



**Napata College
Faculty of Medicine**

**كلية نبتة
NAPATA COLLEGE**

***Knowledge and Attitude of IT Napata student
toward covid 19' Napata colleg'2020***

***Research Report Submitted in Partial Fulfillment for the Requirements of the
MBBS Degree***

Done by

Abeer Abdullah Muhammad Adam

Marwa Bashir Hammad Abdel Rahman

Fatima Siddiq Talha

Hafsa Yusuf Hassan Ahmed

Supervisor

Dr. Moneer Ali Abdalla

DEDICATION

To our families ...

Who encouraged us at all stages of my life

...

For their unlimited support ...

ACKNOWLEDGEMENT

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ABBREVIATIONS

COVID 19	Corona Virus Infection Disease 2019
IT	Information Technology
SARS-COV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SPSS	Statistical Package For Social Sciences
WHO	World Health Organization

ABSTRACT

Background The last few years saw a major global pandemic of the Covid-19 virus, which caused high morbidity and mortality in the world, in Africa and in Sudan. Awareness and good practice remain the first line of defense against the pandemic. Therefore, it is necessary from time to time to assess the level of knowledge, attitudes, especially among university students, to improve it within the activities to control the virus.

Objective To evaluate the knowledge, attitude toward Covid 19 among information technology students in Napata College

Methods A quantitative, descriptive cross sectional study was conducted at the Faculty of Information Technology, Napata College in Khartoum State, Sudan from September to December 2021 and covered second year IT students who registered at faculty of IT. Data was collected, entered, presented using SPSS version 25.0.

Results This study covered 100 IT students. The study found that their overall adequate knowledge regarding the Covid 19 was among less than half of them (41%). The weakest areas that they reported lack of knowledge were related to the isolation period, the mortality rates of the diseases, and the risky groups for the infection. Moreover, the study showed that nearly two thirds of them had negative attitudes toward Covid 19 disease. The most areas of negative attitude among IT students were the own risk for corona infection, their agreement to be vaccinated or isolated and their overall perception toward the epidemiological situation in Sudan.

Conclusion The study found that the rate of knowledge, behavior among students of the Faculty of Information Technology at the NAPATA COLLEG is low and should not be ignored. Therefore, care must be taken to make the necessary educational and guidance interventions, which aim to raise awareness, reduce the rate infection and raise the rate of prevention among students of the Faculty of Information Technology and other faculties

Chapter I

Introduction

1. INTRODUCTION

1.1 Background

A coronavirus is a highly contagious virus causing severe acute respiratory diseases in human beings. It is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is a highly pathogenic virus [1]. The virus has emerged in China, Wuhan state in December 2019. Following the report from China to the world health organization (WHO), WHO declared the diseases as a public health emergency on January 30 [2].

Globally, as of 26 November 2021, there have been 259,502,031 confirmed cases of COVID-19, including 5,183,003 deaths, reported to WHO. As of 5 December 2021, a total of 7,702,859,718 vaccine doses have been administered. [3].

The first case in Sudan was reported on 13 March 2020. In Sudan, from 3 January 2020 to 5 December 2021, there have been 42,056 confirmed cases of COVID-19 with 3,114 deaths, reported to WHO [3, 4]. As of 17 October 2021, a total of 2,698,219 vaccine doses have been administered. The case fatality rate was 6.23%. There is variation in case fatality rate (CFR), which in some cities (like Khartoum) was low (3.8%), but in others (like North Darfur) it was very high (31.7%). [4]

In addition to many prohibitions, one of the actions taken by the government was banning the students from face-to-face education and discharging the university students to their home by the closing school [5].

The virus is spread by small droplets discharged from cases during coughing, sneezing, and talking. It is also transmittable by contaminating the nose and mouth with contaminated hands contaminated surfaces containing the virus. The virus has an incubation period that may range from 2 to 14 days with the main clinical manifestations of fever, cough, and shortness of breath. The virus has no curing antiviral treatment and applying the measures to reduce the transmission remains the mainstay of prevention [6].

Knowledge, attitude, and practices (KAP) are important in controlling the spread of the disease. Knowing the cause of the disease, signs/symptoms, and the possible methods of prevention can facilitate the proactive application of preventive measures [7].

Students are now being in return to their institutions to continue the banned education with serious application of preventive measures. These groups are at risk, and the existence of a single case can cause pandemics among students [6, 7]. And applying essential preventive measures to reduce such risk in this group is important. But there is a shortage of findings in Sudan that identified the KAP among students towards Covid-19.

