

Effect of Regular Baths on the Development of Ring Worm among Primary School Children

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Abstract

Effect of regular baths on the development of ringworm of the body among primary school children was carried out using a sample size of 100 pupils from LEA primary school Pyankasa, Abuja, Federal capital Territory. This study was guided by research question and hypothesis. Inferential statistics of Chi square was used in the analysis of data collected. On the basis of the findings, conclusions were drawn and recommendations, made.

Keywords: *Regular baths, Ringworm, Children.*

Introduction

Background of the study

Ringworm (*Tinea corporis*) has been defined in Merriam Webster dictionary, (2013) as a fungal infection involving parts of the body not covered with hair. Ringworm is a fungal infection that can affect any part of the body. Ringworm is spread by direct and indirect contact with humans, animals and soil. Humans get infections through skin and scalp lesions of infected persons, contaminated clothing, bath mats, towels, floors and showers. Animals get infections through cats, dogs, mice and guinea pig. (Corporate communications unit, 2007).

Yeliz *et al*, (2010), also defined Ringworm (*Tinea corporis*), as a dermatophytic infection which is observed in all body regions except for specific locations such as hands, feet and genitalia. A human patient may be infected by another person, an animal or nature. Zoophilic strains may make the diagnosis difficult by causing inflammatory lesions in particular. (Yeliz *et al*, 2010).

Classically, ringworm manifests as well bordered erythematous, scaly, annular plaques widening from the centre towards the periphery and having elevated borders. Itchiness is a frequently accompanying symptom. Sometimes, vesicles and pustules are observed. Rarely, even blister formation as a secondary change of severe inflammation might be observed. The severity of inflammation changes depending on the type of fungus, the condition of patient's immunity and the degree of follicular invasion. The inflammatory response generated via zoophilic strains is more obvious than a response generated via anthropophilic strains (Sobera & Elewski, 2008).

Atypical and common clinical appearances may occur in patients who are immune compromised. (Veraldine *et al*, 1999). Also atypical patterns resembling other dermatological reported illness may be observed in totally healthy individuals as noted by Bohmer *et al* (1998).

Statement of the problem

Ringworm is a skin infection due to a fungus. It is common especially among children. However, it may affect people of all ages. It is caused by a fungus. Ringworm can spread easily from one person to another. It can be contacted via touching someone who has the infection or contact with items contaminated by the fungus such as combs, unwashed clothing and shower or pool surfaces. The fungus that causes ringworm thrive in warm, moist areas. Ringworm is more likely when one is sweating and from minor injuries to the skin, scalp or nails.

Objectives of the study

The broad objective of this study is to determine the effect of regular baths on the development of Ringworm of the body among primary school children.

Research question

What is the effect of regular baths on the development of Ringworm of the body among primary school children?

Research hypothesis

There is no significant relationship in the effect of regular baths on the development of Ringworm of the body among primary school children.

Significance of the study

The skin is a unique organ in that numerous signs of disease or injury are immediately observable on the skin. The skin serves as interface between the body's internal organs and the external environment. Therefore skin disorders represent the culmination of environmental forces and the internal functioning of the body. Sunlight, infectious organisms, chemicals and physical agents all play a role in the pathogenesis of skin diseases of which Ringworm is one of them. Normally, the skin flora, sebum, immune responses and other protective mechanisms defend against serious systemic infections. However, the skin frequently succumbs to attack by microorganisms whose primary clinical manifestations are in the skin.

Literature review

Review of related literature will dwell on the following topics:

Concept of fungal infection.

Concept of dermatophytosis.

The ringworm concept.

- Symptoms of ringworm infection
- Causes of ringworm infection
- Diagnosis and testing
- Prevention
- Treatment
- Prognosis

Concept of fungal infection

From, Dorlands Medical Dictionary (2013), Mycosis is defined as a fungal infection of animals, including humans. Mycoses are common and a variety of environmental and physiological conditions can contribute to the development of fungal diseases. People are at risk of fungal infections when they are taking strong antibiotics for a long period of time because antibiotics kill not only damaging bacteria, but health bacteria as well. This alters the balance of microorganism in the mouth, vagina, intestines and other places in the body and results in an overgrowth of fungus. Individuals with weakened immune systems are also at risk of developing fungal infection. This is the case of people with HIV/AIDS, people under steroid treatment and people taking chemotherapy. People with diabetes also tend to develop fungal infections. Very young and very old people also are groups at risk. (Wikipedia, 2013).

