

# Assessment of Second and Third Year Nursing Students Knowledge towards Mycetoma Disease in Hayatt University College - 2020

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**Abstract:** ***Background:** Mycetoma is a chronic inflammatory process caused either by bacteria (actinomycetoma) or fungi (eumycetoma), characterized by enormous deformities, disfigurement and disabilities if untreated early. But it has been widely observed that student have poor knowledge about mycetoma disease. **Aim:** To assess the knowledge of second & third year nursing students regarding mycetoma disease at Hayatt University College, Khartoum, Sudan. **Methods:** A descriptive cross-sectional institutional based study design was done at Hayatt University College during the period of November – December 2020. It was total coverage sample included 183 nursing students from second and third year. The data was collected using self-administered questionnaire developed by the researcher, after permission was taken. Data were coded, entered and analyzed using SPSS version 20 in form of frequency & percentage and P.value set as < 0.05. **Results:** The existent study revealed that most of the students 53% not heard about mycetoma, and majority of them 63.4% believed that the most common causes of mycetoma were virus. The majority of students 58% said that antifungal & antibiotic were best treatment of it, and only 1.5% mentioned that antiviral & antifungal were not effective. Half of them 53% said that mycetoma can prevent by wearing shoes. **Conclusion:** The students have had poor knowledge regarding the disease. The researchers recommended that integrated the mycetoma as a topic in the university curriculum to raising awareness among students to help in control and prevention of this disease.*

**Keywords:** Knowledge, mycetoma, nursing, student, Sudan.

## 1. Introduction

Mycetoma is an old disease characterized by massive deformities & disabilities and enormous negative impact on patient and community and lately was honored by the world health organization as a neglected tropical disease <sup>(1,2)</sup>.

It is defined as a chronic, skin and subcutaneous swelling caused either by eumycetoma or actinomycetoma <sup>(2)</sup>. Actinomycotic mycetoma is caused by aerobic species of actinomycetes belonging to the genera Nocardia, Streptomyces and Actinomadura with Nocardia brasiliensis, Actinomadura Madura, Actinomadura pelletieri and Streptomyces somaliensis being most common. Eumycotic mycetoma is associated with a variety of fungi, the most common being Madurella mycetomatis <sup>(3,4)</sup>.

Fungi or bacteria are involving the feet, upper extremities, or back. Symptoms include tumefaction and conformation of sinus tracts. Diagnosis is clinical, confirmed by microscopic examination of exudates and culture. Treatment includes antimicrobials, surgical debridement, and sometimes

amputation <sup>(5)</sup>. It has a worldwide distribution but is endemic in tropical and subtropical countries across the "Mycetoma belt". This runs from India to Yemen and goes through Sudan, Somalia, Senegal, Mexico, Venezuela, Colombia, and Argentina <sup>(6,7)</sup>. In Sudan, mycetoma is common in Gadarif, Kassala, Sinnar, Gezira, Khartoum, Kordofan, and Darfur states <sup>(8)</sup>.

Mycetoma has numerous adverse medical, health and socioeconomic impacts on patients but early detection and treatment are important to reduce morbidity and ameliorate treatment outcomes. <sup>(9)</sup>.

## 2. Materials and Methods

### Study design

The study was a descriptive cross-sectional institutional based study design was used.

### Study area

Hayatt University College was established in 2013, located at Al –Mashtal Street, Riyadh, Khartoum, Sudan. It has 9

programs includes medicine, dentistry, medical laboratory, nursing, biomedical engineering, communication engineering, information technology and electrical engineering. The nursing program has 6 batches and graduated 3 batches and has 6 departments and specialty includes medical, surgical, obstetrical, community, pediatrics and psychiatric nursing.

**Study duration**

During a period of November – December 2020

**Study population**

Second and third year nursing students with no exclusion criteria

**Sample size**

Total coverage included 183 students.

**Data collection method and tool**

**Tool:** The data was collected using structured questionnaire was designed by the authors based on literature review, revised, amended and finally approved by an expert in the field of medical- surgical nursing, faculty of nursing, university of Khartoum. It consists from two section; first section for socio-demographic data and second section covering basic knowledge about mycetoma: causes, mode of transmission, symptoms, treatment, control and prevention.

**Method:** Self- administered questionnaire

**Data analysis**

The collected data was then coded, entered and analyzed using statistical package for social science (SPSS) version 20. Significance for data analysis was considered as  $P \leq 0.05$ . Frequencies and percentages and P-values were calculated for socio-demographic characteristics of students and their knowledge regarding mycetoma.

**Pilot study**

The pilot study was done on 10% of sample equal 18 students to test validity and reliability then rule out from the study. The questionnaire was valid and reliable (89.9%, 90%) respectively.

**Ethical considerations**

Approval was taken to conduct the study from the dean of the Hayatt University College and coordinator of the nursing program. All the students were informed about the purpose of the study clearly without any enhancement or convincing to participate voluntarily then written consent was obtained from them. It was explained that the data would be kept confidential.

**3. Results**

**Table 1:** Socio demographic data, n= (183)

Variables	Frequency	%
<b>Age</b>		
15-20	71	38.8
21-25	110	60.1
26-30	2	1.1
<b>Sex</b>		
Male	26	14.2

Female	157	85.8
<b>Year of education</b>		
Second	97	53
Third	86	47
<b>Total</b>	<b>183</b>	<b>100</b>

This table reveals that 110(60.1%) of age group between 21-25y/o, most of the students were female 157(85.8%), and 97(53.0%) from second year.

