of work where the occupational therapists were working most hours per week were chosen. This implied that most patients should be registered in the nursing homes (38%), followed by rehabilitation centers (32%), general hospitals (20%) and psychiatric hospitals (10%). The registration form was filled out for 944 patients in general care and for 107 patients in psychiatric care, 1051 patients in total. The actual distribution of patients over the four institutions was in accordance with our intentions.

WHICH TYPES OF PATIENTS ARE TREATED BY OCCUPATIONAL THERAPISTS AND WHO HAS REFERRED THESE PATIENTS?

Chapter 4 concerns general characteristics of patients treated by occupational therapists in the study, which diseases they have and who has referred these patients to the occupational therapy services.

Type of patients

Patients in general health care and patients in psychiatric health care were described separately. In general health care, 60% of the patients was female and the mean age was 61 years. Most patients (76%) were insured by the health insurance fund. The housing conditions of the patients during the time of the treatment was almost equally divided over institutions (51%) and at home (48%). Approximately one third (33%) of the patients were single and lived alone.

In psychiatric health care 60% of the patients was female and the mean age was 38 years. The majority of the patients was insured by health insurance fund (87%). During the time of treatment, half of the patients (48%) lived in institutions and the other half (52%) lived at home. Thirty percent of the patients was single and lived alone.

Both patient groups showed much resemblance with regard to the following characteristics: gender (60% women), insurance (majority insured by health insurance fund), housing and living conditions (about half of the patients lived in an institution together with others). The two groups differed with regard to age: the general health care patients were older (mean age 61 years) than the patients in psychiatric health care (mean age 38 years).

Medical/psychiatric diagnosis

A medical or psychiatric diagnosis was given for almost all (more than 97% of the) patients. The most frequently occurring diagnoses in general health care were: diseases of the circulatory system (32%), diseases of the musculoskeletal system and connective tissue (21%) and diseases of the nervous system (17%). Almost all patients in the group 'diseases of the circulatory system' had a stroke (98%).

The most frequently occurring diagnoses in psychiatric health care were; schizophrenia (36%), depressive disorders (23%) and psychotic disorders (10%).

Referral

In general care most patients were referred by a medical specialist (nursing home specialist, rehabilitation specialist, neurologist, rheumatologist) and in nursing homes also by a general practitioner. In psychiatric care most patients were referred by a psychiatrist but a large group (40%) were referred by their mentor (e.g. group leader or nurse).

WHICH OCCUPATIONAL THERAPY DIAGNOSES AND TREATMENT GOALS ARE CHOSEN IN OCCUPATIONAL THERAPY PRACTICE AND IS IT POSSIBLE TO IDENTIFY COMBINATIONS OF OCCUPATIONAL THERAPY DIAGNOSES AND COMBINATIONS OF TREATMENT GOALS?

Chapter 4 also concerns the occupational therapy diagnoses and treatment goals.

Occupational therapy diagnosis

In both patient groups impairments, disabilities and handicaps were frequently diagnosed. In general care the following items were diagnosed in approximately three quarter or more of the patients: motor impairments (94%), disabilities in basic skills (84%), locomotor (78%) and domestic (74%) disabilities, disabilities in personal care (74%) and handicap in mobility (76%). In psychiatric care the following items were diagnosed in three quarter or more of the patients: intra personal impairments (98%), disabilities in basic skills (98%), disabilities in relation (86%), in leisure activities (81%) and in endurance (78%) and handicap in social role (92%), in occupational role (83%) and in family/household role (79%).

Treatment goals

In general care the following treatment goals were most frequently (in more than 25% of the patients) chosen: motor impairments (48%); disabilities in personal care (48%), locomotor (41%) and domestic (35%) disabilities and disabilities in basic skills (32%); handicap in mobility (26%) and handicap in physical independence (24%).

In psychiatric care the following treatment goals were most frequently chosen: intrapersonal (55%) and cognitive (34%) impairments; disabilities in basic skills (72%), disabilities in leisure activities (51%) and disabilities in relations (25%); handicap in occupational role (45%) and handicap in social role (45%).

With both patient groups most treatment goals were chosen at the level of disabilities (see table 1).

Table 1: Distribution of treatment goals at the level of impairments, disabilities and handicaps

	Impairments	Disabilities	Handicaps	
General care	23%	56%	21%	100%
Psychiatric care	23%	48%	29%	100%

Many treatment goals were chosen with no easily identifiable relationships. Statistical analysis was used, investigating whether certain treatment goals were often chosen together, so that a limited number of dimensions would emerge. The intention was to reduce the large variety of treatment goals into a limited number of combinations of treatment goals. All treatment goals chosen with more than 10% of the patients were included in the analysis. A total of 12 independent dimensions were distinguished: 7 dimensions in general care and 5 dimensions in psychiatric care. The largest number of dimensions occurred at the level of disabilities. Apparently the differentiation among treatment goals is larger at the level of disabilities than at the level of impairments or handicaps. Therefore both the frequency and the differentiation among treatment goals point to the disability level as the main focus of occupational therapy.

In addition, an attempt was made to analyze the data on the occupational therapy diagnosis in the same way. However, no meaningful reduction of the data could be achieved. Almost all diagnosed items appeared to cluster on a single dimension. In this way the data were reduced, but the resulting dimensions had no meaning for occupational therapy practice. The most likely

explanation of the failure to reduce the data is that many diagnoses occurred in each patient: this would explain that these diagnoses all clustered on a single dimension.

WHICH INTERVENTIONS ARE APPLIED IN OCCUPATIONAL THERAPY PRACTICE?

IS THE APPLICATION (CHOICE) OF INTERVENTIONS DEPENDENT ON TREATMENT GOALS AND HEALTHCARE PROGRAMS?

In *chapter 5* the contents of occupational therapy are described for patients in nursing homes, rehabilitation centers and general hospitals (N=944). The group of patients from the psychiatric hospitals was not included in the analysis because the group was too small to carry out the statistical tests.

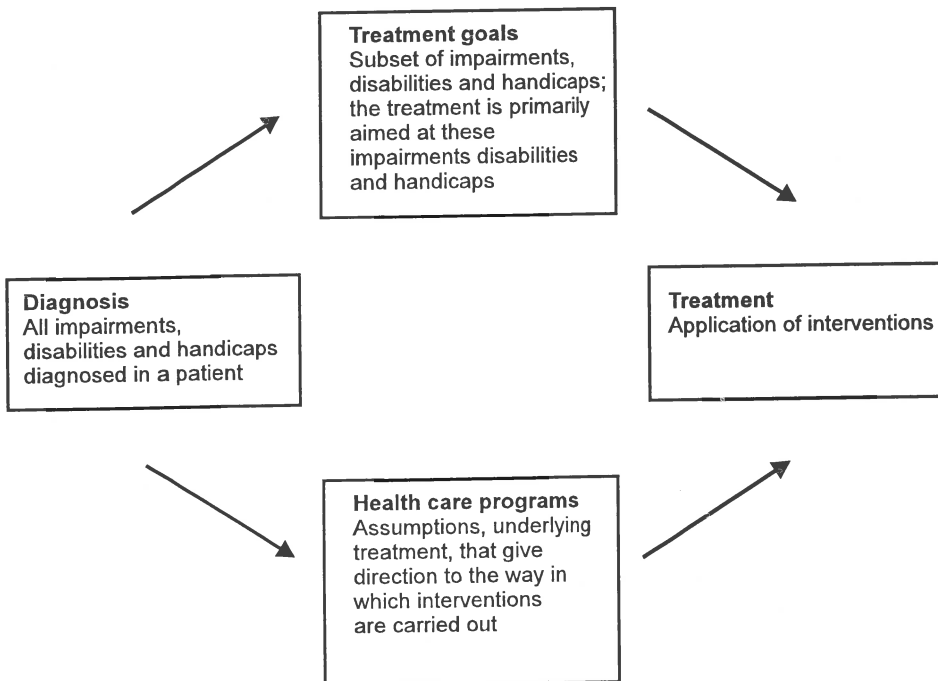
Contents of occupational therapy

The three interventions that are most frequently chosen by occupational therapists were: advice/instruction on aids and adaptations (33%) and activities on personal care (28%), leisure activities (16%) and activities on productivity (16%). The three health care programs most frequently chosen were adaptation (32%), recovery (28%) and development (20%).