Therefore, this study is undertaken to determine the KAP of information technology (IT) students towards Covid-19 in Napata University, Khartoum state, Sudan in 2021.

1.2 Problem Statement

Coronavirus disease (Covid-19) poses the most recent important health risk to the globe that has attracted global scrutiny [1]. To date, several millions of population especially elderly, pregnant, and whom with chronic diseases, globally have been reported as infected with the severe acute respiratory syndrome coronavirus 2 virus that causes the disease. [3]

In light of the global, regional and local epidemiological situation, the situation of the Corona virus is still worrying, especially with the emergence of the latest viral mutants as one (Macron) [4].

The level of awareness with corona virus and prevention and the importance of vaccination against it is still weak in most groups of community, especially among university students from non-medical fields.

1.3 Justification

There is a need to conduct this research to assess the gaps of knowledge, attitudes, towards the prevention of the Covid 19 pandemic among students from non-medical and health colleges such as IT students

Our knowledge of these gaps helps to determine the best ways to raise awareness, reduce infection rates and raise the level of prevention among this important group of the Napata colleg community and also in Sudan.

1.4 Objectives

1.4.1 General objective

To evaluate the knowledge, attitude toward Covid 19 among information technology students in Napata colleg

1.4.2 Specific objectives

1. To assess the knowledge of IT students toward the causative agent, transmission routs, preventive measures and useful treatment
2. To explore the attitude of IT students towards to seriousness of the pandemic in Sudan, perception for isolation, risks for families etc.

Chapter II

Literature Review

2. LITERATURE REVIEW

In early December 2019 an outbreak of corona virus disease caused by a novel severe acute respiratory syndrome occur in Wuhan city, china. Perceived risk of acquiring disease has led many government to institute a variety of control measures.

With increasing spread of this virus corporate entities, federal, state, county and city government, universities, school district. Healthcare facilities ,assisted living organization ,daycare ,homeowner, and other building owner and occupant have an opportunity to reduce the potential for transmission through built environment be mediated pathway

Over the last decade substantial research into the presence, abundance, diversity, function, and transmission of microbes has taken place and revealed common pathway exchange pathway and mechanism.

In this paper we synthesize this microbiology of the be research and the known information about Covid 19 to provide actionable and achievable guidance to be decision maker, building operator, and all indoor occupant attempting to minimize infection disease through environmentally mediated pathway.

We believe this information will be useful to increase health awareness to corporate and environmental services in their decision - making process about whether the Sudanese society need more information and polices and implement social -distancing measures and for what duration.

We know that economic potential is weak at present, and so far no vaccine has reached Sudan and the only option we have to com front the pandemic is to prevent the spread.

To prevent the spread Sudanese community must increase health awareness of this disease .and Sudanese community must follow measures, and strict procedure must be put in place for violator. With regard to this goal, we want to measure the health awareness of Sudanese community, and we want to collect information on whether the Sudanese society is following preventive measures to confront the pandemic.

In Sudan, **Badi S et al** assessed the knowledge, attitude, and practice of university students toward COVID-19. They found that more than 60% of the participants were females, around two-thirds (68.1%) aged between 18 and 23 years. More than 81% of the participants live in urban areas; approximately two-fifth (59.5%) of them were medical students. About 59% of the participants have sufficient knowledge. Twenty-two percent of the participants reported a positive attitude, while 71% of them reported a fair attitude, and only 3.8% reported a negative attitude. Nearly 94% of them do not go out of home, and 95% do use disinfectants, solutions, and face masks to prevent contacting and spreading COVID-19. Knowledge was significantly associated with age, gender, study level, being medical or nonmedical students, attending online lectures or webinars about COVID-19, and educational level, while attitude was significantly associated with gender. Conclusion: More than half of the participants had sufficient knowledge, and the minority of them had a negative attitude toward COVID-19,

while most of them had a good practice. Gender and attending online lectures or webinars about COVID-19 were the predictors for participant's knowledge [8].

In Saudi Arabia, **Alrasheedy et al** assessed the knowledge, attitude and practice about coronavirus disease (COVID-19) Pandemic among university students. The study showed that students had good knowledge as well as positive attitudes and good practices towards COVID-19 and the preventive measures. However, during the early months, the pandemic did have a negative psychological impact on a number of students. Consequently, proactive psychological and social support services to the students should be considered during the current and future pandemics. In addition, it is important to consider and proactively address key issues that could cause stress and anxiety among students when shifting to distance learning and assessments [9].

