# MENTAL HOSPITAL ADMISSIONS IN MYSORE STATE, INDIA

By

**J. HOENIG, M.D., D.P.M.**

*Senior Lecturer*
*Manchester University*
*Formerly Visiting Professor*
*All India Institute of Mental Health, Bangalore*

and

**UMA SREENIVASAN, M.B., B.S., D.P.M.**

*Hon. Research Assistant*
*All India Institute of Mental Health, Bangalore*

THE older psychiatric literature has here and there valuable reports about mental illnesses amongst African, Asian and other societies which are very different from Europe. These authors normally express opinions or speculations based on chance experiences rather than systematic observations. It is only in recent years that more extensive mental health work has been done in these countries, which also has enabled many workers to collect a great deal of information. This is important not only for the countries concerned, so as to help them to plan an appropriate health service, but also for psychiatry as a whole. It gives an impetus to comparative psychiatry, one of the most important basic sciences to clinical psychiatry.

We are not aware of any systematic psychiatric investigation having been carried out in India. There are a large number of opinions expressed on mental illness in that country, mostly based on studies of a few individuals, sometimes only on preconceived notions of the author. These studies are interesting. They have often been compared by critics to the best in English fiction.

The present report is an analysis of certain factors which it has been possible to extract from the case reports of all admissions to the Mental Hospital in Bangalore, Mysore State, in 1953. In respect of some of these factors the patients could be compared with the general population of Mysore State. A few of the findings allow, perhaps, certain limited, tentative conclusions.

## DESCRIPTION OF THE HOSPITAL

The hospital, which has officially 400 beds but contains up to 500 patients, is housed in a relatively new building, situated on the outskirts of Bangalore in a beautiful park. It has two wings, one for male and one for female patients. Indian custom demands that these should be kept entirely separate. The administrative part of the hospital and the two wings embrace an attractive garden which is enclosed on the fourth side by a row of bungalows for private patients.

The hospital is the only in-patient unit for psychiatric patients for the whole state of Mysore. Mysore has 9,074,972 inhabitants and an area of 29,489



https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

square miles. Distance plays an enormous part in limiting the services the hospital can render to the population if it is borne in mind that the transport system in the state, although better than in other Indian states, is not very elaborate. Patients often have to travel by jetka* or on foot for many miles. As many patients who come to the hospital for admission are acutely disturbed they are brought in chained by their relatives, having marched at the end of a chain or rope for 30 or 40 miles. There is an ambulance service, which, however, is quite inadequate to deal with the enormous problem.

## Methods

The information about the patients was obtained from the official hospital records. These are filled in by the medical officers.

The information about the State of Mysore was taken from the official Census Report of 1951. There is no reason to believe that the figures for 1953 would be materially different. As the Indian Government has not continued the tradition of previous censuses to list caste and break figures down according to caste, this information was obtained from the previous Census Report of 1941. Again there is no apparent reason to assume that these figures have materially altered.

## Results and Discussion

### Turnover

The hospital is a very active one, as can be seen from Table I. The table

Table I

| Catchment Area | Sex | Population | First Admissions | First Admissions per 100,000 of Population |
|---|---|---|---|---|
| Mysore State First Admissions | M | 4,657,409 (51·3%) | 379 (61·5%) | 8·11 |
| | F | 4,417,563 (48·7%) | 253 (38·5%) | 5·73 |
| | Total | 9,074,972 | 632 | 6·96 |
| Mysore State Re-admissions | M | | 112 (62·6%) | |
| | F | | 67 (37·4%) | |
| | Total | | 179 | |
| Mysore State Total | M | | 491 (60·6%) | 10·5 |
| | F | | 320 (39·4%) | 7·3 |
| | Total | | 811 | 8·95 |

The table shows First and Re-admissions from Mysore State alone, giving the figures for 100,000 of the population.

only includes the patients who come from Mysore State, the proper catchment area of the hospital. In actual fact the hospital admits a large number of patients who come from outside the borders, often from very far afield. The hospital

* jetka—a small horse-drawn two-wheeler.

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

as a teaching institution enjoys a great reputation and attracts many who are in need of help. For the purpose of this report we have only examined the numbers pertaining to residents of Mysore State.

There were a total of 811 admissions in 1953 of which 491, or 60·6 per cent., were men and 320, or 39·4 per cent., were women. This amounts to an admission rate of 8·95 per 100,000 of the population. Of these admissions 632 were first admissions. This amounts to 6·96 per 100,000 of the population. One hundred and seventy-nine re-admissions, or 22·5 per cent. of all admissions, is a figure only moderately different from that for England and Wales where it was 39·5 per cent. in 1952–53. The first admission rate in relation to the population is however quite different from figures in England and Wales or in any European country or the United States. For England and Wales the figure is 97 first admissions for 100,000 population; in the United States it is even higher. This is not surprising, as admission rates to hospital depend on a great many factors which differ not only from country to country but within countries from hospital to hospital. As an example we need only refer to the report on Graylingwell Hospital (Carse *et al.*, 1958). These authors report a fall in admission rates to hospital within two years from 548 to 229, i.e. by 59 per cent. They attribute this change to certain alterations in the mental health services in the area. Another example is the report by Shepherd (1958) which shows that the relation between admission rates in a particular hospital have changed in the course of 10 years. He too sees the main reasons for the change in alterations within the mental health service in that area. The examples could be multiplied.

Indeed the Mental Hospital, Bangalore itself provides an illustration of much change having occurred in its own history. Table II shows the enormous

TABLE II

Mental Hospital, Bangalore

| Year | Admissions | Discharges and Deaths | Admissions to General Hospitals in Mysore State |
|---|---|---|---|
| 1923 .. .. .. .. | 103 | 127 | |
| 1930 .. .. .. .. | 164 | 179 | |
| 1940 .. .. .. .. | 495 | 486 | 70,955 |
| 1945 .. .. .. .. | 535 | 531 | 97,040 |
| 1953 .. .. .. .. | 948 | | |

This table shows a rapid increase in admissions to all hospitals, but a much sharper rise in admissions to the Mental Hospital.

increase in numbers over a relatively brief period. Whereas 1923 showed only 103 admissions this figure has increased five times only 22 years later to 535, and has multiplied nearly 9 times in 1953. This rapid increase is still taking place and the figures for 1956, which are not included in this paper, are 15 times those of 1923.

## SEX

Of first admissions 379, or 61·5 per cent., are men and 253, or 38·5 per cent., are women (Table I). This ratio is the same as regards re-admissions where the respective figures are 112, or 62·6 per cent., men and 67, or 37·4 per cent., women. This proportion is not the same as in England and Wales. Here the ratio is almost reversed, being, for first admissions, 42·6 per cent. men and

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

57·4 per cent. women. But although these figures are different from the figures in the U.K. they are very similar to those found in the U.S.A.