Relationship between treatment goals, healthcare programs and interventions

There is a lack of information on the factors that influence the choice of interventions in occupational therapy. We assumed that the choice of interventions depends on both treatment goals and healthcare programs (see figure 2).

Figure 2: The relationship between diagnosis, treatment goals, health care programs and interventions



The relationship between treatment goals, health care programs and interventions was analyzed. It was concluded that the treatment goals and health care programs independently determine the choice of interventions in occupational therapy practice; the choice of interventions is not dependent on specific combinations of goals and programs. Based on these relationships several profiles on occupational therapy treatment can be identified. These profiles not only specify what occupational therapists do to achieve a certain treatment goal, they also indicate the assumption underlying the intervention (i.e. which health care program is applied). The following profiles are distinguished:

The interventions "activities on self care" and "activities on productivity" were mainly chosen to achieve treatment goals at the level of disabilities and handicaps, whereas the intervention "activities on leisure" was mainly chosen to achieve treatment goals at the level of impairments and disabilities. All

three interventions "activities on self care", "activities on productivity" and "activities on leisure" were chosen if treatment was based on the developmental and/or recovery program. This means that therapy aims at the development of new skills and/or at the recovery of skills.

The intervention "advice/instruction" was mainly chosen to achieve treatment goals at the level of disabilities and handicap. If the intervention "advice/instruction" was chosen, the therapy was based on the prevention, adaptation or maintenance program. This means that if occupational therapists chose for "advice/instruction" they aimed at adapting the environment to the level of occupational functioning of the patient or at maintenance of the level of functioning of the patient or to prevent a (further) loss of functioning.

IS THERE A DIFFERENCE IN THE PRACTICE OF THE PROFESSION IN GENERAL AND IN PSYCHIATRIC CARE WITH REGARDS TO TREATMENT GOALS, OCCUPATIONAL THERAPY INTERVENTIONS AND HEALTH CARE PROGRAMS?

In *chapter 6* a description is given of occupational therapy practice in psychiatric and in general care. Besides, the various worksettings within general care were also compared to each other.

In the Netherlands the profession started after World War II. British occupational therapists were employed to rehabilitate disabled war veterans. The profession was at first practiced in rehabilitation centers and psychiatric hospitals and moved gradually to other settings such as nursing homes and general hospitals. Since occupational therapy is practiced in many different institutions, the question arises whether differences exist in the practice of the profession in these various settings. Although the basic philosophy of occupational therapy is not restricted to a certain field of work, nor to general or psychiatric care, it is possible that the profession is practiced in distinct ways in the different institutions.

Differences between psychiatric and general care

Occupational therapy practice in psychiatric and general care differ in many aspects. A characterization of treatment goals chosen by occupational therapists in psychiatric care showed that the following treatment goals were emphasized: cognitive and intrapersonal impairments; disabilities in basic skills, in leisure and in relationships; and handicap in social role and in occupational role. Occupational therapy practice in general care can be

characterized by the following treatment goals: motor and sensory impairments; locomotor and personal care disabilities; and handicap in physical independence and in mobility.

A characterization could also be made for the interventions. It appeared that in psychiatric care leisure activities and group therapy were chosen relatively often, whereas in general care self care activities and advice/instruction were emphasized.

At the level of health care programs only one difference was observed: in psychiatric care the developmental program was chosen relatively often.

It can be concluded that there is a large difference in the practice of the profession in both settings. Differences were found at the level of treatment goals, interventions and to a lesser extent health care programs.

Differences between general care settings

It was concluded that occupational therapy practice within general care is very much alike in the three settings: nursing homes, rehabilitation centers and general hospitals. A characterization of occupational therapy in these three settings showed a resemblance with regard to treatment goals, therapeutic interventions and health care programs. Although the differences between the settings were small, some differences did emerge. Cognitive impairments, disabilities in personal care and handicap in physical independence were emphasized in nursing homes. The intervention self care activities was accentuated in nursing homes and productivity was emphasized in rehabilitation centers.

IS THERE A DIFFERENCE IN TREATMENT FOR THREE TYPES OF CHRONIC DISEASES TREATED MOST FREQUENTLY BY OCCUPATIONAL THERAPISTS, WITH REGARD TO TREATMENT GOALS, OCCUPATIONAL THERAPY INTERVENTIONS AND HEALTH CARE PROGRAMS?

In *chapter 7* the treatment by an occupational therapist of patients with selected chronic disease is described. In the Netherlands the number of patients diagnosed with a chronic disease is growing rapidly. A chronic disease can affect all areas of an individual's life. Occupational therapy is an important service for patients with a chronic disease because it focuses on improving the functional capacity of the patients.

In our study three patient groups with chronic diseases were treated most frequently by occupational therapists: Progressive Neurological Diseases (PND, N=102), Cerebral Vascular Accident (CVA, N=338) and Rheumatoid

Arthritis (RA, N=67). Each group could be characterized by a specific approach. These differences were not caused by age or gender differences between the diagnostic groups. The occupational therapy profiles for these diagnostic groups was as follows:

With **PND patients** treatment goals focused on locomotor disabilities and on handicap in mobility. With regard to interventions, advice/instruction was found to be chosen relatively frequently. With regard to the programs, adaptation and maintenance were chosen relatively often. A characterization of the treatment of **CVA patients** showed the following profile. At the level of treatment goals, handicap in physical independence was emphasized. With regard to the interventions, self care and leisure activities were relatively frequently chosen. The programs development and recovery were chosen relatively often. The profile for the **RA patients** was characterized by the following aspects. With the treatment goals motor impairments, domestic disabilities and disabilities in specific skills were relatively often chosen. The intervention advice/instruction and the program prevention was chosen relatively frequently.

Although each group was characterized by a specific approach there also seemed to be a resemblance between the **PND** and **RA** group on one hand as compared to the **CVA** group on the other hand. With **PND** and **RA** patients the average time spent on treatment (6 hours) was similar. Furthermore for both diagnostic groups treatment was based on the concept of care. This means that the direction of the treatment is on adaptation, prevention and maintenance. With **CVA** patients the average time spent on treatment was twice as high as with the other two diagnostic groups (12 hours). The accent of the treatment seemed to be on the concept of 'cure'. With the majority of this group some recovery is still possible. The main accent of treatment was on recovery and development.

It can be concluded that different profiles of occupational therapy treatment can be given for the **PND**, **CVA** and **RA** patient groups. On several aspects there is a resemblance between the **PND** and **RA** patients. These profiles may serve as a first basis for the further development of standards for the profession.

IMPLICATIONS

Chapter 8 discusses the implications of the results for future research, for occupational therapy practice and education, and for health policy.

characterized by the following treatment goals: motor and sensory impairments; locomotor and personal care disabilities; and handicap in physical independence and in mobility.

A characterization could also be made for the interventions. It appeared that in psychiatric care leisure activities and group therapy were chosen relatively often, whereas in general care self care activities and advice/instruction were emphasized.

At the level of health care programs only one difference was observed: in psychiatric care the developmental program was chosen relatively often.

It can be concluded that there is a large difference in the practice of the profession in both settings. Differences were found at the level of treatment goals, interventions and to a lesser extent health care programs.

Differences between general care settings

It was concluded that occupational therapy practice within general care is very much alike in the three settings: nursing homes, rehabilitation centers and general hospitals. A characterization of occupational therapy in these three settings showed a resemblance with regard to treatment goals, therapeutic interventions and health care programs. Although the differences between the settings were small, some differences did emerge. Cognitive impairments, disabilities in personal care and handicap in physical independence were emphasized in nursing homes. The intervention self care activities was accentuated in nursing homes and productivity was emphasized in rehabilitation centers.

