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Original Article

Pattern of Diseases among Soldiers Attending Combined Military Hospital Ramu, Coxs Bazar

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Abstract

Background : *The pattern of disease of a community is not always constant. It was observed that every decade produces its own pattern of disease. The pattern of disease depends on the socio-economic factors, as well as historical period, geographical location and other condition. To determine the pattern of disease of soldiers attending at MI room of CMH Ramu.*

Materials and methods: *This descriptive cross-sectional study was conducted at Medical Inspection Room of Combined Military Hospital Ramu, Cox's Bazar from July 2021 to November 2021. A total of 501 sick soldiers were selected through systematic random sampling for the study. Data were collected by face to face interview with structured questionnaire.*

Results: *Mean age of the respondents was 29.32 ± 1.0 years.Mean age of the respondents was 29.32 ± 1.0 years. Majority of the respondents (53.1%) were in the age group of 20-29 years, followed by 37.1% respondents of 30-39 years. Most frequent acute complaints were fever and injury (100.0%), followed by RTI (97.6%) and musculoskeletal pain (95.7%). Most frequent complaints of chronic disease were hypertension and Diabetes mellitus (100.0%), followed by backache (55.6%), skin disease (11.4%) and eye disease (91.7%).The selected disease like fever, RTI, GI complain, skin disease were higher among the respondents living in the barrack (77.3%) than those who were living in family accommodation (22.7%).*

Conclusion: *The findings of this study revealed that most frequent acute complaints was fever and injury (100.0%), followed by RTI (97.6%), musculoskeletal pain (95.7%). Most frequent complaints of chronic disease were Hypertension and Diabetes mellitus, followed by backache (55.6%), Skin disease (11.4%) and eye disease (91.7%). This study will provide a guideline for planning and implementation of intervention program and resource allocation. It will also provide a guideline for further studies.*

Key words: Medical inspection room; Military Hospital; Pattern of sickness.

INTRODUCTION

In spite of many encouraging improvements in the health care system and the growing number of new effective programs, the gap between production and delivery is becoming wide. The pattern of disease in a community is not always constant. It has observed that every decade produces its own pattern of disease. During the past 80 years, the developed world has experienced a dramatic change in the pattern of disease.[1] In developing countries, most deaths result from infectious and parasitic disease, abetted by malnutrition. Diarrheal diseases are widespread. Cholera has shown a declining trend. There is appreciable change in the prevalence of tuberculosis, leprosy, filariasis, viral hepatitis, diarrhea and dysentery and disorders of malnutrition and under nutrition. On the other hand, an increase in the frequency of new health problems such as coronary heart disease, hypertension, cancer,

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diabetes and accidents has been noted. The factors which play a role in the changing patterns of disease are multiple. They include changing life style and living standards, demographic factors, urbanization and industrialization, medical interventions, maintenance of people with transmissible genetic defects and the widespread effects of technology on ecology.[2]

A few studies were being conducted in our country to find out the prevalence of common illness in the community. In a studyconducted in Shushasthya, Dhaka, the most frequent occurring non-communicable disease was found to be Cardiovascular (24%) and peptic ulcer (20%).[3] Despite great advances in medicine the common cold continues to be a great burden on society in terms of human suffering economic losses.[4] Respiratory infection, the most common cause of acute infectious disease in US are also the leading cause of outpatient illness and the major cause of infectious disease hospitalization specially in military personnel.[5] Injury is another leading cause of illness in Bangladesh.[6] Injuries are also reaming as a leading health problem in the military services. Sports and physical training activities are areas in which a substantial number of injuries can occur.[7]

Bangladesh army is an organization having huge work force, working nationally and internationally at different setting. To provide better services throughout the world they had to remain fit in all aspect. For keeping them fit it is of utmost importance to know the common sickness prevailing in the soldiers community. The findings of this study will help in formulate intervention programs applicable in the context of Bangladesh Army and also provide a guideline for further studies in the same arena as well as in other areas.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted in Central Medical Inspection Room of Combined Military Hospital Ramu from July 2021 to November 2021. A total of 501 cases were selected purposively.Everyday about 100 patients were attended at CMI room. Daily 10 patients were interviewed. So the sampling interval was 100÷10=10. Therefore every 10th patient was interviewed. Data were collected with the help of structured questionnaire. Confidentiality was duly ensured to all participants and informed consent was obtained. After collection data were scrutinized, edited and verified for its consistency. Data were processed and analysed by computer software SPSS version 23 and expressed in frequency and percentage. The necessary ethical issue has been considered.