The admission figures in relation to the population are very much lower than those in European countries. The population has more males than females, the figures being 51·3 per cent. males and 48·7 per cent. females, i.e. 949 females per 1,000 males. The admission figures indicate that there is a higher first admission rate amongst males with 8·11 per 100,000 of the male population as compared with 5·73 per 100,000 females. The corresponding figures for England and Wales are 86 male and 107 females per 100,000 of each sex. It is of course difficult to be certain about the causes for these differences, but certain possible explanations spring to mind.

Most of the patients admitted are in a state of acute disturbance. We believe that owing to the attitudes towards mental patients amongst the population, one of the main indications for admission to hospital is violent or boisterous behaviour. If that is so it is obvious that female patients can be more easily controlled at home. On the other hand, it is also possible that the family goes to greater lengths to restore the health of the breadwinner rather than the health of a female member of the family. This will be discussed in more detail later.

## Age

The age distribution of the patients is perhaps one of the most important items of information for the psychiatrist, but it is also the most difficult to come by in India. Most patients do not know their age and make a guess, or the doctor makes his own guess. An analysis of the ages entered in the records shows a suspicious clustering of the last digit at 0 or 5. It would appear that there are always a much larger number of persons at these round ages than at any others. There is no way of checking on the exact age of any patient even if the doctors were prepared, or had the time, to do so, as the age is just not known. Registration at birth is not compulsory and many births are never notified. Very few possess birth certificates. Certain persons—a minority who can afford it, notably Brahmins or other high caste persons—have a horoscope which states the time and date of birth. But the date usually refers to one of the 200 or more different calendars in use in India and, even if committed to memory, would require a good deal of trouble were it to be translated into the Gregorian calendar.

Various attempts have been made by clinicians to get accurate information about the age of their patients. One can ask an older relative—who usually will not know the age any more than the patient—to relate the birth to a well-known event, e.g. one would ask was he or she born before or after the shelling of Madras by Japanese ships, and how many years before or after. But the limitations of such a method are obvious. Various workers have tried to assess the age by physiological methods such as X-rays of the bones. But it was shown by Modi (1952) that the average rates of ossifications vary greatly from district to district of the sub-continent. This means that the method totally lacks standardization and has therefore no validity at present.

The ages, as shown in these tables, must therefore be regarded sceptically, and are only presented for lack of anything more accurate.

Table III shows that the majority of patients in both sexes come from the age groups between 15 and 34, to a lesser but still high proportion from the age groups between 35 and 44. The figures are 412 (65 per cent.) admissions

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

TABLE III

| Age Group | Male | | | Female | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Population | First Admissions | Per 100,000 | Population | First Admissions | Per 100,000 | Population | First Admissions | Per 100,000 |
| 5–14 .. | 118,855 | 8 | 0·672 | 120,402 | 10 | 0·834 | 239,257 | 18 | 0·752 |
| 15–24 .. | 84,987 | 140 | 16·45 | 79,116 | 74 | 9·35 | 164,103 | 214 | 13·1 |
| 25–34 .. | 71,479 | 107 | 15·00 | 69,198 | 91 | 13·2 | 140,677 | 198 | 14·2 |
| 35–44 .. | 57,261 | 67 | 11·67 | 46,914 | 44 | 9·40 | 108,675 | 111 | 10·2 |
| 45–54 .. | 49,753 | 33 | 6·62 | 33,708 | 23 | 6·82 | 83,461 | 56 | 6·71 |
| 55–64 .. | 22,653 | 21 | 9·52 | 19,569 | 11 | 5·62 | 42,222 | 32 | 7·59 |
| 65–74 .. | 8,876 | 3 | 3·39 | 8,058 | — | — | 16,934 | 3 | 1·77 |
| All ages from 5–74 | 413,864 | 379 | 9·17 | 376,965 | 253 | 6·70 | 795,329 | 632 | 7·94 |

The Age Groups in this table are derived from a 10 per cent. sample of the population. The number included in the sample are 905,857. The Admissions are from Mysore State only.

between the ages of 15–34, a further 111 (17·6 per cent.) between 35 and 44, and only 91 (14·4 per cent.) for all ages above 45. The proportions remain approximately the same for the sexes separately i.e. in the 15–34 group there were 247 (65·2 per cent.) male and 165 (64·6 per cent.) female first admissions; in the 35–44 group there were 67 (17·7 per cent.) male and 44 (17·2 per cent.) female first admissions, and in all age groups above 45 there were 57 (15·1 per cent.) male and 34 (13·3 per cent.) female admissions. These figures are certainly in striking contrast to the findings in other countries, e.g. the U.K. (the Registrar-General's Report 1952–53, p. 7). In England and Wales the percentage for the 15–34 age group is 25 per cent. (male 24·8 per cent., female 24·9 per cent.), and for the age group 35–44 it is 16·9 per cent. (male 16·8 per cent., female 16·9 per cent.) and for all ages above 45 years it is 55 per cent. (male 51·8 per cent., female 57·2 per cent.). It can be seen that more than half of all first admissions come from the older age groups. This is the reverse of the situation in Mysore State. The figures are however not strictly comparable. The graphs in Figure 1a, 1b which were drawn from figures given in the Mysore Census Report (1951, p. 100) show certain differences although the differences are less than might be expected.

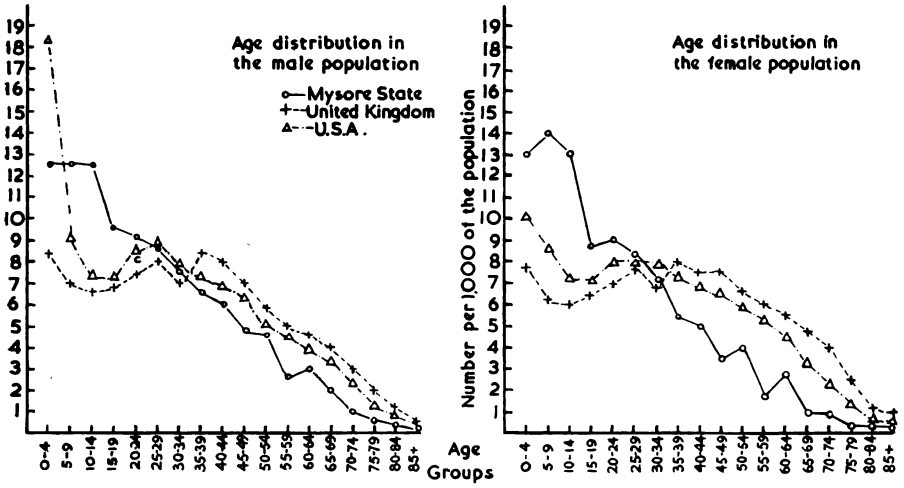



FIG. 1 a, b.

