

## PILOT DATA – WHAT DID IT TELL?

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**ABSTRACT:** A pilot study on 250 foreign workers was undertaken during a 7 month period beginning December 1996. The study subjects were mainly males (88.8%). They were selected using non-probability sampling from two sources, that is, from University of Malaya Medical Centre (72.8%) and the PEREMBA group (27.2%).

The study was clinic-based. Face-to-face interviews (using a structured questionnaires) were carried out to obtain socio-demographic, environmental, health and morbidity data. Physical examinations were also performed on the same day of the interview. Subjects were also required to give their stools, venous blood, and urine specimens for microbiological, parasitological and clinical laboratory investigations. Chest X-Ray was done on all subjects.

The other investigators had already reported findings on the various specific areas of their study. In this part of the report attempt was made to relate the infectious diseases to some of the socio-demographic, and environmental variables on the 112 Indonesians and 133 Bangladeshi workers. Some aspects of health seeking behavior of these foreign workers were also presented.

Most of the Indonesian workers (84%) were from East Java, Jambi in the Sumatra, while majority of the Bangladeshis (67.7%) were from two neighboring administrative districts of Dhaka and Chittagong. The majority of the Indonesians (50.0%) were working in the service industry, while 53.5% Bangladeshis were in the manufacturing. One-fifth of the workers lived in squatter areas, and nearly half of them were working in the service industry.

About 70% of the workers had at least one infection. The proportion was slightly higher among the Indonesians (72.3%) compared to the Bangladeshis (67.7%). It is of interest to point out that 40% had multiple infections. Thirteen had five or more infections (details for the two of the thirteen cases are presented as case studies). However, the findings did not indicate any association between sanitation and infections. The Indonesian workers carried a higher risk of transmitting the diseases (33.9%) compared to 19.5% among the Bangladeshi workers. Those working in the construction industry were at a higher risk of transmitting the diseases compared to other industries.

Slightly more than half of the workers experienced some form of minor illness or injury during the two-week period preceding the interview. Majority sought private care (43.1%), while 42.3% either self-medicate or did nothing at all. Nearly two-thirds paid out of their own pocket. Among the employers, those in the construction sector made negligible contribution (2.9%) to the payment. It is interesting to find that 41.0% of the workers took some form of health supplements, and the majority (48.4%) got it from the pharmacy or traditional sources. Nearly all (88.5%) paid on their own for their health supplements.

The findings from this pilot project need to be interpreted with some caution. However, it appears that the foreign workers do have a considerable amount of health problems. If these are not addressed quickly it may endanger the health of the nation, while we readily acknowledge their contribution towards our national development.

## REVIEW OF QUESTIONNAIRES: THE SOCIO-DEMOGRAPHY AND GEOGRAPHICAL ASPECTS

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**ABSTRACT:** A review of the questionnaire was carried out basically to assess the relevance of the questions to the objectives of the study. It was also done to identify weakness of the questionnaires particularly in terms of the wording in order to make them as clear as possible to the respondents and to minimize ambiguity and thus the problems of getting the questions across to the respondents. Based on the review, a new set of questionnaire would be proposed.

The review thus focuses on two major aspects namely the structure and the content of the questionnaire. From the structural aspects, each question was reviewed in terms of the language, - wording, sequencing

and continuity between one another. Basically, not much problem have been identified except in certain cases of ambiguity largely due to language and words used and some cases lack of continuity due to improper sequencing of the questions. In terms of the content, for each question, the purpose of asking, and what is expected of the questions was thoroughly examined and then the relevance assessed. Based on the analysis, three groups of questions were identified i. e., the irrelevant questions, the partially relevant and most important non-existence of many relevant questions. It is recommended that the irrelevant questions be omitted, those partially relevant to be modified and new questions added.

