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A Study on Morbidity Pattern of Migrant Sand Workers in a River Of Mangalore, Karnataka, India.

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ABSTRACT

Sand has become a very important mineral for the expansion of society. Sand mining refers to the process of removing sand from a place of its occurrence. The present study is carried out with the objectives to study the morbidity pattern of migrant sand workers in a river of Mangalore. This community based cross-sectional study was conducted in Gurupura river, Kulur, Mangalore, Dakshina Kannada district by interviewing 165 migrant sand workers using a semi structured pre-tested questionnaire. Data was compiled in an Excel worksheet. The Data was analyzed using SPSS software version 16.0. The Mean age of the study population was 32.2 years. Out of 165 subjects 61.81% (102) were in the age group of 21-35 years. Majority of the migrant sand workers were from West Bengal i.e. 27.27%. 31.51% of subjects had at least one morbidity. Majority of people had musculoskeletal disorders followed by occupational dermatitis. 44.23 % had musculoskeletal disorders followed by skin diseases (28.85%). These data gives the insight into health problems of migrant sand workers and also gives information about the type of services we can provide to these workers like preventive measures, curative services and health education on personal protective equipments and personal hygiene.

Keywords: Morbidity; Migrants; Sand workers; Sand Mining

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INTRODUCTION

Sand has become a very important mineral for the expansion of society. Sand is a naturally occurring granular material composed of finely divided rock and mineral particles. Sand mining refers to the process of removing sand from a place of its occurrence [1]. These materials occur in a variety of natural settings and are commonly used in the construction industries worldwide. Sand occur on land, oceans, rivers, streams, flood plains or hills [2]. An increase in demand for sand for construction purposes has placed immense pressure on sand resources. Rivers and their floodplains are an economical source of sand [3]. It can be used for making concrete, filling roads, building sites, brick-making, making glass, sandpapers etc. Health Effects of sand workers include airborne pollutants that can be inhaled, heat stroke, musculoskeletal problems and sexually transmitted infections. Being Migrants have difficult and more complex health problems. Poverty, malnutrition, infectious diseases, poor housing, lack of education and health insurance make them a vulnerable population.

Literature review says very few studies done on sand workers, hence the present study is carried out with the objectives to study the Morbidity pattern of migrant sand workers in a river of Mangalore and to study certain socio demographic characteristics of study population.

MATERIALS AND METHODS

This community based cross-sectional study was conducted in Gurupura river, Kulur, Mangalore, Dakshina Kannada district by interviewing 165 migrant sand workers using a semi structured pre-tested questionnaire. The study duration was from June to September 2012. Relevant data was collected by interview and clinical examination which included general information like age, sex, religion, marital status and migration status etc., followed by symptoms they are currently suffering and clinical examination was done. Data was compiled in an Excel worksheet. The Data was analyzed using SPSS software version 16.0. Descriptive statistics including frequency, percentage and mean were obtained.

RESULTS

Table 1: Sociodemographic characteristics of migrant sand workers

PARAMETER	FREQUENCY	PERCENTAGE
AGE(in years)		
<20	9	5.45
21-35	102	61.81
36-49	42	25.45
50-59	12	7.28
EDUCATION		
Illiterate	90	54.54
Primary School	42	25.45
Middle School	21	12.73
High School	9	5.45
PUC	3	1.82
RELIGION		
Hindu	148	89.69
Muslim	10	6.06
Christian	7	4.24
MARITAL STATUS		
Married	99	60.00
Un married	60	36.37
Widowed/Separated	6	3.63
TOTAL	**165**	**100**

A total of 165 migrant sand workers were studied. All the subjects were males. The Mean age of the study population was 32.2 years. Out of 165 subjects 61.81% (102) were in the age group of 21-35 years followed by 25.45 % (42) in the age group of 36 to 49 years. With respect to education majority 54.54% (90) were illiterates followed by 25.45% were studied up to primary school and 12.73 % (21) were studied up to

