

# VOCATIONAL REHABILITATION IN NORTHERN SWEDEN. I

## *A Socio-demographic Description*

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**ABSTRACT.** Some socio-demographic variables were registered by structured interview in a consecutive series ( $n=149$ ) of subjects referred for vocational rehabilitation with a diagnosis of somatic disease. Two years later the subjects were re-interviewed about current occupational and financial status. Initially 43% received sickness allowance and 18% unemployment compensation, the remaining 39% were vocationally active. Almost 19% needed only technical aids to be able to return to/remain in work; an intervention which was used significantly more often for the—relatively older—self-employed than for the rest of the sample. Two years later 80% of those who were vocationally active at the time of referral were still at work, the remaining 20% were undergoing training (11%) or were vocationally inactive (9%). Among those who were receiving sickness benefit/unemployment compensation at referral, 44% were at work and 20% were receiving education. Return to work after vocational inactivity was financially beneficial. It is concluded that vocational rehabilitation in Umeå had a fair rate of success. This may be due to the low rate of handicaps.

*Key words:* vocational rehabilitation, disability, earnings, outcome.

This investigation forms Part I of a prospective analysis of a consecutive series of subjects who, due to bodily impairment, were referred for vocational rehabilitation to the Umeå County Vocational Rehabilitation Service (CVRS). The aim of the present study was to describe the socio-demographic characteristics of the population while Part II will focus on psychosocial characteristics. The overall aim is to search for indicators of the likelihood of success in vocational rehabilitation interventions.

### *On the nature of work*

Wadel (31) postulated that a series of different definitions of work are needed, and Karlsson (13) has listed

a wealth of such different definitions of work, concluding with his own ontologically based concept, that work is man's doing in the sphere of necessity. This definition closely resembles the one given by Lewenhak (15). From a theological perspective Agrell (1) regards work as both divinely commissioned and as liable to lead to idolatory and pride, as existing without having maintenance as its goal, and as done under pressure to secure one's sustenance; as full of joy, and as causing strain and suffering. According to Udy (29) work is any purposive human effort to modify man's physical environment, while Parker & Smith (20) say: "for the individual in a modern industrial society work is normally defined with means of earning a living" and Fenichel (9) believes that work under present-day conditions is the way to independence and success.

The Universal Declaration of Human Rights (10) states that everyone has the right to work, to a free choice of employment, to just and favourable conditions of work and to protection against unemployment. Finally, about 40 years ago, the ILO (International Labour Organization) simply stated that work is not merchandise (12).

The vocationally disabled has been defined by the ILO as a person whose qualifications to obtain or maintain a suitable vocation are essentially limited because of physical or mental impairment (12). In Sweden the vocationally disabled are regarded as those who because of physical, intellectual, mental or social work impediments or limitations are expected to encounter obstacles in obtaining or maintaining a financially gainful occupation (26). Defining "occupation" as the individual's ability to occupy his time in the manner customary for his sex, age and culture, WHO in the Classification of Impairments, Disabilities, and Handicaps "ICIDH" (32) describes an occupational handicap as the inability to sustain an appropriate occupation of time for the working day.



*Vocational rehabilitation in Sweden*

In Sweden, as in many other countries, vocational rehabilitation is basically represented by intensified vocational counselling (8). In 1978 a Swedish commission (18) concluded that vocational rehabilitation aims at building up the vocationally disabled subject's vocational potential. This is accomplished partly by supporting the individual and partly by intervening at the place of work.

The National Labour Market Board (NLMB)<sup>1</sup> in Sweden is the central administrative authority for general labour market issues and the chief authority for all local employment offices (EO), employability assessment centers (AC) and—at the time of the investigation—the labour market training centers (TC). At the time of this investigation about 10 000 employees worked at the NLMB, the 24 County Vocational Rehabilitation Services (CVRS), the more than 300 EOs, about 100 ACs (one of them in the Umeå district) and at the TCs.

At all the larger EOs, vocational rehabilitation is dealt with primarily by specially trained vocational counsellors. At the time of this investigation (1984–1987) 17 such counsellors served the Umeå district. During the 4-year period 1984–1987 the total number of vocationally disabled clients actually served by them averaged  $500 \pm 50$  each month. This averages out at approximately 29 clients served by each counsellor at any given time. Among the clients 2–3 were new each month. Some additional information is given in Appendix A:1. The table demonstrates similarities concerning proportions of vocationally disabled work applicants and cases closed each month in Sweden and in the Umeå district. The simplest intervention is vocational counselling (VC). If the vocational counsellors are unsure of the clients' working capacity or if, for other reasons, further evaluation is needed, the vocational capacity can be assessed at an AC. Here rehabilitation encompasses individual counselling and rehabilitative and preparatory work-training pursued in teams, which generally include vocational counsellors, social workers, psychologists, nurses, physiotherapists and physicians.