## A PILOT STUDY OF FOREIGN WORKERS HEALTH : SOCIOLOGICAL ASPECTS

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**ABSTRACT:** The majority of migrant workers studied in this pilot survey were Muslim males from Bangladesh. The mean age was 30 years and the majority were in the age group between 21 – 30 years. Although almost half of them had 7 – 13 years of schooling, (equivalent to secondary education), the majority were working in the service industry, predominantly in the cleaning services. It is noted that this employment trend varied from the national situation, whereby the majority of legal migrant workers (Indonesian and Thai) are found in the agricultural sector.

More than two thirds of the migrant workers were provided with various forms of housing by the employer. However, it is not known if such accommodation was adequate or not, as there were no questions about housing structures and extent of overcrowding. The majority of them stated that they had better amenities, such as piped drinking water and sanitary toilets, here in Malaysia compared to those in their home countries. Yet, the real extent and interpretation of better sanitation is difficult to assess since verification of such amenities could not be done.

From their self-reports, it appears that the majority did not engage in risk behaviours, such as smoking, alcohol and drug abuse. It is pertinent, however to include other risk behaviours in the study, particularly the area of sexual behaviour.

In the pilot study 28 female Indonesian migrant were interviewed workers. More than two thirds of them were married. Although none of the married women reported that they were pregnant at the time of the survey, more than two thirds of them had between 1 – 3 children while in Malaysia. The age range of these children is an important indicator of the need for preventive health care. Thus it is proposed that age range of the accompanying children and their immunisation status be included in the questionnaire. Less than half of them were currently practising family planning, and more than two thirds were using modern methods, such as pill, Norplant and IUD. It is recommended that in addition to pregnancy and family planning information, the study should also collected data on gynaecological health and their health seeking behaviour for these problems.

## CLINICAL FINDINGS IN MIGRANT WORKERS – A PILOT STUDY

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**ABSTRACT:** This section only examines the clinical findings and some blood chemistry female foreign workers. A total of 222 males and 28 females were studied. Their ages ranged from 12 to 57 years, the mean being 30.1 ( $\pm$  7.4). Generally, the findings at most of the physical examinations were normal and no external features of infectious diseases were seen.

The mean systolic and diastolic blood pressure were 120 ( $\pm$  13) and 76 ( $\pm$  8.7) mm Hg respectively. About 8.4% of the population had elevated blood pressure of 140/90 mm Hg or greater.

About 12.4% of these men and women were underweight with body mass index (BMI) less than 19 kg/m<sup>2</sup> while 11.2% were either overweight or obese (BMI > 25) with the mean being 21.8 ( $\pm$  2.7) kg/m<sup>2</sup>. Only 3 had BMI greater than 30 kg/m<sup>2</sup>.

Three subjects had mitral regurgitation murmur thought to be due to mitral valve prolapse. Four others had *Tinea cruris*, 6 had insignificant axillary lymph-nodes, 5 had enlarged cervical-nodes of which one was due to carcinoma of the tonsils. Thirty had shotty inguinal lymph-nodes which was thought to be of no pathological significance. Four subjects had crepitations in their lungs while five had bronchi in their lungs.

A full blood count revealed that 16.7% of the men and 32.1% of the women had haemoglobin levels of less than 14gm/dl and 12 gm/dl respectively. The most striking abnormality was the high prevalence of eosinophilia; 3.7% of the subjects had eosinophilia counts of greater than 450/dl.

About 19.4% of this study population had fasting serum glucose of greater than 6mmol/L but only 1.3% had fast-

ing serum glucose of greater than 7.8mmol/L. About 22% of the urine examined revealed proteinuria but were otherwise unremarkable for other parameters.

This group of foreign workers was made up of presumably fairly healthy young population. Physical examination did not reveal any remarkable findings. It could be that the majority of these subjects already had an examination prior to coming into the country and another one soon after their arrival. However, an indirect measurement of infectious diseases via the eosinophilic count revealed a high prevalence of parasitic infestations. Attempts to examine the end results of social hardship, be it intrinsic before or appearing after arrival indirectly showed some degree of suffering. There was a fairly high prevalence of anemia, especially amongst the women. The BMI also revealed this population to be generally less obese than other populations.

