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Studies on Socio-demographic Characteristics of Fungal Diseases Patients Attending at Out Patient Department of Rajshahi Medical College Hospital

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Abstract

A total of 12,798 fungal diseases patients were interviewed about their socio-demographic characteristics attending the Skin and V.D. department of Rajshahi Medical College Hospital from July 2002 to June 2004. It was found that high prevalence of diseases was in age group 20-29 years (36.03%) and females were the more suffered group (55.39%) than the males (44.61%). Among the different occupations, housewives ranked first (37.05%) and shows a definite association with fungal infections due to sweating (P<0.001). Tinea corporis were highest in prevalence (36.48%) as compared to other clinical varieties of diseases. Majority of the patients were heavy sweating group (71.15%). It was showed that patients who washed their cloths and bed sheets within seven days were less suffered group (7.89%).The illiterate group of patients was highly sufferer (51.07%) and unawareness shows a definite association with fungal diseases (P<0.001). It was observed that low-income group of people had the highest number of diseases (59.45%) than the higher income group of patients (12.04%).

Keywords: Socio-demographic study, Fungal diseases.

Introduction

Fungal infections are common health problem in Bangladesh. The prevalence of these diseases in a community usually depends on age, sex, occupation, personal hygiene, educational status and economic condition of the patients. Some investigators reported that the disease pattern of fungal infections varies among the different countries and different areas within the same country[1,2]. Rajshahi is a mega city of Bangladesh. So, it was logical to evaluate the socio-demographic characteristics of fungal diseases patients at Rajshahi locality. The exact prevalence of fungal infection is not known, because these diseases are not life threatening so usually not reportable. Although there is no complete survey but some investigators reported that about 20% of all skin diseases patients had fungal problems[1,3]. A study at Mymensingh Medical College Hospital, Mymensingh evaluated various parameters of dermatomycotic patients and revealed that 46.30% of patients were under 15 years of age, 53.09% were illiterate and 20.06% had only primary level of education[4]. Another study was conducted by some

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workers in the mycology laboratory of the Department of Dermatology, University Hospital Leiden, Netherlands, during the periods of 1972-1992, exhibited fungal infections were 21% among the 9,018 patients and hence a major public health problem[5].

This investigation evaluates the results of a survey work on socio-demographic characteristics of fungal diseases patients attending the outpatient department of Skin & V.D of Rajshahi Medical College Hospital over the period of July 2002 to June 2004. Questionnaires for each patient were filled up to obtain information related to fungal infections that gives a complete profile of socio-demographic characteristics of the patients. The factors associated with fungal diseases should be determined for taking effective control and preventive measures.

Methodology

A prospective survey work was conducted on socio-demographic characteristics and prevalence of the different types of fungal infections (particularly dermatophytoses and candidiasis) among the patients attended in outpatient department (OPD) of Skin and V.D. of Rajshahi Medical College Hospital. For this purpose, six working days per week were visited to the same department during the period of July 2002 & to June 2004. A total number of 12,798 patients were enrolled in the study. Questionnaires were supplied to every fifth number of fungal disease patients (n=12,798) including both male and female and were interviewed in examination room.

The specialist physician working at the same department was examined the patients and performed the diagnosis of diseases on the basis of clinical history, physical examination and relevant laboratory investigations. The data thus collected through questionnaires were studied according to the age, sex, occupation, personal hygiene (i.e. habits of washing of cloths & bed sheets), educational status and economic condition of patients that may influence the incidence and prevalence of fungal diseases. The results are shown in Table: 1-8 and Figure: 1-5. Data were analyzed using Chi-square test. A sample of questionnaire is shown below.

QUESTIONNAIRE

Name of the patient: ....

Sex: .... Age: ....
Occupation: ....
Socio-economic status: . ...
Educational status: ..……………………………………
General health condition:..
Smoking: Yes/ No
Sweating: Normal/ Medium/ Heavy
Washing of cloths & bed sheets: ....
Use of soaps: ....
Use of oils: ....
Use of antibiotics: ....
Symptoms:...
Duration:..

