

# Occupational therapy in hospital based care in the Netherlands: a comparison of occupational therapy in general care (nursing homes, rehabilitation centres and general hospitals) and psychiatric care.

MARIE-JOSE DRIESSEN, NIVEL, Netherlands Institute of Primary Health Care, Utrecht, Netherlands.

JOOST DEKKER, NIVEL, Netherlands Institute of Primary Health Care, Utrecht, Netherlands.

JOUKE VAN DER ZEE, NIVEL and Department of Medical Sociology, University of Limburg, Netherlands.

GUSTAAF LANKHORST, Department of Rehabilitation Medicine, Free University, Amsterdam, Netherlands.

**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 centres, 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 registration form, 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.*

**Key words:** ICIDH, survey research, general care, psychiatric care

## 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 programmes 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 centres. Gradually, it moved to other settings such as general hospitals and nursing homes.

Nowadays, in the USA, most occupational therapists work in rehabilitation centres 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 centres, 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 centres, schools, and private practice. At present, the majority of occupational therapists work in nursing homes, followed by rehabilitation centres, general hospitals, and psychiatric hospitals. These four fields cover approximately 80% of all hours worked by all occupational therapists in the Netherlands (CIPH, 1990). This high proportion of hospital-based care is in line with other countries such as Canada, United States, 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 in the patient's home (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 practised in distinct ways in the different institutions e.g. treatment goals, therapeutic interventions or the focus of the treatment may differ. General hospitals can probably be expected to emphasise the recovery process, whereas rehabilitation centres might aim at the development of (new) skills. Such differences have not been studied in the Netherlands, or 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 where 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 have been chosen as an

intervention although the results from a recent survey in the USA showed that functional activities are being offered more and more to patients in physical disability settings (Neistad & Seymour, 1995).

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

## METHOD

### Design

A survey of occupational therapy in the Netherlands was carried out and data 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 centres, 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; (1) patient characteristics, (2) occupational therapy diagnosis and (3) 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 thera-

py diagnosis was tested prior to the start of the survey study in a rehabilitation centre and in a psychiatric hospital, and appeared to be satisfactory to good (Driessen et al., 1995). In the rehabilitation centre all items and in the psychiatric hospital 88% of the items had a kappa value higher than 0.45. Items with a kappa value below 0.45 were modified (see Appendix 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 off a list and they are shown in Table 1.

TABLE 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 programmes that were used. For each treatment goal two interventions and two programmes 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 combined in 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 on 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 *splinting* category consists of the making of splints.

The '*other interventions*' category was not further specified.

The health care programmes were adopted from Reed and Sanderson (1992) and consisted of five items: prevention, developmental, recovery, environmental adjustment and maintenance programmes. These programmes could be considered as overall goals determining the direction of the treatment. With each treatment goal a specific health care programme could be chosen, depending on which outcomes of treatment were aimed at. For instance if the 'prevention' programme was 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 programme 'development' was chosen, the focus of the treatment would be on 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 centres (32%), general hospitals (20%) and psychiatric hospitals (10%).

## Analysis

The results were analysed using descriptive statistics. The differences in treatment goals, interventions and health care programmes 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 of less than five and no expected value was less than one (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 were considered important and were discussed. Hiloglinear analysis (Norsius, 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.

## RESULTS

### General care v. Psychiatric care

#### *General characteristics of the patients*

This study covered 1051 patients: 944 patients in general care (380 in nursing homes, 359 in rehabilitation centres, 205 in general hospitals) and 107 patients in psychiatric hospitals. The mean age of 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,  $df = 4$ ,  $p = 0.00$ ). The data shows that in general care most patients (61.2%) were older than 45 years and in the psychiatric hospitals most patients (92.3%) were 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 diagnoses of the patients in the psychiatric hospital were classified with the Diagnostic and Statistical Manual of Mental Disorders, Third edition, Revised (APA, 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 analysed 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 2). A signif-

ificant 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 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 emphasised, 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 self-care were emphasised.

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 emphasised, while in general care handicaps in physical independence and mobility were emphasised.