Some other major rehabilitative interventions are: Training at a TC, often financed by vocational training subsidies and aimed at providing either a general preparatory theoretical education or more often practical vocational education. Extended work-training (EWT) provides an evaluation of working capacity within a particular vocation or a more detailed introduction to different occupations. Other investigations

are: Assistants for handicapped employees and sheltered work in order to secure the client's right to payed work, facilitating return to the general labour market. These measures represent the working line, a cardinal characteristic of Swedish labour market policy.

The financial grants line includes: Grants for technical devices, maximized to 50 000 SEK; starting allowances for disabled clients (up to 30 000 SEK) to provide equipment needed to facilitate the starting of a private enterprise; salary contribution (100% to government authorities; 90% to public services and 50% during the first two years reduced to 25% during the following two years to private companies and municipal employers). Special salary contributions can also be granted to severely vocationally disabled clients (90% of the salary during the first and 50% during a further three years). All these contributions can be and often are prolonged. An introduction subsidy, covering 90% of the salary, is however given for a maximum of 6 months.

Further financial subsidies are: A general starting allowance for those who establish themselves in private enterprise and a motor vehicle subsidy (administered since October 1988 by the Social Insurance Institution) when a vehicle is crucial for future vocational activity.

## SUBJECTS AND PROCEDURES

Umeå is situated in Northern Sweden (Fig. 1) some 300 km south of the Arctic Circle. The land area of the district is 9351 km<sup>2</sup>. The total population of the district has remained quite stable since the beginning of the 1970s and at the time of the investigation was around 117 000 with an approximately equal male/female distribution. The majority of the population (71%) lives within the city of Umeå. The number of individuals within the vocationally active span of years 20–64 is approximately 69 000, with a virtually exact 1:1 male/female ratio (25).

The availability of jobs both in Sweden and in the Umeå district in terms of reported new vacancies is shown in Appendix A:2. New vacancies during the four-year period 1984–1987 (the time of the investigation) in the Umeå district totaled 1.4% of that reported for Sweden. As the population of the Umeå district constitutes 1.5% of the Swedish population the total availability appears to be similar to that for Sweden as a whole. Nor were there any striking differences within the different main vocational areas. Furthermore (see Appendix A:3) the unemployment rate in the

<sup>1</sup> To facilitate understanding of the English names and abbreviations for the Scandinavian readers a list is given in the Appendix A:4.

