



## **MICROBIAL SKIN DISEASES AMONG SECONDARY AND PRIMARY SCHOOL CHILDREN IN IMO STATE.**

By

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### **Abstract**

When the skin is not well taken care of, it can be prone to diseases. This research examined microbial skin diseases among secondary and primary school children in Imo State. In view of this, two (2) research questions and two (2) hypotheses were formulated. The design of this study was cross-sectional descriptive survey. The population of the study was 806,990 and the sample size was selected using purposive sampling technique and Taro Yamen Formular. Research questionnaire was used as the instrument for data collection which was also validated by experts. The reliability study recorded 0.74 correlation coefficient. Percentage, mean and standard deviations were used to answer research questions, while Analysis of Covariance (ANCOVA) and Chi-squared were used to test the hypotheses at 0.05 level of significance. It was revealed that secondary school students with 57.8% recorded more prevalence to microbial skin diseases among school children. This may be as a result of their attitude towards personal hygiene practice and knowledge. On the other hand, their counterpart in the primary schools recorded 42.2% with less contagious rate to the prevalence of microbial skin diseases. Based on the findings of this study, it was concluded that “Infectious skin diseases” were very common and constituted an economic and public health problem among “school children” in Imo State. It is therefore recommended that parents should have a regular screening of their children with respect to skin diseases and educate them on personal hygiene. Equally, teachers should teach their students good personal hygiene and practice in school.

**Keywords:** Microbial, hygiene, Validated, Contagious, Prevalence, Screening



### **Introduction**

The skin is a sensitive part of the body that, if not well taken care of can be prone to diseases. Poor knowledge of how to handle chemicals and poor hygiene can cause rashes. Contaminated environment, allergy can give rise to any of the dermatological conditions. The spread of skin diseases can be through body contact, example; scabies, ring worm, some can be transmitted sexually, example; Herpes as in adults.

### **Fungal skin infections**

These types of skin infections are caused by fungi and often develop in moist areas of the body, such as the feet, armpit. Examples of fungal infections: ringworm, athlete's foot, yeast infection, diaper rash, nail fungus etc The above cases are often associated with one species of fungus or the other. Fungus is any of a group of spore forming organisms feeding mainly on dead organic matter; this includes moulds, yeast, mushrooms and toadstool (Sullivan, 2018).

### **Bacterial skin infections**

Bacterial skin infections occur when bacteria invade the skin. Bacteria can enter the skin through a hair follicle or after a wound. *Staphylococcus* and *Streptococcus* are bacteria that are commonly present on the skin and only cause a problem in certain circumstances. Systemic bacterial infections can cause symptoms throughout the whole body, such as a fever, while local infections only affect a specific area. Examples of bacterial skin diseases: cellulites, impetigo, leptospirosis etc

### **Viral skin infections**

Viruses can cause different types of infections that have skin symptoms, such as: Warts, chicken pox, shingles etc . Some viral diseases are often contagious, and most are systemic.

### **Parasitic skin infection**



These types of skin infections are caused by parasitic organisms. These infections can spread beyond the skin to the bloodstream and organs. Examples of parasitic skin infections: scabies, cutaneous larva migrans etc

The maintenance of good personal hygiene is important for population's wellbeing; while poor hygiene is a risk to public health, it is a behavioural risk and contributes to global burden of diseases. Hazazi, (2019) noted the factors that influence one's hygiene and wellbeing as society, family, individual's knowledge of cleanliness and attitude towards hygiene. Most of the health problems affecting school students are preventable by proper hygiene through the family as well as adopting good health educational practices.

### **Layers of Skin**

The human skin consists of two main layers namely, the dermis and outer layer epidermis. The skin being the body's covering. The skin has three layers namely:

- (a) The epidermis
- (b) The dermis, under the dermis
- (c) Hypodermis (subcutaneous tissue)

The epidermis is the outermost layer of the skin. It provides a barrier against water and noxious substance; it is also in this layer that the skin tone is created.

The dermis is the second layer; it is made of connective tissue, hair follicles and sweat glands. The hypoderm is also the subcutaneous tissue, it consists of fat and connective tissues ( White and Butcher 2015)

### **Glands**

The sweat glands are located in the dermis. They are regulated by the temperature regulating centers in the brain. Sweating is one of the ways the body cools itself by allowing evaporation of the sweat (Hawksorth 2001)



The aim of this study is to establish the prevalence of Microbial Skin Diseases among secondary and primary school children in Imo State.

