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STAFF/POPULATION RATIOS IN SOUTH AFRICAN PUBLIC SECTOR MENTAL HEALTH SERVICES

Crick Lund, Alan J Flisher

Objective. To document existing staff/population ratios per 100 000 population in South African public sector mental health services.

Design. Cross-sectional survey.

Method. A questionnaire was distributed to provincial mental health co-ordinators requesting them to provide the number of full-time equivalent (FTE) staff responsible for mental health care at all service levels. These data were supplemented by consultations with mental health co-ordinators in each of the nine provinces. Population data were obtained from preliminary findings of the 1996 census.

Results. The overall staff/population ratio per 100 000 population was 19.5, with an interprovincial range of 5.7 - 31.5. The staff/population ratios per 100 000 population for selected personnel categories (with the interprovincial ranges in brackets) were as follows: total nursing staff 15.6 (4.4 - 28.4), occupational therapists 0.4 (0.1 - 0.8), occupational therapy assistants 0.5 (0.0 - 1.3), social workers 0.5 (0.1 - 0.9), community health workers 0.3 (0.0 - 1.0), psychologists 0.3 (0.0 - 0.7), intern psychologists 0.3 (0.0 - 0.7), psychiatrists 0.4 (0.1 - 0.8), psychiatric registrars 0.4 (0.0 - 1.2), medical officers 0.4 (0.2 - 1.3), pharmacists 0.2 (0.1 - 1.1), and pharmacy assistants 0.2 (0.0 - 0.6).

Conclusions. Relative to international settings, there are low levels of mental health staff provision in South Africa, and there is a large amount of variability between provinces. There are considerable challenges in monitoring mental health staff resources within an integrated health service.

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Shortages of mental health personnel,¹ and their inequitable distribution,^{2,3} have been a cause of concern in recent South African mental health services literature. In the context of provincial health budget cuts and related voluntary severance packages, there has been concern that mental health personnel have become severely depleted. This is of particular salience as current national mental health policies prioritise the

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Department of Psychiatry, University of Cape Town

Crick Lund, MA, MSocSci

Alan J Flisher, MSc, MMed (Psych), PhD, FCPsych (SA), DCH



development of personnel equipped with the skills and training necessary to provide a comprehensive, integrated community-based mental health service.^{4,6}

There is an urgent need to find accurate indicators to measure the distribution of mental health personnel in the public sector. Staff/population ratios are widely used as indicators of the number of staff available to meet the mental health needs of a given population.⁷⁻¹¹ In providing a global picture of available human resources, staff/population ratios facilitate comparison with other mental health services, and allow planners to monitor service development over time.

It is only recently that the discrepancies in levels of provision in South Africa and the historical forces that have precipitated the present situation have been documented.⁶ Recent studies have noted personnel shortages even in relatively well-resourced provinces such as the Western Cape,¹ and a substantial maldistribution of mental health professionals³ (for example, only 7% of psychiatrists live in rural areas).³ However, the usefulness of available data is limited by the fact that the data become outdated. There are also few data providing a comprehensive overview of mental health staff distribution in relation to the population being served. In order to address present inequities and plan effectively for future service development, accurate indicators of the numbers of current psychiatric personnel per unit of population are necessary. This paper reports current staff/population ratios in public sector mental health services in South Africa.

METHODS

We distributed a questionnaire to provincial mental health co-ordinators requesting information on the numbers of psychiatric staff in the following categories: enrolled nurses, psychiatric nurses, general nurses, occupational therapists, occupational therapy assistants, social workers, community health workers, psychologists, intern psychologists, psychiatrists, psychiatric registrars, medical officers, pharmacists and pharmacy assistants. Although the term 'psychiatric nurses' does not denote a nursing category but rather a term describing the work a nurse performs, we included it to distinguish nurses who render a psychiatric service from other nurses. We requested data for the numbers of staff at all levels of service provision, including specialist psychiatric hospitals, general (secondary and tertiary) hospitals, district hospitals, and community health centres. Staff employed in the fields of mental handicap, forensic psychiatry, alcohol and other substance use disorders, and child and adolescent psychiatry were excluded. Telephonic contact was maintained with all the provincial mental health co-ordinators during the time they were completing the questionnaire to address difficulties at an early stage and prevent misunderstandings.

Over a period of 5 weeks we conducted 2-day workshops in each province. They were attended by mental health co-ordinators, hospital managers, district managers and service providers in each province. A total of about 120 people were involved in this process. During the visits we gathered outstanding data and engaged in discussions on the methodology of calculating staff/population ratios. We attempted to gain the full participation of key provincial role players, in the hope that the ratios would become a tool that could be adapted and used for the specific local needs of the provinces.

