

## **II. THE USE OF THE DEGREE OF DEPENDENCY SCALE FOR DESCRIBING THE CHARACTERISTICS OF CLIENTS WHO ARE MENTALLY HANDICAPPED**

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### **INTRODUCTION**

The information presented here was gathered as part of the long-term evaluation of the NIMROD Service (Humphreys, *et al.*, 1983). The NIMROD Service is a pilot, comprehensive, community-based Service for mentally handicapped people who live in, or come from a defined catchment area within the City of Cardiff (Mathieson and Blunden, 1980). The NIMROD Service is being introduced in phases to four geographically defined areas of the city ('Communities'), and the impact of the new Service is being evaluated over a five-year period by the Mental Handicap in Wales — Applied Research Unit.

The NIMROD Service will operate within its catchment area in addition to, and not instead of existing mental handicap service provision. In order to evaluate the impact of existing mental handicap services over this period, a 'comparison community' has been identified for research purposes, whose clients will not be receiving NIMROD services.

The selection of the four Communities to be offered NIMROD services was one of the tasks of the original Working Party on NIMROD (Welsh Office, 1978). The decision was partly governed by the size of the Communities: each Community to be of approximately 15,000 total population. In addition, Communities were selected so that a wide range of housing types were represented and so that the entire catchment area contained no major mental handicap facilities, e.g. mental handicap hospitals. The choice of 'comparison' Community was based on the results of a study of the administrative prevalence of mental handicap in the City of Cardiff (Humphreys *et al.*, 1982). The Community that was finally selected was one that was similar to the NIMROD Communities in respect of numbers of mentally handicapped people, total population, geographical location, housing type, age-grouping and socio-economic status.

Factors of age, residential setting and degree of handicap of the clients identified did not govern the choice either of the NIMROD Communities, or the 'comparison' Community. This paper therefore represents the first attempt to summarise and compare the degree of disability of clients in the five Communities in conjunction with factors of age and residential setting.

### **AIM OF THE STUDY**

The aim of this study is to use the Degree of Dependency Scale to report the characteristics of clients in the four NIMROD Communities and a fifth 'comparison' Community.

### **METHOD**

#### **The Measure — Degree of Dependency Scale.**

As part of the long-term evaluation of the NIMROD Service, routine baseline data are collected on all clients and include details of clients' age, sex, type of residential setting, clinical diagnosis, secondary handicaps and length of institutionalization. In addition, the

Social and Physical Incapacity and Speech, Self-help and Literacy Scales (SPI/SSL) (Kushlick, *et al.*, 1973) are administered to provide basic descriptive data on the degree of clients' handicap. These Scales, in their original form, have been widely used to describe the characteristics of large populations of mentally handicapped people in terms of their dependence on others (e.g. Blunden, 1975; Martindale, 1976; National Development Group, 1978). There has however been some criticism of the reliability of the SPI/SSL Scales (Palmer and Jenkins, 1982; May, *et al.*, 1982). In the present study therefore several amendments were made to the definitions used to assign SPI/SSL ratings in an attempt to remove some uncertainties between categories. In addition, SPI and SSL data were gathered by interviewing staff or parents, rather than them completing the Scales unsupervised. As a result of these amendments, acceptable levels of reliability were obtained and are reported by Humphreys *et al.* (1983).

The application of the SPI/SSL Scales often results in the division of client populations into those who are continent, ambulant and not behaviour disordered (CAN) and the remainder who have varying degrees of difficulty in these areas (CAN'T). Although useful in some instances at this gross level, the simple CAN/CAN'T dichotomy fails to take into account the extent to which a client may possess basic self-help skills such as feeding, dressing or washing, and hence his dependence upon staff or parents for help in the completion of activities of daily living.