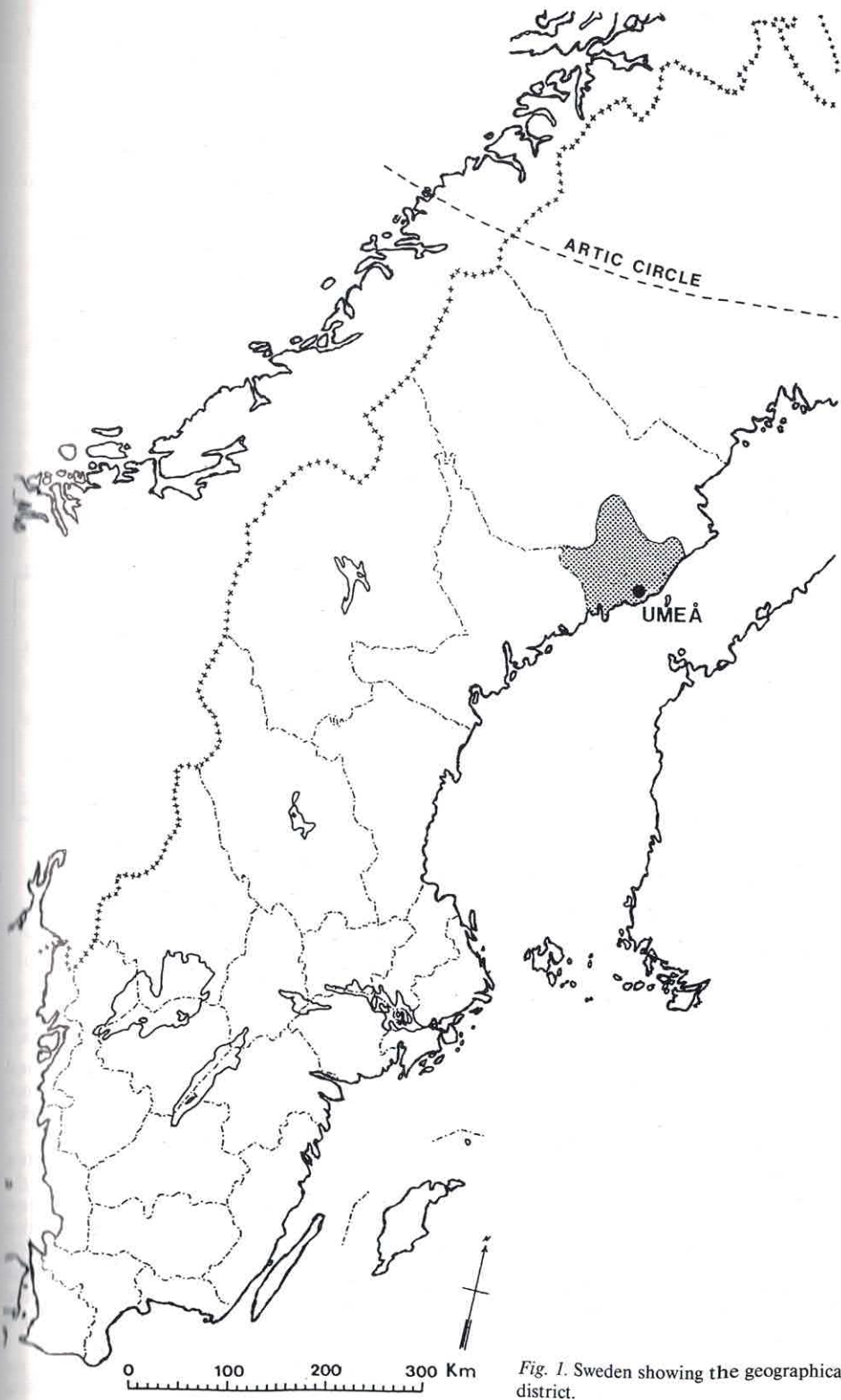
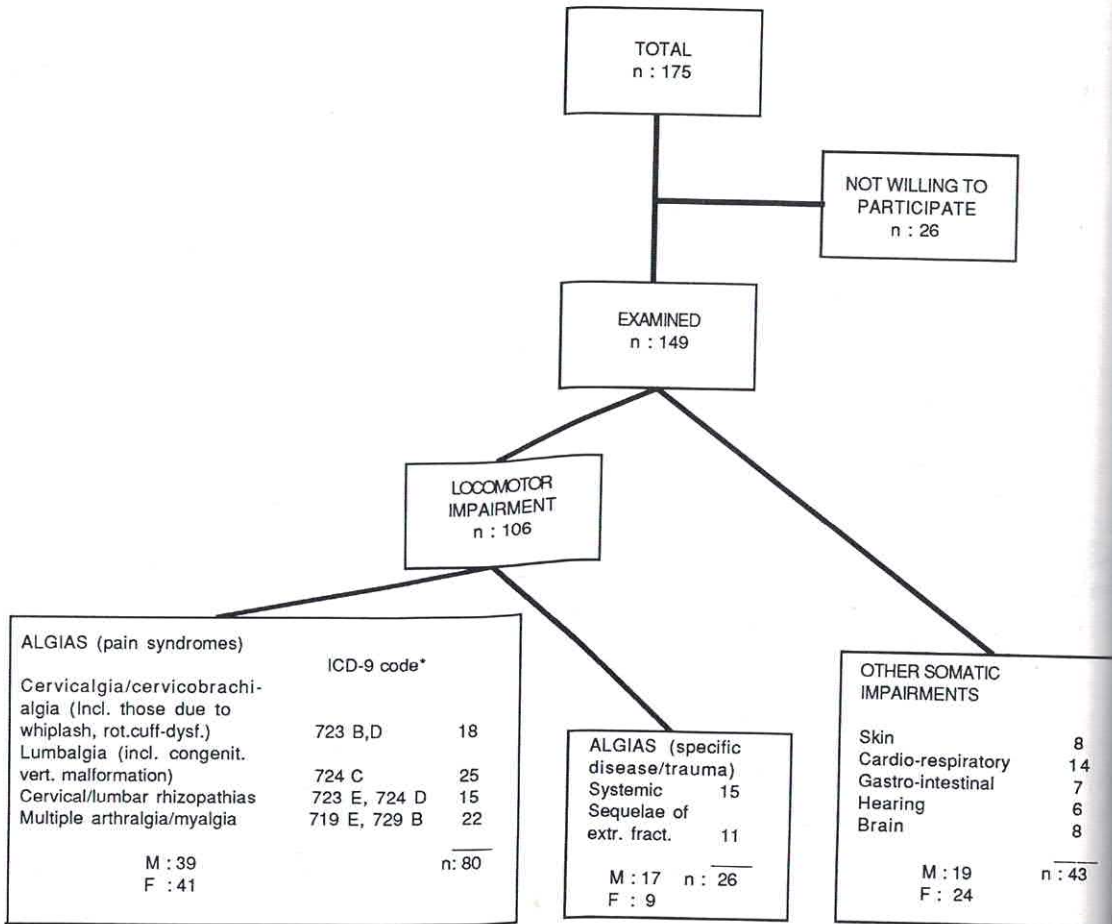


Fig. 1. Sweden showing the geographical position of Umeå district.





\* Swedish version of International classification of diseases (27), ninth revision where B,C,D,E corresponds to 1,2,3,4.

Fig. 2. The consecutive series of the bodily impaired vocational rehabilitation clients studied. The distribution into (gross) diagnostic categories is given.

Umeå district was quite similar to that for Sweden in general during the 1984–1987 period.