## REMARKS CONCERNING THE CENSUS REPORT

It will already be clear from what was said above on obtaining information on age in patients, that Census findings will hardly be more accurate. The

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

Census officials are dealing with large numbers and cannot spend nearly as much time with each person as can the doctor. The reasons for these difficulties in obtaining information on age are manifold. In addition to the fact that most persons do not know their age, many people who do know dislike disclosing it. We are not referring here only to this reluctance so prevalent amongst the ladies—inside and outside India—and certain age groups in men; the Hitopadesa, one of the ancient Hindu tracts, contains an injunction against the disclosure of a person's age and will influence the religious. The purpose of this injunction is not clear. It may be connected with the belief prevalent among the orthodox that telling one's correct age is equivalent to boasting and reduces the span of life. It is also believed that a man by giving his true age places thereby an opportunity into the hands of his enemy to unleash against him the forces of black magic. Superstition against certain numbers such as 13 is probably also a source for misstatements. Nor do the dangers which may derive from disclosing one's true age always lie in the realms of mysticism or magic. The Mysore Government initiated a probe into the dates of birth of their officers which brought to light a large number of understatements of age, made with the main intention of postponing the date of retirement. Similarly, there have been cases where persons tried to get over the age restrictions for recruitment by giving a false age. The Mysore Census Report (1951, p. 98) sums up the situation, "It would be clear from the above remarks that our age-returns are far from being trustworthy." It ends however on an optimistic note, "Yet the observations of tendency and the facts of probability make it possible to draw a greater value from the returns than might be expected."

### First Admission Rates by Age Groups per 100,000 of the Population

Table III shows the figures extracted from the Census Report of 1951. As the numbers are not expected to have changed greatly between 1951 and 1953 they are used here to calculate admission rates in relation to population. These figures are derived from a 10 per cent. sample of the population. The tendencies observed above still hold when the admission numbers are calculated in proportion to the corresponding age group in the population. The actual figures are 13·4 new admissions per 100,000 of the population in the 15–34 age groups, 10·2 new admissions per 100,000 of the 35–44 age groups, and only 6·3 for all ages above 45. Again the proportions are the same for the sexes. It is interesting that the highest proportion of female admissions occur in the 25–34 age bracket, namely 13·2 per 100,000, as opposed to only 9·35 in the 15 to 24 age group. It must be remembered that the vast majority of marriages are consummated shortly after the menarche which occurs at about the same age as in the U.K. and that a large number of children are born to mothers in the 15–24 age group. It appears from these figures that early childbearing does not seem particularly to increase the risk of admission to a mental hospital. As far as this is an indication for the incidence of mental illness, very early childbearing would not appear to increase the mental morbidity risk in the mothers. This has also been observed in the U.K.—in this case unmarried mothers—(Anderson *et al.*, 1957, Fairfield 1940). Again the figures show a striking difference to those applying to England and Wales (Registrar-General's Report, 1952–53, p. 7). Here the first admission rate per 100,000 of the home population is 536 in the 16–34 age groups, 227 in the 35–40 age groups, and 1,350 in all ages over 45. The female rates in the over 20 age groups are consistently higher than the male ones. They are 375 per 100,000 in the 16–34 group, 129 in the 35–44 group, and 715



https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

TABLE IV

| District | Population | Per cent. of Total Population of Mysore State | First Admissions | Per cent. of the Total Number of First Admissions | First Admissions per 100,000 of the Population |
|---|---|---|---|---|---|
| Bangalore .. | 1,348,084 | 14·8 | 60 | 14·6 | 4·75 |
| Bangalore Corp. | 778,977 | 8·6 | 176 | 40·4 | 22·6 |
| Mysore .. | 1,040,448 | 11·4 | 19 | 4·6 | 1·93 |
| Mysore City .. | 244,323 | 2·7 | 30 | 6·5 | 11·5 |
| Kolar .. .. | 970,791 | 10·7 | 19 | 4·2 | 1·86 |
| Kolar City .. | 159,084 | 1·8 | 8 | 1·8 | 5·04 |
| Tumkur .. | 1,151,362 | 12·7 | 24 | 5·5 | 2·09 |
| Mandya .. | 717,545 | 7·9 | 44 | 10·2 | 6·12 |
| Chitaldrug .. | 868,370 | 9·6 | 12 | 2·76 | 1·49 |
| Hassan .. | 715,135 | 7·9 | 14 | 3·23 | 1·96 |
| Chickmagalur .. | 417,538 | 4·6 | 10 | 2·3 | 2·15 |
| Shimoga .. | 663,315 | 7·3 | 17 | 3·91 | 2·56 |
| Mysore State .. | 9,074,972 | 100·0 | 433 | 100·00 | 4·68 |

This table only includes Regular and Voluntary Patients. Observation cases are not shown.

in the above 45 age group. The difference between male and female admission rates remains almost the same for all age groups over 20.

DISTRICTS

Table IV shows the first admissions to hospital according to the district where the patient is domiciled. The admission figures could only include

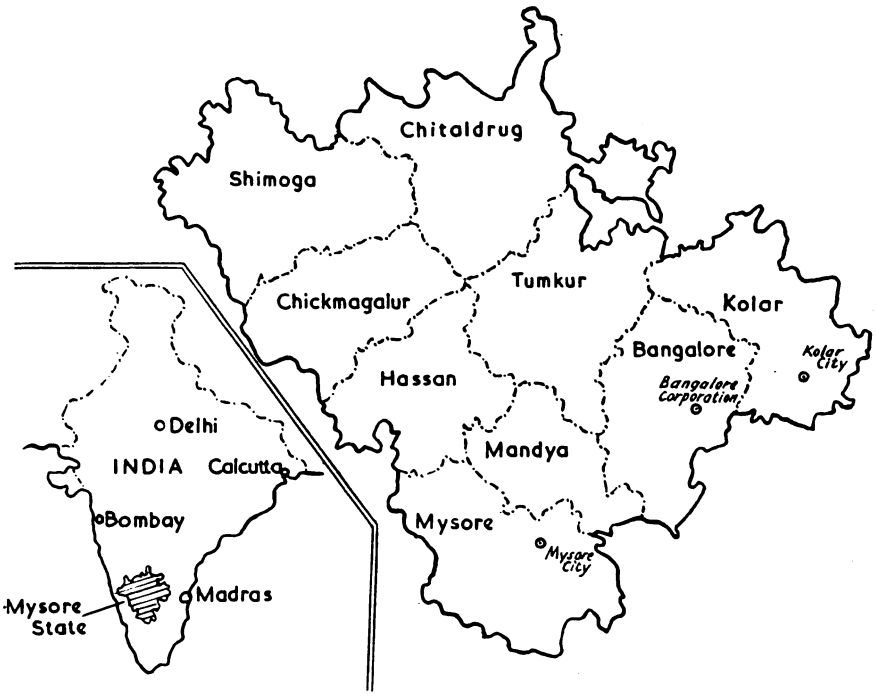



FIG. 2—Map of Mysore State, 1951

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

voluntary and regular patients; the observation cases had to be omitted because the address stated on their case records is often the location of the referring agency, usually a law court, rather than the domicile of the patient.