It was with these limitations of the SPI/SSL Scales in mind that Evans, *et al.* (1981, unpublished manuscript) developed the Degree of Dependency Scale at Bryn-y-Neuadd Hospital. With data collected using the SPI/SSL Scales, the combined scores on the sections dealing with continence, ambulation, problem behaviours and self-help ability were used to derive a single Degree of Dependency rating for each client. The derivation of these ratings from SPI/SSL data is shown in Appendix 1. The 9 Degree of Dependency ratings thus derived are: CAN and able; non-ambulant only; severe behaviour problems only; elderly-low dependency; elderly-dependent; medium dependency; high dependency; severe behaviour problems and medium dependency; severe behaviour problems and high dependency.

## SUBJECTS

SPI/SSL data were first collected by interviewing families or care staff of 167 mentally handicapped clients who had been identified in the NIMROD catchment area or in the 'comparison' Community. At this time, before NIMROD became operational, clients lived either at home in the community with their relatives, or in various types of long-term residential care. Subsequently however, some clients from two of the NIMROD Communities have moved into NIMROD residential care provided in ordinary houses within the clients' Community of origin.

## RESULTS

Using the SPI/SSL data, each client was ascribed a Degree of Dependency rating, derived as described in Appendix 1. Degree of Dependency was then examined in conjunction with clients' age, Community of origin and place of residence.

### (a) Clients' Degree of Dependency

In order to compare the Degree of Dependency of clients in different Communities, factors of age and residential setting were collapsed. Table 1 shows that just under one-third of the entire sample were described as continent, ambulant, not behaviour disordered and fully independent in self-help skills (CAN and ABLE). A further quarter of the sample was found to be of 'medium dependency' and hence having some problems with incontinence and self-help skills.

Table 1 shows that there were some differences in Degree of Dependency between clients in the different NIMROD Communities:-

- fewer Community 1 clients were described as having 'severe problem behaviours only', than clients in other Communities.
- Community 2 had the lowest proportion of clients of 'medium dependency' but the highest proportion of clients described as having 'severe problem behaviours AND medium dependency'.
- A higher proportion of Community 3 clients were described as having 'severe behaviour problems AND high dependency' than clients in other Communities.
- Compared with clients in other NIMROD Communities, fewer Community 4 clients were described as 'can and able', but a higher proportion of clients were of high or medium dependency.

**Table 1**

Number of clients in each Dependency category analysed by Community.

Community	Nimrod Communities				'Comparison' Community		Total	
	1	2	3	4	5			
Dependency Category	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Can & Able	13 (35)	10 (29)	9 (28)	5 (20)	12 (32)	49 (29)		
Non-Ambulant Only Severe Behaviour	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)		
Problems Only Elderly — Low	1 (3)	3 (9)	3 (9)	2 (8)	6 (16)	15 (9)		
Dependence	2 (5)	4 (11)	3 (9)	0 (0)	2 (5)	11 (6)		
Elderly — Dependent	0 (0)	0 (0)	0 (0)	1 (4)	1 (3)	2 (1)		
Medium Dependency	12 (32)	5 (14)	10 (31)	9 (36)	6 (16)	42 (25)		
High Dependency Severe Behaviour	3 (8)	3 (9)	0 (0)	3 (12)	7 (18)	16 (10)		
Problems & Medium Dependency Severe Behaviour	4 (11)	5 (14)	2 (6)	3 (12)	2 (5)	16 (10)		
Problems & High Dependency	1 (3)	5 (14)	5 (16)	2 (8)	2 (5)	15 (9)		
<b>TOTAL</b>	<b>37</b>	<b>35</b>	<b>32</b>	<b>25</b>	<b>38</b>	<b>167</b>		

There were also some differences between clients in the 'comparison' Community and those in the NIMROD catchment area in terms of degree of dependency. Table 2 shows that a higher proportion of clients in the 'comparison' Community were described as being of 'high dependency' or as having 'severe behaviour problems only', compared with clients in the NIMROD Communities. However, more clients in NIMROD Communities were described as having 'severe problem behaviours AND high/medium dependency', than

clients in the 'comparison' Community. Nevertheless, the differences between the 'comparison' Community and the NIMROD Communities are of a similar order of magnitude to those occurring between the NIMROD Communities themselves.