All subjects who, due to somatically induced vocational disability, were referred to the Umeå CVRS during October 1984–February 1985 were located through reviews of the records of that service. The total number was 175. Of these, 149 gave their informed consent to participate in the investigation. There were no significant differences as regards age and sex between the respondents and the 24/26 non-respondents whose charts could be located.

All 149 respondents were examined by a specialist in physical medicine and rehabilitation (M. E.). A gross diagnostic distribution of the subjects is given in Fig. 2. For the majority (71%) the main vocational disability was caused by loco-motor impairments, including pain-syndromes from the neck, back and shoulder ("algias"). Fourteen per cent of these had manifest neurological impairments such as cervical or lumbar rhizopathias. For the remaining 43 non-"algic" subjects,

one-third had loco-motor problems which contributed to, but were not the main reason, for the vocational disability.

The following items were recorded: age, sex, educational level and occupation, source and level of actual income, equipment with technical devices and, for those receiving sickness compensation, its duration (in months).

To obtain an impression of the disadvantages, resulting from impairment or disability, limiting or preventing the fulfilment of "normal" roles the "normative" classification of handicaps introduced by the World Health Organization (32) was used. Five of its six dimensions were included (orientation, physical independence, mobility, occupation and economic self-sufficiency). For each of the five dimensions ratings are between 0 (no handicap whatsoever) through 4 (severe handicap). For further clarification, see ref. 32.

Two years ( $\pm 1$  month) after the first investigation the majority of the clients were contacted by telephone by the physician who had conducted the initial interview. The

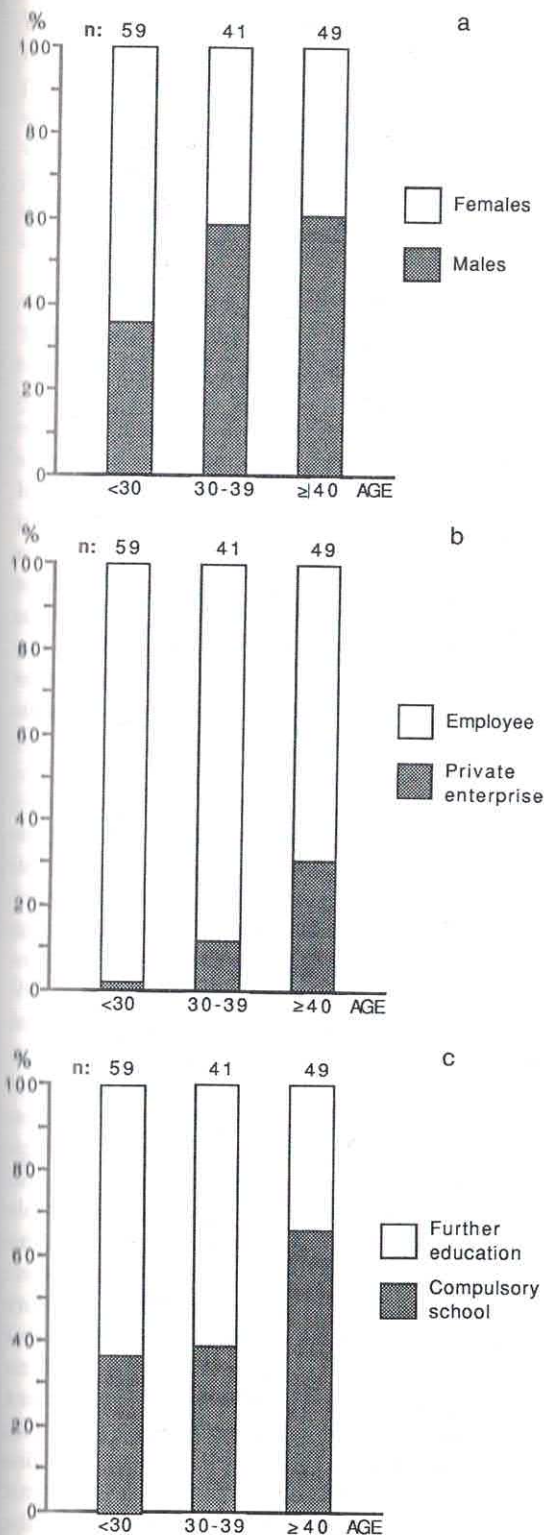


Fig. 3 a-c. Age (in years) related to sex, educational level and employment status.

source of income ( $n=149$ ) was registered and 140 clients again reported their actual income.

*Statistics.* To evaluate co-variations of pairs of variables, cross-tabulations were performed among all variables, while incomes were compared using the *t*-test (23). The chosen level of significance was  $p \leq 0.05$ . In the text and figures differences and co-variations are given only if they fulfil the criterion of significance.