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IMPLICATIONS

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Implications for future research

The results of the study are only the beginning of a tradition in occupational therapy research in the Netherlands. For the future it can be recommended that objective assessment methods of 'functional consequences' should be developed for the profession in the Netherlands. It is suggested to investigate whether instruments measuring the functional consequences of disease, which have been developed in other countries, can be used in the Dutch situation. This concerns for example the Assessment of Motor and Process Skills and the Canadian Occupational Performance Measurements. Furthermore it is of importance to investigate which factors affect the goal setting of occupational therapists. Finally, it is important to develop outcome studies for occupational therapy, in which the effect of certain interventions with a specific treatment goal and program are investigated. In these future studies, the basic principles of occupational therapy should be taken into consideration. This means that the functional orientation of occupational therapy should guide the methodology of outcome studies.

Implications for occupational therapy practice and education

The results of the study show that occupational therapy focuses on disabilities. Treatment goals are mainly chosen at this level. The implications of this finding should be fully grasped in occupational therapy practice, for example in tests, assessments and the intake process of the therapy.

The ICDH has proven to be a useful classification to describe the occupational therapy diagnosis. It is advisable to enhance the dissemination of the terminology of the ICDH in the professional group and in the basic training of occupational therapists.

Differences between general and psychiatric care emerged in the results of the study. Thus, it appears that specialization occurs in occupational therapy practice. This may indicate that changing jobs from a general care based work environment to a psychiatric based work environment requires different therapeutic skills that possibly need additional training.

Occupational therapists choose different approaches in the treatment of three groups of patients with a chronic disease (progressive neurologic diseases, cerebrovascular accident and rheumatoid arthritis). It seems that there is a certain degree of consensus among occupational therapists on the treatment of these three patient groups. The observed treatment approaches could be the first step towards the development of standards for these type of patients.

Implications for health policy

The Dutch government stresses that care which improves the independent living of people is of main importance in future health care. People should live in their own homes as long as possible. The role of the occupational therapist in home health care (care at the patient's home: thuiszorg) can become very important since the independent functioning of patients in all daily living activities is at the heart of the profession. The occupational therapists is very well capable to judge the (dis)abilities of the patient and to determine whether the patient can (learn to) live independently, with or without aids in his home environment. The last five years occupational therapy in home health care has increased with approximately 75%. The Dutch government is further supporting the growth of occupational therapy in home health care.

Because of the rapid growth of the profession, the intake of the students has increased from 180 (in 1993) to 390 (in 1997). It is argued that -despite the favorable prospectives- there is a danger of training too many students. A careful planning of the number of occupational therapists required in the future seems to be indicated.

SAMENVATTING

INLEIDING

Het onderhavige onderzoek had tot doel de huidige praktijk van ergotherapie in ziekenhuizen, revalidatiecentra, verpleeghuizen en psychiatrische instellingen te beschrijven en te analyseren.

Het beroep van ergotherapeut is een wettelijk erkend en in de gezondheidszorg geïstitutioniseerd beroep. Toch is het vanuit het oogpunt van professionalisering nog een jong beroep. De kennis waarop de uitoefening van het beroep gebaseerd is, is nog weinig geëxpliciteerd, gestructureerd of getoetst. Om hier verandering in te brengen is een traject van activiteiten vereist. Een beschrijvend en analyserend onderzoek naar de huidige beroepsuitoefening kan gezien worden als de eerste stap op dit traject. Om de volgende redenen is een dergelijk onderzoek relevant. Ten eerste leidt dit onderzoek tot het expliciteren van kennis, die nu niet of alleen in de vorm van tekstboeken en beschouwingen gedocumenteerd is. De ervaring van beroepsbeoefenaren is een waardevolle bron van kennis, die nu echter nauwelijks of niet expliciet gemaakt is. Ten tweede is een beschrijving van de huidige beroepsuitoefening noodzakelijk als vertrekpunt voor verder onderzoek en voor het verbeteren van de beroepsuitoefening. Tenslotte is een beschrijving van de huidige praktijk vereist om prioriteiten te kunnen stellen (bijvoorbeeld op het gebied van onderzoek of op het gebied van kwaliteitsverbetering) en om toekomstige veranderingen te kunnen evalueren. Tegen deze achtergrond is een onderzoek naar de praktijk van de ergotherapeutische beroepsuitoefening uitgevoerd. De resultaten hiervan zijn gebundeld in dit proefschrift.

Voorafgaand aan het onderzoek is een literatuurstudie uitgevoerd naar kwantitatieve gegevens over de ergotherapie praktijk, in Nederland en in andere landen. Het bleek dat er weinig studies beschikbaar waren over de praktijk van ergotherapie.

De Internationale Classificatie van Stoornissen, Beperkingen en Handicaps (ICIDH)

Zowel het diagnostische onderzoek van de ergotherapeut als de behandeling richten zich op de gevolgen van ziekte en de betekenis die deze gevolgen hebben voor de activiteiten in het dagelijkse leven. Bijvoorbeeld: bij een patiënt met een beroerte die wordt verwezen naar de afdeling ergotherapie, richt

2. (a) Welke zijn de karakteristieken van patiënten die door ergotherapeuten worden behandeld en wie heeft deze patiënten naar ergotherapie verwezen? (b) Welke zijn de diagnostische bevindingen van de ergotherapeut en welke zijn de behandoelen die daarvan afgeleid worden? Is het mogelijk combinaties aan te wijzen van diagnostische bevindingen van de ergotherapeut? Is het mogelijk combinaties aan te wijzen van behandoelen?
3. Welke interventies worden toegepast in de praktijk en is de keuze van interventies afhankelijk van behandoelen en behandelprogramma's?
4. Bestaat er verschil in de uitoefening van het vak tussen ergotherapeuten die in de somatische gezondheidszorg en degenen die in de psychiatrische gezondheidszorg werken, met betrekking tot behandoelen, interventies en behandelprogramma's?
5. Bestaat er verschil in de ergotherapeutische behandeling van drie frequent behandelde patiëntengroepen met een chronische ziekte, met betrekking tot behandoelen, interventies en behandelprogramma's?

Deze vijf vragen zijn onderzocht in een betrouwbaarheidsonderzoek en in een beschrijvend onderzoek. De resultaten zijn beschreven in hoofdstuk 3 tot en met hoofdstuk 7.

BETROUWBAARHEID VAN DE ERGOTHERAPEUTISCHE DIAGNOSE

Voor de start van het onderzoek is onderzocht of het mogelijk is om de ergotherapeutische diagnose op een betrouwbare (reproduceerbare) manier vast te leggen, gebruik makend een registratieformulier dat is gebaseerd op de ICDH (*hoofdstuk 3*). De inhoud van het registratieformulier wordt weergegeven in tabel 1.

Vijftig patiënten van een psychiatrisch ziekenhuis namen deel aan een onderzoek naar de interbeoordelaars betrouwbaarheid en 57 patiënten van een revalidatiecentrum namen deel aan een onderzoek naar de intrabeoordelaars betrouwbaarheid. In het interbeoordelaarsonderzoek werden de patiënten gedurende drie weken na opname geobserveerd. Na deze periode vulden twee ergotherapeuten onafhankelijk van elkaar het registratieformulier in. In het intrabeoordelaarsonderzoek vulde elke ergotherapeut het registratieformulier voor elke patiënt twee keer in met een tussenliggende periode van 7 tot 10 dagen. De betrouwbaarheid werd op twee verschillende manieren vastgesteld: met behulp van het percentage van overeenkomst (met als grenswaarde 80%) en met behulp van Cohen's kappa (met als grenswaarde 0.40). De resultaten toonden aan dat stoornissen, beperkingen en handicaps op een

samenvatting

redelijk tot zeer betrouwbare wijze konden worden vastgesteld. In het intra-beoordelaarsonderzoek in het revalidatiecentrum was er één item waarvan het percentage van overeenkomst lager was dan 80%; alle kappa waarden waren boven de 0.40. In het interbeoordelaarsonderzoek in het psychiatrisch ziekenhuis had 72% van de items een percentage van overeenkomst hoger dan 80%; 88% van de items had een kappa waarde hoger dan 0.40. Het registratieformulier werd aangepast voor de items met een kappa waarde lager dan 0.40. Deze items zijn samengevoegd in nieuwe items. Deze nieuwe items hadden allen een percentage van overeenkomst hoger dan 80% en een kappa waarde hoger dan 0.40. De resultaten van dit onderzoek laten zien dat het registratieformulier gebruikt kan worden in het beschrijvende onderzoek.