**Table 2:** Heard about mycetoma, n= (183)

Variables	Frequency	%
Yes	86	47
No	97	53
<b>Total</b>	<b>183</b>	<b>100</b>

This table represents that 97(53.0%) of students not heard about mycetoma disease.

**Table 3:** causes of mycetoma, n= (183)

Variables	Frequency	%
Fungal	29	15.8
Bacterial	38	20.8
Virus	116	63.4
<b>Total</b>	<b>183</b>	<b>100</b>

This table shows that most of the students 116(63.4%) said that virus were the common cause of mycetoma.

**Table 4:** Effect of mycetoma, n= (183)

Variables	Frequency	%
Male	32	17.5
Female	15	8.2
Both	136	74.3
<b>Total</b>	<b>183</b>	<b>100</b>

This table represents that 136(74.3%) of the students said that both sex were affected by mycetoma.

**Table 5:** Age group mycetoma, n= (183)

Variables	Frequency	%
<15 y/o	35	19.1%
15-30	70	38.3%
>30	78	42.6%
<b>Total</b>	<b>183</b>	<b>100</b>

This table displays that 78(24%) of students said that the age group exposed to mycetoma was more than 30 years old.

**Table 6:** Knowledge about mycetoma, n= (183)

Variables	Frequency	%
<b>Signs &amp; symptoms</b>		
Tachycardia	43	23.5
Sero-purulent discharge	27	14.8
Painless & edema	113	61.7
<b>Diagnosis</b>		
Biopsy & culture	31	16.9
Auscultation	62	33.9
x-ray	90	49.2
<b>Treatment</b>		
Antivirus & antifungal	24	13.1
Antivirus & antibiotics	37	20.2
Antifungal antibiotics	122	66.7
<b>Prevention</b>		
Not walk barefoot	43	23.5

Walk barefoot	43	23.5
Wear shoes	97	53
Total	183	100

This table shows that the students' knowledge regarding mycetoma, the majority 113 (61.7%) of them said that painless & edema was sign & symptoms of it, most of them 90 (49.2%) mentioned that x-ray is a diagnosis of the disease, more than half of them 122(66.7%) answered the best treatment was anti-fungal & antibiotics, and the two-third 97(53%) supposed that shoes was prevented from the disease.

**Table 7:** risk group of mycetoma, n=183

Variable	Frequency	%
Agriculture works	21	15.2%
Good hygiene	30	16.4%
Who walk by foot	132	72.1%
Total	183	100%

This table reveals that most of them 132(72.1%) said that individuals who walk by foot were most risk group of mycetoma

**Table 8:** Complications of mycetoma, n=183

Variable	Frequency	%
Disability	28	15.3%
Deformity	36	19.6%
Disability & Deformity	119	65%
Total	183	100%

This table shows that majority of the students 119(65%) said that the complications of mycetoma were disability and deformity.

## 4. Discussion

Mycetoma is a neglected tropical disease that affects poor communities; cases generally present late with advanced disease which results in several medical, health and socio-economic problems. Hence mycetoma has a negative impact on cases families, communities and health authorities in endemic areas. (1)

The current study showed that the most common 60.1% age group between (21-25) years old, majority 85.8% of nursing students were female, and 53% studied in second year. There was no previous study done to assess the knowledge of students. But study was done by Ahmed Fahal & et al most of respondents 241(60%) were female, while age group between 20-40 years and 103 were illiterate or attained khalwa<sup>(11)</sup>.

The existent study revealed that about 97(53%) of the students not heard about mycetoma, this referred to disease not studied during academic journey. There were no former studies done to assess knowledge of students toward mycetoma.

But on study was done by Ahmed Fahal & et al; unveiled that 391 of participants heard of mycetoma from relatives and friends<sup>(11)</sup>.

This study represented that 116(63.4%) of students said that the main cause of the mycetoma was virus, but the facts said that the disease caused by true fungi or by certain bacteria<sup>(10)</sup>. While 136(74.3%) of them supposed that the disease affected both sex as equal, and 78(24%) of them answered that more than 30 years old only exposed to the disease. This results were disagree with the study showed that Mycetoma is more commonly reported in males than females, presumably attributable to men being more commonly involved in agricultural work (12), but agree with recent epidemiological study showed that female ratio is higher than male ratio a result attributed by the researcher to female health seeking behavior (13). And the condition is most common in young adults between (16-40) and is uncommon in children<sup>(4)</sup>. Also study done by Ahmed Fahal & et al in cases confirmed mycetoma showed that 16(49%) were male, the majority 22(67%) < 30 years were affected most<sup>(11,13)</sup>

This current study showed that the students' knowledge regarding mycetoma, the majority 113 (61.7%) of them said that painless & edema was signs & symptoms of it, most of them 90 (49.2%) mentioned that x-ray is a diagnosis of the disease, more than half of them 122(66.7%) answered the best treatment was anti-fungal & antibiotics, and the two-third 97(53%) supposed that shoes was prevented from the disease. No studies were published to assess knowledge of students but facts and studies in Sudan dictated that most of cases presented with swelling (80.8%), and group who wore shoes showed similar prevalence of mycetoma (11,13), while x-ray is best diagnosed the disease and medical treatment was the best treatment option and wearing shoes was most important<sup>(11)</sup>.

## 5. Limitations

**First;** lack of previous research studies on the topic and all literature researcher found were clinical base, **second;** limited access to data, **third;** time constraints.

## 6. Conclusion

Based on the findings of the present study it was concluded that: The students had poor knowledge regarding mycetoma disease.

### Conflict of Interest

The authors declare that there are no conflicts of interest

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