Staff/population ratios were calculated using the following formula:

$$\text{staff/population ratio} = \frac{\text{number of staff} \times 100\,000}{\text{total population}}$$

Population data were obtained from preliminary estimates of the 1996 census.¹² Because of the integrated system of delivery, it was necessary in certain instances to describe staff as percentages of generalist staff or 'full-time equivalents' (FTEs). The number of FTE staff can be derived from the percentage of time each staff member spends in mental health care. For example, if a general nurse spends 20% of her time in mental health work (including time spent seeing patients, making referrals, writing case notes, and consulting with colleagues), this corresponds to 0.2 of a FTE mental health nurse.

RESULTS

The overall staff/population ratio per 100 000 population was 19.5, with an interprovincial range of 5.7 - 31.5 (Table I). The Northern Cape had the lowest total staff/population ratio (5.7 per 100 000), followed by Mpumalanga (11.3/100 000).

The staff/population ratios per 100 000 population for selected personnel categories (with the interprovincial ranges in brackets) were as follows: total nursing staff 15.6 (4.4 - 28.4), occupational therapists 0.4 (0.1 - 0.8), occupational therapy assistants 0.5 (0.0 - 1.3), social workers 0.5 (0.1 - 0.9), community health workers 0.3 (0.0 - 1.0), psychologists 0.3 (0.0 - 0.7), intern psychologists 0.3 (0.0 - 0.7), psychiatrists 0.4 (0.1 - 0.8), psychiatric registrars 0.4 (0.0 - 1.2), medical officers 0.4 (0.2 - 1.3), pharmacists 0.2 (0.1 - 1.1), and pharmacy assistants 0.2 (0.0 - 0.6).

For most staff categories, Gauteng and the Western Cape had relatively favourable staff/population ratios compared with the other provinces. However, the ratio for general nurses for the Northern Province (11.7/100 000) was high. It was almost three times that of the Western Cape (4.2/100 000), which was the province with the next highest general nurse/100 000 population (4.2/100 000).



Table I. Staff/population ratios per 100 000 population in South African mental health services

Province	Population (× 1 000)	Enrolled nurses		Psychiatric nurses		General nurses		Occupational therapists		Occupational therapy assistants		Social workers		Community health workers	
		N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio
Eastern Cape	5 865	308	5.3	350	6.0	53	0.9	5	0.1	7	0.1	16	0.3	57	1.0
Free State	2 470	48	1.9	190	7.7	34	1.4	13	0.5	8	0.3	10	0.4	2	0.1
Gauteng	7 171	578	8.1	732	10.2	90	1.2	49	0.7	94	1.3	48	0.7	8	0.1
KwaZulu-Natal	7 672	516	6.7	431	5.6	85	1.1	13	0.2	5	0.1	18	0.2	0	0.0
North West	3 043	78	2.6	115	3.8	72	2.4	5	0.2	7	0.2	27	0.9	29	0.9
Northern Cape	746	3	0.4	28	3.8	2	0.2	2	0.3	3	0.4	1	0.1	0	0.0
Northern Province	4 128	290	7.0	398	9.6	483	11.7	11	0.3	55	1.3	22	0.5	5	0.1
Mpumalanga	2 646	101	3.8	71	2.7	64	2.4	6	0.2	0	0.0	13	0.5	8	0.3
Western Cape	4 118	296	7.2	318	7.7	173	4.2	32	0.8	13	0.3	30	0.7	0	0.0
Total	37 859	2 217	5.9	2 634	7.0	1 056	2.8	136	0.4	191	0.5	184	0.5	109	0.3

Province	Psychologists		Intern psychologists		Psychiatrists		Psychiatric registrars		Medical officers		Pharmacists		Pharmacy assistants		Total (nurses)		Total (all staff)	
	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio	N	Ratio
Eastern Cape	10	0.2	10	0.2	10	0.2	2	0.0	18	0.3	5	0.1	9	0.2	711	12.1	859	14.7
Free State	1	0.0	2	0.1	2	0.1	0	0.0	5	0.2	6	0.2	3	0.1	272	11.0	324	13.1
Gauteng	51	0.7	47	0.7	60	0.8	71	1.0	32	0.5	12	0.2	6	0.1	1 400	19.5	1 878	26.2
KwaZulu-Natal	30	0.4	22	0.3	21	0.3	22	0.3	18	0.2	10	0.1	22	0.3	1 032	13.5	1 214	15.8
North West	2	0.1	3	0.1	3	0.1	0	0.0	38	1.3	34	1.1	20	0.6	265	8.7	432	14.2
Northern Cape	0	0.0	0	0.0	1	0.1	0	0.0	2	0.3	1	0.1	0	0.0	33	4.4	43	5.7
Northern Province	1	0.0	0	0.0	3	0.1	0	0.0	19	0.5	3	0.1	10	0.2	1 171	28.4	1 300	31.5
Mpumalanga	1	0.0	0	0.0	5	0.2	1	0.0	22	0.8	6	0.2	0	0.0	237	8.9	298	11.3
Western Cape	25	0.6	21	0.5	31	0.8	49	1.2	16	0.4	8	0.2	5	0.1	787	19.1	1 016	24.7
Total	122	0.3	106	0.3	135	0.4	144	0.4	169	0.4	85	0.2	75	0.2	5 907	15.6	7 369	19.5