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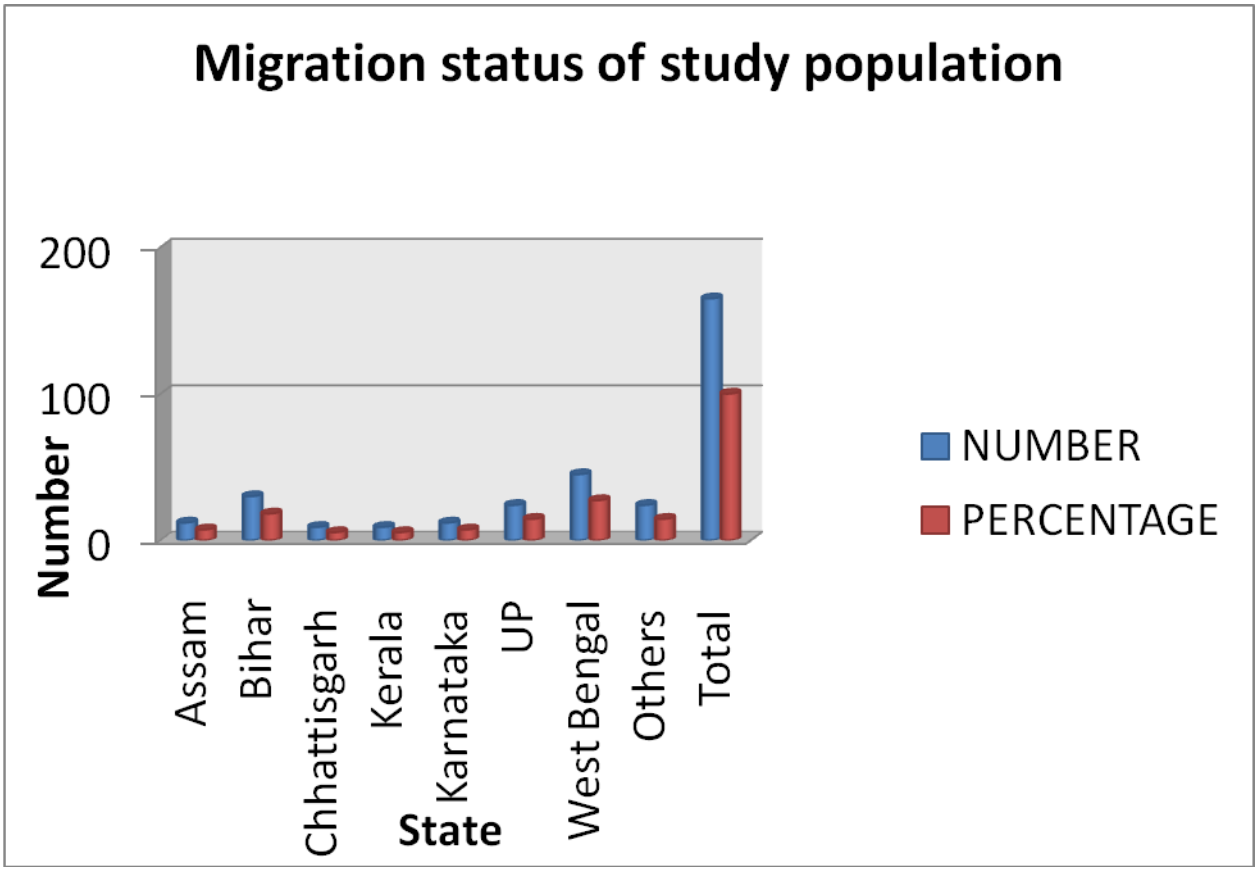
middle school. 89.69% (148) were belonging to Hindu religion whereas only 6.06 % were Muslims and 4.24 % were Christians. Majority (60%) were married and 36.37 % were unmarried. (Table 1)

Majority of the migrant sand workers were from West Bengal i.e. 27.27% (45) followed by Bihar i.e. 18.18% (30) and Uttar Pradesh 14.55% (24) etc .(Table 2)

Table 2: Migration status of study population

STATE	FREQUENCY	PERCENTAGE
Assam	12	7.28
Bihar	30	18.18
Chhattisgarh	09	5.45
Kerala	09	5.45
Karnataka	12	7.28
Uttar Pradesh (UP)	24	14.55
West Bengal	45	27.27
Others	24	14.55
Total	**165**	**100**

Figure 1: Migration status of study population



Out of 165, 31.51% (52) of subjects had at least one morbidity as we can see in table 3. Majority of people had musculoskeletal disorders followed by occupational dermatitis.