## RESULTS AND COMMENTS

### Sex and age

Among the 149 respondents 74 were females (mean age  $32 \pm 10.5$  years) and 75 were males ( $37 \pm 11.3$  years). For simplification we trichotomized the respondents into three age cohorts:  $<30$  ( $n=59$ ),  $30-39$  ( $n=41$ ),  $\geq 40$  ( $n=49$ ). Only a few ( $n=5$ ) were younger than 20, the youngest being 17 years old; while three were older than 59, the oldest being 63. As shown in Fig. 3 a the youngest cohort differed from those older than 30 years with regard to sex, as females predominated (64%). A finding which agrees with those of Elmfeldt (6) and Román (21). We cannot readily explain this difference. One explanation may, however, be that females seek medical care more often (3, 19), another that they are more predisposed to consult doctors especially with vague symptoms and for milder forms of illness and disability (30).

### Employees and self-employed people

The proportions of employees/self-employed subjects were 87%/13%. Significantly more among the latter clients belonged to the oldest than to the two younger cohorts (Fig. 3 b). Seventeen of the 20 self-employed were males, also a significant sex difference which probably reflects actual societal sex differences concerning the relative proportions of employees/self-employed (25). The majority (65%) of the self-employed were vocationally active and the remainder received sickness benefit. Among the employees significantly fewer (35%) were vocationally active.

### Source of income

For nearly half the population (34 of the females and 30 of the males) the source of income at the time of the investigation was sickness benefit or temporary premature pension. Eleven of these had a part-time (50%) benefit/pension, but were vocationally inactive and a further 12 had full (accorded by law) economic compensation as their disability was caused by occupational accident or overload. Significantly more fe-



Table I. The distribution in per cent of a vocational rehabilitation sample ( $n=149$ ) according to pre-referral vocational categories

The distributions in Sweden in general and in the Umeå district are also given

	Present study			Umeå district (1980) M+F vocationally active (%)	Sweden (1980) M+F vocationally active (%)
	M <i>n</i>	F <i>n</i>	M+F (%)		
Professional/managerial	2	9	8	33	28
Clerical	10	14	16	10	12
Service/miscellaneous	4	32	24	22	23
Heavy manual	13	8	14	7	5
Industrial	46	11	38	28	32

males ( $n=17$ ) than males ( $n=10$ ) were on unemployment allowance. The remaining 58 subjects (23 females and 35 males) were vocationally active, although at least partly vocationally disabled. Thus, 61% of the clients were vocationally inactive at referral. A certain age dependence occurred: those on sickness benefit were significantly older than those on unemployment allowance.

#### Education

Compulsory school (7 years for the oldest and 9 for the younger subjects) was the highest level of education for 48%. A further 27% had attended school for 3-5 more years, while 7% were university graduates. The remaining 18% had received some form of vocational education after compulsory school. In comparison 3/4 of the vocational rehabilitation clients at an AC, studied by Elmfeldt (6) had completed only compulsory school. This significant difference may be due to a general increase in educational level of the Swedish population during the fifteen years which separate the two investigations. In Román's study (21) from Umeå on vocational assessment for clients with low back pain 65% had passed compulsory school. No one in these studies was a university graduate.

When we dichotomized the sample into those with only compulsory school vs. those with further education (Fig. 3 c) the oldest cohort had a significantly lower level of education than the two younger cohorts. This probably reflects the greater availability of further education during more recent decades. The majority (65%) of the vocationally active subjects were among those who had further education after compulsory school. This was significantly more than for those on disability (46%) or unemployment (41%) compensation. The difference may indicate that those

with some further education have invested more of their personality (see also below) in their vocation and, hence, are less likely to give up their job until a suitable alternative or adequate technical aids have been provided. Furthermore, those with a higher educational level may have had better opportunities to advance more rapidly and move about in particular job families more freely, to find a position more suited to their physical condition (2).

#### Principle occupations

Table I shows the distribution of the subjects according to different principle occupations. Among the industrial workers 57% were skilled and 43% were unskilled. The professional/managerial group was significantly under-represented as compared to the general proportion in the area while the clerical, industrial and heavy manual workers were significantly over-represented (25). As expected, significantly more females than males belonged to the service-group, while the opposite was true for industrial workers. Hence about 50% of the sample were "blue collar" (industrial and heavy manual work), a further quarter also mainly had manual work of the more typical female type such as being assistant nurses. This group also included one home-maker and a few shop-assistants.

Vocational status and adjustment prior to disability can be expected to have a major influence on post-disability adjustment (7). The meaning of work of an individual and his pre-disability work adjustment have a major impact on later work adjustment (22). Significant determinants can be found in pre-disability occupational level and socio-economic status (11, 16). Safilios-Rothschild (22) suggest that for the professional and "white collar" workers, work constitutes a major portion of their lives and identities,



These individuals have so much invested in work and in career success that not continuing to work would penalize them too extensively. In contrast the unskilled or semi-skilled individual is probably the most vocationally vulnerable to disability. Work does not play an essential role in his esteem or identity, because his job may be frustrating, unrewarding and insecure.