Results

It is evident that fungal infections were more in age group 20- 29 years (36.03 %) than the rest of age group (Table-1 and Figure-1).

Age group	No. of patients	Percentage (%)
0 - 9 yrs.	327	2.55
10 - 19 yrs.	1661	12.98
20 - 29 yrs.	4080	31.88
30 - 39 yrs.	4611	36.03
40 - 49 yrs.	1323	10.34
50 - 59 yrs.	489	3.82
60 - 69 yrs.	307	2.40
Total	12,798	100%

Mean age of the patients = 30.05, SD = 0.28; (Mean age ± SD = 30.05 ± 0.28)

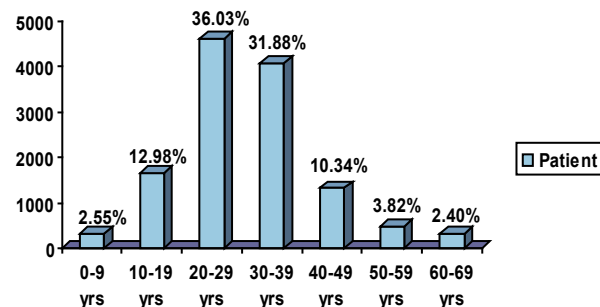**Table-1.** Age distribution of the patients (n = 12,798).

Figure-1: Age distribution of the patients (n = 12,798).

The patients of 30-39 years were the second dominant suffered group (31.88 %) and age group 60-69 years were less suffered group (2.40%). Table-2 and Figure-2 showed that female patients were more sufferers (55.39 %) than males (44.61 %).

Sex of the patients	No. of patients	Percentage (%)
Female	7089	55.39
Male	5709	44.61
Total	12,798	100

Table-2. Sex distribution of the patients (n =12,798 patients)
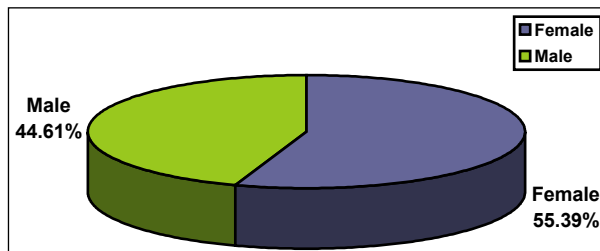
Figure-2: Sex distribution of the patients (n = 12,798).

Ranking of different occupations of the patients are shown in Table-3 and Figure-3. It was found that housewives ranked first (37.05%), followed by daily labours and farmers (24.53%), service holders (17.89%), students (12.11%), businessman (6.84%) and others (1.58%).

Occupation	No. of patients	Percentage (%)
Daily labour and Farmer	3139	24.53
Housewife	4742	37.05
Service holder	2290	17.89
Businessman	875	6.84
Student	1550	12.11
Others	202	1.58
Total	12,798	100

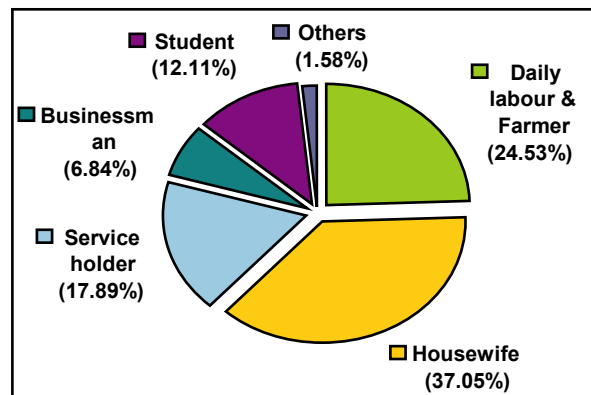**Table-3.** Distribution of patients according to occupation (n = 12,798).

