Occupational health services in manufacturing industries in Nigeria

E. C. Isah,* M. C. Asuzu† and O. H. Okojie*
*Department of Community Health, University of Benin, Benin City, Nigeria and †Department of Preventive and Social Medicine, University of Ibadan, Ibadan, Nigeria

The provision of adequate health care facilities to cater for the health of workers is an important consideration in the management of manufacturing industries, since productivity is dependent on the health status of the workers. There are very few studies evaluating the health care provision in Nigerian industries. This study elucidates such health care services in Edo and Delta States of Nigeria. One hundred and thirty-five (56%) of the 241 registered manufacturing industries in Edo and Delta States of Nigeria were randomly selected and investigated. The response rate was 91.1% and the result showed that the medical staff comprised 2.5% of the total workforce, with the large scale industries contributing the highest proportion of these. Four point five per cent of the medical staff had formal training in occupational health and 15.6% of them visited the factory shop floor. The doctor:staff ratio in the medium and large scale industries were 1:819 and 1:618 respectively. It was found that all the industries used the health care facilities provided by the government, there were no clinics in all the small scale industries and group practice was not used by any of the industries studied. Pre-employment medical examinations were carried out in each of the groups of industries (100%, 39.4% and 5%) respectively, as were periodic medical examinations during employment, although to a lesser extent (100%, 13.2%, 0%) for the large, medium and small scale industries respectively. These finding suggest the availability of a reasonable standard of health care provision for large scale industries and somewhat less availability for medium and small scale industries. Health education of both the employers of labour, and the employees and the enforcement of existing laws are needed to improve the existing standard of occupational health services.

Key words: Health services; Nigeria; occupational.

INTRODUCTION

In the field of occupational health, in developed countries, there has been a gradual progression from first aid to well established health services through the treatment of work injuries and diseases with the curative, the preventive and the practical primary health care approach.1 In some countries, group practices or consortia of clinics have sometimes provided the much needed medicare in industries.2,3

In developing countries, not much progress has been made in these directions as there are few functional occupational health services in work places and services provided tend to be that of general practice. The difficulties involved in providing occupational health care in these countries are further compounded by the fact that many people still live in a vicious cycle of ignorance, poverty and disease. The major health problems are those of malnutrition and a wide range of endemic, parasitic and communicable diseases. Health services are therefore concentrated on these predominant health problems.4

The general doctor:population ratio remains at 1:10,2925 and doctors tend to conglomerate in urban government hospitals and private clinics. This mal-distribution also applies to other supporting health care providers. The profile of these health services in the manufacturing industries is still unclear in Nigeria.
This study is designed to further elucidate the health services in these industries using two Nigeria states.

MATERIALS AND METHODS

The study was carried out in major urban cities in Edo and Delta States of Nigeria, where 95% of the registered manufacturing industries are located. The industries which were identified from an industrial directory compiled by the Ministry of Commerce and Industry were already categorized according to labour size into small, medium and large scale with staff strengths of 1-50, 51-1,000 and 1,000+ respectively.

As only five large industries were listed, all of these were included in the study while a 50% sample of each of the small and medium size industries were chosen by a simple random sampling method. A semi-structured questionnaire was completed for each industry, and all the selected industries were personally visited to assess the medical facilities present, using an observational check-list.

Information gathered with the questionnaire included the name, address and size of industry; the labour strength and personnel disposition; the use of part-time private practitioners and the use of established government and mission hospitals. Information was also gathered on the health service facilities on site including first aid boxes, clinics, surgical theatres, x-ray facilities, laboratories, pharmacies/dispensaries and treatment rooms. Records of cases seen as well as the types of medical examinations carried out and the job description of the health personnel were also sought.

RESULTS

One hundred and thirty-five of the 241 manufacturing industries listed were approached but only those who responded (123) were available for study. Twelve industries (8.9%) did not respond for various reasons which included bureaucratic process, company policy of not allowing such research, fear of prosecution and outright aggression. Also some industries were not in production at the time of the study and so could not be included.