#### *About sickness benefit*

Twenty-eight per cent of those who were on sickness benefit had been receiving it for more than 12 months. Dichotomizing into  $\leq 12$  months/ $> 12$  months the length of this period was significantly associated only with educational level. Significantly more of those with a relatively low level of education than those with a relatively high educational level had received sickness benefit for more than one year. Several reasons for this fact can be contemplated. A low educational level generally leads to relatively monotonous jobs which demand brain and this type of work may be frustrating (there was a significant predomination of subjects with low educational level among unskilled workers and those with heavy manual jobs compared to other occupational groups). Thus, both for physical and psychological reasons hard labour with low status may carry with it a predisposition for the subjects to have a longer period on sickness benefit before they are referred for vocational rehabilitation.

#### *Income*

Males had significantly lower incomes in relation to the sex-specific area median than females. Thus financially, the males were at a relative disadvantage compared to the females. The average female income in 1985 for the age group 20–60 years was about 67% of that of the males (25). However, in 1985 these average incomes were calculated on the basis of all subjects and a considerable proportion of married females in the area had no formal source of income as they were home-makers. Further analyses were therefore performed and demonstrated that in the present sample neither males nor females actually working had incomes below the median. In contrast both males and females on unemployment compensation and also males (but not females) receiving sickness benefit had significantly lower incomes than the area median.

These results may simply illustrate the fact that these types of compensation are by law lower than are

the vocational incomes upon which they are based. However, they may also imply, particularly for males, that basically the subjects who are referred for vocational rehabilitation are relatively low income earners, probably employed in characteristic stereotyped routine-work with few possibilities of modifying the working situation.

#### *ICIDH-classification of handicaps*

The distribution of the respondents into the 5 normative (i.e. the evaluator-assessed degree of handicap) categories of handicap according to the ICIDH (32) is given in Fig. 4. As illustrated, only very few were handicapped within the categories mobility and self-care. In this context it is pertinent to note that several researchers (5, 17) have pointed out that this normative classification of handicaps designates disability rather than what it intends to describe: "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". The fact that only 55% had no impediment to orientation simply indicates that a sizeable proportion used glasses (those with scores of 1). Four per cent (scoring  $\geq 2$ ) had mobility handicaps, which for half of the cases (scores 2 and 3) were considered slight or moderate.

In contrast, the vast majority were classified as occupationally handicapped. A score of 1 designates intermittent inability to follow customary occupation while a score of 7 (obtained by 40% of the population) at the other end of the scale means inability to follow occupation. In all only 3% were classified as being occupationally non-handicapped at the time of the investigation. After an (operational) trichotomy (Table II) of the occupation handicap variable into: no/minor (0–2), moderate (3–4) and severe (5–7) occupation handicap it became clear that the majority of those at work or unemployed at the time of the initial investigation had a minor or moderate handicap, while among the subjects receiving sickness benefit 84% were classified as severely handicapped. The majority of the respondents were also classified as economically handicapped. While degrees 0–2 range from wealthy to fully self-sufficient (none of the respondents were gauged as being wealthy or even comfortably off) a score of 3 includes individuals who, although economically self-sufficient, have suffered a reduction in economic well-being compared to status before disability developed. Only 4% were rated as being in financial difficulties and of these only 1% (scoring 6) were considered impoverished.

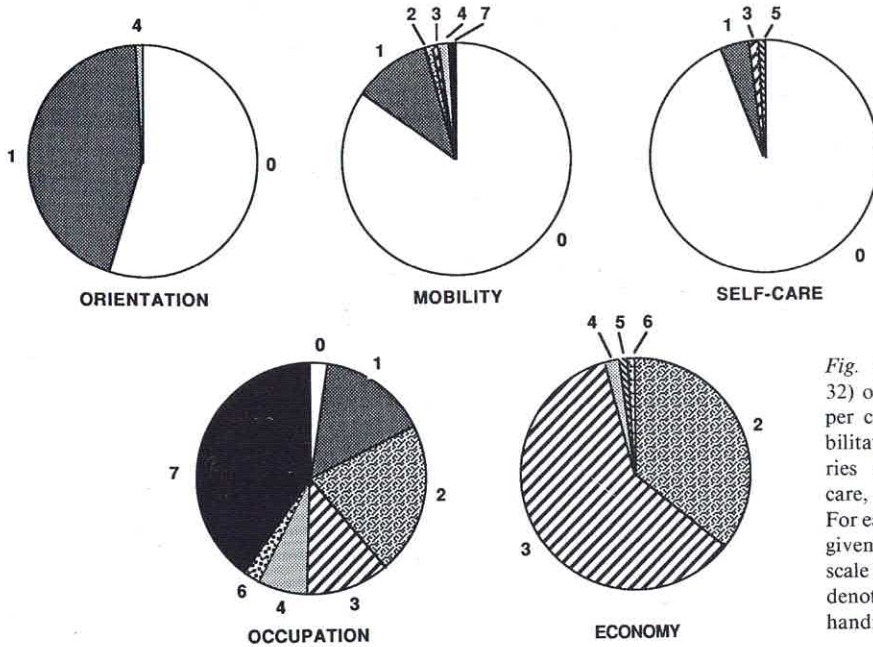


Fig. 4. ICIDH-classification (cf. 32) of handicaps. Distribution in per cent of 149 vocational rehabilitation clients into the categories orientation, mobility, self-care, occupation and economy. For each category the 9 grade scale given by the ICIDH is used. In this scale 0 means fully normal while 8 denotes a maximum degree of handicap.