The table shows that the largest number of patients, namely 40·4 per cent., come from Bangalore Corporation. The next largest percentage comes from Bangalore district (14·6 per cent.) and from Mandya (10·2 per cent.). The smallest percentage comes from Kolar City (1·3 per cent.). But if the admissions are expressed in relation to the population figures it will be seen that the differences while still large are not nearly as wide as would appear. The highest proportion comes again from Bangalore Corporation with 22·6 per 100,000 of the population; but this figure is only 14 times greater than the smallest, 1·49, which applies to Chitaldrug. For absolute admission percentages the largest figure is over 22 times bigger than the smallest.

The largest proportion of admissions per 100,000 of the population is found in Bangalore Corporation with 22·6 per cent., next from Mysore City with 11·5, and next from Mandya with 6·12 followed closely by Kolar City with 5·04. Bangalore district comes next with 4·75. The other districts vary between 1·49 and 2·56, the figures being too small to allow too much meaning to be read into the differences. With the exception of Mandya, which is a very industrialized district, the highest proportion of mental hospital admissions is to be found in the large towns, the figures being proportionate to the size. This is not an unexpected finding, particularly if it is borne in mind that the type of patient referred to the hospital is the grossly disturbing rather than the disturbed patient. The size of towns seems even more important than the distance from hospital, as shown by the figures for Mysore City (11·5) which is very far away, compared with those of Bangalore District (4·75) which is closest to the hospital, next to the Corporation itself. The difference between Mysore City with 11·5 per 100,000, which puts it second on the list, and Mysore District with 1·93, placing it near the bottom of the list, is equally illuminating on this point.

Although distance from the hospital is not a factor of overriding importance, it does, nevertheless, influence the admission rates. This is not surprising considering not only how enormous these distances really are, but also the inadequate means of transport available. The actual figures are seen in Table V where the districts are grouped geographically according to distance from the hospital. The nearest group of districts shows 11·09 admissions per

TABLE V

| Patients' Residence Districts are Grouped According to Distance from the Mental Hospital | Population | First Admissions (Voluntary and Regular Patients only) | First Admissions per 100,000 of the Population |
|---|---|---|---|
| 1. Nearest: Bangalore, Bangalore Corporation | 2,127,061 | 236 | 11·9 |
| 2. Intermediate: Kolar, Kolar City, Tumkur, Mandya .. .. .. .. | 2,998,782 | 95 | 3·17 |
| 3. Furthest: Mysore, Mysore City, Hassan, Chitaldrug, Chickmagalur, Shimoga | 3,949,129 | 102 | 2·58 |
| Mysore State .. .. .. .. | 9,074,972 | 433 | 4·68 |

This table shows that distance from hospital influences the admission rate.

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

100,000 of the population, the next nearest group 3·17, and the most distant group 2·58.

## Social and Economic Factors

Table VI summarizes a number of social and economic factors, comparing them as they apply to the various districts. The factors are chosen because they might conceivably affect admission rates to the mental hospital.

TABLE VI

| Districts | Per cent. of Population Living in Villages or Towns of: | | Population per Hundred Living on Agriculture | Density | | Persons per House | Average Annual Growth Rate Between 1941/51 |
|---|---|---|---|---|---|---|---|
| | Less than 2,000 | 20,000 to 100,000 | | Crude | Cultivable Area | | |
| Bangalore .. | 76·7 | 3·28 | 74·2 | 441 | 969 | 6 | 25·6 |
| Bangalore Corporation .. | — | Population over 100,000 | 15·7 | — | — | 9 | Average for Cities 52·4 |
| Mysore .. .. | 71·5 | — | 84·5 | 294 | 515 | 5 | 13·5 |
| Mysore City .. | — | Population over 100,000 | 7·9 | — | — | 7 | Average for Cities 52·4 |
| Kolar .. .. | 73·8 | 4·76 | 82·1 | 307 | 783 | 5 | 14·6 |
| Kolar City .. | — | Population over 100,000 | 12·3 | — | — | 6 | Average for Cities 52·4 |
| Tumkur .. .. | 83·95 | 2·96 | 83·9 | 281 | 517 | 5 | 18·6 |
| Mandya .. | 79·92 | 2·96 | 85·0 | 374 | 595 | 5 | 12·1 |
| Chitaldrug .. | 72·90 | 9·35 | 76·0 | 207 | 342 | 6 | 17·8 |
| Hassan .. .. | 85·14 | 3·48 | 83·5 | 271 | 472 | 5 | 13 |
| Chickmagalur .. | 80·46 | 5·19 | 72·9 | 150 | 427 | 5 | 15·3 |
| Shimoga .. | 73·38 | 13·52 | 71·2 | 164 | 414 | 6 | 18·2 |

### (a) *Size of Village or Town of Residence Prior to Admission*

This column shows the number of persons in the various districts who live in small villages. It will be seen that the majority of the population still lives in villages with populations of less than 2,000. It might be expected that the districts where the largest populations live in the larger towns would show a higher admission rate per population. This however does not appear to be so, except in the case of the three large cities, namely, Bangalore Corporation, Mysore City, and Kolar City. If this factor also applied to the other districts, Shimoga and Chitaldrug should have the highest admission rates, and Mandya and Mysore district the lowest. In actual fact Shimoga occupies third place and Chitaldrug the last, whereas Mandya shows first place and Mysore District seventh. The size of the town only appears to be a factor if the towns are *very* large as in the case of the three cities.

### (b) *Agricultural versus Industrial Occupation*

Agricultural versus industrial occupation amongst the population might conceivably play a part, but this again is not confirmed by the figures. If industrialization was in fact increasing admission rates Shimoga and Chickmagalur should stand at the top of the list. In fact they come in third and fourth place; Mandya and Mysore district should be lowest but show up in first and seventh place respectively, that is not counting the three large cities.

