Variations in care for the elderly in Wales

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SUMMARY The counties of Wales were examined and relationships sought between the socioeconomic status and the per caput expenditure on health and social services by each county, the services provided for the elderly and their outcome measured as a standardised mortality ratio and a simple measure of long-term disability. Counties with a high socioeconomic status provided more residential services, those with low status more home helps. There were no other significant relationships between provision of services and status, nor any correlation between provision of services and expenditure. There was an inverse relationship between high status and the mortality and disability measures. In general at county level the social services appear to be responding more appropriately to the needs of the elderly than the health services.

There are marked variations in the provision of personal health and social services for the elderly in the counties of Wales. Such variations might be thought to have an effect upon the elderly in terms of morbidity and mortality. The cause of such variations might be due to spending, that is, the per caput expenditure on these services or the wealth available in the county, measured by the socioeconomic status of each county.

Thus, in this study we examine the relationships between the resources put into the health and social services, the level of services provided, and the outcome in terms of the standardised mortality ratio (SMR) for the elderly. A simple measure of long-standing disability was available by county for the first time in this study and was used as an additional outcome measure.

Method

The socioeconomic status of each county was assessed using figures obtained for the proportion of the employed in socioeconomic groups 1–4 and 13, the professional and managerial groups; the proportion of the employed in socioeconomic groups 10, 11, and 15, the unskilled and semi-skilled; and the per caput budget allocated to social services and health services.¹

Data on the provision of services for the elderly were obtained from published statistics.² The SMR for six age/sex groups (male, female: 65–74, 75–84 and 85+) was calculated for each county, using Wales as the standard. A measure of disability was based on a survey of over 7000 households in each of

the eight counties of Wales, which resulted in over 45 000 successful household interviews.³ One of the questions asked in that survey was: Does . . . (person) have any longstanding illness, disability, or infirmity? The answer to this question was standardised for age and sex in a similar way to the SMR.

Relationships were examined between the socioeconomic data for each county (the input variables), the provision of services (the process variables), and the standardised mortality ratio and the standardised disability ratio (the output variables).

Results

Table 1 shows the disability rates by age and sex for each Welsh county. The overall rate in the under-65s was 6% compared with 29% for the elderly. The rate of disability increased with age and was similar for both the sexes except for the rates in the very elderly men. There was a marked fluctuation between the counties; the highest rates were in Mid Glamorgan, the lowest in Powys. Because of variations in the age/sex structure of each county, the disability rates were standardised for this study.

Table 2 shows the data used to compare the input, process, and output variables.

Table 3 shows a regression matrix demonstrating the relationships between socioeconomic group, per caput expenditure (the input variables), and the relevant services (the process variables). There was a linear relationship between socioeconomic group and the provision of geriatrics beds, local authority and voluntary homes, and home help visits. The

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Table 1 Longstanding disability rates by county in Wales (%)

	Males				Females				Total 65+
	<65	65–	75–	85+	<65	65–	75–	85+	
Clwyd	5	24	30	31	5	22	31	45	26
Dyfed	7	25	27	30	6	20	29	50	25
Gwent	7	29	38	26	6	25	44	38	32
Gwynedd	6	25	35	34	5	22	33	46	27
Mid Glamorgan	9	39	45	36	7	30	47	53	38
Powys	6	20	26	37	4	19	30	40	24
South Glamorgan	6	22	34	25	5	23	37	42	27
West Glamorgan	8	30	37	38	7	32	37	45	33
WALES	7	27	34	32	6	24	36	45	29

Table 2 Input, process and output variables for the elderly: by county, Wales 1977

