



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2016; 4(6): 706-708

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Received: 04-09-2016

Accepted: 05-10-2016

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To evaluate the fungal skin infestation in human population of central hospital, Rawalpindi

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Abstract

Harmful fungi penetrate into the skin and cause fungal skin infestation. Among fungal infestation *Tinea corporis* commonly known as ringworm (RW) affects skin hair and nails. Ringworm causes red, itchy, scaly, ring like blotches on the affected area. Jock itch and athlete's foot are two of the most common forms of ringworm. Symptoms include white patches of skin, redness, itchiness and pain, depending on the area affected. Almost 20-25 percent of the world has been affected since last decades. The prevalence of dermatophytes varies according to geographical location, season or living conditions and the manipulation to which the susceptible human is exposed. *Tinea corporis* (TC) occurs more commonly in countries with a hot and humid climate. Species of this fungi have also been reported from the soil of Pakistan. Transmission of fungal infestation is either direct skin-to-skin or indirect contact, especially from the back of theater seats, contaminated floors, shower stalls, toilet articles such as combs and hair brushes, or clothing and hats contaminated with hair from infected persons or animals, more often cats than dogs. The aim of the study to find out the root causes of transmission of *Tinea corporis* to make measurements which are helpful for the reduction of ringworm. The patients were studied by individual, Shared items, Bedding shared item and washes got results, 83%, 88%, 72%, and 77% respectively. For the present study I visited the Hospitals of Rawalpindi where patients having this disease are reported. For collecting the data and proceeding of my research I made a questionnaire and collect all the necessary information regarding this fungal infestation.

Keywords: Fungal skin infestation, human population, central hospital, Rawalpindi

1. Introduction

Healthy fungi live on the skin's surface, especially in the moist areas of the body. However, when harmful fungi penetrate the skin, it causes fungal skin infestations. Fungi are non-motile, filamentous organisms that cause diseases that can be very difficult to treat. In general, fungal infections tend to spread easily over the body: Just touching an affected area and then spreads other part of the body^[1].

Among fungal infestation *Tinea corporis* commonly known as ringworm (RW) affects the skin hair and nails. Because it has the capacity to invade keratinized tissue of the body including skin, hairs and nails^[2, 3]. The dermatophytes have been divided into three ecological groups' geophiles, zoophiles and anthropophiles^[4]. The prevalence of dermatophytes varies according to geographical location, season or living conditions and the manipulation to which the susceptible human is exposed^[5].

Tinea corporis (TC) occurs more commonly in countries with a hot and humid climate. Species of these fungi have also been reported from the soil of Pakistan. Ringworm causes red, itchy, scaly, ring-like blotches on the affected area. Jock itch and athlete's foot are two of the most common forms of ringworm. Symptoms include white patches of skin, redness, itchiness and pain, depending on the area affected. Prescription creams or mouthwashes are used to treat yeast infections^[4-7].

Causative agents are Trichophyton and Macrosporum. Treatment revolves around anti-fungal medications and creams, along with steroids to reduce inflammation in more serious cases^[1]. The actual prevalence for fungi skin infestation is unknown in many endemic areas^[8]. Transmission of fungal infestation is either direct skin-to-skin or indirect contact, especially from the back of theater seats, contaminated floors, shower stalls, toilet articles such as combs and hair brushes, or clothing and hats contaminated with hair from infected persons or

animals, more often cats than dogs. Young children who are infected should minimize close contact with other children until effectively treated [1]. The objective of the present study was to find out the root causes of transmission of *Tinea corporis* to make measurements which helpful to for reduction of ringworm.

2. Materials and Methods

2.1 Study Area

The present study was conducted in Central Hospital, Rawalpindi, Punjab, Pakistan. The data collected through questionnaire method and 48 samples were collected. The total area of Rawalpindi district is 108.8 square kilometers, which is equivalent to 26885 acres.

2.2 Study Duration

The study duration was 4 months from October, 2012 to January, 2013

2.3 Experimental Design

A survey was conducted to find out the diseases caused by fungus. The main focus was the population who visited the Benazir Bhutto Hospitals, Rawalpindi. The questionnaire was specially designed which includes multiple choice questions attached as appendices; sampling area from where sample collected. The public was questioned for *Tinea corporis*, to check their hygienic condition in their surroundings. The results were concluded from earlier collected samples.

2.4 Statistical Analysis

Among the studied population 18 individuals were found to be positive for ringworm (RW) while 30 individuals were negative for RW. The data analyzed by using suitable statistical formula with the aid of Electronic media to find the prevalence in the population of Benazir Hospital, Rawalpindi. Graphs are plotted to check the prevalence; gender wise, locality wise and age wise.

The factors which were responsible for the transmission of RW was analyzed within the table, 1 and those have percentage of more than 70 considered as significant factors because the level of significance considered as greater than 70 percent.

3. Results and Discussions

3.1 Prevalence of Ringworm

Among the population sample of 48, 18 (37.5%) individuals were positive for *Tinea corporis* while the rest of 30 (62.5%) were negative for *Tinea corporis*. These results are shown in figure 1. The prevalence of the affected population is beyond the limit but yet it was alarming condition because ringworm transmission is contagious. Prevalence of ringworm showed dissimilarity with the findings of Khaled *et al* [9].

3.2 Gender Wise Prevalence

Affected individual was 18 in which 7 were males and 11 were females. Prevalence was more common in females 61% rather than males 39%. They were not much conscious about health as compared to their daily working.

Secondly, they were involved in social activities as compared to males. The results were shown in figure 2. The result has similarity with the findings of Khaled *et al* [9].