Tabel 1: Items van de ergotherapeutische diagnose in het registratieformulier

Items	
Stoornissen	Subitems
Motorische stoornissen	Gestoorde structuur/functie van onderdelen van het bewegingsapparaat, amputatie, stoornis in coördinatie, overig.
Sensorische stoornissen	Stoornis in sensibiliteit, stoornis in proprioceptie, pijn, overig.
Cognitieve stoornissen	Stoornis in geheugen, denkstoornissen, neuropsychologische functiestoornissen, overig.
Intrapersoonlijke stoornissen	Stoornis in drift-gevoels-wilsleven, gedragsstoornis, waarnemingsstoornis, stoornis in aandacht, stoornis in realiteitsbesef, overig.
Overige stoornissen	
Beperkingen	Subitems
Basisvaardigheden	Motorische, cognitieve, psychologische en interactieve vaardigheden.
Communicatie	Spreken, lezen, schrijven, luisteren.
Uithoudingsvermogen	Psychisch/fysiek uithoudingsvermogen.
Verplaatsen en voortbewegen	Transfers, lopen binnens- en buitenshuis, vervoer.
Persoonlijke verzorging	Plassen en ontlasten, persoonlijke hygiëne, kleden, eten/drinken.
Huishouden	Onderhoud eigen woonruimte, uitvoeren lichte huishoudelijke taken, verzorgen van maaltijden, verzorgen van huisgenoten, onderhoud woonomgeving.
Specifieke vaardigheden	Hanteren fysieke omgeving, hanteren geld/budgetteren.
Tijdsbesteding	Bijvoorbeeld sport, handvaardigheidsactiviteiten, op vakantie gaan.
Relatie	Leggen en onderhouden van contacten met anderen, functioneren binnen een groep.
Handicap	Definities
Rol van zelfverzorger	Het uiterlijk en de wijze van presenteren van het individu, zorg dragen voor eigen bezittingen, leefgewoonten in verband met gezondheid.
Mobiliteit	Vermogen van een individu om zich zowel binnens- als buitenshuis te kunnen of durven te verplaatsen.
Sociale rol	Frequentie en kwaliteit van de contacten met vrienden en goede kennissen, het ondernemen van activiteiten in de vrije tijd.
Beroepsrol	Het functioneren in het dagelijks werk, bijvoorbeeld het aanpassen aan de dagelijkse routine, omgang met collega's. Hiermee wordt ook huishoudelijk werk bedoeld.
Gezins/familierol	Het onderhouden van een emotionele band met gezins/familieleden, taken op zich nemen die belangrijk zijn voor het functioneren van het gezin/groep, bijdragen aan de sfeer in het gezin of anderen met wie men samenwoont.

METHODE VAN HET BESCHRIJVENDE ONDERZOEK (hoofdstuk 4-7)

Deelnemende ergotherapeuten

In de periode van januari 1992 tot en met maart 1993 hebben 143 ergotherapeuten werkzaam op 49 verschillende afdelingen ergotherapie deelgenomen aan het onderzoek. De Inspectie voor de Gezondheidszorg (voorheen Geneeskundige Hoofd Inspectie) heeft in een studie onderzocht waar ergotherapeuten werkzaam zijn in Nederland. Uit de resultaten bleek dat in vier typen instellingen door ergotherapeuten het meeste aantal uren gewerkt werd; namelijk verpleeghuizen, revalidatiecentra, ziekenhuizen en psychiatrische instellingen. Het onderhavige onderzoek heeft zich beperkt tot deze vier werkvelden. Uitgesloten van onderzoek zijn daarmee onder andere de volgende werkvelden: verstandelijk gehandicapten, vrijgevestigde praktijken en kinderevalidatie. De deelnemende afdelingen zijn willekeurig gekozen uit een lijst met instellingen met een afdeling ergotherapie, opgesteld door de Nederlandse Vereniging voor Ergotherapie. De ergotherapeuten die hebben deelgenomen aan het onderzoek verschilden niet significant qua leeftijd en geslacht van een representatieve groep ergotherapeuten die in Nederland werkzaam zijn.

Registratieformulier

Om inzicht te krijgen in de karakteristieken van de beroepsuitoefening is er een registratieformulier ontwikkeld. Dit registratieformulier bestond uit drie delen. Het *eerste gedeelte* betrof algemene patiëntgegevens (geslacht, geboortedatum, type verzekering), gegevens omtrent de verwijzing en de medische diagnose. Het *tweede deel* betrof de ergotherapeutische diagnose (zie tabel 1). Deze diagnose was gebaseerd op de ICDH. In dit deel werd de therapeut ook gevraagd om de gekozen behandeldoelen aan te geven. De behandeldoelen konden worden afgeleid van de gediagnostiseerde stoornissen, beperkingen en handicaps (zie linkerkolom van tabel 1). Bijvoorbeeld, als een therapeut beperkingen in verplaatsen en voortbewegen had vastgesteld dan kon de therapeut aangeven dat het behandeldoel wel (of juist niet) betrekking had op verplaatsen en voortbewegen. Per patiënt mochten maximaal vijf behandeldoelen worden gekozen. Het *derde deel* van het registratieformulier betrof gegevens over de ergotherapiebehandeling: duur, frequentie, interventies en behandelprogramma's. Dit derde deel werd ingevuld na 16 weken of als de behandeling korter duurde, zoveel eerder. In het registratieformulier was een matrix opgenomen waarin de therapeut voor elk gekozen behandeldoel twee interventies en twee behandelprogramma's kon aangeven.

De interventies die in het onderzoek waren opgenomen zijn de volgende: activiteiten op het gebied van zelfverzorging, activiteiten op het gebied van productiviteit, activiteiten op het gebied van tijdsbesteding, advies en instructie, groepsbehandeling, spalken en overige interventies (zie tabel 2)

Tabel 2: Interventies in het onderzoek

Interventies

Activiteiten op het gebied van zelfverzorging
Activiteiten op het gebied van productiviteit
Activiteiten op het gebied van tijdsbesteding
Advies/instructie op het gebied van hulpmiddelen en (woning)aanpassingen
Groepsbehandeling
Spalken
Overige interventies

De oorspronkelijke lijst in het registratieformulier was uitgebreider. Bovenstaande lijst werd verkregen door verschillende items samen te voegen. De samenvoeging is op de volgende manier uitgevoerd:

Activiteiten op het gebied van zelfverzorging zijn gedefinieerd als: activiteiten of taken die routinematig worden uitgevoerd om het welzijn en de gezondheid van een persoon in zijn omgeving te onderhouden. De volgende items van het oorspronkelijke registratieformulier zijn in deze categorie samengevoegd: activiteiten op het gebied van zelfverzorging, verplaatsen, voortbewegen en communicatie.

Activiteiten op het gebied van productiviteit zijn gedefinieerd als: activiteiten of taken die worden uitgevoerd om een persoon in staat te stellen zichzelf of zijn familie te onderhouden door de productie van goederen of diensten. De volgende items van het oorspronkelijke registratieformulier zijn in deze categorie samengevoegd: activiteiten op het gebied van huishouden en op het gebied van arbeid.

Activiteiten op het gebied van tijdsbesteding zijn gedefinieerd als: aspecten van het dagelijks leven die vrij zijn van productiviteit en zelfverzorgingsactiviteiten. De volgende items van het oorspronkelijke registratieformulier zijn in deze categorie samengevoegd: activiteiten op het gebied van tijdsbesteding, handvaardigheid of spel.

Advies/instructie bestaat uit de items advies/instructie op het gebied van zitten/staan, gebruik van hulpmiddelen en aanpassing van de woning (en omgeving).

Groepstherapie bestaat uit twee vormen van groepstherapie, namelijk taakgericht en persoons/probleem gericht.

Spalken betreft het vervaardigen van spalken.