RESULTS

Mean age of the respondents was 29.32 ± 1.0 years. Majority of the respondents (53.1%) were in the age group of 20-29 years, followed by 37.1% respondents of 30-39 years. Male respondents were 94.8% and female were only 5.2%. Most of the respondents (80.0%) were qualified in SSC or equivalent level of education. Majority (50.5%) respondents had their monthly family income Tk 20000-40000, Among the respondents majority(55.1%) were Sainik, 57.6% were married, 76.4% respondent reported once only, 80.4% were non-smoker and 79.0% were living in barrack house. Most frequent acute complaints was fever and injury (100.0%), followed by RTI (97.6%) and musculoskeletal pain (95.7%). Most frequent complaints of chronic disease were hypertension and Diabetes mellitus (100.0%), followed by backache (55.6%), skin disease (11.4%) and eye disease (91.7%).The selected disease like fever, RTI, GI complain, skin disease were higher among the respondents living in the barrack (77.3%) than those who were living in family accommodation (22.7%).

Table I Distribution of respondents by socio-demographic characteristics

Characteristics		Frequency	Percentage (%)
Age Group (In years)	<20	15	3.0
	20-29	266	53.1
	30-39	186	37.1
	>40	34	6.8
	Total	501	100.0
	Mean ± SD = 29.32 ± 1.0 years		
Sex	Male	475	94.8
	Female	26	5.2
Educational status	SSC/Equivalent	401	80.0
	HSC/Equivalent	50	10.0
	Graduation and above	50	10.0
Monthly family income	<20000	198	39.5
	20000-40000	253	50.5
	>40000	50	10.0
Rank	Sainik	276	55.1
	Lance Corporal	62	12.4
	Corporal	91	18.2
	Sergeant	50	10.0
	Warrant Officer	22	4.3
Marital status	Married	289	57.6
	Unmarried	212	42.4
Number of report	Once	383	76.4
	Twice	109	21.8
	Thrice	9	1.8
Personal habit	Smoker	98	19.6
	Non-smoker	403	80.4
Immunization status	COVID-19	501	100.0
	Hepatitis -A	1	0.2
	Hepatitis-B	139	27.7
	Meningitis	45	9.0
Accommodation	Barrack	396	79.0
	Government Quarter	85	17.0
	Personal	20	4.0
Chronic Disease	Present	35	6.9
	Absent	466	93.1
Duration of suffering	1-7	419	83.6
	8-14	21	4.2
	15-30	25	5.0
	>30	36	7.2

Table I shows that Mean age of the respondent was 29±1.0 years. Majority of the respondents (53.1%) were in the age group 20-29 years. Most of the respondents were male (94.8%). Among the respondents maximum (80.0%) were qualified in SSC level of education. More than half (50.5%) of the respondents had their monthly family income Tk 20000-40000, Majority (55.1%) were Sainik and 57.6% were married. Among the respondents 76.4% were reported into MI room once, 80.4% were non-smoker and 100.0% were immunized against COVID-19. Out of 501 respondents 79.0% were living in barrack, 93.1% were suffering from acute disease and 83.6% were suffering for 1-7 days.