**Table 2**

Differences in Degree of Dependency between the NIMROD Communities and the 'Comparison Community'

<i>Community</i>	<i>Nimrod Communities (1, 2, 3 and 4) % of clients</i>	<i>Comparison Community (5) % of clients</i>
<i>Dependency Category</i>		
Can & Able	29	32
Non-Ambulant Only Severe Behaviour	0.8	0
Problems Only Elderly — Low Dependence	7	16
Elderly — Dependent	7	5
Medium Dependency	0.8	3
High Dependency Severe Behaviour	27	16
Problems & Medium Dependency Severe Behaviour	7	18
Problems & High Dependency	11	5
	10	5

(b) Client age group

Data were next analysed to show any major differences in the age composition of the Communities. Table 3 shows that over three-quarters of the sample were aged between 16 and 64 years. There were 23 children under 16 years of age and 13 clients who were aged 65 years or more. There were some differences between the communities in terms of age composition: a higher proportion of clients in Community 2 and a lower proportion in Community 1 were under 16 years of age compared with other Communities. In addition, a higher proportion of clients in Communities 2 and 3 were aged 65 years or more compared with other Communities. The age of clients in the 'comparison' Community was found to be similar to that of clients in the NIMROD Communities.

**Table 3**

Number of clients in each age group analysed by Community

Community	Nimrod Communities				Comparison Community	Total	
	1	2	3	4	5	n	(%)
Age Group	n (%)	n (%)	n (%)	n (%)	n (%)	n	(%)
< 16 years	1 (3)	9 (26)	4 (13)	3 (12)	6 (16)	23	(14)
16-64 years	34 (92)	22 (63)	25 (78)	21 (84)	29 (76)	131	(78)
≥ 65 years	2 (5)	4 (11)	3 (9)	1 (4)	3 (8)	13	(8)
TOTAL	37	35	32	25	38	167	

(c) Clients' place of residence

Table 4 presents data on clients' place of residence as analysed before the NIMROD Service had become operational and no clients had moved out of long-term care to community-based residential care. The table shows that almost half of the sample lived at home with their relatives and a third lived in mental handicap hospitals. However, 19 of the 23 children lived at home and all elderly clients lived in long-term care.

**Table 4**

Clients' place of residence analysed by Community

Community	Nimrod Communities				Comparison Community	Total	
	1	2	3	4	5	n	(%)
Place of Residence	n (%)	n (%)	n (%)	n (%)	n (%)	n	(%)
At Home — Alone	0 (0)	2 (6)	0 (0)	0 (0)	0 (0)	2	(1)
At Home — With							
Relatives	15 (41)	16 (45)	20 (63)	14 (56)	17 (45)	82	(49)
Mental Handicap							
Hospital	18 (49)	13 (37)	10 (31)	9 (36)	15 (39)	65	(39)
Local Authority							
Hostel	2 (5)	2 (6)	1 (3)	1 (4)	1 (3)	7	(4)
Other Residential							
Unit*	2 (5)	2 (6)	1 (3)	1 (4)	5 (13)	11	(7)
TOTAL	37	35	32	25	38	167	

\* e.g. private residential facilities out of County; social services or voluntary group house; local authority childrens' home.

There were some differences in clients' place of residence between the Communities:-  
— a greater proportion of Community 3 clients lived at home with their relatives than did clients in other Communities.

— a greater proportion of clients from Community 1 lived in mental handicap hospitals than clients from other Communities.

Clients from the 'comparison' Community (Community 5) lived in a similar range of residential settings as clients in NIMROD Communities, except for five clients who lived together in a Group House run by a local voluntary organisation. No such comparable residential setting is represented in the NIMROD Communities.

(d) Clients' residential setting and Degree of Dependency

The NIMROD Service is still in the process of becoming established. To date 22 clients from Communities 1 and 2 have moved into residential care in ordinary houses in the community provided by NIMROD. Of these clients, 5 moved from their own homes where they lived with relatives, and 17 moved from long-term care (mainly mental handicap hospitals and local authority hostels).