### **Methodology**

The design of this study was cross-sectional descriptive survey carried out in the three education zones in Imo State. The population of the study was 806,990 and the sample size of 800 was selected using purposive sampling technique and Taro Yamen Formular to determine the minimum sample size. Research questionnaire was used as the instrument for data collection also the structured questionnaires were validated by experts. The reliability study was carried out and 0.74 correlation coefficient was obtained. 800 questionnaires were distributed to the respondents and all were collected on the spot. In analyzing the data obtained from field, percentage, mean and standard deviation were used to answer research questions, while ANCOV and Chi-squared were used to test the hypotheses at 0.05 level of significance using SPSS.

### **Results**

#### **Research Question 1:**

To what extent is the impact of socio demographic factors on the prevalence of skin diseases among primary and secondary school children in Imo state?

**Table 1: Socio demographic factors and prevalence of skin diseases**

Items	group	Bacteria %	Viral %	Fungi %	Parasitic %	Other skin reactions %	Total no: / %
Age groups	8-11	13 (6.0)	44 (20.4)	61 (28.2)	56 (26.0)	42 (19.4)	<b>216</b> <b>(28.2)</b>
	12-15	47 (13.0)	69 (19.2)	94 (26.2)	81 (22.6)	68 (19.0)	<b>359</b> <b>(46.8)</b>
	16-19	21	33	43	31	64	<b>192</b>



		(11.0)	(17.2)	(22.4)	(16.1)	(33.3)	<b>(25.0)</b>
	<b>Total</b>	<b>81</b>	<b>146</b>	<b>198</b>	<b>168</b>	<b>174</b>	<b>767</b>
		<b>(10.5)</b>	<b>(19.0)</b>	<b>(25.8)</b>	<b>(22.0)</b>	<b>(22.7)</b>	<b>(100)</b>
Gender	Male	53	52	91	67	99	<b>362</b>
		(14.6)	(14.4)	(25.1)	(18.5)	(27.4)	<b>(47.2)</b>
	Female	69	81	70	97	88	<b>405</b>
		(17.0)	(20.0)	(17.3)	(24.0)	(21.7)	<b>(52.8)</b>
	<b>Total</b>	<b>122</b>	<b>133</b>	<b>161</b>	<b>164</b>	<b>187</b>	<b>767</b>
		<b>(16.0)</b>	<b>(17.3)</b>	<b>(21.0)</b>	<b>(21.3)</b>	<b>(24.4)</b>	<b>(100)</b>
Residents	Urban	61	68	57	86	92	<b>364</b>
		(16.8)	(18.7)	(15.6)	(23.6)	(25.3)	<b>(47.5)</b>
	Rural	81	75	110	78	59	<b>403</b>
		(20.1)	(18.6)	(27.3)	(19.4)	(14.6)	<b>(52.5)</b>
	<b>Total</b>	<b>142</b>	<b>143</b>	<b>167</b>	<b>164</b>	<b>150</b>	<b>767</b>
		<b>(18.5)</b>	<b>(18.6)</b>	<b>(21.8)</b>	<b>(21.5)</b>	<b>(19.6)</b>	<b>(100)</b>
Parents' Economic occupation	Famer	32	50	58	35	64	<b>239</b>
		(13.4)	(21.0)	(24.3)	(14.6)	(26.8)	<b>(31.2)</b>
	Trader/skill worker	48	55	65	83	85	<b>336</b>
		(14.3)	(16.4)	(19.3)	(24.6)	(25.3)	<b>(43.8)</b>