Out of 52 subjects 23 i.e., 44.23 % had musculoskeletal disorders followed by skin diseases (28.85%), fever (15.38%), respiratory diseases (11.54%), urethral discharge (9.62%), gastrointestinal disorders (5.77%) and only very few subjects had eye problems and headache. (Table 4)

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Table 3: Morbidity pattern of study population

MORBIDITY	FREQUENCY	PERCENTAGE
Yes	52	31.51
No	113	68.49
Total	**165**	**100**

Table 4: Distribution of study population according to morbidity (N=52)

SYMPTOMS/DISEASES (MORBIDITY)	FREQUENCY	PERCENTAGE
Skin diseases- dermatitis	15	28.85
Musculoskeletal disorders	23	44.23
Urethral discharge/STIs.	5	9.62
GIT disorders- abdominal pain/diarrhoea	3	5.77
Respiratory diseases	6	11.54
Malaria/fever	8	15.38
Others- eye problems ,headache	8	15.38

***16 Subjects had more than 1 symptoms/disease.**

DISCUSSION

With regard to the morbidity pattern, in the present study it was found that musculoskeletal disorders, skin diseases, respiratory diseases, gastrointestinal problems, urethral discharge, fever and impaired vision was found in excess as compared to other morbidities. Assessment of the health status of sand workers has been one of the proposed areas of research priorities in the National programme for control and treatment of occupational diseases [4]. Despite this, it is evident from the review of literature that there are only few studies on the health status of sand workers.

The most reported morbidity was musculoskeletal disorders in this study (44.23%). A number of studies have documented higher musculoskeletal morbidity among other occupations also, such as truck drivers, textile workers, fishermen and workers in outdoor occupations [5-9]. 28.85% of sand workers in the present study as against 4% in Herian J et al. had dermatological problems [10]. Skin diseases were found to be in high proportion in this community because of reasons like walking barefoot, environmental factors and also the personal hygiene of the sand workers. Respiratory diseases were found in 11.54% of subjects which is in concordance with the study done by Gomathy Parasuraman et al [11] in which it was 13.6% and Dr. S. B. Rotti [12] which showed that the respiratory diseases to be 12.4%. Fever was found to be 15.38% of thesand workers, while in the study done by Gomathy Parasuraman et al. [11] it was 3.8%. Lack of mosquito control measures, unhygienic practices, improper environmental sanitation and waste disposal can be attributed as the reasons. Gastrointestinal disorders were reported in 5.77% of the subjects. This was in concordance with the study done by Gomathy Parasuraman et al. [11] and Dr. S. B. Rotti [12]. Eyes of sand workers are continuously exposed to sunlight reflected by the surface of brine and by the crystals lying at the bottom of the pans, causing glare and irritation. This results in ophthalmic complaints including glare, burning of eyes, dimness of vision, watering of eyes. The present study shows a lower prevalence of ocular morbidities. Outdoor occupation has been reported as a risk factor for ophthalmic conditions like cataract, pterygium [13, 14].

The Government of India, through its 'National Policy on Safety, Health and Environment at work place', states that "Government is committed to regulate all economic activities for management of safety and health risks at workplaces and to provide measures so as to ensure safe and healthy working conditions for every working man and woman in the nation" [15]. Further studies are needed to document their health status and methods for prevention of these morbidities.

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CONCLUSION

The morbidity pattern of migrant sand workers shows that further follow-up and awareness among the workers regarding risks of disease patterns is needed. Further studies are required to correlate the morbidity pattern with other sociobehavioral factors. These data gives the insight into health problems of migrant sand workers and also gives information about the type of services we can provide to these workers like preventive measures, curative services and health education on personal protective equipments and personal hygiene etc.

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