	Clwyd	Dyfed	Gwent	Gwynedd	Mid Glamorgan	Powys	South Glamorgan	West Glamorgan	Wales
Population aged 65 and over (thousands)	60.5	53.3	59.4	39.3	72.7	17.4	54.8	54.8	412.2
INPUT VARIABLES									
Managerial S.E.G. (%)	12.7	13.3	10.6	16.1	9.2	14.1	14.4	10.5	12.0
Semi and unskilled S.E.G. (%)	9.2	7.6	9.7	7.3	8.4	6.2	7.8	9.9	8.6
Health and social services expenditure: local authority (£)	15.6	13.7	16.0	19.6	21.8	16.3	21.8	18.9	18.3
National Health Service (£)	92.1	92.1	101.5	95.0	97.6	95.6	150.5	96.1	103.7
PROCESS VARIABLES									
GPs/1000 population over 65	2.6	3.0	3.3	3.3	3.2	3.6	3.5	3.0	3.2
Sheltered housing places/1000 population over 65	53.3	31.0	56.9	52.7	24.2	62.8	9.8	15.9	35.4
Geriatric beds: rate/1000 population over 65	10.4	10.6	8.7	10.3	10.7	14.7	8.3	7.6	9.8
Percentage of persons 65+: in local authority homes	1.5	1.8	1.6	2.1	1.7	1.8	1.7	1.4	1.7
in voluntary and private homes	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
Percentage of persons 65+ who: were seen by health visitors	7.7	5.2	5.7	8.9	13.4	6.1	20.6	16.4	10.9
were seen by home nurses	23.6	18.9	14.0	20.8	16.5	39.7	15.3	14.5	18.5
received chiropody treatment	17.9	18.6	22.7	22.5	25.7	22.2	19.2	22.6	21.5
received home helps	6.2	5.3	10.4	5.9	12.6	5.1	9.0	8.2	8.4
received meals on wheels	2.8	0.9	2.0	3.9	9.2	2.9	2.3	4.2	3.8
OUTPUT VARIABLES									
Standardised mortality ratio (over 65s)	99	100	101	98	108	94	94	99	100
Standardised L.S. disability ratio	90	87	109	94	133	81	94	116	100

Table 3 Regression matrix for input and process variables

PROCESS VARIABLES (PER 1000 OVER 65)										
INPUT VARIABLES	GPs	Sheltered housing places	Geriatric beds	L.A. home places	L.A. & vol. home places	Health visitor visits	Home nurse visits	Chiropody visits	Home help visits	Meals on wheels (persons)
S.E.G. managerial	0.29	0.27	0.30	0.69	0.80*	-0.11	0.43	-0.49	-0.74*	-0.52
S.E.G. semi and unskilled	-0.59	-0.24	-0.76*	-0.77*	-0.75*	0.20	-0.70	0.06	0.50	0.10
Expenditure per person (L.A.)				0.09	0.09				0.60	0.66
Expenditure per person (N.H.S.)	0.47		-0.38			0.72*	-0.29	-0.15		

*0.01 < p < 0.05 df = 6.

Fig. 1 Relationship between home help visits and socioeconomic group for Welsh counties (1977).

Fig. 2 Comparison of health visitor visits to the elderly with NHS per caput expenditure for the Welsh counties (1977).

residential care provision was greater for counties with either more managers or less semiskilled and unskilled workers. Home help visits showed a positive relationship with the counties that had a smaller proportion of professional and managerial groups (Fig. 1).

Expenditure per caput showed a relationship between high National Health Service per caput expenditure and health visitor visits to the elderly. However, scrutiny of the scattergram (Fig. 2) shows that the linear relationship is spurious, being due to a high level of provision in a single county.

Table 4 shows the regression coefficients for the provision of services (process variables) against the standardised mortality ratio and standardised disability ratio for the elderly in each county (output variables). There was no relationship at the 5% level between any service examined and the SMR, although the two major domiciliary local authority

Fig. 3 Relationship between disability and home help visits.