Table 1 shows the labour strength and the medical personnel in the industries surveyed. The medical staff comprised 2.5% of the entire work force, with a high proportion located in the large scale industries. No doctors were employed by the small scale industries. Of the 622 medical personnel, only 26 (4.2%) had formal training in occupational health while 97 (15.6%) paid regular visits to the factory shop floor as part of their occupational health work. The doctor:staff ratio in the medium and large scale industries were 1:819 and 1:618 respectively.

Table 2 shows the types of health service in the industries. None of the industries participated in group occupational health practice, none of the small scale industries had their individual clinics nor an equipped first aid box and none of the large scale industries used the services of part-time private practitioners. However, all of the industries used the services of established government hospitals. Medical cases constituted 50.1% of all of the cases seen in the clinics with occupationally-related cases and injuries accounting for 4.3% (Table 3).

Table 4 shows the types of medical examinations carried out in the industries. Pre-employment and periodic medical examinations were routinely carried out in all the large scale industries, while only 39.4% of the medium scale and 5% of the small scale industries carried out pre-employment medical examinations. Thirteen point two per cent of the medium scale and none of the small industries carried out periodic medical examinations. None of the industries studied had any form of special medical examination such as post-illness or pre-retirement periods.

Table 1. Labour strength and medical staff in the different industries (percentages in brackets)

<table>
<thead>
<tr>
<th>Category of industry</th>
<th>Total labour strength</th>
<th>Medical staff strength*</th>
<th>Para-medical staff</th>
<th>Medical doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Small scale (n = 80)</td>
<td>1,749</td>
<td>(7.2)</td>
<td>15 (0.9)</td>
<td>15 (0.9)</td>
</tr>
<tr>
<td>Medium scale (n = 38)</td>
<td>11,463</td>
<td>(47.1)</td>
<td>128 (1.1)</td>
<td>114 (1.0)</td>
</tr>
<tr>
<td>Large scale (n = 5)</td>
<td>11,119</td>
<td>(45.7)</td>
<td>479 (4.3)</td>
<td>46 (4.1)</td>
</tr>
<tr>
<td>Total (n = 123)</td>
<td>24,331</td>
<td>(100.0)</td>
<td>622 (2.5)</td>
<td>590 (2.4)</td>
</tr>
</tbody>
</table>

* Including medical doctors, nurses, hygienists, first aiders, laboratory technicians and auxiliary nurses.

Table 2. Percentage distribution of the types of health services in the different industries

<table>
<thead>
<tr>
<th>Category of industry</th>
<th>Individual practice</th>
<th>Group practice</th>
<th>Use of part-time private practitioner</th>
<th>Use of government hospital</th>
<th>Presence of equipped first aid box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small scale (n = 80)</td>
<td>0</td>
<td>0</td>
<td>6.3</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Medium scale (n = 38)</td>
<td>31.6</td>
<td>0</td>
<td>42.1</td>
<td>100</td>
<td>13</td>
</tr>
<tr>
<td>Large scale (n = 5)</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
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resources like Nigeria. In government hospitals, while
financial commitment for running these clinics cannot
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DISCUSSION
This study highlights the poor provision of health care
facilities for a substantial segment of the manufactur-
ing industries.

As expected, the proportion of the medical staff was
small (2.5%), with the doctor:staff ratio of 1:819 and
1:618 in the medium and large scale industries respec-
tively. This gives a relatively favourable doctor:staff
ratio when compared to the national ratio of 1:10,292.\(^4\)
However, when considered in the context of services
extended to the families of staff, this might be less
favourable considering the national average family size
of six to seven children per woman at the end of her
reproductive life.\(^5\) This still constitutes a significant
work load considering that the work of the doctor in
the industry goes beyond routine medical examination
and general practice.

The observation that only 15.6% of the medical staff
visit the factory shop floor suggests that most of them
are inundated with patient care in the clinics and are
probably not aware of all the work-related factors
which may affect health. This is not an efficient use
of the doctors' time in the industry. Again, that only
4.2% of the medical staff have formal training in the
field of occupational health, necessitates an urgent
review of the man-power development programme in
this field.

The number of staff (average 22 per industry) in
the small scale industries perhaps would not have
warranted the establishment of on-site clinics as the
financial commitment for running these clinics cannot
be justified in a developing country with limited health
resources like Nigeria. In government hospitals, while
the consultation time has been put at 6.3 minutes,\(^7\)
the waiting time ranges in hours. The use of these
hospitals therefore causes delays and unnecessary
waste of time leading to loss of man-hours and
decreased productivity. Group occupational health
practice is thus advocated and should be encouraged
especially in the small and medium scale industries
who depend mostly on these government hospitals.