	Civil servants	27 (14.1)	28 (14.6)	43 (22.4)	34 (17.6)	60 (31.3)	<b>192</b> <b>(25.0)</b>
	<b>Total</b>	<b>107</b> <b>(14.1)</b>	<b>133</b> <b>(17.3)</b>	<b>166</b> <b>(21.6)</b>	<b>152</b> <b>(19.8)</b>	<b>209</b> <b>(27.2)</b>	<b>767</b> <b>(100)</b>
School	Primary	57 (15.4)	63 (17.1)	94 (25.4)	66 (17.8)	90 (24.3)	<b>370</b> <b>(48.2)</b>
	Secondary	54 (13.6)	55 (13.8)	80 (20.2)	96 (24.2)	112 (28.2)	<b>397</b> <b>(57.8)</b>
	<b>Total</b>	<b>111</b> <b>(14.5)</b>	<b>118</b> <b>(15.4)</b>	<b>174</b> <b>(22.7)</b>	<b>162</b> <b>(21.1)</b>	<b>202</b> <b>(26.3)</b>	<b>767</b> <b>(100)</b>
Education status	Graduate	20 (9.7)	57 (27.7)	58 (28.2)	38 (18.4)	33 (16.0)	<b>206</b> <b>(26.9)</b>
	Illiterate	87 (15.5)	104 (18.5)	153 (27.3)	102 (18.2)	115 (20.5)	<b>561</b> <b>(73.1)</b>
	<b>Total</b>	<b>107</b> <b>(14.0)</b>	<b>161</b> <b>(21.0)</b>	<b>211</b> <b>(27.5)</b>	<b>140</b> <b>(18.3)</b>	<b>148</b> <b>(19.2)</b>	<b>767</b> <b>(100)</b>

Table 1 shows the analysis of the impact of socio demographic factors on the prevalence of skin diseases amongst students. Based on the ages of the children, it was revealed that the students within the age bracket of 11-15 had the value of 46.8% which implies more prevalence to various infectious skin diseases. While those within the age brackets 16-19 recorded 25.0 % which means less prevalence to microbial skin diseases. The study revealed that fungi with 25.8% are the



most prevalent of infectious skin diseases. In the category of gender, it was revealed that female students with 52.8% were more prone to microbial skin diseases among school children. With their counterpart that recorded 48.2% which implies less contagious rate of microbial skin diseases. It also indicated that rural residents were more prone to various infectious skin diseases with 52.5% this may be as a result of the poor personal hygienic and sanitary conditions, lack of awareness and health services in the area. On the side of urban residents, 47.5% was recorded. The most prevalent disease was parasitic skin diseases with 21.3%. In this category, it was shown that the trader/skill workers (skill worker such as carpenters, welders, electricians, plumbers, builder etc.) had the highest percentage- 43.8% which implies that the school children of these traders/skill workers were more exposed to microbial skin diseases. Parasitic and fungal skin diseases were more common, with 21.8% and 21.5%. This may be as a result of their fluty environment and poor toilet facilities. Famers recorded 32.2% and civil servants with 25% had fewer cases in the prevalence of microbial skin diseases. The differences in socioeconomic standards, even within the country may be responsible for great variations in the prevalence of “skin diseases.

### **Research Question 2:**

To what extent were the students awareness, attitude and practice in the prevention and control of skin diseases in Imo state?

**Table 2: Attitude and practice in the prevention and control of skin disease**

S/no:	Questionnaire Items	N	$\sum x$	X	S	Remark
1.	Bathing regularly with soap and sponge control skin infection	800	2,265	2.83		Accepted
2.	Fungi skin disease can't be spread from one person to another	800	2,238	2.79		Accepted
3.	Communicable skin diseases can't be transmitted from infected animal to a healthy person	800	2,178	2.72		Accepted
4.	Use of disinfectant in cleaning the toilet reduces skin disease infection	800	2,154	2.69		Accepted



5.	Regular washing of hand with soap and disinfectant control skin diseases	800	2,310	2.88	Accepted
6.	Use of unclean water to bath or wash hand increases incessant skin infection	800	2,392	2.99	Accepted
7.	Avoidance of cosmetics and medicated cream reduces and control skin reaction	800	1,383	1.73	Not Accepted
8.	Some person are allergic to some drugs	800	1,322	1.65	Not Accepted
9	Use of cloths one and wash with detergent control and prevent skin disease	800	2,185	2.73	Accepted
10	use of lab chemicals without proper precaution may lead to skin reaction	800	1,795	2.24	Not Accepted
<b>Cluster/pooled mean</b>				<b>22.5</b>	
<b>Mean of item means</b>				<b>2.25</b>	

Table 2 shows the mean and standard deviation of the student awareness, attitude and practice in the prevention and control of skin diseases. The result from the table shows that questions 1, 2, 3, 4, 5, 6 and 9 were accepted. Question 3 communicable skin diseases can't be transmitted from infected animal to a healthy person with mean value of 2.72 showed to a high extent the level of ignorance and lack of awareness in the prevention and control of skin disease of school children. Question 6, use of unclean water to bath or wash hand increases incessant skin infection had the highest mean value of 2.99. Questions 7, 8, and 10 were not accepted, showed the respondents level of ignorant attitude and practice towards prevention and control of skin disease. The high prevalence of "infectious skin diseases" in "school children" in the study might be explained by the poor personal hygiene, lack of awareness and poor attitude and practice. The answer to research



question 4 is that there were lack of awareness, poor attitude and practice in the prevention and control of skin disease among secondary and primary school children in Imo state.