In Ethiopia, **Abiy et al** assessed the knowledge, attitudes, and practices toward covid-19 and associated factors among university students in Mizan Tepi University. They found that the KAP of the students towards the Covid-19 was low. Being a health sciences student was an explanatory variable for better knowledge. Sex, being a health science college student, parents' educational status, and monthly income were predictors of students' attitude. Residency, knowledge, and attitude were independent predictors of practice. Awareness creation on preventive behaviors among the students is highly recommended [10].

In Pakistan, **Shah et al** assessed the knowledge, attitudes, and practices (KAP) towards COVID-19 among university students they reported that most of the students have an adequate level of knowledge and are doing better preventive

measures against COVID-19. Health education initiatives are required to ensure best practice among the high-risk groups [11].

In China, **Yuehui Jia, et al** assessed the knowledge, attitude and practice regarding covid-19 among college students During the COVID-19 Outbreak. They stated that the college students had a good KAP towards the COVID-19 pandemic. The present study was able to assess the COVID-19-related KAP among college students during the pandemic and identify their weaknesses in pandemic prevention. Consequently, the results of this study provide theoretical basis for implementing precision health education among college students and reference for campuses to conduct scientific prevention and control during a pandemic. Results also provide beneficial experience to curb similar major public health emergencies in the future [12].

Chapter III

Materials and Methods

3. MATERIALS AND METHODS

3.1 Study design

observational method. cross sectional

3.2 Study area

The research was conducted at the Faculty of Information Technology secondary year, Napata College in Khartoum State, Sudan. Napata College was established in the year 2014 and is located in Riyadh neighborhood in the city of Khartoum. It also offers bachelor's degrees in a number of scientific and literary colleges, such as the faculty of Medicine and of Computer Science.

3.3 Study period

The study was conducted from September to December 2021

3.4 Study population

second year IT students who registered at faculty of IT in Napata University in Khartoum State, Sudan within 2021

3.4.1 Inclusion criteria

- IT students second year who registered at faculty of IT in Napata University in Khartoum
- Available in the year 2021
- Accept to participate in the study

3.4.2 Exclusion criteria

- Any participants who did not fulfilled the criteria above

3.5 Sampling (size and method)

The study covered 100 IT students who were selected randomly we select this number because limited recourse and limited time

3.6 Data collection tools and methods

A survey questionnaire included socio-demographic characteristic and 24 items question on knowledge attitude, practice toward corona virus. Questionnaire was in both Arabic and English languages. Data was collected online through google forms.

3.8 Data analysis

- Data was entered, cleaned, and analyzed using SPSS 25.0
- Quantitative, descriptive statistics in term of frequency tables with percentages and graphs.

3.9 Ethical consideration

- Approval from Napata College, Khartoum state, Ministry of Health, Research department.
- Research purpose and objectives were explained to participant in clear simple words.
- Participant has right to voluntary informed consent.
- Participant has right to withdrawal at any time without any deprivation.

- Participant has right to no harm (privacy and confidentiality by using coded questionnaire).
- Participant has right to benefit from researcher knowledge and skills.
- Investigation results were received by the participant immediately.
- Questionnaire Sample will not be reused for other study.
- Questionnaires were filled with the participants in their rest time without any interruption.

Chapter IV

Results

RESULTS

This study covered 100 students who recruited from information Technology College in Napata College in 2021.

The study found that their overall adequate knowledge regarding the Covid 19 was among less than half of them (41%). The weakest areas that they reported lack of knowledge were related to the isolation period, the mortality rates of the diseases, and the risky groups for the infection as detailed in tables 1 and 2.

Moreover, the study showed that nearly two thirds of them had negative attitudes toward Covid 19 disease. The most areas of negative attitude among IT students were the own risk for corona infection, their agreement to be vaccinated or isolated and their overall perception toward the epidemiological situation in Sudan as detailed in tables 3 and 4.