Table II Distribution of disease by the pattern of morbidity

Disease	Pattern of morbidity		Total
	Acute	Chronic	
Fever	119 (100.0)	0 (0.0)	119 (100.0)
RTI	80 (97.6)	2 (2.4)	82 (100.0)
GI complaints	60(95.2)	3 (4.7)	63 (100.0)
Injury	53 (100.0)	0 (0.0)	53 (100.0)
Skin disease	39 (88.6)	5(11.4)	44 (100.0)
ENT problems	26 (92.9)	2 (7.1)	28 (100.0)
Backache	12 (44.4)	15 (55.6)	27 (100.0)
Musculoskeletal pain	22 (95.7)	1 (4.3)	23 (100.0)
Eye disease	11 (91.7)	1 (8.3)	12 (100.0)
Hypertension	0	6 (100.0)	6 (100.0)
Diabetes mellitus	0	2 (100.0)	2 (100.0)
Miscellaneous	42 (100.0)	0	42 (100.0)
Total	464 (92.6)	37 (7.4)	501 (100.0)

Table II shows that most frequent acute complaints was fever and injury (100.0%), followed by RTI (97.6%), Musculoskeletal pain (95.7%). Most frequent complaints of chronic disease were Hypertension and Diabetes mellitus, followed by backache (55.6%), Skin disease (11.4%) and eye disease (91.7%).

Table III Distribution of respondents by type of disease and age

Disease	Age in years				Total
	<20	20-29	30-39	≥ 40	
Fever	6 (40.0	72 (27.1)	37 (19.9)	4 (11.8)	119 (23.8)
RTI	2 (13.3)	52 (19.5)	24 (12.9)	4 (11.8)	82 (16.4)
GI complaints	2 (13.3)	26 (9.8)	28 (15.1)	7 (20.6)	63 (12.6)
Injury	1 (6.7)	29 (10.9)	20 (10.8	3 (8.8)	53 (10.6)
Skin disease	0 (0.0)	21 (7.9)	23 (12.4)	0 (0.0)	44 (8.8)
ENT disease	1 (6.7)	13 (4.9)	12 (6.5)	2(5.9)	28 (5.6)
Backache	1 (6.7)	10 (3.8)	10 (5.4)	6 (17.6)	27 (5.4)
Musculoskeletal	1 (6.7)	10 (3.8)	11 (5.9)	1 (2.9)	23 (4.6)
Eye disease	1 (6.7)	4 (1.5)	7 (3.8)	0 (0.0)	12 (2.4)
Hypertension	0 (0.0)	0 (0.0)	2 (1.1)	4 (11.8)	6 (1.2)
Diabetes Mellitus	0 (0.0_	0 (0.0)	0.0	2 (5.9)	2 2 (4.4)
Miscellaneous	0 (0.0)	29 (10.9)	12(6.5)	1 (2.9)	42(8.4)
Total	15 (2.9)	266 (53.09)	186 (37.1)	34 (6.79)	501 (100.0)

Table III shows the type of disease by age of the respondents. Fever appeared to be the most frequent complaint in all age strata except gastrointestinal complaints, which was more among the respondents having age group 30 years and above. RTI appeared to be the 2nd highest disease among the respondents.

Table IV Relationship with some selected disease with accommodation

Disease	Accommodation		Total
	Family living	Barrack	
Fever	25 (21.1)	94 (78.9)	119 (100.0)
RTI	17 (20.7)	65 (79.3)	82 (100.0)
GI Complaints	16 (25.4)	47 (74.6)	63 (100.0)
Skin disease	12 (27.3)	32 (72.7)	44 (100.0)
Total	70 (22.7)	238 (77.3)	308 (100.0)

Table IV shows that the selected disease like fever, RTI, GI complain, skin disease were higher among the respondents living in the barrack (77.3%) than those who were living in family accommodation (22.7%).

DISCUSSION

In this study it was revealed that maximum number of patients (53.1%) belongs to the age group 20-29 years, followed by 30-39 years age group (37.1%). The mean age was 29.32 ± 1.0 years. The highest incidence of reporting sick in the age group was 20-29 years. This is due to the fact that, overall age distribution of armed forces members is same like above. More ever this group of soldiers have to undergo more physical hardship round the year. Maximum soldiers go on retirement between the age of 40-45 years of age. As a result aged soldiers reporting of CMI room are less. The lowest age was below 20 years age group. This is due to the fact that soldiers are recruited in the army between the ages of 17-20 years.