Concept of dermatophytosis

Dermatophytosis is a clinical condition caused by fungal infection of the skin in humans, pets such as cats and domesticated animals such as sheep and cattle. The term "Ringworm" commonly used to refer to such infections is a misnomer, since the condition is caused by fungi of several different species and not by parasitic worms. The fungi that cause parasitic

infection (dermatophytes) feed on keratin, the material found on the outer layer of skin, hair and nails. These fungi thrive on skin that is warm and moist, but may also survive directly on the outside of hair shafts or in their interiors. It has been estimated that currently, up to twenty percent of the population may be infected by ringworm or one of the other dermatophytoses. (Dercoby, 2009). Dermatophytosis of the scalp, glabrous skin and nails is caused by a closely related group of fungi known as dermatophytes which have the ability to utilise keratin as a nutrient source i.e. they have a unique enzymatic capacity (keratinase). The disease process in dermatophytosis is unique for two reasons; firstly, no living tissue is invaded, the keratinised stratum corneum is simply colonised. However, the presence of the fungus and its metabolic products induces an allergic and inflammatory eczematous response in the host. The type and severity of the host response is often related to the species and strain of the dermatophyte causing the infection, secondly, the dermatophyte are the only fungi that have evolved a dependency on human or animal infection for the survival and dissemination of their species. (David Ellis,2013).

The ring worm concept.

Tinea corporis.

Tinea corporis (Also known as ringworm) is a superficial fungal infection (Dermatophytosis) of the arms and legs especially on glabrous skin; however, it may occur on any part of the body. (Bologna *et al*, 2007).

Symptoms

According to Berma, (2008), symptoms of *Tinea corporis* may have a variety of appearances; most easily identifiable are the enlarging raised red rings with a central area of clearing. The same appearances of ringworm may also occur on the scalp (*Tinea capitis*), Beard (*Tinea barbae*) or the groin (*Tinea cruris*), known as jock itch or dhobi itch. Other classic features of *Tineacorporis* include:

- The edge of the rash appear elevated and is scaly to touch.
- Sometimes the skin surrounding the rash may be dry and flaky.
- Almost invariably, there will be hair loss in areas of infection.

Causes

Tinea corporis is caused by a fungus known as dermatophyte. These organisms normally live on the superficial skin surface, and when the opportunity is right, they can induce a rash or infection. Individuals at high risk of acquiring ringworm include those who:

- Live in crowded humid conditions.
- Sweat excessively, as sweat can produce a humid wet environment where the pathogenic fungi can thrive. This is most common in the armpits, groin creases and skin folds of the abdomen
- Participate in close contact sports like soccer, rugby or wrestling.
- Wear tight, constrictive clothing with poor aeration.
- Have a weakened immune system (e.g. those infected with HIV) or taking immunosuppressive drugs. Brannon ,(2010).

Diagnosis and testing

From Wikipedia,(2013), once a fungus is suspected, the skin will be examined and scraping, taken. These superficial scraps of skin are examined underneath the microscope which quickly reveal the presence of a fungus. If the skin scrapings are negative and a fungus is still suspected, the scrapings are sent for culture. Because the fungus grows slowly, the culture results do take several days to become positive. Other methods of diagnosis include potassium hydroxide tests (KOH).

Prevention

Because fungi prefer warm, moist environments, preventing ringworm involves keeping skin dry and avoiding contact with infectious material. Basic prevention measures include:

- Washing hands after handling animals, soil and plants
- Avoiding touching characteristic lesions on other people
- Wearing loose fitting clothing
- Practicing good hygiene when participating in sports involving physical contact with other people as noted in Brandon,(2010).

Treatment

Most cases are treated by application of topical antifungal creams to the skin, but in extensive or difficult to treat cases, systemic treatment with oral medication may be required. In general, ringworm responds well to topical treatment. Topical antifungals are applied to the lesion twice a day for at least two weeks, but therapy should be continued for another week to ensure the fungus is completely eradicated. The most commonly used antifungals are clotrimazole, ketoconazole, miconazole, etc. (Wikipedia,2013).