Figure-3: Distribution of patients according to occupation.

Table-4 and Figure-4 showed that sweating is a highly precipitating factor for fungal infection. Out of 12,798 patients, 9,106 were found in heavy sweating group (71.15%). The moderate and less sweating groups were 22.44% and 6.41% respectively.

Sweating	No. of patients	Percentage(%)
Heavy	9106	71.15
Moderate	2872	22.44
Less	820	6.41
Total	12,798	100

Table-4. Distribution of patients according to state of sweating (n = 12,798).
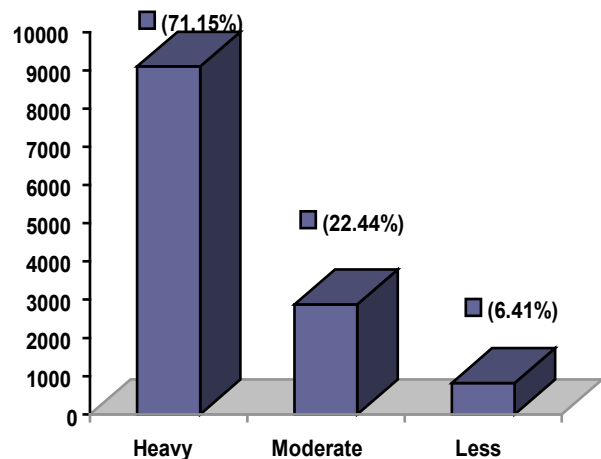

Figure-4: Distribution of patients according to state of sweating (n = 12,798).

The data in Table-5 revealed that washing of clothes and bed sheets are another important factor for fungal infections. Patients who wash their clothes and bed sheets within seven days are less sufferer (7.89%) than the patients who wash their clothes and bed sheets every fifteen days interval or more. Educational status may play an important role for fungal infections (Table-6 and Figure-5).

Washing of cloths and bed sheets	No. of patients	Percentage
Once in 7 days	1010	7.89
Once in 15 days	2291	17.90
Once in 22 days	4176	32.63
Once in 30 days	5321	41.58
Total	12,798	100

Table-5. Distribution of diseases according to personal hygiene of patients based on washing of cloths and bed sheets (n = 12,798).

Level of education	No.of patients	Percentage (%)
Illiterate	6536	51.07
Primary	2896	22.63
Secondary	1447	11.31
Higher Secondary	1110	8.67
Bachelor and above	809	6.32
Total	12,798	100

Table-6. Distribution of patients by education (n = 12,798).
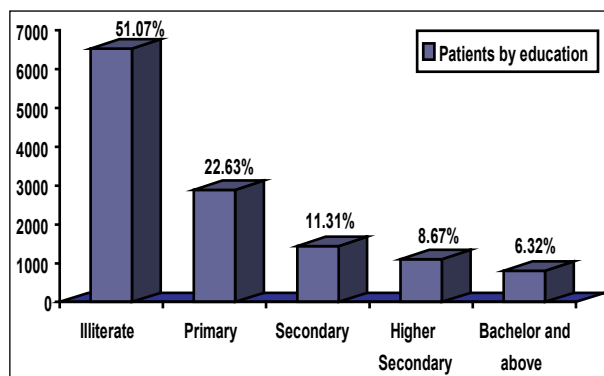

Figure-5: Distribution of patients by education (n = 12,798).

It was observed that illiterates were 51.07%, followed by primary level of education 22.63%, secondary education 11.31%, higher secondary 8.67%, and bachelor and above level of education was 6.32%. The illiterate group was highly sufferer (51.07%). Table-7 showed the relationship of educational status of the patients with the awareness of fungal infections. It was observed that illiterate persons were significantly affected with fungal infections (P<0.001, h.s.; df= 1).

Group	Literate	Illi terate	Total
Patients with awareness	4,402	1,638	6,040
Patients without awareness	1,860	4,898	6,758
Total	6,262	6,536	12,798

P<0.001, h.s. ; df=1

Table-7. Shows the relationship of educational status of the patients with the awareness of fungal infections.