### (c) *Density of Population*

Mysore State has 308 persons per square mile. This compares with Europe as follows. Holland with 717 and Belgium with 715 are the most densely

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

populated countries, Sweden with 38 falls among the less densely populated countries, with U.K. at 550 in the middle. The All India density is less than in Mysore, namely 281. But among the Asian countries India ranks very high. China has a density of 123, Pakistan only 96.

As large parts of Mysore State are uncultivatable land the crude density however is less likely to show a correlation with admission figures than the density in relation to the cultivatable area in each district. However, no correlation could be found with these figures either. According to density Bangalore district and Kolar district should show the highest admission rate, but they come in second and eighth place respectively. Shimoga, which should be near the bottom of the list, has in fact third place.

(d) *Number of Persons per House*

In other words, crowding could be expected to increase the admission rate. As the table shows, however, there is hardly any difference between the districts as far as that is concerned.

(e) *Average Annual Growth Rate between 1941 and 1951*

This might conceivably be expected to show a correlation with the admission rate, affecting it indirectly, but the table does not show any such correlation clearly except in the case of the three large cities. But Mandya, which has the lowest growth rate, shows a high admission rate. Nevertheless there is a better approximation between the admission rates and the growth rate than is shown in any of the other columns.

MARITAL STATE

The Tables VIIa and b show the relationship between admission rates to the mental hospital and marital status. The figures are further broken down according to age groups.

The attitude to marriage in India is very different in many ways from that in European countries. There is a difference in Mysore State between the various communities such as the Hindus, the Muslims or Christians, but in spite of the differences there is also a great deal in common.

In the Muslim community polygamy is tolerated. In the Hindu community the Government introduced a law in 1951 forbidding it, but the law is recent and not often enforced. There are small communities where polyandry is practised but these are numerically insignificant. The Christians cannot marry more than one wife in church but the customs of the country are often stronger than the law of the church and the law of the country, and some Christians do in fact live with several concubines.

Marriages in all communities are mostly arranged between the families rather than between the marriage partners as in European countries, and they take place at a very early age. Child marriages are still very common; such marriages are only consummated after the wife "comes of age". A number of widows have lost their husbands before this has happened.

The tables show that the highest admission rate in both sexes occurs amongst married persons, the figures being 1·12 per 100,000 of the population for men and 1·13 for women. Single men with 0·811 show a slightly higher rate than women with 0·221. Widows with 0·280 show a higher incidence than widowers with 0·108, but the numbers of admissions there are rather small and difficult to evaluate statistically. The status of widowhood is a

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

TABLE VIIA

| Age Group | Single | | | Married | | | Widowed | | |
|---|---|---|---|---|---|---|---|---|---|
| | Population | Number of Admissions | Admissions per 100,000 of the Age Group of the Total Population | Population | Admissions | Admissions per 100,000 | Population | Admissions | Admissions per 100,000 |
| 5–14 .. | 118,576 | 7 | 0·059 | 266 | 1 | 3·76 | 13 | – | — |
| 15–24 .. | 72,753 | 118 | 1·62 | 11,893 | 22 | 1·85 | 341 | – | — |
| 25–34 .. | 14,158 | 33 | 2·32 | 55,359 | 74 | 1·34 | 1,962 | – | — |
| 35–44 .. | 2,268 | 9 | 3·96 | 51,560 | 57 | 1·11 | 3,433 | 1 | 0·292 |
| 45–54 .. | 893 | 2 | 2·25 | 43,723 | 30 | 0·68 | 5,137 | 1 | 0·195 |
| 55–64 .. | 389 | — | — | 17,199 | 21 | 1·22 | 5,065 | – | — |
| 65–74 .. | 142 | — | — | 5,081 | 3 | 0·49 | 2,653 | – | — |
| All ages from 5–74 | 209,179 | 169 | 0·811 | 186,081 | 108 | 1·12 | 18,604 | 2 | 0·108 |

The table shows the male population. The age distribution is derived from a 10 per cent. sample of the total population comprising 905,857 persons. The admissions are from Mysore State only.

TABLE VIIB

| Age Group | Single | | | Married | | | Widowed | | |
|---|---|---|---|---|---|---|---|---|---|
| | Population | Admissions | Admissions per 100,000 of the Age Group in the Population | Population | Admissions | Admissions per 100,000 of the Age Group in the Population | Population | Admissions | Admissions per 100,000 of the Age Group in the Population |
| 5–14 .. | 114,574 | 10 | 0·09 | 5,759 | — | — | 69 | — | — |
| 15–24 .. | 13,498 | 15 | 1·11 | 62,856 | 59 | 0·94 | 2,762 | — | — |
| 25–34 .. | 1,411 | 2 | 1·42 | 59,382 | 86 | 1·45 | 8,405 | 3 | 0·41 |
| 35–44 .. | 500 | 1 | 2·00 | 32,867 | 36 | 1·09 | 13,547 | 7 | 0·52 |
| 45–54 .. | 338 | 1 | 2·96 | 15,728 | 16 | 1·02 | 17,642 | 6 | 0·34 |
| 55–64 .. | 210 | — | — | 4,610 | 9 | 1·95 | 14,749 | 2 | 0·14 |
| 65–74 .. | 91 | — | — | 941 | — | — | 7,026 | — | — |
| All ages from 5–74 | 130,622 | 29 | 0·221 | 182,143 | 206 | 1·13 | 64,200 | 18 | 0·28 |

This table shows the female population. The age distribution is derived from a 10 per cent. sample of the total population comprising 905,857 persons. The admissions are from Mysore State only.

distressing one. The widow never remarries (except in extremely rare cases) and she assumes a lowly place in the household where she considers herself as only tolerated. In the case of the widowers the situation is different. He can remarry. The fact that there are so few admissions amongst widows may mean that there is a lower incidence of mental illness due, perhaps to the absence of childbearing; it may also mean that since their place in society is such a low one they are not often referred for treatment or admission. Very young widowhood does not seem to bring about a high admission rate. We did not know the ages at which these patients had become widows, and cannot say therefore whether a large number of widows had lost their husbands early in life.

As regards married men the high figure in the youngest age bracket cannot be regarded as significant in view of the very small number of admissions, namely 1. It is however interesting that of all admissions in that age group so many are single, namely 7. The largest number of admissions amongst married and single men seems to occur in the 25 to 54 age groups. The incidence of admissions amongst the single men is very considerably higher in all these 3 age groups, particularly in the 35–44 age group, where it is 3·96 per 100,000 of the population as compared to 1·11 amongst the married men. The meaning of these differences is difficult to understand. Again it would be dangerous to equate admission numbers with incidence of mental illness as such. It is quite possible that singleness and mental instability are correlated, but other interpretations are also feasible.

It is interesting to note that amongst the married men a second peak of admission occurs in the 55–64 age group which is not seen amongst the

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

unmarried. In the single group the peak occurs in the 35–44 group, in the married group there are two peaks, one in the 15–24 and one in the 55–64 groups.

