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Bed/population ratios in South African public sector mental health services

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Abstract *Background* In post-apartheid South Africa, mental health service planners face critical decisions regarding appropriate and affordable inpatient care. Before a fashion of deinstitutionalisation is followed blindly in South Africa, effective community services should be in place and sufficient psychiatric beds should remain in hospitals for those who cannot be catered for in the community. In order to maintain the delicate balance between hospital and community-based services, it is essential that useful indicators of inpatient care are established. This study documents current bed/population ratios per 100 000 population in public sector mental health services in South Africa. *Method* A questionnaire was distributed to provincial mental health coordinators requesting psychiatric bed numbers in acute and medium-long stay facilities across all service levels. The information was supplemented by consultations with mental health coordinators in each of the nine provinces. Population data were obtained from preliminary findings of the 1996 census. *Results* For acute facilities, the mean bed/population ratio was 13 (provincial range: 6–18) per 100 000 population. For medium-long stay facilities, it was 16 (provincial range: 0–29) excluding contracted facilities, and 35 (provincial range: 0–83) including contracted facilities per 100 000 population. *Conclusions* There were low levels of inpatient service provision in South Africa, and there was considerable variability between provinces. This study gives further support to the need to develop acute inpatient psychiatric services, reduce levels of chronic care where appropriate, and redirect resources towards the development of community-level residential and day-care services. It is crucial to develop accurate indicators to monitor this process.

Key words bed/population ratios – mental health services – mental health policy – South Africa

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Introduction

In post-apartheid South Africa, mental health service planners face critical decisions regarding appropriate and affordable inpatient care. Internationally, concern over recidivism, high readmission rates [1], the homeless mentally ill [2], and high prevalence rates of mental disorder in prisons [3] has characterised the post-deinstitutionalisation era [4]. It has been argued that before a fashion of deinstitutionalisation is followed blindly in South Africa, effective community services should be in place and sufficient psychiatric beds should remain in hospitals for those who cannot be catered for in the community [5–7]. In order to maintain the delicate balance between hospital and community-based services, it is essential that useful indicators of inpatient care are established.

The number of available beds per unit of population is a gross indicator of the ability of a mental health care system to meet the population's needs for inpatient psychiatric care. Bed/population ratios are a measure widely used in the planning and service literature, and the monitoring of such ratios is regarded as a crucial aspect of service planning [8, 9]. These ratios are relatively

easy to calculate, requiring only figures for available psychiatric beds and the population of the catchment area which the facility serves. As one commentator notes, in spite of advances in the rehabilitation of chronically mentally ill patients in the community, the measures of service delivery in psychiatric care remain primitive: "we still count beds" [10].

Pioneering South African studies of inpatient care levels have been conducted in the Western Cape [11] and nationally [12]. However, in the rapid process of service rationalisation, these data have become outdated. Also, there is variability in how bed/population ratios are calculated. For example, psychiatric bed numbers may or may not include learning disability [12]. In some cases, psychiatric care is even included as a subcategory of "chronic care" along with diseases such as tuberculosis [13]. There is a need for valid estimates of current bed/population ratios to enable the planning and development of appropriate and affordable mental health services [14].

This paper reports current bed/population ratios in South African mental health services, as indicators of existing inpatient service delivery.

Subjects and methods

We distributed a questionnaire to provincial mental health coordinators requesting information on numbers of psychiatric beds in all levels of public sector health care in South Africa. The information from the questionnaire was supplemented by consultations with mental health coordinators in each of the nine provinces. Beds were reported in a variety of settings, including district hospitals, wards of general tertiary institutions and specialist psychiatric institutions. Because of the variation between provinces, particularly in the level of integration of mental health services into general health care, it was impossible to stipulate the setting of the psychiatric beds.

We defined the type of inpatient facility according to the length of admission: acute and emergency facilities for admissions of 3 months or less and medium-long stay facilities for longer stays. This distinction between "acute" and "medium-long" stay facilities is in keeping with that adopted in a range of international settings [15–19] and current mental health policy in South Africa [20]. Population data were obtained from preliminary findings of the 1996 census [21]. Bed/population ratios per 100 000 population were calculated using the following formula:

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

Bed/population ratios refer to numbers of available beds (per unit of population), not numbers of occupied beds.

In certain instances data regarding the numbers of acute beds in general (regional and district) hospitals were not available. However, it was clear that psychiatric patients were being managed in these facilities for short admissions, usually 24–48 h in duration. In these instances, bed numbers were estimated from the numbers of admissions, and lengths of stay which were provided in other sections of the questionnaire. Two bed occupancy rates were used (80 % and 100 %), with different numbers of beds generated for each. Variable bed occupancy rates were used to allow for variability in the use of the available beds. The estimated number of beds was calculated in this instance by using the formula:

$$\text{number of beds} = \frac{(\text{number of annual admissions} \times \text{length of stay})}{(\%\ \text{bed occupancy} \times 365)}$$

In certain provinces (Gauteng, Northern Province, and KwaZulu-Natal), medium-long stay care was contracted out to Lifecare, a private service provider. We reported numbers of Lifecare beds separately as all other inpatient mental health services were provided directly by the public sector and the quality of care offered in Lifecare facilities differs from that provided in the public sector [22].

Results

Table 1 outlines the bed/population ratios per 100 000 population. There are large discrepancies between bed numbers in each province. For acute beds, the ratio varied between 6 and 18, while for medium-long stay beds it varied between 0 and 29 (excluding Lifecare) and 0 and 83 (including Lifecare).