DISCUSSION

The results indicate that mental health staffing levels in South Africa are considerably lower than those in developed countries and even some developing countries. This is exemplified by the ratios for psychiatrists. We found that there were 135 psychiatrists employed in public sector mental health services in South Africa, which corresponds to a ratio of 0.4/100 000 population. This is considerably lower than the ratios for developed countries such as Sweden (12.5/100 000),⁹ the USA (16.0)¹¹ and developing countries such as Brazil (4.4)¹³ and Columbia (3.5).¹⁴ However, it is higher than India (0.23)¹⁵ and other African countries such as Botswana (0.3),¹⁶ Egypt (0.3),¹⁷ Ethiopia (0.0),¹⁸ Kenya (0.1),¹⁸ Mali (0.0),¹⁸ Nigeria (0.1)¹⁶ and Zimbabwe (0.1).¹⁸ Also, there was less than 1 staff member per 100 000 for all personnel categories except nurses. Clearly, it is impossible to deliver a substantial service with such low ratios. Comparisons with international staff/population ratios are compromised by an absence of comparable data for many of the categories of staff included in the present study.

Consistent with previous reports,^{13,19} we found that there was considerable variation in the staffing levels between provinces.

The Northern Province had the highest total staff/population ratio. This can be accounted for by the high ratios for nurses, especially general nurses. However, qualitative reports suggest that these ratios are considerably inflated.²⁰ Generalist nurses may have been reported as full-time psychiatric service providers, even though they devote only a proportion of their time to the treatment of patients with psychiatric conditions. After the Northern Province, Gauteng and the Western Cape had the most favourable staff levels, with overall staff/population ratios of 26.2 and 24.7 respectively. The Northern Cape was at the other extreme, with a total staff/population ratio of 5.7/100 000. In general, the predominantly rural provinces had the lowest total staff/population ratios. However, these provincial-level data obscure the historical legacy of centralised and institutionalised mental health services in South Africa. As a result of this legacy, there is considerable cross-border flow between provinces. Gauteng mental health services, for example, provide care for patients from at least three other provinces, namely Mpumalanga, Northern Province and North West.²¹ Therefore inflated figures for Gauteng and the Western Cape probably do not reflect the reality of service provision in those



provinces as these provinces continue to provide care for patients referred from surrounding rural provinces. Indeed it is likely that people in remote rural parts of the Western Cape have a similar level of access to mental health service providers as their counterparts in predominantly rural provinces.

The interprovincial discrepancies observed for the total staff were in most cases paralleled by similar discrepancies for the specific occupational groups. The psychologist/population ratio, for example, was 0.7 and 0.6 per 100 000 in Gauteng and the Western Cape respectively, 0.4 in KwaZulu-Natal and 0.2 or less for the remaining provinces. However, there did not appear to be an association between the ratio for medical officers and that for total staff or other staff categories. This could reflect interprovincial policy differences regarding the deployment of medical officers to provide mental health services.

As the findings for the Northern Province suggest, the present results should be regarded with a measure of caution since they may be of suboptimal validity. In addition, the Northern Province, Mpumalanga and North West all reported during the provincial workshops that they did not have any full-time psychiatrists. The data supplied to us from the questionnaire indicated otherwise, even though the data were returned to the provinces for checking. We decided not to alter the figures provided by the provinces, but to report them as they were given to us.

These findings highlight the limitations of present provincial mental health information systems. More specifically, the results draw attention to some of the difficulties of monitoring mental health service delivery within an integrated health service. These problems are compounded by the limitations of staff/population ratios *per se*. Staff/population ratios are dependent on a range of factors, including level, quality and appropriateness of training; systemic issues related to supervision, support, referral procedures and the functional units within which staff deliver care²² (and A L Gray — unpublished report prepared for the Interim Pharmacy Council of South Africa, 1998); clinical policies and practice guidelines or parameters; management and health policy; and the quality of care offered. Other indicators such as bed/population ratios, the distribution of staff between hospital and community services, bed occupancy rates, admission rates, length of stay, readmission rates, and default rates all have a bearing on staffing requirements.²⁰ The results of this study therefore need to be interpreted in relation to a range of other indicators in order to provide a comprehensive picture of mental health service provision.

This paper reports on the initial stages of a project to develop norms and standards for the care of South Africans with severe psychiatric conditions. The project was initiated by the Directorate: Mental Health and Substance Abuse of the Department of Health and awarded as a tender to the Department of Psychiatry at the

University of Cape Town, in collaboration with the Centre for Health Policy at the University of the Witwatersrand. The views expressed in this paper are those of the authors, and not those of the Department of Health.

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