RESULTS

KNOWLEDGE ASSESSMENT

Table (1) the distribution of the participants according to their knowledge toward Covid 19 (n = 100 IT students)

Knowledge assessment		Frequency	Percent (%)
Corona disease is caused by viral infection	Yes	82	82.0
	No	18	18.0
Corona disease is spread through respiratory droplets	Yes	77	77.0
	No	23	23.0
Fever, cough, and shortness of breath may be symptoms of corona disease	Yes	67	67.0
	No	33	33.0
The isolation period for a person with symptoms of corona is two weeks	Yes	19	19.0
	No	81	81.0
These vaccin available for corona diseases	Yes	86	86.0
	No	14	14.0
Washing hands and wearing a mask will reduce the rate of transmission	Yes	78	78.0
	No	22	22.0
Antibiotics are an effective treatment against corona disease	Yes	74	74.0
	No	26	26.0
Vaccination against corona disease is an effective way to prevent the disease	Yes	54	54.0
	No	46	46.0
	The elderly	88	88.0

The groups most at risk of corona virus disease are	Kids	47	47.0
	Pregnant	55	55.0
	Depressed	10	10.0
Mortality rates for corona disease exceed 10%	Yes	98	98.0
	No	2	2.0
What is the source of your information about the disease?	TV	33	33.0
	Friends and family	59	59.0
	Social Networking Sites	89	89.0
	Health Authority Reports	8	8.0
	WHO website	1	1.0

Table (2) the overall knowledge regarding Covid 19 among IT students (n = 100)

Overall knowledge toward Covid 19	Frequency	Percent (%)
Adequate knowledge	41	41.0
Inadequate knowledge	59	59.0
Total	100	100.0

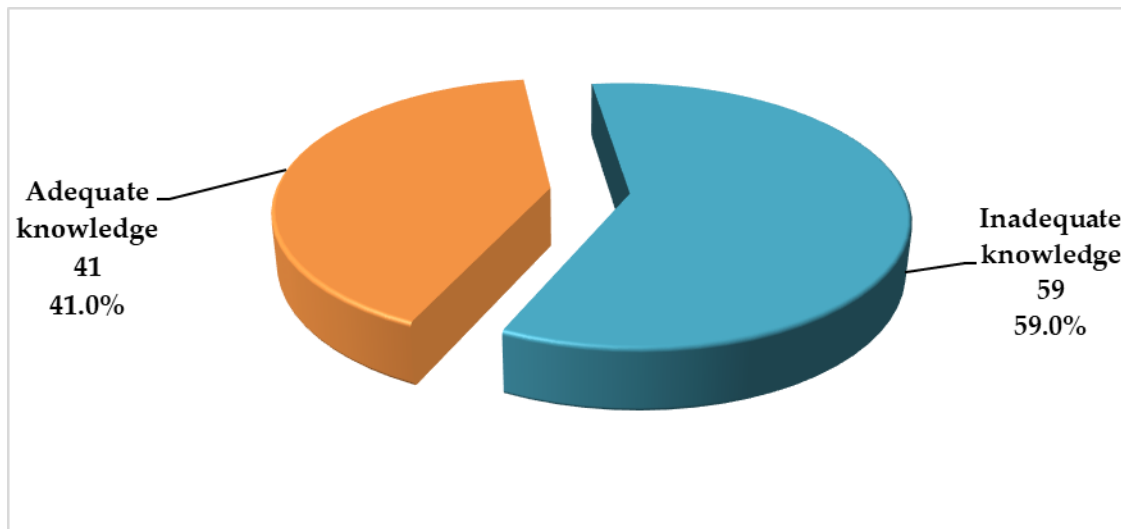


Figure (1) the overall knowledge regarding Covid 19 among IT students (n = 100)

ATTITUDE ASSESSMENT

Table (3) the distribution of the participants according to their attitude toward Covid 19 (n = 100 IT students)

Attitude assessment		Frequency	Percent (%)
you might catch corona disease	Yes it might	12	12.0
	No, I won't get hurt	88	88.0
Are you worried about your family getting infected with Corona disease?	Yes worried	67	67.0
	No but worried	33	33.0
Is it possible to protect yourself from infection with corona disease by wearing a mask and frequent hand washing	I agree	52	52.0
	I don't agree	48	48.0
If you develop symptoms of corona disease, do you agree to be isolated?	I agree	34	34.0
	I don't agree	66	66.0
The epidemiological situation of corona disease in Sudan currently is not a cause for concern	I agree	9	9.0
	I don't agree	91	91.0
Do you think that some municipal remedies are effective against corona disease?	Yes, I think so	63	63.0
	No, I don't think	37	37.0
Do you agree to take a dose of the vaccine against the disease (for unvaccinated people)?	I agree	14	14.0
	I don't agree	86	86.0

Table (4) the overall attitude regarding Covid 19 among IT students (n = 100)