Table 4 Standardised mortality and disability ratios for the elderly against the provision of services by the Welsh counties (1977)

	GPs	Sheltered housing places	Geriatric beds/1000 population	L.A. home places	L.A. & vol. home places	Health visitor visits	Home nurse visits	Chiro-pody visits	Home help visits	Meals on wheels
Standardised mortality ratio	-0.36	-0.14	-0.17	-0.15	-0.25	-0.09	-0.46	0.55	0.66	0.70
Standardised disability ratio	-0.09	-0.44	-0.45	-0.36	-0.49	-0.40	-0.61	0.73	0.89**	0.79*
(Regression coefficient)										

*0.01 < p < 0.05

**0.005 < p < 0.01

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services, meals on wheels and home helps, do show a relationship at the 10% level. Both of these services show a close relationship with disability, but on examination of the scattergram, the relationship with meals on wheels was seen to be due to a single outlying point. The relationship with home helps (Fig. 3) was clearer.

Table 5 shows the regression coefficients for the input variables against the output variables. There was an inverse relationship between the proportion of professionals and managers in the counties and the standardised mortality and disability ratios (Fig. 4). The inverse relationship between managerial socioeconomic group and disability was closer than that for mortality. There was no relationship between NHS and local authority expenditure and either outcome variable.

Discussion

In this paper we have described the relationships between the services provided for the care of the

Fig. 4 Relationship between standardised mortality and disability ratios and socioeconomic groups for the Welsh counties.

elderly, socioeconomic status, and the amount spent per caput on health and social services and their impact upon mortality or disability in the counties of Wales.

There was no relationship between socioeconomic status and expenditure on the provision of services. This is more surprising for local authority than for health service spending, for a third of the former is locally determined and funded. Nor was any relationship found between expenditure and the provision of the individual services for the elderly.

There was a relationship between the socioeconomic status of the counties and their provision of residential care; the counties of low status were less well provided for. The home help service was the only service for which there was more provision in these counties. This is a service funded by the local authority and has often been thought of as the key to the domiciliary care of the elderly.

The standardised mortality and disability ratios for those over 65 were used as measures of output. The mortality rate was not closely related to the provision of any of the services but the standardised disability ratio was proportional to the provision of home help services, once again emphasising the importance of such a service where 'needs' are high.

The use of SMR as an output measure is controversial. Forster⁴ has attacked the use of the ratio for all age groups in the Resource Allocation Working Party formula because of its poor correlation with acute sickness. It may be more reasonable to use this factor in the care of the elderly where death rates are higher and chronic sickness, which is related to SMR in both Forster's study and this one, is an important cause of morbidity.

A recent study on the elderly in Leicestershire has shown a good correlation between a measure of functional disability and the SMR over the following year (Clarke M, personal communication).

The provision of residential health services at a higher level in counties with high socioeconomic status fits in with a previous study of the English regions.⁵ In some ways this is a curious anomaly, for the private sector of the health service will also be providing more care in these areas and is generally more involved with residential than community care.

Table 5 Relationship between input variables and standardised mortality ratio for the Welsh counties (1977)

	% S.E.G. managerial	% S.E.G. unskilled, semiskilled	Expenditure L.A.	Expenditure N.H.S.
Standardised mortality ratio	-0.75*	0.43	0.15	-0.45
Standardised disability ratio	-0.82*	0.78*	-0.30	-0.07
(Regression coefficients)				

*0.01 < p < 0.05 df = 6.

Recent advances in the care of the elderly have concentrated on helping old people to manage in their own homes for as long as possible—using residential care as a last resort. But the finding that high-status counties tend to have a high provision of residential care and low-status ones concentrate on domiciliary care suggests that too much emphasis is being put on residential care where the expectations of the population are high, with the home help services used in low-status areas for problems which may be in need of residential care.

Overall, Wales has a low level of effectiveness in providing care for its elderly, for the socioeconomic status of counties had more effect upon the provision of services, mortality, and long-term disability than the amount of money spent on those services. The welfare state has not positively discriminated at county level towards the low-status authorities sufficiently to counter the effect of that status, any more than it has for the country as a whole.⁶ In particular, the health service has been less successful than the social services in providing more care for the areas where problems are likely to be greatest.

We thank the Welsh Office for permission to use data from the *Welsh Housing and Dwelling Survey* in this paper.

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