The value of medical check-up has been debated, especially if it was done as a pre-employment procedure. This pilot study has shown that it is not cost-effective to do physical examination or blood chemistry and urine analysis in trying to identify infectious diseases the migrant workers.

In light of the paucity of clinical findings in this pilot study, it would be prudent to review the strategy of examining the health status of migrant workers. Perhaps the physical examination can be dispensed with, and blood and urine analysis be very focused and directed in order to maximise the cost-effectiveness of this programme. Certainly the high prevalence of eosinophilia needs further evaluation.

## FAECAL PATHOGENS IN FOREIGN WORKERS

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**ABSTRACT:** One hundred seventy three stool samples were obtained from workers from Bangladesh, Indonesia, Myanmar, Pakistan and other countries. The stool samples were examined for eggs of *Ascaris*, *Trichuris*, hookworm, trematodes and cestodes. The protozoan parasites included *Balantidium coli*, *Blastocystis hominis*, *Cyclospora*, *Cryptosporidium*, *Microsporidium*, *Entamoeba histolytica*, *Giardia lamblia*, *Iodamoeba butschlii*.

The percentage of population studied found to be infected with hookworm, *Trichuris trichiura* and *Ascaris lumbricoides* was found to be 21.9%, 17% and 1% respectively. There was only one Indonesian reported to have *Hymenolepis nana* infection. The most common protozoan seen in the faecal samples is *Blastocystis hominis* (36%) followed by *Giardia lamblia* (4%). Most of the stools positive with these faecal pathogens were semi-solid especially the ones positive for the protozoa. We observed that *Blastocystis* in the stools of the Indonesian workers show very small forms almost 3 –

5 µm in size compared to the normal size of 10 – 15 µm in the other nationalities. These forms show a distinct growth profile in cultures and appears to be more resistant to temperature changes than *Blastocystis* seen in the other two nationalities. The high incidence of hookworm and *Trichuris* infections is suggestive that if these workers are left untreated their productivity will be hampered by other possible serious complications such as anaemia, weight loss, abdominal pain, diarrhoea and nausea. There are increasing reports that *Blastocystis hominis* is pathogenic. Flatulence, stomach discomfort and increased frequency of passing watery stool has been noted in patients infected with the parasite.

Since most of the workers are generally housed in crowded rooms, it is highly likely that this will facilitate transmission of *Giardia* and *Blastocystis* through the oral-faecal route thereby increasing the incidence of these infection among these migrant workers.

## A CASE REPORT OF VISCERAL LEISHMANIASIS IN A FOREIGN WORKER

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**ABSTRACT:** This is a report of a case of visceral leishmaniasis (Kala-azar) in a 28 year old Bangladesh migrant worker. The patient had migrated to Malaysia 9 months prior to admission to University Malaya Medical Centre (UMMC). He was employed in a glove factory. His illness began one week prior to presentation with high swinging fever, chest pain and substantial weight loss. On examination, he was found to be cachexic, with cervical and inguinal lymphadenopathy and massive hepatosplenomegaly.

Investigation revealed a pancytopenia with a Hb of 9.9 g/L, WBC  $3.10 \times 10^9$  /L and a platelet count of  $29 \times 10^9$  /L. Liver function test revealed an elevated alkaline phosphatase 380 I.U/L and transaminases AST 169 I.U/L and

ALT 95 I.U/L. The serum albumin was 19g/L. Blood for malaria parasite was negative.

A bone marrow examination was performed to look for LD (*Leishman-Donovan*) bodies and to exclude haematological malignancies. The bone marrow examination revealed multiple LD bodies. Serology for leishmaniasis was strongly positive.