**Hypothesis 1:**

There is no significant relationship @  $\alpha_{0.05}$  between the impact of socio demographic factors and the prevalence of skin diseases amongst the students in the senatorial zones of the state.

**Table 3: Chi-square analysis of the social demographic factors and the prevalence of skin diseases.**

	Value	df	Asymp. Sig. (2 sided)	Exact Sig. (2 sided)	Exact Sig. (2 sided)
Pearson Chi-square	.478 <sup>a</sup>	1	.486		
Continuity correction <sup>b</sup>	.217	1	.644		
Likelihood ratio	.486	1	.475		
Fisher's Exact test				.742	.421
Linear-by-linear Association	.471	1	.486		
N of valid cases	800				

a. 0 cell (.0%) here expected count less than 5. The minimum expected count is 14.50

Table 3 Chi-square result analysis showed that  $X^2 (2) = 0.478 < p = 0.486$  which means that the p-value is less than the significance level ( $\alpha = 0.05$ ) therefore we reject the null hypothesis, which implies that there is a significant relationship between the impact of social demographic factors and the distribution of prevalence of skin diseases amongst the students in the zones of the state.



**Hypothesis 2:**

There is no significant relationship between the awareness, attitude and practice in the prevention and control of skin disease amongst student?

**Table 4. Analysis of Covariance (ANCOVA) on the awareness, attitude and practice in the prevention and control of skin disease**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3911.884 <sup>a</sup>	4	977.971	9.355	.000	.296
Intercept	21176.805	1	21176.805	202.571	.000	.695
Pre-test	11.075	1	11.075	.106	.746	.001
<b>Method</b>	<b>2123.688</b>	<b>1</b>	<b>2123.688</b>	<b>20.315</b>	<b>.000</b>	<b>.186</b>
Gender	24.995	1	24.995	.239	.626	.003
Method * Gender	594.069	1	594.069	5.683	.019	.060
Error	9304.084	89	104.540			
Total	146305.000	94				
Corrected Total	13215.968	93				

a. R Squared = .296 (Adjusted R Squared = .264)

**Decision:** Null hypothesis rejected

Table 4. Shows that the p-value (**sig**) is **0** while alpha ( $\alpha$ ) is 0.05, therefore p – value is less than alpha ( $\alpha$ ) level. Hence, we reject the null hypothesis ( $H_0$ ). This entails that there is a significant relationship between the awareness, attitude and practice in the prevention and control of skin disease amongst student at 0.05 level of significant.

**Discussion of findings**

Research question 1, the finding revealed that there is high impact of socio demographic factors on the prevalence of skin diseases amongst the students in the zones of the state, This study is in accordance with the study of Rajesh, (2013), which examined socio demographic factors and their association to skin diseases among adolescents.. The findings also indicated that more



respondents between 15-19 years old were more prone to skin diseases. Also it was recommended that schools should have a medical plan for their students and teach hygienic management always.

Research question 2, the findings revealed that there were limited awareness, poor attitude and practice in the prevention and control of skin diseases among secondary school and primary school children in Imo state. This study is not in line with this study conducted on communicable diseases risk behaviour by Ilesanmi (2016) based on personal hygiene. The result showed that majority of the respondents had good hygiene practices including taking bath (99.6%) brushing teeth (98.2%), washing of clothes (65.9%).

### **Conclusion and Recommendations**

Based on the findings, it is therefore concluded that “Infectious skin diseases” are very common and constitute an economic and public health problem among “school children”. The rural area, crowding houses, parent’s educational level, secondary and primary school, low economic status were significantly associated with the prevalence of “infectious skin diseases”. It is therefore recommended that:

1. There should be regular screening of school children in respect of their personal hygiene practices in school.
2. The government should provide school medical care unit and services in all public secondary and primary schools.
3. There should be public awareness on infectious skin diseases in our society especially at the secondary and primary school.

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