Discussion

The total number of beds of 48 per 100 000 in the present study is higher than the corresponding mean ratios for

Table 1 Bed/population ratios per 100 000 population in South African public sector mental health services

Province	Population (x 1000)	Acute beds*		Medium-long stay beds						Total beds	
				Public sector		Lifecare**		Total			
		No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio	No.	Ratio
Gauteng	7171	1292	18	1260	18	4672	65	5932	83	7224	101
Northern Province	4128	377	9	669	16	1740	42	2409	58	2807	68
Mpumalanga	2646	152	6	0	0	0	0	0	0	152	6
North-West	3043	208	7	268	9	0	0	268	9	476	16
Free State	2470	355	14	225	9	0	0	225	9	580	23
Northern Cape	746	55	7	52	7	0	0	52	7	107	14
Eastern Cape	5865	832	14	1690	29	0	0	1690	29	2330	40
Western Cape	4118	649	16	751	18	0	0	751	18	1400	34
KwaZulu-Natal	7672	1026	13	1238	16	819	11	2057	27	3083	40
Total	37859	4946	13	6153	16	7231	19	13384	35	18159	48

* Numbers of beds assuming a bed occupancy of 100 % for integrated beds in general hospitals. The ratios are identical to those assuming a bed occupancy of 80 % (see text for explanation)

** Lifecare facilities are contracted out by public sector services, and provided medium-long stay beds at the time of this study

the world [44] and Africa [34], but lower than the mean for European countries (87) [23]. However, the total for the country as a whole masks inter-provincial discrepancies. As confirmed elsewhere [12], mental health resources tend to be concentrated in provinces with densely populated urban areas and greater economic development. Acute bed/population ratios of 6 (Mpumalanga), 7 (Northern Cape), and 7 (North-West) per 100 000 population indicate inadequate acute inpatient care in these predominantly rural and less economically developed provinces. Mpumalanga has no medium-long stay inpatient or community residential facilities in a population of over 2.5 million. These poorer rural provinces are in urgent need of inpatient mental health service development. In the case of the Northern Province, which is also a poor rural province, the ratio for medium-long stay care is relatively favourable. This is mainly due to the presence of many Lifecare beds in that province.

However, these findings should not lead to the conclusion that services in urban provinces such as Gauteng are adequate. The bed numbers in Gauteng mask the fact that this province provides services for patients from surrounding rural provinces such as the North West, the Northern Province, and Mpumalanga. In a count carried out in all provincial hospitals in Gauteng (excluding Lifecare) in September 1996, 29 % of patients were identified as coming from other provinces (Lazarus and Thom, personal communication). In Lifecare facilities in Gauteng, patients from other provinces currently make up 33 % of the total number of patients (Lazarus and Thom, personal communication). A combined bed/population ratio for the four northern provinces (Gauteng, Mpumalanga, North West, and Northern Province) gives a total of 48 beds per 100 000 population (consistent with the national average), compared to a range of 6–101 reported in Table 1. The reliance of surrounding provinces on mental health services in Gauteng reflects problems of access, maldistribution of skilled service providers, inadequately integrated services, and overly centralised service provision which is out of touch with local needs.

In provinces with a history of relatively well developed dedicated psychiatric institutions, the emphasis in terms of bed numbers remains on medium-long term care. Current mental health policies emphasise the short-term treatment of psychiatric patients in acute inpatient facilities (which can be situated in general hospitals) and concerted rehabilitation programmes in residential care and ambulatory care facilities in the community [20]. There is a need to downscale these institutions and shift beds either to acute care or community-based residential care in keeping with current policies.

In some provinces, downscaling has occurred, but this has been driven mainly by financial concerns as opposed to policy geared to improve mental health care [24]. Partly for this reason, downscaling of inpatient beds has not been accompanied by the development of residential and ambulatory care in the community. For example, in the Western Cape, which has historically enjoyed the highest levels of mental health service, budget cuts led to the discharge of several hundred psychiatric patients. Bed population ratios per 100 000 fell from 61 in 1992 [11] to the 34 in 1998 reported in the current study. Despite this precipitous decline, no community residential care facilities were reported in the Western Cape. The only province to report residential care facilities in the community was Gauteng, which reported a total of 305 places. It is clear that community-based residential care facilities are inadequate and need to be developed if psychiatric hospitals are to continue to reduce medium-long stay bed numbers.

The results of this study also indicate the need for more sophisticated information systems to monitor inpatient care. For example, a more detailed breakdown of acute bed numbers according to district, regional, and specialist hospitals would provide a clearer picture of service delivery in those settings. There is also a need to develop other indicators which have a bearing on inpatient care. Bed/population ratios are complex, and cannot stand alone as mental health care indicators for several reasons. Firstly, the optimum number of beds is dependent on the level and the sophistication of the community services in which inpatient facilities are located [18, 25, 26]. Secondly, in the post-deinstitutionalisation era in developed countries, community-based residential care facilities have taken over the role of long-term psychiatric institutions in many instances. Therefore, the number of psychiatric hospital beds does not necessarily indicate the level of residential care which is available. In the USA, for example, it is difficult to find meaningful comparisons for bed/population ratios when patients with severe mental illness are housed in a range of residential facilities [27]. Thirdly, bed/population ratios are a meaningful indicator of care only if the quality of care can be assumed to be of an acceptable standard. Fourthly, bed/population ratios should be considered in the context of a range of other indicators, including staff/population ratios, staff/bed ratios, admission rates, bed occupancy rates, average length of stay, readmission rates, default rates, and community/hospital ratios. For example, bed/population ratios can only be assumed to be adequate if staff resources are adequate and the average length of stay is sufficient for clinical efficacy.

Conclusion

This study gives further support to the need to develop acute inpatient psychiatric services in South Africa, reduce levels of chronic care where appropriate, and redirect resources towards the development of community-level residential and day-care services. It is crucial to develop accurate indicators to monitor this process.

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