3.3 Locality Wise Prevalence

Among the affected population of 39% of the Benazir Bhutto Hospital, Rawalpindi majority of individual belong to rural

area. Rural population had the prevalence of 61% while urban population had 39% prevalence. The prevalence rate was higher in rural area due to lack of awareness. It is might possibly that the observed population belongs to rural areas because in the Benazir Bhutto Hospital is less expensive and in excess of rural population. Results are described in figure 3. The findings resemble with the results of Fuller *et al* [10].

3.4 Age Wise Prevalence

Among the population of 48, individuals of younger age are less affected than the individuals those belong to a higher age group (more than 10 years). Children had the prevalence of only 22%, while rest of age group had high prevalence. It is because a member of a higher age group had more social relationship. The prevalence of all age groups which were under observation shown in figure 4. Results showed the similarities with the findings of Elewski and Charif [11].

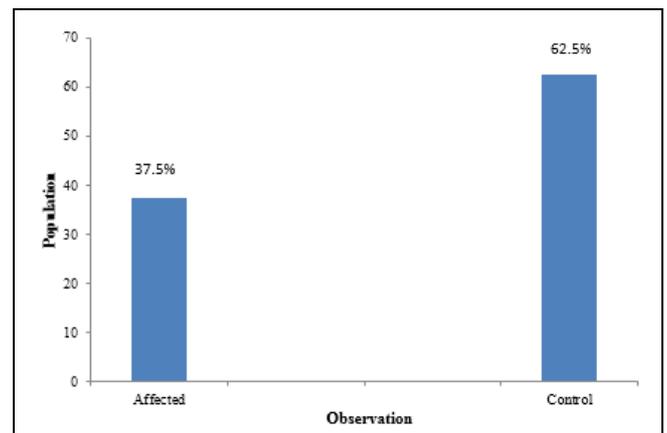


Fig 4.1: Prevalence of Ringworm

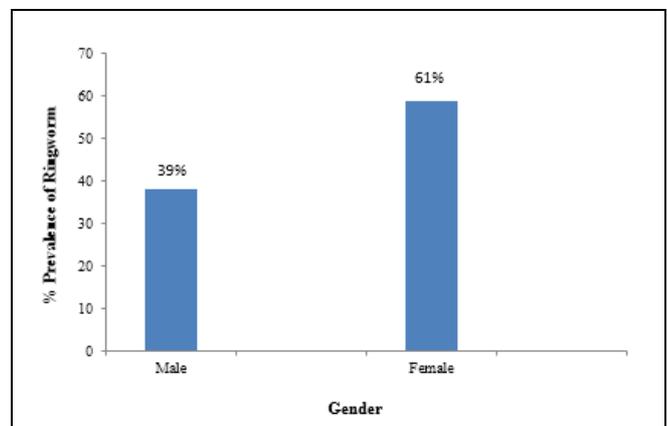


Fig 4.2 Gender wise prevalence

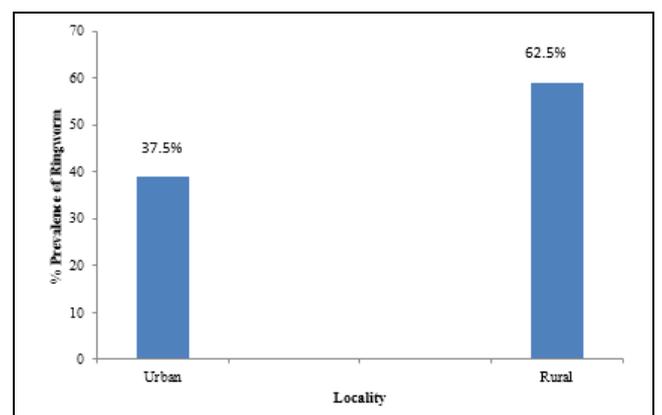


Fig 4.3 Locality wise prevalence

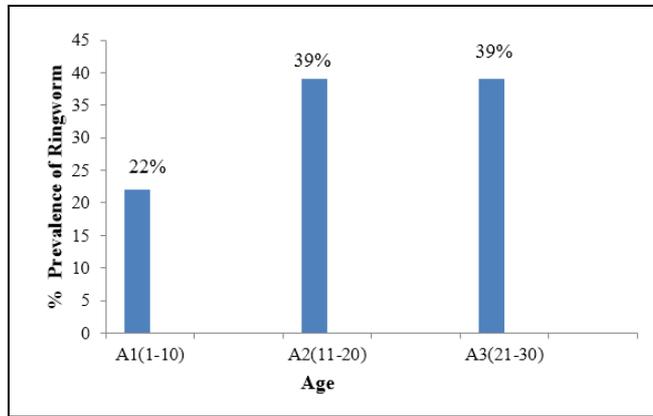


Fig 4.4: Age wise prevalence

Table 1: Causes of Transmission of Ringworm

Sr. No.	Characteristics	No. of Affected cases		% Contributor	Significance
		Y	N		
1	More Than 8 Individuals	15	3	83%	High
2	Shared Items	16	2	88%	High
3	Bedding Changed	14	4	72%	High
4	Shared Items Washed	13	5	77%	High

4. Summary

The present study was designed to determinate the prevalence of fungal skin infestation among human population in Benazir Bhutto Hospital Rawalpindi. Earlier researcher had conducted studies on fungal skin infestation one by one. But the present study was focused on the local population and found the root causes of transmission of ringworm in population. Data was collected through self-designed multiple choice questionnaire and interpretation of data revealed that a person who is negative for *Tinea corporis* should avoid to contact with affected person, and advised to prohibit sharing of articles of daily use, take bath regularly and change bedding after daily work done weekly.

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