This trend is all the more interesting as it seems almost the same amongst the women. The single women are admitted in relatively larger numbers than the married women and more frequently in the 35–44 age group, whereas the married women show the two peaks, one in the 25–34 age group with 1·45 per 100,000 and again in the 55–64 group with 1·95 per 100,000. If a woman does not get married this carries a stronger stigma in India than in Europe and is worse for her than for an Indian man. It is possible that one of the reasons why these women did not get married was mental instability, or physical illness predisposing to mental illness. The second peak in the married groups may be due to a difference in the type of mental illnesses. If it means that there is a higher incidence of affective disorders in the married groups this would suggest a most interesting line of enquiry. Unfortunately, the diagnosis on the case-sheets did not seem an item which was sufficiently uniform to allow of reliable statistical analysis. As was pointed out above, the turnover of the hospital is very rapid. The patients are from several linguistic groups, and no single doctor can be expected to speak all these languages. The possibilities for special investigations were at that time limited, which in view of the high incidence of organic syndromes, impairs accurate diagnosis very much. Also the patients tend to leave the hospital as soon as the acute phase of the illness has passed, and there is little opportunity for prolonged observation.

The hospital has since been upgraded to the level of a teaching hospital with many more doctors, psychiatrically trained nurses and excellent laboratory facilities, biochemical, electro-physiological and psychological, which will make such an analysis possible in the future.

It is noteworthy that the maximum proportion of admissions for women occurs in the 25–34 group, although the childbearing age begins much earlier. Extremely early childbearing, such as would hardly ever occur in Europe but is frequent in India, does not seem to contribute much to admissions. It cannot be repeated often enough that this does not necessarily mean that puerperal mental illnesses do not occur more frequently. The position of the young married wife in society is different from that in the European set-up. The young wife moves into the house of her husband. There she is expected to assume a very modest place in her husband's household and is exposed to much friction. "Mother-in-law trouble" is liable to affect the young wife rather than the young husband as is the case in Europe or the U.S.A. For childbirth she usually returns to her mother's house. This situation may well prevent the young mother who is stricken by mental illness from being admitted to hospital.

The figures create more new problems than they answer and more research is required before an interpretation can be ventured.

## Social and Cultural Factors

### *Religion and Caste*

The religious composition of India, and even more so the caste structure of the society, are unique in the world. Their existence could prove a gold-mine of information for comparative psychiatry. The religious and caste communities, although living in close proximity, provide widely differing social and cultural backgrounds for the individuals belonging to them. Furthermore they do not intermarry, and many communities sanction marriage between

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

uncle and niece, i.e. a girl being married to her mother's younger brother, or first cousin marriages, i.e. a girl being married to her maternal uncle's son or her paternal aunt's son (never to a paternal uncle's or maternal aunt's son). There seems to exist almost an experimental situation for psychiatric, genetic and social research. Considering that many families are polygamous the "experiment" is almost perfect. All the more surprising that this unique source of research information has not yet been tapped.

Unfortunately the information provided in the case notes under caste is not detailed enough to allow a satisfactory analysis. We had to restrict ourselves to very few items. Furthermore, the Indian government is anxious to root out the caste system and has excluded this item from its census reports. We therefore had to use the figures given in the previous Census of 1946. We were reassured that no major changes need be expected. A further complication is the caste system itself. The four main castes Brahmins (priests), Kshatrias (warriors), Vyshias (merchants) and Sudras (farmers) represent a crude oversimplification of the situation. Hutton (1951) points out that the origins of the caste system are multiple, with such diverse factors as migration, race, colour, language groups and many more playing a part. For instance a Brahmin from the Kanarese-speaking group will not marry a Brahmin from the Tamil-speaking group. There are even differences of caste between Tamil-speaking Brahmins from Madras, and Tamil-speaking Brahmins from Kerala. The situation in Mysore State is as complex as elsewhere in India. There are five major language groups represented in the country, and considering the influence of this factor alone on caste one may see the infinite complexity. Furthermore, the castes do not always agree as to their position in the hierarchy. To quote only one example from the Census Report (1941): The Vyshakarma caste are counted officially as Sudras, but they consider themselves Brahmins and have made representation with the Census Office to have their status amended. Another complication is provided by the Lingayats (non-Brahmin priests). They are a very numerous group in this state and are officially regarded as Sudras. But historically they are more a splinter religion or sect of Hinduism with their own internal caste system.

The other religions, although officially condemning the caste system, nevertheless show rather similar structure within their own flock. Even the Jews are divided into "white Jews" and "black Jews"; the former claim to have come to India in the second century, whereas the latter are said by the "white Jews" to be converts. They behave towards each other rather like castes.

As will be seen from this the situation is extremely complex and, unless the information is collected in the most circumspect and informed way, may easily lead to wrong conclusions. This becomes clear when the official, rather crude census results are examined in the light of far more detailed investigations of small communities or villages by anthropologists. Srinivas (1955) has reported on a village in Mysore State called Rampura. In this village of 1,523 inhabitants alone there are 17 castes as well as a Muslim community. Every one of these is separated from the others by endogamy, prohibition of contact through food (commensalism), occupational specialization, separate caste courts, etc.

Keeping all these limitations in mind we have attempted to analyse whatever information is available both from the case records, and from social and anthropological research in the population.

Table VIII shows the main religious communities and castes both in the population and amongst first admissions to the hospital. The Hindus with

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

TABLE VIII

| Communities | Number of Persons | Number of First Admissions | First Admissions per 100,000 of the Population |
|---|---|---|---|
| Muslims | 485,230 | 64 | 13·2 |
| Indian Christians | 98,580 | 31 | 31·5 |
| Other Christians | 14,273 | 3 | 21·6 |
| Parsees | 401 | — | — |
| Jains | 32,858 | 4 | 12·3 |
| Brahmins | 295,466 | 124 | 42·0 |
| Kshatrias (Warrior caste) | 45,274 | 7 | 15·5 |
| Vyshias (Merchant caste) | 55,811 | 31 | 55·5 |
| Sudras (Workers caste) | 4,869,824 | 232 | 4·7 |
| Scheduled castes* (Untouchables) | 1,405,067 | 78 | 6·9 |
| Other Hindus (not specified) | 14,188 | 58 | Not applicable |
| All Hindus | 6,686,630 | 530 | 7·9 |

* These include: A.K., Banajara, Vodda, Koracha, Korama.

This table shows that the Vyshias, Brahmins and Indian Christians have the highest admission rates. The Parsees and "other Christians" (mostly Europeans or Eurasians) are probably not strictly comparable with the other groups in this respect.