Table-8 showed that lower income group of patients (income less than Tk.3,000/month) had the highest number of diseases (59.45%) than the middle income group (28.51%) and the higher income group of patients (12.04%) whose income more than Tk.10,000/month.

Social status	No. of patients	Percentage (%)
Lower (Income less than Tk.3,000.00/month)	7608	59.45
Middle (Income Tk.3000.00 to 10,000.00/month)	3649	28.51
Higher (Income more than Tk.10,000.00/month)	1541	12.04
Total	12,798	100

Table-8. Socio-economic condition of the study population (n =12,798).

Discussion

Fungal diseases are major public health problem and widely distributed all over the world. It varies with different age group of patients. The data obtained in our study, showed that highest number of patients were in the age group between 20-29 years (36.03 %) and 30-39 years (31.88 %) among the all age group of patients. This may be due to more physical activities of the patients at this age group. It was also evident that with the increase of age, the incidence is comparatively lower

than that of early aged people. It may be due to consciousness of personal hygiene, immunological factors and some nutritional choice of pathogens from the human body. Farah and co-workers[4] reported that 30.55% of patients were in the age group of 16-25 years. Nowicki[6] reported that dermatophytoses are significantly more frequent among adults (71.3%) whose age group was more than 15 years. The present findings correlated with the results of Farah and Nowicki.

Regarding the sex incidence of the patients it was found that out of 12,798 patients, the females were comparatively more sufferer (56.17%) than the male patients (43.83%). The reason may be due to the body of the females remains covered by clothes, which may help to keep the body moist and provide favorable environment for the growth of fungus. The result of the present study is consistent with Khan[7] and Siddque[8]. Among the various occupational groups, housewives were more sufferers (37.05%), than the other groups. This may be due to more household wet work done by this group of peoples and provide favorable condition for fungal infection. Our findings correlate with the results of Serajul Islam[9].

Sweating is a highly precipitating factor for fungal infection. In this study, out of 12,798 patients, 9106 (71.15%) were found heavy sweating type. Due to sweating, the spores of dermatophytes can easily germinate on the skin surface. Spores can easily take different minerals, vitamins and other necessary nutrients from sweating and then they drew their nutrition from cellular layer. These observations are correlated with the results of Ghosh[10].

Washing of clothes and bed-sheets is another important factor for dermatophytic infection. The present study showed that the patients who wash their clothes and bed-sheets once in every 7 days are less sufferer than the patients who wash their clothes and bed-sheets every fifteen days interval or more. These finding indicate that dermotophytes can draw easily their nutrition from dirty clothes. The unclean clothes may be a carrier of dermatophytes. When they got a favorable condition for infection, they infect the host body. This observation is correlated with those of Ghosh[10] and Parvin[11]. Educational status may play an important role for fungal

infections. It was observed in our study that illiterate group was highly sufferer (51.07%). It may be due to unawareness of illiterate group of people. The consciousness of educated peoples may decrease the disease condition. Our study showed the relationship of educational status of the patients with the awareness of fungal infections. It was observed that illiterate persons were significantly affected with fungal infections (P<0.001, h.s.; df= 1). This result has conformity with Farah and co-workers[4]. We found that low-income group of people was the most suffered group, the reason may be due to their malnutritions and low standard of living conditions. These findings are similar to the reports of Farah and co-workers[4].

Conclusion

Illiteracy, low socioeconomic condition, humid climate, excessive sweating, unawareness about the diseases and lack of personal hygiene are to be considered as major precipitating factors for the present rising trend of fungal diseases particularly dermatophytoses and candidiasis. The study also revealed that. proper education, better nutrition; increased awareness and improved hygiene may be effective for the prevention of the fungal diseases. However, detailed study may be needed for this purpose.

Acknowledgements

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