Zoals al eerder aangegeven kon de ergotherapeut bij elk behandeldoel maximaal twee interventies en twee behandelprogramma's kiezen. De behandelprogramma's kunnen worden beschouwd als "meta-doelen" die aangeven op welke manier er in de behandeling te werk gegaan wordt. Het gaat om de gerichtheid van de behandeling. Bijvoorbeeld: als bij een patiënt beperkingen in het huishouden worden gediagnostiseerd en gekozen als behandeldoel, dan kan de ergotherapeut daar op verschillende manieren aan werken. Als de ergotherapeut kiest voor de aanpak van het programma herstel, dan zal zij met behulp van trainen/oefenen een gewenst niveau van functioneren op dit gebied proberen te bereiken. Als de ergotherapeut voor het programma aanpassen kiest, dan zal het accent van de behandeling liggen op het adviseren op het gebied van hulpmiddelen en (woning)aanpassingen om zodoende het gewenste niveau van functioneren te kunnen bereiken. De programma's zijn overgenomen van Reed and Sanderson (1992). De volgende programma's zijn onderscheiden: preventie, ontwikkelen, herstel, aanpassen, onderhoud/behoud (zie tabel 3).

Tabel 3: Behandelprogramma's in het registratieformulier

Behandelprogramma's

Preventie
 Ontwikkelen
 Herstel
 Aanpassen
 Onderhoud/behoud

Reed en Sanderson beschrijven de programma's als volgt. Het programma *preventie* is gericht op het voorkomen van terugval in ontwikkeling (fysiek en psychosociaal) en het voorkomen van lichamelijke, psychische en sociale stoornissen. Het programma *ontwikkelen* is gericht op individuen die bepaalde vaardigheden die passen bij leeftijd of ievenstaak niet geleerd of ontwikkeld hebben. Het programma *herstel* is gericht op individuen die door ziekte of trauma bepaalde vaardigheden zijn verloren maar die (door functieherstel) de mogelijkheid hebben bepaalde activiteiten weer leren. Het programma *aanpassen* wordt gekozen als er een maximaal niveau van herstel/functie is bereikt en als een verdere verbetering alleen bereikt kan worden door het aan-

passen van de omgeving. Het programma *onderhoud/behoud* wordt gekozen als een patiënt in staat is bepaalde vaardigheden zelfstandig uit te voeren maar dat hij deze vaardigheden moet blijven uitvoeren om zijn gezondheid te behouden/ op peil te houden.

Bij elk behandeldoel kon de ergotherapeut maximaal twee behandelprogramma('s) aangeven, afhankelijk van het resultaat dat men wilde bereiken met de behandeling. Bijvoorbeeld als het programma preventie wordt gekozen bij het behandeldoel "beperkingen in huishoudelijke activiteiten" dan zal het accent van de behandeling liggen op de principes van belasting-belastbaarheid en gewrichtsbescherming, terwijl als het programma "ontwikkelen" wordt gekozen er nadruk zal worden gelegd op het leren van nieuwe vaardigheden.

Procedure

De deelnemende therapeuten hebben een korte instructie ontvangen in het gebruik van het registratieformulier en zij hebben een handleiding gekregen. Voor alle patiënten die gedurende de periode van het onderzoek zijn verwezen naar de ergotherapeut diende het registratieformulier te worden ingevuld. Het aantal formulieren dat door een afdeling ergotherapie zou worden ingevuld werd voorafgaand aan het onderzoek vastgesteld. Het aantal patiënten dat in ieder type werkveld geregistreerd moest worden correspondeerde met de verdeling van het aantal uren dat door ergotherapeuten in het betreffende werkveld werd gewerkt. Dit houdt in dat de meeste patiënten moesten worden geregistreerd door ergotherapeuten die in verpleeghuizen werken (38%), gevolgd door revalidatiecentra (32%), algemene ziekenhuizen (20%) en psychiatrische ziekenhuizen (10%). Het registratieformulier werd voor 944 patiënten uit de algemene gezondheidszorg ingevuld en voor 107 patiënten uit de geestelijke gezondheidszorg, in totaal 1051 patiënten. De uiteindelijke verdeling van patiënten over de instellingen kwam overeen met de verdeling die tevoren beoogd werd.

WELKE ZIJN DE KARAKTERISTIEKEN VAN PATIËNTEN DIE DOOR ERGOTHERAPEUTEN WORDEN BEHANDELD EN WIE HEEFT DEZE PATIËNTEN NAAR DE ERGOTHERAPIE VERWEZEN?

In *hoofdstuk vier* worden de karakteristieken van de patiënten beschreven.

Karakteristieken van patiënten

Patiënten uit de somatische zorg en uit de psychiatrische zorg worden afzonderlijk besproken.

In de somatische zorg (verpleeghuis, ziekenhuis, revalidatiecentrum) was 60% van de patiënten van het vrouwelijk geslacht en de gemiddelde leeftijd was 61 jaar. De meeste patiënten (76%) waren verzekerd via het ziekenfonds. De woonsituatie gedurende de behandeling was gelijkelijk verdeeld tussen wonen in een instelling (51%) en thuis. Ongeveer eenderde (33%) van de somatische patiënten was alleenstaand en woonde alleen.

In de psychiatrische zorg was 60% van de patiënten van het vrouwelijk geslacht en de gemiddelde leeftijd was 38 jaar. Het grootste aantal patiënten was bij het ziekenfonds verzekerd (87%). De helft van de patiënten woonde in een instelling tijdens de behandeling en de helft woonde thuis. Dertig procent van de psychiatrische patiënten was alleenstaand en woonde alleen.

Beide groepen patiënten laten veel overeenkomsten zien op de volgende aspecten: geslacht (60% vrouw), verzekering (merendeel ziekenfonds verzekerd), woon en leefsituatie (ongeveer de helft van de patiënten woonde in een instelling). De twee groepen verschilden qua leeftijd: in de somatische zorg waren de patiënten ouder (gemiddelde leeftijd 61 jaar) dan in de psychiatrische zorg (gemiddelde leeftijd 38 jaar).

Medische/psychiatrische diagnose

Een medische/psychiatrische diagnose is voor bijna alle patiënten (97%) gegeven. De meest voorkomende diagnoses in de somatische zorg waren: ziekten van hart- en vaatstelsel (32%), ziekten van bewegingsstelsel en bindweefsel (21%) en ziekten van het zenuwstelsel (17%). Bijna alle patiënten uit de groep "ziekten van hart- en vaatstelsel" hadden een beroerte gehad (98%).

De meest frequent gestelde diagnoses in psychiatrische zorg waren: schizofrenie (36%), depressieve stoornissen (23%) en psychotische stoornissen (10%).

Verwijzer

In de somatische zorg werden de meeste patiënten verwezen door een medisch specialist (verpleeghuisarts, revalidatiearts, neuroloog, reumatoloog); in verpleeghuizen werden patiënten ook verwezen door een huisarts. In de psychiatrische zorg werden de meeste patiënten verwezen door een psychiater, maar een grote groep patiënten (40%) werd aangemeld door bijvoorbeeld groepsleider of verpleging.

WELKE ZIJN DE DIAGNOSTISCHE BEVINDINGEN VAN DE ERGOTHERAPEUT EN WELKE ZIJN DE BEHANDELDOELEN DIE DAARVAN AFGELEID WORDEN? IS HET MOGELIJK COMBINATIES AAN TE WIJZEN VAN DIAGNOSTISCHE BEVINDINGEN VAN DE ERGOTHERAPEUT? IS HET MOGELIJK COMBINATIES AAN TE WIJZEN VAN BEHANDELDOELEN?

In *hoofdstuk vier* worden ook de ergotherapeutische diagnose en de behandeldoelen besproken.

Ergotherapeutische diagnose

In beide patiëntengroepen werden stoornissen, beperkingen en handicaps veelvuldig gediagnostiseerd door de ergotherapeut. In de somatische zorg werden de volgende items bij driekwart of meer van de patiënten gediagnostiseerd: motorische stoornissen (94%), beperkingen in basisvaardigheden (84%), in verplaatsen en voortbewegen (78%), in huishouden (74%), in persoonlijke verzorging (74%) en handicap in mobiliteit (76%). In de psychiatrische zorg werden de volgende items bij meer dan driekwart van de patiënten gediagnostiseerd: intrapersonlijke stoornissen (98%), beperkingen in basisvaardigheden (98%), in relatie (86%), in tijdsbesteding (81%) in uithoudingsvermogen (78%) en handicap in sociale rol (92%), in beroepsrol (83%) en in gezins/familierol (79%).