Table 5 analyses clients' degree of dependency according to their present residential setting. The table shows that clients in NIMROD houses present a similar range of dependency to clients living in other residential settings and that clients in traditional forms of long-term residential care are not more handicapped in terms of degree of dependency than clients living at home with relatives or in NIMROD houses. Table 5 indicates that the clients presently living in NIMROD houses are, as a group, more dependent than those remaining in hospitals or hostels, in that a greater proportion were described as having 'severe problem behaviours AND medium or high dependency' than clients who remained in long-term care.

**Table 5**

Comparison of degree of dependency for clients in three residential settings

<i>Residential Setting</i>	<i>Long-Term Care</i>		<i>At Home</i>		<i>NIMROD Houses</i>		<i>Total</i>	
	<i>n</i>	<i>(%)</i>	<i>n</i>	<i>(%)</i>	<i>n</i>	<i>(%)</i>	<i>n</i>	<i>(%)</i>
Can & Able	16	(24)	27	(34)	6	(27)	49	(29)
Non-Ambulant Only Severe Behaviour	0	(0)	1	(1)	0	(0)	1	(1)
Problems Only Elderly — Low Dependence	6	(9)	7	(9)	2	(9)	15	(9)
Elderly — Dependent	10	(15)	0	(0)	1	(5)	11	(6)
Medium Dependency	2	(3)	0	(0)	0	(0)	2	(1)
High Dependency Severe Behaviour	15	(23)	21	(27)	6	(27)	42	(25)
Problems & Medium Dependency Severe Behaviour	7	(11)	7	(9)	2	(9)	16	(10)
Problems & High Dependency	7	(11)	6	(7)	3	(14)	16	(10)
TOTAL	3	(5)	10	(13)	2	(9)	15	(9)
	66		79		22		167	

## DISCUSSION

The results presented here have shown that mentally handicapped clients from five 'Communities' in the City of Cardiff display a range of handicaps resulting in differing degrees of dependency. However, in the main, each Community follows a similar pattern, with the majority of clients being described in two main categories: 'can and able' and 'medium dependency'.

Data presented here were collected primarily for research purposes in order to describe the client sample in broad terms. The Social and Physical Incapacity and Speech, Self-help and Literacy Scales were administered once only therefore, at the baseline phase of the research before any clients had begun to receive NIMROD services (Humphreys, *et al.*, 1983). Ordinarily, most assessments of clients' abilities are designed for repeated administration.

With increasing emphasis on residential care for mentally handicapped people being provided in ordinary houses in the community rather than in hospital wards, the concept of degree of dependency, and its accurate assessment may be of relevance in assisting with the calculation of adequate staffing provision. In this way, the various and individual needs of mentally handicapped people may be matched with adequate numbers of staff which would be required, in a flexible range of residential settings, so that no mentally handicapped person is denied a place in the community on the basis of his or her degree of dependency. Indeed, although fairly intensive levels of staffing may always be required to help with the physical needs of highly dependent clients, even clients in the 'can and able' category of dependence may need initial one-to-one help in learning daily living skills. This highlights the need for assessments of clients' basic abilities, teaching needs and, hence, staffing requirements to be made on an individual basis before a proposed move to a community setting, rather than attempting to fit each client group into fixed staffing patterns for community residences.

After minor amendments to the Social and Physical Incapacity and Speech, Self-help and Literacy Scales to improve reliability, and a change in the method of administration of the Scales, the assessment and description of clients' needs using the Degree of Dependency Scale as presented here, seems to offer a valuable extension of the SPI/SSL Scales. More detailed information on the combination of clients' incapacities can, if necessary, be gleaned from these Scales by cross-tabulating the five SSL categories with the six SPI categories (Kushlick, *et al.*, 1973), but the resulting table, although incorporating additional information on clients' speech and literacy skills, becomes rather unwieldy.