TABLE 2: Treatment goals directed at impairments, disabilities and handicaps		
Treatment goals	General care (%)	Psychiatric care (%)
<i>Impairments</i>		
Motor	<b>56.7</b>	5.5
Sensory	<b>18.0</b>	1.9
Cognitive	16.4	<b>33.9</b>
Intrapersonal	6.5	<b>54.1</b>
Other	<u>2.4</u>	<u>4.6</u>
	100.0	100.0
<i>Disabilities</i>		
Basic skills	15.0	<b>34.2</b>
Communication	3.8	2.2
Endurance	6.8	9.8
Locomotor	<b>19.4</b>	0.9
Personal Care	<b>22.8</b>	5.8
Domestic	16.6	7.1
Specific skills	5.8	3.6
Leisure	9.6	<b>24.4</b>
Relation	<u>0.2</u>	<u>12.0</u>
	100.0	100.0
<i>Handicap</i>		
Physical independence	<b>30.3</b>	15.0
Mobility	<b>32.4</b>	2.3
Social role	7.4	<b>36.8</b>
Occupational role	24.1	<b>38.3</b>
Family/Household role	<u>5.8</u>	<u>7.6</u>
	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 3.

## Programmes

With each treatment goal, two health care programmes could be indicated for a particular patient. A total of 5954 programmes were chosen and are summarised in Table 4. Analysis showed a significant relationship between the work setting and the type of programme chosen (Chi square = 109.18,  $df = 4$ ,  $p = 0.00$ ).

Only for the developmental programme a difference of more than 10% between the settings existed: this programme was chosen more frequently in psychiatric care.

TABLE 3: Treatment interventions in general and psychiatric care		
Interventions	General care (%)	Psychiatric care (%)
Self-care activities	<b>27.9</b>	12.0
Productivity activities	15.6	12.6
Leisure activities	15.9	<b>35.8</b>
Advice/instruction	<b>31.7</b>	5.0
Group therapy	1.8	<b>29.2</b>
Splinting	2.8	0.0
Other	4.3	5.4

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

TABLE 4: Health care programmes in general and psychiatric care		
Health care programmes	General care (%)	Psychiatric care (%)
Prevention	8.9	3.6
Development	20.6	<b>31.1</b>
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 shows that in nursing homes most patients (62.1%) were older than 75 years (mean age 77 years); in rehabilitation centres and general hospitals most patients were 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 centres the proportion of men and women was equal (50%).

### Medical diagnosis

Five main groups of medical diagnosis covering 74% of all medical diagnosis 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 centre has taken 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 showed that in nursing homes the cognitive impairments were chosen relatively often (25.1%) by occupational therapists. At the level of disabilities there was a large difference (>10%) for one treatment goal: in nursing homes this treatment goal – personal care – was picked relatively often. At the handicap level, a large difference was evident for two goals: in nursing homes handicap in physical independence while in rehabilitation centres and general hospital handicap in occupational role was chosen relatively often. Table 5 shows the treatment goals chosen at all three levels.

TABLE 5: Treatment goals in nursing home, rehabilitation centre and general hospital			
Treatment goals	Nursing home (%)	Rehabilitation centre (%)	General hospital (%)
<i>Impairments</i>			
Motor	50.8	59.1	60.5
Sensory	12.2	23.0	18.1
Cognitive	<b>25.1</b>	13.2	10.2
Intrapersonal	8.9	4.4	6.5
Other	<u>3.0</u>	<u>0.3</u>	<u>4.7</u>
	100.0	100.0	100.0
<i>Disabilities</i>			
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	<b>32.1</b>	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	<u>0.2</u>	<u>0.3</u>	<u>0.3</u>
	100.0	100.0	100.0
<i>Handicap</i>			
Physical independence	<b>48.9</b>	16.7	27.9
Mobility	32.8	29.2	38.2
Social role	7.3	9.4	3.6
Occupational role	8.4	<b>36.5</b>	<b>24.2</b>
Family/Household role	<u>2.6</u>	<u>8.2</u>	<u>6.1</u>
	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 shows that in nursing homes self-care activities and in rehabilitation centres, productivity activities were relatively often emphasised.

TABLE 6: Interventions in nursing home, rehabilitation centre and general hospital			
Treatment goals	Nursing home (%)	Rehabilitation centre (%)	General hospital (%)
Activities on self-care	<b>38.0</b>	21.0	26.7
Activities on productivity	8.8	<b>21.0</b>	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%.

### Treatment programmes

There was a significant relationship between setting and treatment programmes (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 7 shows the programmes chosen in the different settings. A large difference (>10%) in the choice of treatment programmes was observed for one treatment programme. The recovery programme was applied relatively often in general hospitals compared to nursing homes.

TABLE 7: Health care programmes in nursing home, rehabilitation centre and general hospital			
Health care programmes	Nursing home (%)	Rehabilitation centre (%)	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

### Discussion

The aim of this study was to describe and analyse the occupational therapy practice in the four largest worksettings of occupational therapists in the Netherlands, i.e. nursing homes, rehabilitation centres, 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 programmes.