Behandeldoelen

In de somatische zorg werden de volgende doelen frequent (bij meer dan 25% van de patiënten) gekozen: motorische stoornissen (48%), beperkingen in persoonlijke verzorging (48%), in verplaatsen en voortbewegen (41%), in huishouden (35%), in basisvaardigheden (32%) en handicaps in mobiliteit (26%) en in rol van zelfverzorger (24%).

In de psychiatrische zorg werden de volgende behandeldoelen vaak (meer dan 25% van de patiënten) gekozen: intrapersonlijke (55%) en cognitieve (34%) stoornissen, beperkingen in basisvaardigheden (72%), in tijdsbesteding (51%), in relaties (25%) en handicap in beroepsrol (45%) en in sociale rol (45%).

Bij beide patiëntengroepen werden de meeste behandeldoelen op het niveau van beperkingen gekozen (zie tabel 4).

Tabel 4 Verdeling van behandeldoelen over het niveau van stoornissen, beperkingen en handicaps

	Stoornissen	Beperkingen	Handicaps	
Somatische zorg	23%	56%	21%	100%
Psychiatrische zorg	23%	48%	29%	100%

Er waren veel behandeldoelen gekozen en op het eerste gezicht kon er geen duidelijke patroon in worden herkend. Met statistische analyse werd gekeken of er behandeldoelen waren die vaak samen voorkwamen (dimensies), zodat de grote hoeveelheid behandeldoelen kon worden teruggebracht tot een kleiner aantal dimensies. Het doel hiervan was om het aantal behandeldoelen te reduceren tot een beperkt aantal combinaties van behandeldoelen (dimensies). Alle behandeldoelen die bij meer dan 10% van de patiënten waren gekozen werden meegenomen in de analyse. In totaal werden er 12 dimensies onderscheiden, 7 dimensies voor de somatische zorg en 5 dimensies voor de psychiatrische zorg. Het grootste aantal dimensies deed zich voor op het niveau van beperkingen. Blijkbaar is de differentiatie tussen behandeldoelen groter op het niveau van beperkingen dan op het niveau van stoornissen en handicaps. Dit feit, in samenhang met de bevinding dat de meeste behandeldoelen op het niveau van beperkingen werden gekozen (tabel 4), wijst erop dat het beperkingen niveau de kern van de ergotherapie vormt.

Tevens werd geprobeerd de gegevens over de ergotherapeutische diagnose op eenzelfde manier te analyseren. Dit leidde echter niet tot een zinvolle reductie van de gegevens. Bijna alle gediagnostiseerde items bleken één dimensie te vormen. Op deze manier werden de gegevens inderdaad gereduceerd, maar het resultaat had geen betekenis voor de ergotherapeutische praktijk. De meest waarschijnlijke verklaring hiervoor is dat er bij elke patiënt zeer veel diagnostische bevindingen waren: dit zou een verklaring kunnen zijn voor het feit dat de gediagnostiseerde items één dimensie vormden.

WELKE INTERVENTIES WORDEN TOEGEPAST IN DE PRAKTIJK EN IS DE KEUZE VAN INTERVENTIES AFHANKELIJK VAN BEHANDELDOELEN EN BEHANDELPROGRAMMA'S?

In *hoofdstuk vijf* wordt de inhoud van de ergotherapeutische behandeling in verpleeghuizen, revalidatiecentra en algemene ziekenhuizen besproken (N=944). De groep patiënten in de psychiatrische zorg is niet betrokken in de analyse omdat de groep te klein was om de statistische analyses uit te kunnen voeren.

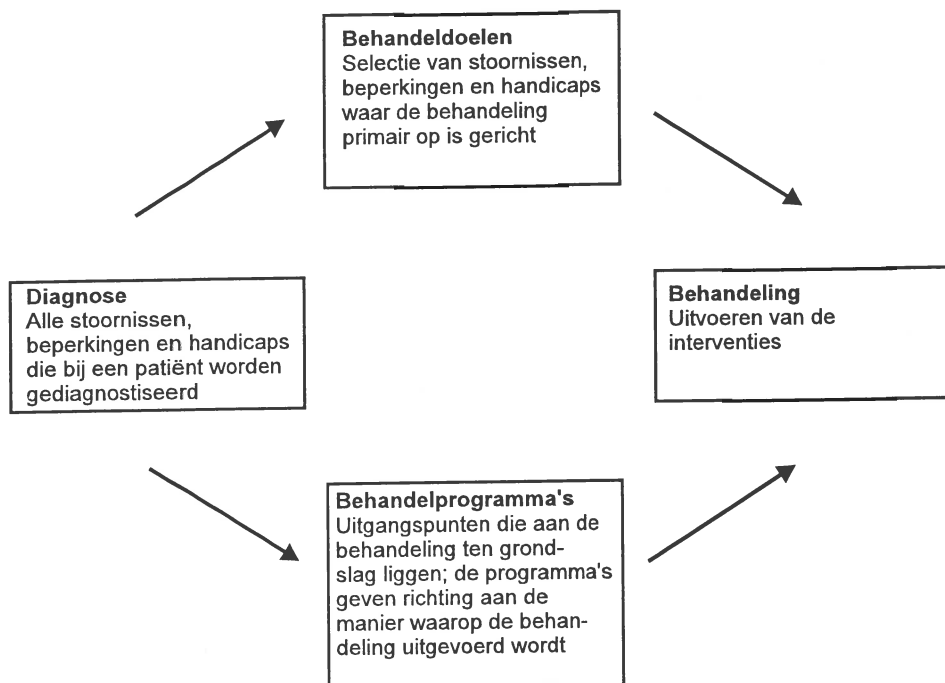
Inhoud van de ergotherapiebehandeling

De drie interventies die het meest frequent werden gekozen door ergotherapeuten zijn: advies/instructie op het gebied van hulpmiddelen en aanpassingen (33%), activiteiten op het gebied van zelfverzorging (28%), activiteiten op het gebied van productiviteit (16%) en activiteiten op het gebied van tijdsbesteding (16%). De drie behandelprogramma's die het meest frequent werden gekozen zijn: aanpassen (32%), herstel (28%) en ontwikkeling (20%).

Relatie tussen behandeldoelen, behandelprogramma's en interventies

Er is bijna geen informatie over de factoren die de keuze van interventies in de ergotherapie beïnvloeden. In deze studie is verondersteld dat zowel behandeldoelen als behandelprogramma's van invloed zijn op de keuze van interventies (zie figuur 2).

Figuur 2: De relatie tussen diagnose, behandeldoelen, behandelprogramma's en interventies



De relatie tussen de behandeldoelen, behandelprogramma's en interventies werd geanalyseerd. Uit de analyse kwam naar voren dat de behandeldoelen en behandelprogramma's onafhankelijk van elkaar de keuze van de interventies bepalen. De keuze van interventies is niet afhankelijk van een specifieke combinatie van behandeldoelen en behandelprogramma's. Uitgaande van deze relaties kon een aantal profielen van de ergotherapeutische behandeling worden onderscheiden. Deze profielen geven niet alleen aan wat de ergotherapeut doet (interventies) om een behandeldoel te bereiken maar ook welk uitgangspunt aan de therapie ten grondslag ligt (behandelprogramma). De volgende profielen werden onderscheiden:

De interventies "activiteiten op het gebied van zelfverzorging" en "activiteiten op het gebied van productiviteit" werden voornamelijk gekozen om behandeldoelen op het gebied van beperkingen en handicaps te bereiken terwijl "activiteiten op het gebied van tijdsbesteding" voornamelijk werden gekozen om

behandeldoelen op het gebied van stoornissen en beperkingen te bereiken. Alle drie de interventies "*activiteiten op het gebied van zelfverzorging*", "*activiteiten op het gebied van productiviteit*" en "*activiteiten op het gebied van tijdsbesteding*" werden gekozen als de behandeling gebaseerd was op de behandelprogramma's ontwikkeling en/of herstel. Dit houdt in dat de therapie gericht is op de ontwikkeling van (nieuwe) vaardigheden en/of op het herstel van vaardigheden.