6,686,630 are by far the largest group, and amongst them the Sudras and scheduled castes outnumber by far the high castes. As regards admission rates to hospital the Hindus as a whole have the lowest rate, that is not counting the small community of Parsees who are in a rather special position. Within the Hindus however there are enormous differences. The Vyshias show the highest admission rates of 55·5 per 100,000 of the population, the Brahmins come second with 42·0.

The next largest rate are the Indian Christians with 31·5. It must not be assumed that the Christians are largely converts. Many of them are descended from converts of several generations ago. The group "other Christians" are mainly Anglo-Indians and a small group of Europeans. Their rate of 21·6 is next in size. Muslims with 13·2 and Jains, a Hindu splinter religion originating in the twelfth century, with 12·3 are rather similar. The last group "other Hindus" cannot be compared. The admissions classed under this heading fall into this group because of unprecise entries on the case sheets. In the census it includes Hindus not falling into any of the provided major categories.

It is most difficult to interpret these findings. The important question which arises of course is whether the admission rates bear any relationship at all to the incidence of mental illness. This question cannot be answered without further research. Some light may be thrown on these figures from the findings reported in the next section.

## LITERACY

Literacy amongst the population has been assessed by the Census Report (1951, p. 161). Unfortunately no such enquiry was made amongst the patients admitted to the hospital. In order to correlate literacy with admission rate to hospital we have to use an oblique approach. We have therefore examined the correlation between literacy and communities. Literacy was defined in the Census Report as "a person's ability to read and write a letter". No further details are noted.

Figure 3 shows that there is a certain similarity between the admission rates in the various communities and the literacy. The Vyshias have a larger

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

admission rate with 55·5 than the Brahmins with 42·0, although literacy is higher amongst Brahmins with 59·4 per 100 as compared to 43·9 amongst Vyshias. It is possible that the influence of literacy is offset by the fact that Vyshias as merchants tend to live very much in the cities. Parsees and "other Christians" have not been included as they are in rather a special position.

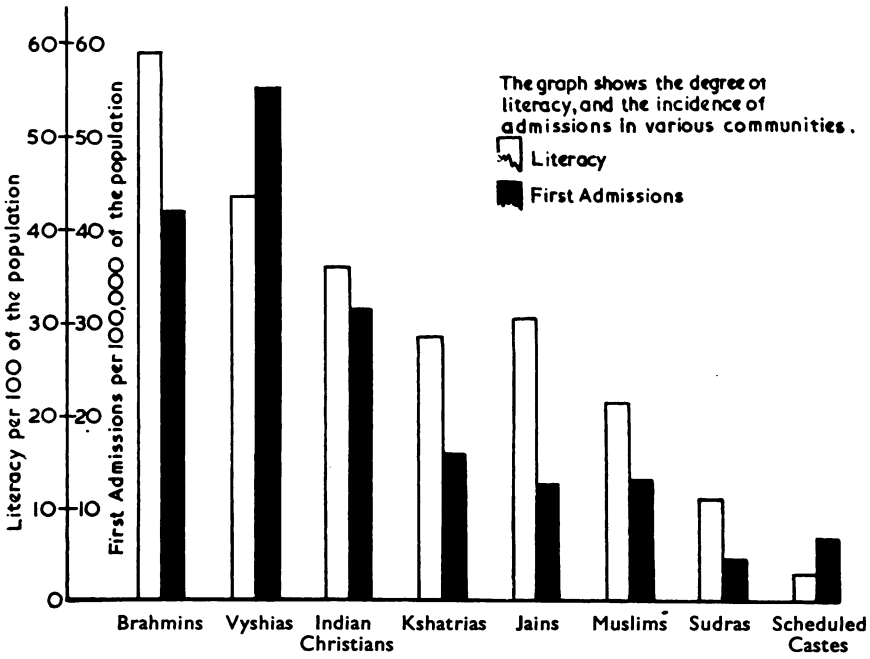



FIG. 3

The degree of literacy amongst them is quite out of proportion to the other communities. Also they are liable to use other facilities in case of mental illness than the state mental hospital. They most probably turn to private institutions outside Mysore State. Amongst the other communities the relationship is commensurate, except amongst the scheduled castes where both admission rates and literacy rates are rather small. From this figure it would appear that literacy would affect admission rates to hospital to a certain extent. To be able to use such facilities as hospitalization, familiarity with the services available and also a certain trust in these would seem necessary. Literacy would both make the available information accessible and also indicate a certain attitude in the community which is less parochial and ready to avail itself of services provided by the state.

## CONCLUSIONS

These figures, interesting though they are, pose more questions than they answer. They clearly point to the possibilities and the necessity of further research. It would be interesting to know to what extent the hospital admission figures are related to the actual incidence of mental illness. It would be foolish to expect the incidence figures to be anything as exact as admission figures. The incidence of mental illness very much depends on the definition of this term. The admission figures to mental hospitals in England and Wales have vastly

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

increased over the past 36 years. In 1920 they were 21,703 (Royal Commission 1954) as compared with 50,405 in 1956 (Annual Report, 1956). Everyone will agree that this is largely due to an alteration in the service which the medical and psychiatric organizations in this country are rendering to the community. It would be rash to conclude that it reflects an increase of mental illness in the community. The facts are much more elusive than that. The psychiatrist may be expected to deal with problems which were formerly regarded as belonging to the domain of the clergy, the law courts and the police, the educationist, etc., and is therefore dealing with different groups of people than he used to.

This is certainly true for India. One would expect the admission figures and incidence figures in the U.K. to have a closer relationship than in India due to a wider development of mental health services.

Hare (1956) when investigating the incidence of certain mental illnesses in Bristol believes that few schizophrenic patients will escape admission to a mental hospital at one stage or another of their illness. Lemert (1951) points out that this may be far too optimistic a view. It would certainly be too optimistic for Mysore State. A visit to a village near Bangalore in 1956 showed us that, if indeed proof were needed. This is a village with about 900 inhabitants and not more than 5 miles from the mental hospital. It is partly an industrial village, as it has a large textile mill. Both the distance from hospital and industrialization would lead one to expect a closer link between admission and incidence figures. We asked the Shambog (the village clerk) if he knew of any mental cases in his village. He was most helpful and not only mentioned a few but actually sent for four such persons whom he knew. We found that they were all young persons, perhaps 20 years or so. Two had what appeared to be chronic schizophrenia. One was a farmhand, the other a shepherd. One person was a mental defective, perhaps of imbecile level. We were unable to come to any conclusions regarding the aetiology. The fourth person had a basal ganglia disorder which was said to have been present since childhood. He had choreoathetotic movements and appeared mentally defective. He was however working in a reduced capacity. None of these four had ever been to the mental hospital either as in- or out-patients. We have no doubt that the state of affairs in this village is typical for the rest of the country.