The patient was treated with Amphotericin B to a total dose of 0.6 g. There was resolution of his fever and a reduction in the size of the liver and spleen at the end of therapy on recovery.

The patient regained his weight steadily.

## PARASITIC INFECTION IN FOREIGN WORKERS : SEROLOGICAL FINDINGS

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**ABSTRACT:** The serology result of parasitic infections of 260 foreign workers who were seen at the University of Malaya Medical Center, during 7 months period is reported here. The 260 foreign workers comprised 114 Indonesians, 142 Bangladeshis, 2 Myanmar and 2 Pakistanis.

Blood samples were taken from these workers and eight tests (amoebiasis, echinococcosis, filariasis, leishmaniasis, malaria, schistosomiasis, toxoplasmosis and trypanosomiasis) were performed on serum separated from the blood. Among the 250 sera tested, 92 (36.8%) were found to be positive for at least one parasitic infection.

From this preliminary study, it is obvious that hepatitis B is the most important problem among the workers from Indonesia and Bangladesh. The next important problem is venereal disease and enteric bacteria among Bangladesh workers. The other three national groups are too small to be analyzed.

It is interesting to note that although these workers are supposed to have been screened for venereal diseases, a number of them were still found to be positive. However, we have no information whether the venereal diseases were acquired in the migrant workers' home country or locally. There was only one case of HIV detected but if the foreign workers continue

**Table 1.** Number of Tests Performed

Country of foreign workers examined	No.	RPR/TPHA	HIV	HB	Salmonella	Shigella	Vibrio
Indonesia	103	92	102	102	53	53	53
Bangladesh	133	133	131	131	115	115	115
Myanmar	1	1	1	1	1	1	1
Pakistan	3	3	3	3	3	3	3
Others	1	1	1	1	1	1	1
Total	241	230	238	238	173	173	173

**Table 2.** Number of Positive Samples (%)

Country	RPR / TPHA	HIV	HB	Salmonella	Shigella	Vibrio
Indonesia	1/92 (1.09)	1/102 (0.98)	10/102 (9.80)	1/53 (1.69)	0/53 (0)	0/53 (0)
Bangladesh	1/133(3.01)	0 / 131(0)	13/131(9.82)	4/115 (3.48)	0/115 (0)	0/115 (0)
Myanmar	0/1(0)	0/1(0)	0/1(0)	0/1(0)	0/1(0)	0/1(0)
Pakistan	0/3 (0)	0 / 3 (0)	0 / 3 (0)	0/3 (0)	1/3 (3.33)	0/3 (0)
Others	0/1 (0)	0/1 (0)	0/1 (0)	0/1 (0)	0/1 (0)	0/1 (0)
Total	5/230 (2.18)	1/238 (0.42)	23/238 (9.66)	5/173 (2.89)	1/173 (0.58)	0/173 (0)

There was one case where the serum was found positive for 5 tests. The most common antibody detected in those positive sera was antibody for toxoplasmosis (80%), followed by filariasis (32.8%) and amoebiasis (30%). Other tests showed low percentage of infection with schistosomiasis, (10%); echinococcosis, (6%) and malaria, (3.6%). None of the foreign workers were found positive for leishmaniasis and trypanosomiasis.

As for the enteric bacterial pathogens, only 6 out of 173 stool samples tested were positive; 5 for *Salmonella* spp. and 1 for *Shigella* sp. Of the five positive for *Salmonella*, one was from an Indonesia worker and four from Bangladesh. The single isolate of *Shigella* was from the stool of a Pakistani worker.

with their promiscuous lifestyle, they are likely to pick up other sexually transmitted diseases including HIV and chlamydial infections. For those who were found to have their stools positive for enteric pathogens, it is important to determine whether they are food-handlers, as they will prove a significant risk for the spread of food borne infections.