De interventie "*advies/instructie*" werd voornamelijk gekozen om behandel-doelen op het niveau van beperkingen en handicap te bereiken. Als de interventie "*advies/instructie*" werd gekozen dan was de behandeling gebaseerd op de volgende behandelprogramma's: preventie, aanpassen en onderhoud/behoud. Dit houdt in dat de ergotherapeut die voor advies/instructie kiest haar behandeling richt op het aanpassen van de omgeving aan het niveau van functioneren van de patiënt, of op het behoud van het functioneren van de patiënt, of op het voorkomen dat het functioneren van de patiënt (verder) verslechtert.

BESTAAT ER EEN VERSCHIL IN DE UITOEFENING VAN HET VAK TUSSEN ERGOTHERAPEUTEN DIE IN DE SOMATISCHE GEZONDHEIDSZORG EN IN DE PSYCHIATRISCHE GEZONDHEIDSZORG WERKEN, MET BETREKKING TOT BEHANDELDOELLEN, INTERVENTIES EN BEHANDELPROGRAMMA'S?

In *hoofdstuk 6* wordt een beschrijving gegeven van de ergotherapeutische behandeling in psychiatrische en in somatische zorg. Daarnaast worden de drie werkvelden in de somatische zorg met elkaar vergeleken.

In Nederland startte het beroep ergotherapie na de tweede wereldoorlog. Britse ergotherapeuten kwamen naar Nederland om gehandicapte oorlogsslachtoffers te revalideren. Het beroep werd eerst uitgeoefend in revalidatiecentra en in psychiatrische ziekenhuizen; na verloop van tijd werd het beroep ook in andere werkvelden uitgeoefend, zoals verpleeghuizen en algemene ziekenhuizen. Omdat ergotherapeuten in veel verschillende type instellingen werkzaam zijn kan de volgende vraag gesteld worden: wordt het vak ergotherapie in alle instellingen op dezelfde manier uitgeoefend? In de uitgangspunten van de ergotherapie wordt geen onderscheid gemaakt tussen verschillende werkvelden, ook niet tussen somatische en psychiatrische zorg. Toch is het mogelijk dat het beroep op verschillende manieren wordt uitgeoefend in de verschillende instellingen.

Verschillen tussen somatische en psychiatrische zorg

Er blijken aanzienlijke verschillen te bestaan tussen ergotherapie in de psychiatrische en somatische zorg. Ergotherapie in de psychiatrische zorg wordt gekarakteriseerd door behandeldoelen die betrekking hebben op de volgende aspecten: cognitieve en intrapersonlijke stoornissen; beperkingen in basisvaardigheden, in tijdsbesteding en in relaties; handicap in sociale rol en in beroepsrol. In de somatische zorg wordt de ergotherapie gekarakteriseerd door behandeldoelen die betrekking hebben op de volgende aspecten: motorische en sensorische stoornissen; beperkingen in verplaatsen en voortbewegen en in persoonlijke verzorging; handicap in rol van zelfverzorger en in mobiliteit.

Ook op het gebied van interventies kon een karakterisering van de twee werkvelden worden gegeven. Het bleek dat in de psychiatrische zorg relatief vaak voor activiteiten op het gebied van tijdsbesteding en groepsbehandeling werd gekozen, terwijl in de somatische zorg de nadruk werd gelegd op activiteiten op het gebied van zelfverzorging en advies/instructie.

Op het niveau van behandelprogramma's werd maar één verschil waargenomen: in de psychiatrische zorg werd relatief vaak het behandelprogramma "ontwikkelen" gekozen.

Er kan worden geconcludeerd dat er tussen beide werkvelden een groot verschil is in de uitoefening van het vak. Verschillen werden gevonden op het gebied van behandeldoelen, interventies en in beperkte mate op het gebied van behandelprogramma's.

Verschillen tussen werkvelden in de somatische zorg

De uitoefening van het vak in verschillende werkvelden in de somatische zorg - verpleeghuizen, revalidatiecentra en algemene ziekenhuizen - lijkt sterk op elkaar. Een karakterisering van ergotherapie in deze drie instellingen laat grote overeenkomsten zien op het gebied van behandeldoelen, interventies en behandelprogramma's. Hoewel over het algemeen de verschillen tussen de instellingen klein waren, werden er toch een paar verschillen geconstateerd. In verpleeghuizen lag bij de keuze van de behandeldoelen de nadruk op cognitieve stoornissen, beperkingen in persoonlijke verzorging en handicap in rol van zelfverzorger. De interventie "activiteiten op het gebied van zelfverzorging" werd relatief vaak gekozen in verpleeghuizen terwijl de interventie "activiteiten op het gebied van productiviteit" relatief vaak in revalidatiecentra werd gekozen.

BESTAAT ER EEN VERSCHIL IN DE ERGOTHERAPEUTISCHE BEHANDELING VAN DRIE FREQUENT BEHANDELDE GROEPEN PATIËNTEN MET EEN CHRONISCHE ZIEKTE MET BETREKKING TOT BEHANDELDOELLEN, INTERVENTIES EN BEHANDELPROGRAMMA'S?

In *hoofdstuk 7* wordt de ergotherapeutische behandeling bij patiënten met een specifieke chronische ziekte beschreven. Een chronische ziekte kan gevolgen hebben op alle gebieden van het dagelijks leven van de patiënt. Ergotherapie is mogelijk belangrijk voor deze groep patiënten omdat de ergotherapeutische behandeling zich richt op het verbeteren van de functionele mogelijkheden van de patiënten.

In onze studie bleken drie groepen patiënten met een chronische ziekte het meest frequent behandeld te worden door ergotherapeuten: Progressief verloopende Neurologische Aandoeningen (PND, N=102), Cerebro Vasculair Accident (CVA, N=338) en Reumatoïde Artritis (RA, N=67). Elke groep kon gekarakteriseerd worden door een specifieke benadering. Deze verschillen werden niet veroorzaakt door verschillen in leeftijd of geslacht tussen de drie patiënt groepen. De ergotherapeutische profielen voor deze drie groepen kunnen als volgt worden beschreven:

Bij de groep **PND**-patiënten betroffen de behandeldoelen beperkingen in verplaatsen en voortbewegen, en handicap in mobiliteit. De interventie advies/instructie werd relatief vaak gekozen; dit gold ook voor de behandelprogramma's aanpassen en onderhoud/behoud. Bij de groep **CVA**-patiënten kon het volgende worden geconcludeerd: wat betreft de behandeldoelen werd handicap in rol van zelfverzorger relatief vaak gekozen. Wat betreft interventies werden activiteiten op het gebied van zelfverzorging en activiteiten op het gebied van productiviteit relatief vaak gekozen. De programma's ontwikkelen en herstel werden relatief vaak gekozen. Het profiel voor **RA**-patiënten werd gekarakteriseerd door het volgende: wat betreft behandeldoelen werden motorische stoornissen, beperkingen in huishouden en in specifieke vaardigheden relatief vaak gekozen. Daarnaast werd de interventie advies/instructie en het programma preventie eveneens relatief vaak gekozen.

Ook al werd iedere groep gekarakteriseerd door een specifieke benadering, toch leek er ook een overeenkomst te zijn tussen de **PND** en de **RA** groep aan de ene kant en de **CVA** groep aan de andere kant. Bij de **PND** en **RA** groep was de behandelduur hetzelfde (gemiddeld 6 uur). Daarnaast werd de ergotherapeutische behandeling van deze twee groepen gekenmerkt werd door een "care" benadering. Dat wil zeggen: de behandeling richtte zich voornamelijk op preventie, aanpassen en onderhoud/behoud. Bij de groep **CVA** patiënten was de behandelduur twee keer zo lang (gemiddeld 12 uur) als bij de andere twee groepen. De ergotherapeutische behandeling bij deze groep

werd gekenmerkt door een "cure" gerichte benadering. Het accent van de behandeling lag op herstel en ontwikkeling.