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

#### *Psychiatric care v. General care*

Occupational therapy practices in psychiatric and general care differed in all aspects. A characterisation of occupational therapy practice in these settings can be made. In general care the following treatment goals were emphasised: 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 emphasised: cognitive and intrapersonal impairments; disabilities in basic skills, in leisure and in relationships; and handicap in social role and in occupational role. Also a characterisation can be made for the interventions. In general care, self-care and advice/instruction were emphasised whereas in psychiatric care leisure and group therapy were chosen relatively often. Only one difference was observed at the level of health care programmes; in psychiatric care the developmental programme was relatively often chosen.

#### *Occupational therapy in general care*

A characterisation of occupational therapy in general care showed a resemblance across all three settings. The differences between the settings were small with regard to treatment goals, therapeutic interventions, and treatment programmes. 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 self-care activities; in rehabilitation centres 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 postgraduate 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 postgraduate 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 pre-requisite.

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.

## REFERENCES

- Allen F, Graham J, Hiep M, Tonkin J (1988). Occupational therapy 1981–1986, Trends and implications. *The Australian Occupational Therapy Journal*, **35**: 155–64.
- American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed. revised). Washington DC: APA.
- Barris R, Cordero J, Christiaansen R (1986). Occupational therapists use of media. *The American Journal of Occupational Therapy* **40**: 679–84.
- 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, Netherlands: CIPH.
- Cossar A. (1992). The growth of private practice in occupational therapy in Great Britain. *British Journal of Occupational Therapy* **55**: 157–61.
- Driessen MJ, Dekker J, van der Zee J, Lankhorst GJ (1993). Ergotherapeuten:werksituatie en taakuitoefening (Occupational therapists: Practice of profession). *Nederlands Tijdschrift voor Ergotherapie* **21**: 75–82.
- Driessen MJ, Dekker J, Lankhorst GJ, van der Zee J (1995). Inter-rater and intra-rater reliability of the occupational therapy diagnosis. *Occupational Therapy Journal of Research* **15**: 259–74 .
- Dutch Association of Occupational Therapy. (1988). *Het beroepsprofiel (Profile of the Profession)*. Delft, The Netherlands: DAOT.
- Eliason ML, Gohl-Giese A (1979). A question for professional boundaries: Implications for education programs. *The American Journal of Occupational Therapy* **33**: 175–79.
- Kirkwood BR (1988). *Essentials of medical statistics*. Oxford: Blackwell Scientific Publications.
- Kleinman BL (1992). The challenge of providing occupational therapy in mental health. *The American Journal of Occupational Therapy* **46**: 555–57.
- Kunstaetter D (1988). Occupational therapy treatment in home health care. *The American Journal of Occupational Therapy* **42**: 513–19.
- Morris LV (1989). Occupational therapy: A study of supply and demand in Georgia. *The American Journal of Occupational Therapy* **43**: 234–39.

- Neistad ME (1986). Occupational therapy treatment goals for adults with developmental disabilities. *The American Journal of Occupational Therapy* **40**: 672–78.
- Neistad ME, Seymour SG (1995). Treatment activity preferences of occupational therapists in adult physical dysfunction settings. *The American Journal of Occupational Therapy* **49**: 437–43.
- Norsius MJ (1992). *SPSS/PC+ Advanced Statistics Version 5.0*. Chicago: SPSS.
- Pendleton HM (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 KL, Sanderson SN (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 SA, Gwin CH (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**: 317–22.
- World Health Organization (1980). *International Classification of Impairments, Disabilities and Handicaps*. Geneva: WHO.
- World Health Organization (1995). *International Classification of Diseases (10th revision), Clinical Modification*. Geneva: WHO.

Address correspondence to: Marie-José Driessen, NIVEL, Netherlands Institute of Primary Health Care, P.O. Box 1568, 3500 BN Utrecht, The Netherlands.

## APPENDIX 1: MODIFIED OCCUPATIONAL THERAPY DIAGNOSIS IN THE REGISTRATION FORM

Category	Subitems
<i>Impairments</i>	
Motor impairments	impairment of structure, 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.
<i>Disabilities</i>	
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**.
<i>Handicap</i>	
Physical independence	
Mobility	
Social role	
Occupational role	
Family/Household role**	

- 
- \* new item
  - \*\* old items are combined
  - \*\*\* category is restructured
  - \*\*\*\* new category with old items