So much for gross mental illnesses. The incidence of other and lesser forms is even more difficult to assess. Certain disorders, which would not necessarily be regarded as "psychiatric" in Europe would be considered to be due to "possession" by spirits, and treated in the villages by the village priest, sorcerers, etc. The most notable disorder of this group are all forms of infertility in women. The villages have a very elaborate organization governed and maintained by tradition to deal with problems which Europeans would consider to be related to health. Very little is known about this. An American anthropologist Woodruff (1956) investigated this problem in a community of Pariahs in Bangalore and reported on it in a lecture at the All India Institute of Mental Health. She found the following: A person in the community who by tradition holds such office would see anyone who had a complaint regarding his "health". The distinction between physical and mental ill health is not sharp and strikingly "modern" in that respect. These "patients" would be given treatment by him or referred to see either a practitioner of the indigenous schools of medicine—ayurvedic or unani—or to a "Western" trained doctor. The local treatment might be anything from an application of herbs to a sacrifice of a lizard or a cock. Sometimes an exorcism would be arranged. There is no reason to believe that these treatments are less effective than certain

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

types of psychotherapy or than the prescription of virtually placebo "bottles" in a European consulting room, and they may be dealing with large numbers of minor forms of mental ill health. It would indeed be very difficult to give a meaningful definition of mental ill health by which to assess the incidence. It would almost certainly be misleading to simply transfer European or American definitions to conditions in Mysore State, which shows such enormous differences in cultural and social patterns.

As regards admissions to mental hospital it is obvious that Mysore State is undergoing a change in this respect. The admission figures have grown enormously in the last ten years and show every sign of further increases with the growth gathering momentum.

Some factors which correlate with admission rates are not unexpected: distance of residence from the hospital is an obvious factor, particularly if one considers the enormous distances involved. Dwelling in large towns is also a factor, which overrides the distance. The admission rates from very distant large towns are higher than those from very near rural districts. These factors will obviously have to be taken into account in organizing the mental health service in Mysore State (Hoenig *et al.*, 1956). It is perhaps surprising that certain other social factors did not seem to affect the admission rates. Notable are overcrowding, population-density and size of township, provided it was below the size of the very large cities. It must be remembered that the admission figures are relatively small at present and these factors may come to play a part in the future.

Sex and marital status certainly correlate with admission rates. In the case of sex the probability is that the male breadwinner is brought for treatment more readily than the female, and also that home nursing of an acutely disturbed male patient may be more difficult than a female one. In the case of marital status the causal connection is less clear. Married persons show a higher admission rate than single or widowed persons. The negative finding amongst widows is very surprising here, considering their distressing social status. It is possible that because of their social position abnormal behaviour is more readily accepted by the community and treatment not sought so regularly. There is no evidence that very early childbearing is a contributory factor in admission rates. Single persons, particularly men, show a higher admission rate than single women, particularly in the younger age groups. The significance of this is impossible to assess reliably without further investigations.

As regards age there are certain very interesting correlations, particularly the high incidence amongst the younger age groups. Another point of interest is the second peak amongst the married persons in the higher age brackets. It was pointed out however how precarious a piece of information age is, amongst the patients as well as in the general population. Conclusions here must therefore remain very tentative indeed.

A most interesting finding is that caste or religious community shows correlation with admission rates, with Brahmins, Vyshias and Indian Christians showing a much higher rate than the others. Various possible explanations must be considered. Most communities are in-breeding often in a genetically highly significant degree, i.e. by uncle-niece, or first cousin marriages. It may well be that this increases the incidence of mental illness in certain communities where the stock predisposes to this. It is however possible that the above communities are more numerous in the large towns, or more aware of the hospital services, modern medicine, etc. and may therefore use them more.

https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press

These communities are the most literate ones and this finding would lend support to such a theory. The finding would suggest further possible lines of research. Here again conclusions must be very guarded in view of the limited amount of available information.


## Summary

The admission figures of the Mental Hospital in Bangalore, Mysore State, are presented and analysed according to certain social, geographical and cultural factors. These are correlated with the general population of Mysore State.

Admission to the mental hospital is higher:

1. In large cities, than in smaller towns or rural communities.
2. In districts situated nearer to the hospital, than in those further away.
3. Amongst men, than amongst women.
4. Amongst married, than amongst single or widowed persons.
5. Amongst the younger age groups, than amongst the older ones.
6. Amongst certain communities, notably the Brahmins, Vyshias and Indian Christians.

The difficulties of assessing the possible significance of these findings are discussed.



## Acknowledgments

Our thanks are due to Professor M. V. Govinda Swamy, Director of the All India Institute of Mental Health, for his invaluable help and to W.H.O. for permission to publish this report. We also wish to thank Shri Gopinath and also Male Nurse Shri Ramaya for their most valuable assistance.


## References


ANDERSON, E. W., HAMILTON, M. W., and KENNA, J. C., "Psychiatric, social and psychological aspects of illegitimate pregnancy in girls under 16 years", *Psychiatria et Neurologia, Basel*, 1957, **133**, 207–220.

Annual Report of the Board of Control to the Lord Chancellor for 1956. London: H.M.S.O.

CARSE, J., PANTON, N., and WATT, A., "A district mental health service", *Lancet*, 1958, *i*, 39–40.

Census of India, 1941. Vol. XXIII. Bangalore.

Census of India, 1951. Vol. XIV. Mysore.

FAIRFIELD, L., "Mothers under sixteen", *Lancet*, 1940, *ii*, 61–63.

HARE, E. H., "Mental illness and social conditions in Bristol", *J. Ment. Sci.*, 1956, **102**, 429, 752.

HOENIG, J., and SREENIVASAN, UMA, *The Future of Mental Health Services in Mysore State*. In print.

HUTTON, J., *Caste in India*, 1951. Oxford University Press.

LEMERT, E., *Social Pathology*, 1951. New York: McGraw-Hill.

MODI, J. P., *A Textbook of Medical Jurisprudence and Toxicology*, 1952. Bombay.

The Registrar General's Statistical Review of England and Wales for 1952–53. London: H.M.S.O.

Royal Commission on Law Relating to Mental Illness and Mental Deficiency. Minutes of Evidence. I. App. Cp. 34, 1954. H.M.S.O.

SHEPHERD, M., "A study of the major psychoses in an English County", 1958. London: Maudsley Monograph.

WOODRUFF, GERTRUDE, "Health organization in a Pariah community", 1956. Read at All India Institute of Mental Health. Not printed.


https://doi.org/10.1192/bjp.105.438.124 Published online by Cambridge University Press