Er kan worden geconcludeerd dat er voor de drie groepen patiënten (PND, CVA en RA) verschillende behandelprofielen kunnen worden onderscheiden. Op een aantal aspecten vertonen de groepen PND en RA overeenkomsten. Deze profielen kunnen als een eerste aanzet dienen voor de (verdere) ontwikkeling van standaarden voor behandeling van deze patiënten.

IMPLICATIES

In *hoofdstuk 8* worden de implicaties van de resultaten voor toekomstig onderzoek, voor praktijk en opleiding en voor het beleid in de gezondheidszorg besproken.

Implicaties voor toekomstig onderzoek

De resultaten van dit onderzoek zijn nog maar een aanzet tot een ergotherapeutische onderzoekstraditie op het gebied van ergotherapie. Voor de toekomst is het noodzakelijk dat meetinstrumenten waarmee de gevolgen van ziekte op het niveau van beperkingen kunnen worden vastgesteld, worden ontwikkeld. Het is aan te bevelen dat instrumenten die in andere landen ontwikkeld zijn, worden bekeken op hun bruikbaarheid voor de Nederlandse situatie. Dit geldt bijvoorbeeld voor de Assessment of Motor and Process Skills en de Canadian Occupational Performance Measurements. Verder is het van belang dat nader wordt onderzocht welke factoren de keuze van de behandeldoelen beïnvloeden. Het laatste aspect waar toekomstig onderzoek zich op dient te richten is het ontwikkelen van effectstudies op het gebied van ergotherapie. Op deze manier kan worden onderzocht welk effect bepaalde interventies bij een bepaald behandeldoel en bepaald behandelprogramma hebben. In deze effectstudies dienen de uitgangspunten van de ergotherapie verdisconteerd te worden. Dit houdt in dat de functionele gerichtheid van de ergotherapie richtinggevend is voor de methode van de effectstudies.

Implicaties voor de ergotherapeutische praktijk en opleiding

De resultaten laten zien dat de kern van de ergotherapie ligt op het gebied van beperkingen. Behandeldoelen worden voornamelijk op dit niveau gekozen. Deze bevinding dient implicaties te hebben voor de ergotherapeutische praktijk; bijvoorbeeld bij de keuze van meetinstrumenten en tests, maar ook in de intakeprocedure dienen beperkingen centraal te staan.

De ICDH is een goede classificatie gebleken om de ergotherapeutische diagnose vast te leggen. Het is aan te raden om de terminologie van de ICDH verder te verspreiden in de beroepsgroep en op de opleidingen.

Er werden verschillen tussen de ergotherapeutische beroepsuitoefening in somatische en psychiatrische zorg aangetoond. Dit impliceert dat in de praktijk specialisatie in de beroepsuitoefening optreedt. Dit kan betekenen dat het wisselen van baan tussen somatische en psychiatrische zorg andere therapeutische vaardigheden vereist en dat een bepaalde mate van bijscholing daarvoor nodig zou kunnen zijn.

Ergotherapeuten kiezen een specifieke aanpak in de behandeling van drie groepen patiënten met een chronische ziekte (progressief verlopende neurologische aandoeningen, cerebro vasculair accident en reumatoïde artritis). Er lijkt een bepaalde mate van consensus te zijn onder ergotherapeuten bij de behandeling van deze drie groepen patiënten. Deze bevinding kan een eerste aanzet vormen voor de ontwikkeling van standaarden voor de behandeling van deze patiëntengroepen.

Implicaties voor gezondheidszorgbeleid

Ergotherapie past goed in het gezondheidszorgbeleid in Nederland waarin zorg, die mensen in staat stelt zo lang mogelijk zelfstandig te functioneren, als zeer belangrijk wordt gezien. De rol van de ergotherapeut in de thuiszorg kan hierdoor zeer belangrijk worden. De ergotherapeut heeft geleerd te beoordelen welke beperkingen en mogelijkheden de patiënt heeft en of de patiënt thuis zelfstandig kan (leren) functioneren. De laatste vijf jaar is de omvang van ergotherapie in de thuiszorg toegenomen met ongeveer 75%. De Nederlandse overheid stimuleert deze groei.

Op dit moment is de vraag naar ergotherapeuten groter dan het aanbod van ergotherapeuten. Mede door de snelle groei van het beroep worden er vanaf 1993 meer studenten toegelaten tot de opleidingen ergotherapie. Het aantal eerstejaarsstudenten is gestegen van 180 (in 1993) tot 390 (in 1997). Het gevaar bestaat dat er nu teveel studenten worden opgeleid. Een zorgvuldige planning van het aantal ergotherapeuten dat in de toekomst benodigd is, lijkt aangewezen.

DANKWOORD

Het proefschrift is af! Het is een hele klus geweest met de nodige onderbrekingen en die zonder de steun en inzet van velen nooit was geklaard. Daarom wil ik een aantal mensen met name noemen. Op de eerste plaats mijn promotoren professor Guus Lankhorst en professor Jouke van der Zee. Zij hebben alle concepten van bruikbaar commentaar voorzien. Mijn copromotor Joost Dekker wil ik speciaal bedanken. Joost, altijd weer was je bereid concepten te lezen en nuttige tips voor verbetering te geven. Jouw perfectionisme was niet altijd prettig, maar het stuk is er natuurlijk wel beter van geworden. Ik vind het leuk dat ik je eerste promovenda ben, iets wat jij - maar ook ikzelf - aan het begin van het onderzoek nooit had gedacht.

Het onderzoek is alleen mogelijk geweest door de inzet van vele ergotherapeuten die tijd en moeite hebben genomen om 'de groene formulieren' in te vullen. Met vragen tijdens het schrijven kon ik terecht bij collega's op het NIVEL. Statistische zaken kon ik altijd met Jan Kerssens bespreken en de collega's van 'paramed' hebben keer op keer commentaar geleverd op de concepten die ik aan hen heb voorgelegd. Met mijn kamergenoot Marij Roebroek heb ik nuttige discussies gevoerd over het feit of ergotherapie wel of geen 'bewegingsberoep' is. We zijn er niet uitgekomen en verschillen nog steeds van mening.

Marina van Geelkerken heeft me ontzettend geholpen met het in de goede lay-out zetten van het proefschrift. Altijd kon er weer een versie met gele stickertjes worden verwerkt tot een nieuwe versie. Mieke Cornelius heeft ervoor gezorgd dat de omslag er goed uitziet.

Naast 'de mensen van het werk' hebben Janine, Marjolein en Gea al die jaren interesse getoond in de stand van zaken rond het proefschrift. De 'vriendinnen-bijeenkomsten' hebben regelmatig voor de nodige afleiding gezorgd.

Mijn ouders wil ik bedanken omdat ze me altijd hebben gestimuleerd te doen wat ik leuk vond en me daarin ook altijd ondersteund hebben.

Tenslotte heb ik van Walter veel steun gehad bij het afronden van het proefschrift en bij het omzetten van de database. Walter, het viel vast niet mee om met zo'n ongeduldig type, die alles binnen vijf minuten klaar wil hebben, rustig te blijven. Je bent me toch blijven helpen en hebt me ondersteund en gestimuleerd om het af te maken. Anouk en Casper, jullie zijn er in de loop van het traject bijgekomen en hebben er misschien niet zoveel van gemerkt. Toch hebben jullie voor de nodige afleiding gezorgd. Anouk, ik hoef niet meer naar boven aan het boekje te werken want het boekje is eindelijk af.

CURRICULUM VITAE

Marie-José Driessen werd geboren op 9 februari 1963 in Eindhoven. In 1982 behaalde zij het diploma VWO. Daarna volgde zij de opleiding ergotherapie in Weesp, waarvan zij in 1986 het diploma behaalde. Aansluitend ging zij verder met een studie bewegingswetenschappen aan de Vrije Universiteit van Amsterdam, die zij in 1990 afrondde. In het laatste jaar van haar studie ging zij bij het NIVEL werken als onderzoeker op het gebied van ergotherapie. Bij het NIVEL heeft zij een aantal onderzoeken uitgevoerd, op het gebied van ergotherapie en op het gebied van paramedische beroepen en kwaliteit. Sinds 1996 werkt zij als staffunctionaris bij de Nederlandse Vereniging voor Ergotherapie.