Hence, it appears that the Swedish welfare system, at least as it is applied in vocational rehabilitation in this group of rehabilitees, allows subjects to seek rehabilitation even though they have no or only minor handicaps (as classified following the guidance of the ICIDH). The present findings may, however, also indicate that only a few subjects with major physically induced handicaps will be considered for vocational

rehabilitation. The fact that the majority of subjects were gauged to be at least at some financial disadvantage mirrors to a great extent the interviewer's/exa-

Table II. The distribution in per cent of 149 somatically impaired Northern Swedish vocational rehabilitation clients according to earlier source of income

Distribution is related to the degree of occupational handicap (ICIDH) assessed at admission

Occupational handicap	Earlier source of income		
	At work (%)	Un-employed (%)	On sickness benefit (%)
Minor (0-2)	69	29	2
Moderate (3-4)	54	14	32
Severe (5-7)	6	10	84
% of total population	39	18	43

Table III. The re-distribution, in per cent, of source of income, at a two-year follow-up, of 149 somatically impaired Northern Swedish vocational rehabilitation clients. The earnings' enhancement (per cent) in different source-of-income categories for n=140 (9 subjects did not report their income at the follow-up) is also given

Before	At work 2 years later	Earnings' enhancement
At work	80	19
On sickness benefit/unemployed	44	31*
In education 2 years later		
Before		
At work	11	
On sickness benefit/unemployed	20	
Vocationally inactive 2 years later		
Before		
At work	9	-1*
On sickness benefit/unemployed	36	19

\* Denotes significance.



Table IV. Vocational rehabilitation interventions for 149 clients related to the two-year outcome

Rehabilitation intervention	Total <i>n</i>	Vocational outcome after 2 years				
		Vocationally active at referral and at follow-up/		Vocationally inactive at referral/		
		Same job <i>n</i>	New job <i>n</i>	New job <i>n</i>	In education <i>n</i>	Vocationally inactive <i>n</i>
Counselling only	45	11	7 <sup>b</sup>	14 <sup>c</sup>	—	13
+ Technical aids	28	16	6	4	—	2
+ Employability assessment center (AC)	32 <sup>a</sup>	1	9 <sup>d</sup>	9 <sup>e</sup>	7	6
+ Education	35	—	4 <sup>f</sup>	6	17	8
+ Extended work training (EWT)	9	—	2	2 <sup>g</sup>	—	5
Total	149	28	28	35	24	34 <sup>h</sup>

<sup>a</sup> Of these 6 subjects started their vocational rehabilitation through EWT. Salary contribution for: <sup>b</sup>2 subjects, <sup>c</sup>3 subjects, <sup>d</sup>6 subjects, <sup>e</sup>2 subjects, <sup>f</sup>4 subjects, <sup>g</sup>1 subject. <sup>h</sup>Including 5 subjects vocationally active at referral/inactive at follow-up, the rest being inactive on both occasions.

miner's knowledge that those subjects were receiving sickness/or unemployment benefit.

#### The two-year follow-up

Two years after the initial investigation (see Table III) the vast majority (80%) of those who were occupationally active at the initial investigation had remained so, while the rest were undergoing training (11%) or were vocationally inactive (9%). Among those who were unemployed or receiving sickness benefit at the initial investigation about one-third were still vocationally inactive while 44% were active and 20%—after appropriate training—aimed to go back to work. Thus, the effects of the National Labour Market Board services appear to be far from wasted, as nearly all (91%) of those who were vocationally active at the time of referral were still active—or planned to return to work—at follow-up. Moreover, 64% of those who were vocationally inactive at referral were now engaged in financially gainful work or intended to be so.

In Table IV the outcome in relation to the actual intervention measures is given. As shown, vocational counselling (one or mostly a series of counsellings) was the only intervention for 30% of the sample. Further 19% were furnished with technical devices. The majority of those who only had counselling or who were assessed as only needing technical aids were

actually at work at the time of the follow-up. Twenty-one per cent were assessed at the AC while a total of 28% either directly ( $n=35$ ) or after assessment at the AC ( $n=7$ ) were given training. Only a small minority (9 subjects) had EWT as the only measure in addition to vocational counselling, and more than half of this group were vocationally inactive (on premature pension/sickness benefit or unemployed) at the follow-up investigation.

Those keeping the same job throughout the investigation were quite easily manageable as 27/28 of them needed only vocational counselling and/or technical devices. In contrast, the group ( $n=63$ ) that comprised those who changed their jobs or became vocationally active after earlier sickness benefit/unemployment allowance included all 18 clients who received salary contribution. Thus, 20% of those vocationally active at follow-up were employed through salary contribution in spite of a low prevalence (cf. above) of "handicaps".