It was depicted in the study that most of the soldiers (94.8%) were male and rest (5.2%) were female. Female soldiers were introduced in the army newly and in selective crops. Maximum respondents (80.0%) were qualified in SSC or equivalent level of education. This is because of the existing army enrolment policy. The educational qualification for soldier's recruitment in army is secondary level in maximum category of trades. The maximum number of respondents (50.5%) were from middle class whose monthly income was in between TK=20000-40000. In Army, the rank and salary increase with the increase of age, so higher age group is having higher income. The higher rate of reporting sick may be associated with strenuous manual works, physical exertion, economic struggle, inadequate food, mental anxiety, tension and poor living condition.

Among the respondents most common type of disease was fever (23.8%), followed by respiratory tract infection (16.4%).A study was conducted on US military personnel shown that respiratory tract infection was the leading cause of outpatient illness in US military personnel. The cause may be

due to crowded living condition, stressful working environment, and exposure to the respiratory pathogens in disease endemic areas, military trainees and newly mobilized troops are at particularly high risk for respiratory disease epidemics [5]. The next highest morbidity was gastrointestinal complains (12.6%). Gastroenteritis among the defense personnel due to crowded communal living in barracks and substandard out living environment outside the cantonment with inadequate sanitation practices may increase the susceptibility of the disease.

Among the respondents the morbidity of injury was 10.6%, Backache 5.4%, and musculoskeletal pain 4.6%. A study was conducted in US army center for health promotion cited injuries were the single leading cause of deaths, disabilities, hospitalization, outpatient visits and losses of manpower.The causes and risk factors for injuries are training injuries, sports, falls and motor vehicle crashes are among the most important causes of morbidity for military personnel[8,9]. Another study on the health profile of Danish army personnel shown that somatic health problems were the most frequent being lower back pain, mild chest pain, and sensory disorders.[10]

Skin disease like allergy was most common in army due to some food allergy and other skin disorder like dermatitis due to working outdoor with sweat soaked cloth and crowded communal life in barracks and sub-standard out living environment of the outside cantonment with inadequacy in health education or sanitation practices may increases the susceptibility of the disease.[11,12]

In this study it was revealed that among the respondents 55.1% were sainik, 18.2% corporal, 12.4% lance corporal,10% sergeant, and 4.3% were warrant officer. This is due to the fact that the existing authorization of ranks structure in army is tapering from bottom to top.The married percentage among the respondents was 57.6% and unmarried was 42.4%. In army, soldiers are eligible to get marry after 26 years of age. So, it is common for them to get married as soon as they became eligible to marry (Table-I).[13,14]

Most of the respondents (83.6%) were suffering from illness between 1-7 days. This finding indicate that a huge number of respondents had been suffering from acute illness (Table-II).This study reveals that a large number of respondents (76.4%) reported in CMI room only one time for a same illness. Twice reported 21.8%, and thrice reported 1.8%. It proved that most of the patient cured during the first visit, which indicates diagnosis and treatment was proper (Table-I).[15,16]

In this study it was shown that, out of 501 respondents, one fifth 19.6% were habituated with smoking and tobacco leafs and the remaining 80.4% had no habit of smoking. This is the commonest forms of social addiction (Table-I). Study also shows that a large number immunization status constitutes vaccination against COVID-19. It is mandatory for all members of Bangladesh Army. This reflects the health consciousness of the soldiers.

CONCLUSION

The findings of the study provided a picture of the common acute and chronic illness prevailing among the soldiers in Bangladesh army. The army is a big community involving officers, soldiers, civilians and their families. To have a complete picture of the illness we need to know prevalence of common acute and chronic diseases among all the members. The findings of this study revealed that most frequent acute complaints was fever and injury (100.0%), followed by RTI (97.6%), musculoskeletal pain (95.7%).Most frequent complaints of chronic disease were Hypertension and Diabetes mellitus, followed by backache (55.6%), Skin disease (11.4%) and eye disease (91.7%). This study will provide a guideline for planning and implementation of intervention program and resource allocation. It will also provide a guideline for further studies.

DISCLOSURE

The author declared no competing interest.

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