Other factors clearly contribute to a client's degree of dependency: receptive and expressive language; sensory deficits; clinical conditions such as epilepsy. Nevertheless, the authors of the Degree of Dependency Scale consider that continence, ambulance, problem behaviours and self-help skills are the main dimensions along which clients may be most usefully assessed for the purposes of epidemiological surveys of populations of mentally handicapped people. Indeed, the Degree of Dependency ratings have been applied with some success in this way for assessing the dependency and training needs of residents of a large mental handicap hospital (Evans, *et al.*, 1981, unpublished manuscript). In addition, the Scale was employed for a costs/service needs exercise undertaken by a sub-group of the All-Wales Working Party on Services for Mentally Handicapped People in which comparisons between clients of two large mental handicap hospitals and clients of the NIMROD catchment area showed a similar distribution in terms of degree of dependency (Welsh Office, 1982).

The Degree of Dependency Scale benefits from being simple to apply to data collected using the SPI/SSL Scales which are now well known and well used. On applying the Degree of Dependency Scale, two omissions become apparent. Mobility problems appear to receive no negative weighting in the calculation of high or medium dependency, although *problems of mobility in conjunction with incontinence or limited self-help ability could*

have implications for judging a client to be of high or medium dependency. One other omission that became apparent in the derivation of dependency ratings was that incidence of problem behaviours appeared not to have been taken into consideration in the assessment of the degree of dependency of elderly clients.

The results of a simple survey of clients' age, place of residence and degree of dependency as described here would clearly be of value at the stage of planning the resources required for a community-based service, particularly where that service is to be administered by geographical boundaries. From the results of this study for example, it may have been helpful for the planners of a service such as NIMROD to be aware of the numbers of clients with 'severe behaviour problems and high/medium dependency' who were already living at home, so that domiciliary services could be planned accordingly. The fact that clients in Community 2 tend to be represented in extremes of the age range, i.e. very young or very old, that more Community 1 clients live in long-term care, that more clients in Community 3 live at home, and that all elderly people live in long-term care, may well have affected the type and level of provision of different service components in each of the Communities.

The fact remains though, that it has only been possible to provide such information at this later stage, which means that its primary relevance is for descriptive research purposes. The study has indicated that there is no reason to suppose that the range of clients' dependency would have been very different had alternative Communities been selected to receive NIMROD services. The extent to which the differences observed in degree of dependency among clients in the 'comparison' Community will have implications for the long-term evaluative research remains to be answered at a later stage in the research. Nevertheless, the differences shown between the five Communities highlights that planning service needs must take place at the 'community' level because of the existence of local differences.

## Appendix 1

### Derivation of Degree of Dependency Ratings from SPI/SSL Scales

Dependency Scales	Age (years)	SPI/SSL Scores			
		Continance	Mobility	Behaviour	Self-help
Can & Able	<65	2, 3	2, 3	3	3
Non-Ambulant Only	<65	2, 3	1	3	3
Severe Behaviour Problems Only	<65	2, 3	2, 3	1	3
Elderly — Low Dependence	≥65	2, 3	2, 3	—	3
Elderly — Dependent	≥65	1	—	—	—
		2, 3	—	—	1, 2
		2, 3	1	—	3
Medium Dependency	<65	2, 3	—	2	2, 3
		1	—	3	3
		2, 3	—	3	2
		3	—	3	1
High Dependency	<65	1	—	3	1, 2
		2	—	3	1
		1	—	2	—
		2, 3	—	2	1
Severe Behaviour Problems & Medium Dependency	<65	1	2, 3	1	3
Severe Behaviour Problems & High Dependency	<65	2, 3	3	1	1, 2
Severe Behaviour Problems & Medium Dependency	<65	2, 3	1	1	3
Severe Behaviour Problems & High Dependency	<65	1	—	1	1, 2
Severe Behaviour Problems & Medium Dependency	<65	1	1	1	3
Severe Behaviour Problems & High Dependency	<65	2, 3	1, 2	1	1, 2

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