Fifty per cent of the cases seen in the health facilities
were due to medically-related disorders while only
4.3% were due to occupationally-related disorders.
This is in contrast with the figure of 23% obtained in
an earlier study in Nigeria\(^8\) for occupationally-related
ailments. The lack of awareness of ergonomically-
related illnesses, especially the musculoskeletal aches
and pains might have accounted for the misclassifica-
tion of the occupationally-related ailments as medical,
thus giving an impression of a high proportion of
medically-related illnesses. Another reason might be
due to the fact that health services concentrate on the
priority areas of endemic and parasitic medical disease.
The extension of medical services to families of
members of staff accounted for the paediatrics and
the obstetrics/gynaecological cases.

It is an encouraging trend that the large scale indus-
tries carried out pre-employment and periodic medical
examinations routinely. These aid early detection and
prompt treatment of both occupationally and non-
occupationally-related illnesses. The poor facilities in
the small and medium scale industries would have
accounted for their inability to carry out these exami-
nations. There is a need for special medical
examinations such as post-illness and pre-retirement
examinations as these will help in appropriate assess-
ment and payment of workers' compensation where
necessary as well as adequate plans and pension
schemes for retiring workers. There is also need for
enforcement of the existing industrial (occupational)

Table 3. Cases seen in the health facilities in a year (percentages in brackets)

<table>
<thead>
<tr>
<th>Category of industry</th>
<th>Occupationaly-related(^1)</th>
<th>Medical</th>
<th>Surgical</th>
<th>Paediatrics</th>
<th>Obstetrics/ Gynaecology</th>
<th>Referrals(^1)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small scale (n = 80)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Medium scale (n = 38)</td>
<td>50 (33.3)</td>
<td>966 (63.9)</td>
<td>4 (0.3)</td>
<td>287 (19.0)</td>
<td>0 (0.0)</td>
<td>205 (13.5)</td>
<td>1,512 (2.5)</td>
</tr>
<tr>
<td>Large scale (n = 5)</td>
<td>2,513 (4.3)</td>
<td>28,975 (48.8)</td>
<td>2,041 (3.5)</td>
<td>18,343 (31.5)</td>
<td>5,781 (9.9)</td>
<td>2,390 (4.1)</td>
<td>58,206 (97.5)</td>
</tr>
<tr>
<td>Total (n = 123)</td>
<td>2,563 (4.3)</td>
<td>29,941 (50.1)</td>
<td>2,083 (0.3)</td>
<td>18,630 (31.2)</td>
<td>5,781 (9.7)</td>
<td>2,595 (4.3)</td>
<td>58,718 (100.0)</td>
</tr>
</tbody>
</table>

\(^1\) Illnesses and injuries acquired in the course of working in the industry.

\(^1\) Referrals to secondary government hospitals and to tertiary university teaching hospital.

Table 4. Types of medical examinations carried out in the industries (percentages in brackets)

<table>
<thead>
<tr>
<th>Category of industry</th>
<th>Pre-employment</th>
<th>Periodic(^1)</th>
<th>Special(^1)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small scale (n = 80)</td>
<td>4 (5.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>4 (3.2)</td>
</tr>
<tr>
<td>Medium scale (n = 38)</td>
<td>15 (39.4)</td>
<td>5 (13.2)</td>
<td>0 (0.0)</td>
<td>20 (16.3)</td>
</tr>
<tr>
<td>Large scale (n = 5)</td>
<td>5 (100.0)</td>
<td>5 (100.0)</td>
<td>0 (0.0)</td>
<td>10 (8.1)</td>
</tr>
<tr>
<td>Total (n = 123)</td>
<td>24 (19.5)</td>
<td>10 (8.1)</td>
<td>0 (0.0)</td>
<td>34 (27.6)</td>
</tr>
</tbody>
</table>

\(^1\) Routine surveillance examinations at specific intervals.

\(^1\) Post-sickness or pre-retirement medical examinations.
health legislation to further improve existing standards.

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REFERENCES