It was possible to locate the charts at the Umeå CVRS for 24 of the 26 subjects who declined to participate in the investigation. At the two-years follow-up 16 subjects were gainfully at work while 3 were undergoing training and 5 were vocationally inactive. There were, thus, no significant differences between respondents and non-respondents. Moreover, the distribution of the non-respondents according to reha-

Table V. *The distribution in per cent of 149 somatically impaired Northern Swedish vocational rehabilitation clients according to vocational outcome at a two-year follow-up*

Distribution is related to the degree of occupational handicap (ICIDH) assessed at admission

Occupational handicap	Vocational outcome after 2 years		
	At work (%)	In education (%)	Vocationally inactive (%)
Minor (0-2)	71	14	15
Moderate (3-4)	68	18	14
Severe (5-7)	49	18	33
% of total population	61	16	23

bilitation interventions given in Table IV, also did not differ from that of the 149 respondents.

Technical aids which can enable a vocationally disabled subject to perform a certain task may be rather costly, for instance giving a disabled farmer (included in the heavy manual labour group) automatic fertilizing equipment/milking machinery implies a cost of at least 50 000 SEK (1 US\$ = approx 6.5 SEK at the time of the investigation). The vast majority of technical aids, however, are quite cheap, such as ergonomically correct desks and chairs, each costing only a few thousand SEK. Whereas the majority of the self-employed (55%) (including six of seven farmers) were only furnished with technical aids, only 13% of the employed received this intervention. In contrast to the farmers and 42% ( $n=10$ ) of those employed in clerical professions only 9% ( $n=5$ ) of the industrial workers ( $n=57$ ) were given technical devices.

The vast majority of the sample had increased their income (cf. Table III). According to the Swedish National Institute of Economic Research the average income in Sweden had increased by 16% during this particular period (28). Normalizing for this average increase only those who returned to work from sickness benefit/unemployment allowance significantly (32%) increased their earnings and those who became vocationally inactive had significantly reduced income. The financial benefits of successful rehabilitation for the severely disabled in Sweden were demon-

strated in 1964 by Levi (14), and in 1987 in the USA by Carlsson & Corbett (4).

In Table V the outcome of vocational rehabilitation is related to the degree of occupational handicap (ICIDH-classification) which was used to characterize subjects at the initial investigation. The table elucidates that in this sample about 85% of those with minor or moderate occupational handicap were actually working or were expected to do so after appropriate training. Significantly fewer, but as much as 67%, of those with severe occupational handicap also had returned or could be expected to return to financially gainful work.

Therefore we believe that it is justified to conclude that vocational rehabilitation in the Umeå district has a good success rate—nearly 80% could stay in or return to work.

#### ACKNOWLEDGEMENT

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APPENDIX

A: 1. *The total number (n/month ± SD) of work applicants, vocationally disabled clients and closed cases of vocationally disabled clients during 1984-1987 in Sweden and the Umeå district (24)*

	1984-1987	
	Sweden	Umeå district
Work applicants totally (n/month)	324 500 ± 4 900	5 450 ± 350
Vocationally disabled clients (n/month)	32 300 ± 1 750	500 ± 50
Closed cases of vocationally disabled clients (n/month)	3 640 ± 90	50 ± 9

A: 2. *The total number of reported new vacancies (number (n)/year ± SD) related to different occupations (in % ± SD) 1984-1987 in the Umeå district and Sweden (24)*

Occupation	1984-1987	
	Sweden (%)	Umeå district (%)
Technical, educational, public health	40.8 ± 1.9	37.3 ± 4.6
Administrative, financial, office, technical	7.3 ± 0.5	8.3 ± 0.5
Commercial	5.3 ± 0.5	7.8 ± 1.0
Agriculture, forestry, fishing, mining, quarrying	4.5 ± 1.0	6.5 ± 1.0
Transport, storage, communication	4.0 ± 0	3.5 ± 1.3
Manufacturing, construction, stevedores, general work	21.5 ± 1.0	19.0 ± 4.8
Service, miscellaneous	16.5 ± 0.6	17.5 ± 1.7
Total n/year	639 000 ± 69 000	9 140 ± 630

A:3. Unemployment 1984–1987 in per cent ( $\pm$ SD) of labour force by sex in the Umeå district and Sweden (25, 24)

	1984–1987		
	Total (%)	Men (%)	Women (%)
Umeå district	2.8 $\pm$ 0.2	3.0 $\pm$ 0.1	2.6 $\pm$ 0.3
Sweden	2.6 $\pm$ 0.5	2.6 $\pm$ 0.5	2.7 $\pm$ 0.7

A:4. Swedish list of abbreviations

English abbreviation	Swedish name
AC	Arbetsmarknadsinstitut (AMI)
CVRS	Länsarbetsnämnd (LAN)
EO	Arbetsförmedling (AF)
EWT	Vidgad arbetsprövning (VAP)
NLMB	Arbetsmarknadsstyrelsen (AMS)
TC	Arbetsmarknadsutbildning (AMU)
VC	Arbetsvägledning