Methodology

The procedure used to determine the effect of regular baths on the development of Ring worm of the body among primary school children are presented in this chapter. It covers:

- Research design
- Description of the study area
- Population of the study
- Sample/ Sampling technique
- Instrument for data collection
- Method of data collection
- Method of data analysis

Research design

The research design adopted in this study is the descriptive survey. Descriptive survey are those studies which aim at collecting data on and describing in a systematic manner, characteristic features or facts about a given population.

Description of the study area

The study area is LEA primary school, Pyankasa, Abuja, Federal capital territory, Nigeria. The school has one headmistress, two assistant head teachers and twenty five teachers. There are four hundred and fifty pupils in the school.

Population of the study

The population of the study comprises of children, male and female from the age of 6 years to 12 years who have had cases of ring worm as well as those who have not.

Sampling/sampling technique

The sample for the study consisted of 100 children, male and female from the age of 6 years to 12 years.

Instrument for data collection

Data for the study was collected using information from teachers who handle the primary school children.

Method of data collection

Questionnaires were distributed to teachers on observation of children who have had cases of ring worm, current cases of ring worm and those who have no ring worm. Answers based

on how regular baths affect ring worm occurrence are to be given by these teachers by means of questionnaire.

Method of data analysis

The data gathered were analysed using descriptive statistics of percentage and frequency counts as well as inferential statics of Chisquare. Level of significance was placed at 0.05. Appropriate degrees of freedom were worked out.

Data presentation and analysis

Presentation and analysis of data on the effect of regular baths on the development of ringworm of the body among primary school children. Data obtained were analysed using descriptive statistics of percentages, frequency tables as well as inferential statistics of Chisquare.

Table 1. Frequency distribution of primary school children from LEA primary school according to their gender.

	F%	
Male	53	53%
Female	47	47%
Total	100	100%

Table 1 represents the frequency distribution of primary school children from LEA primary school according to their gender. Out of one hundred pupils (100) selected, 53(53%) were male while 47(47%) were females.

Research hypothesis

There is no significant relationship in the effect of regular baths on the development of Ringworm of the body among primary school children.

Table 2. Ringworm occurrence among primary school children from LEA primary school.

Ringworm Present	Ringworm Absent	Total	
Occasional baths	64(64%)	8(8%)	72(72%)
Regular Baths	11(11%)	17(17%)	28(28%)
Total	75(75%)	25(25%)	100(100%)

X^2 Cal=26.2; $X2$ 0.05=3.841.

Table 2 reveals the relationship of the effect of regular baths on Ringworm of the body occurrence among primary school children. Observation on the table shows that out of 100 children (respondents) and with regard to occasional baths, 64% of the children had ring worm while only 8% do not have ringworm. On the other hand, 11% of the children had ring worm in spite of regular baths while 17% of the children did not have ring worm.

Chi square analysis carried out on the table showed that the calculated Chisquare is greater than the tabled Chisquare, in other words we conclude that there is significant relationship in the effect of regular baths on the occurrence of ring worm of the body among children. This means that the result is significant and regular baths prevent occurrence of ring worm of the body.

Discussion, summary, conclusion and recommendations

This chapter presents discussion of results, conclusion and recommendation.

Discussion of results

The research hypothesis used in the research study was stated thus: "There is no significant relationship in the effect of regular baths on the development of ringworm of the body among

primary school children". Chi square analysis was carried out using the data on Table 2, and the result of the analysis showed that there is significant relationship in the effect of regular baths on the development of Ring worm of the body among primary school children. This is in agreement with (Brannon, 2010) who gave an overview of people who are at risk of acquiring ringworm.

Summary

Ring worm is an infection caused by a type of fungus called a dermatophyte. It is spread through contact with a person or animal with the infection. Ringworm infections are very common and can affect anyone. Children also are at risk of infection with ringworm.

Conclusion

Conclusion drawn in this study is that there is significant relationship in the effect of regular baths on the occurrence of Ringworm of the body among children.

Recommendations

Based on the above conclusions, the following recommendations were made.

- Practices of regular hand washing should be adopted.
- Sharing of hair brushes, hats and articles of clothing that might have come into contact with an infected area should be avoided. It is important to make children to be aware of this rule.
- Take pets to veterinarian at first sign of skin irritation.
- Ensure that sterilized instruments are used in places such as barber shop or beauty salon.
- Maintenance of regular cleaning.

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