Originally, it was intended to test blood samples for Hepatitis C and E markers since the prevalence of these problems in foreign countries from which the workers come are higher. However, due to inadequate blood samples, this had to be deferred. In view of the fact that hepatitis carriage rate is the highest for the microbes tested, it is important to include these two markers in future studies.

## FOREIGN WORKERS STUDY : BLOOD PARASITES

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**ABSTRACT:** Lymphatic filariasis is endemic in Asia. It persists as a major cause of clinical morbidity and significantly impedes socioeconomic development. Its prevalence is increasing worldwide, largely because of rapid unplanned urbanization in many endemic areas. Globally, it is estimated that at least 120 million people are affected.

In our study on foreign workers, a total of 241 day time blood samples were collected. The countries represented were Bangladesh (134), Indonesia (103), Pakistan (3) and Myanmar (1). The tests conducted on blood samples were thick blood film for microfilaria and thin blood film for malaria, quantification of eosinophilia was made possible using the Giemsa stain.

Two hundred and forty-one blood samples were tested. The blood sample from one Bangladeshi tested positive for *Wuchereria bancrofti* and from an Indonesian was positive for malaria (*Plasmodium falciparum*). As

for blood eosinophils, 39 (16.2%) blood samples showed high eosinophilia. Fifteen (6.2%) were from Bangladesh and 24 (10%) were from Indonesia. The Bangladeshi male who was positive for *Wuchereria bancrofti* also showed eosinophilia of 22%. We believe that some of these cases with high eosinophilia, may be positive for microfilaria. We may have missed some cases because of the methodology we chose.

Lymphatic filariasis is endemic in Bangladesh and Indonesia. In the urban areas of Malaysia, *W. bancrofti*, have been eliminated. However, the vectors involved in transmission of *W. bancrofti* are still found in the cities. With the influx of the immigrants, there may be some who may be harbouring the parasite. In addition, the foreign workers are a highly mobile group. These factors favour the re-introduction of *W. bancrofti* into the community and may eventually change the scenario of the disease pattern in Malaysia.

## THE CHEST RADIOGRAPHIC CHANGES IN AN IMMIGRANT POPULATION – A PILOT STUDY

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**ABSTRACT:** With the increasing ease of travel and the passage of peoples between countries there is a need to ensure that the recipient country is not burdened by the need to provide care for immigrants with health problems and the increased risks posed to the local population resulting from exposure to communicable diseases. To assess the chest radiographs of a selected group of immigrants to ascertain the presence of abnormalities and especially to detect the presence of tuberculosis.

A total of 250 immigrants were prospectively evaluated by a PA chest radiograph. The chest radiograph was evaluated by two radiologists for the presence of abnormalities of the heart, lung, mediastinum and bony rib cage. There were 112 Indonesians, 133 Bangladeshis, one Burmese, three Pakistanis and one others. Males made up 222 while there were 28 females.

The chest radiograph was diagnostic in all cases. There were 13 cases with enlarged hearts but with no evidence of heart failure. There was only a single immigrant who had evidence of active TB though there were 6 others who had evidence of old disease. There was

evidence of other infections in 5. With regard to the mediastinum there was a single case with enlarged hila probably secondary to increased cardiac output. There were 21 patients with scoliosis of the spine and two with abnormalities of the ribs. Even though there was a single case with evidence of TB from this pilot study, from unreported data from the UMMC, there were 15, 16 and 23 immigrants treated for TB for 1994, 1995 and 1996 respectively. This was mainly seen in the Indonesians followed by the Bangladeshis and Burmese.

We attribute this discrepancy to the biased samples in this study where probably only the healthy were seen while those who were not well did not want to participate in this study. In addition, this may also be due to the small sample used in this study. We feel that screening of the immigrants out in the field may be able to detect cases of active TB. As for the large hearts, we feel that in the absence of any cardiac symptoms and other radiological changes these are probably due to the increased workload on the heart from physical activities. This is a recognized presentation. The changes in the mediastinum and bony rib cage are probably not very significant.