Overall attitude toward Covid 19	Frequency	Percent (%)
Positive attitude	34	34.0
Negative attitude	66	66.0
Total	100	100.0

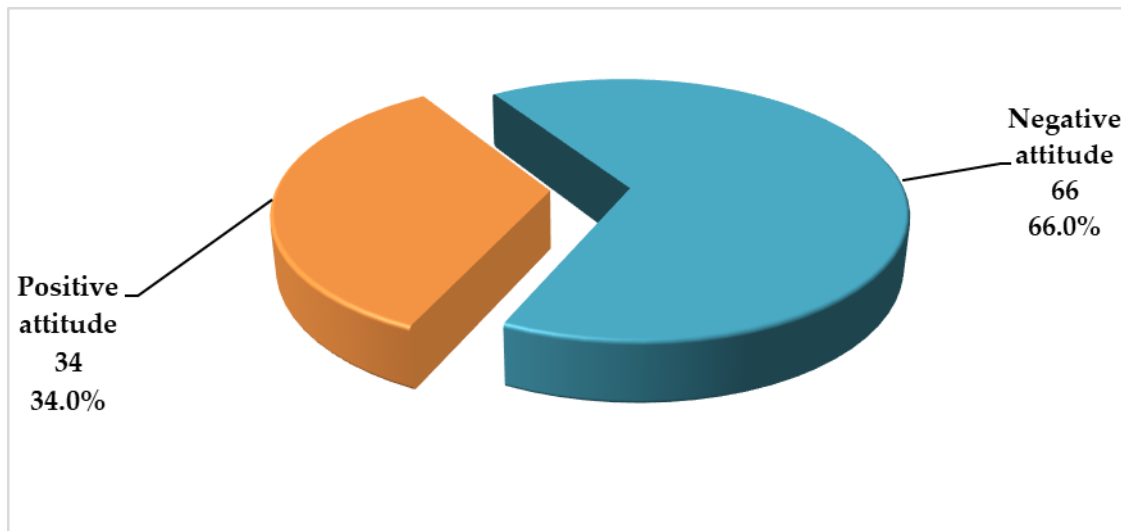


Figure (2) the overall attitude regarding Covid 19 among IT students (n = 100)

Chapter V

Discussions

5.1 Discussion

This study aimed to evaluate the knowledge, attitude toward Covid 19 among information technology students in Napata College in 2021 and covered 100 IT students.

Our study found that their overall adequate knowledge regarding the Covid 19 was among less than half of them (41%). The weakest areas that they reported lack of knowledge were related to the isolation period, the mortality rates of the diseases, and the risky groups for the infection. In other Sudanese study by Badi S et al [8], 58.8% of Sudanese students had sufficient knowledge of COVID-19. This overall knowledge score was far below shown in the Chinese population, US citizens [19], Indian people [20], Jordan students [17], and Chinese students.[18, 21] Moreover, by Badi S et al [8], reported that 78.7% of the students felt that prophylactic antibiotics would be useful for Covid 19. Moreover, Modi et al [23] stated that the majority of the students responded well to the knowledge questions related to the transmission of the disease, the preventable measures, and the respiratory symptoms (fever, dry cough, and difficulty in breathing). However, their knowledge about the gastrointestinal symptoms was inadequate (44%). Thus, in order to improve knowledge and perception, further

training and education on transmission, symptoms, and management about COVID-19 are required in our population.

Moreover, the study showed that nearly two thirds of them had negative attitudes toward Covid 19 disease. The most areas of negative attitude among IT students were the own risk for corona infection, their agreement to be vaccinated or isolated and their overall perception toward the epidemiological situation in Sudan. However, in Sudan, Badi S et al [8], stated that around 19% of the participants have not considered COVID-19 a dangerous disease, and around one-third of them thought that media coverage about the disease is exaggerated, and 12.8% of them have regarded the disease politically fabricated. Therefore, particular education/information about preventive measures for IT students may be necessary. Other KAP studies in global did not separate knowledge into basic and advanced. Therefore, our results provide novel information. Moreover, studies in Japan [30] by Hatabuet al found that the attitude toward Covid 19 measure was appropriate but still need some more exploration

workshops and webinars about COVID-19 will help increase the knowledge about control and prevention of the disease properly, as there are many misleading and unverified information found in social media. However, globally, social media is still considered the main source of information about COVID-19, even for health-care

professionals. [13 - 15]. Huynh et al in China showed that media represent the main source of information about this disease for the public, including the students [16]

Chapter VI

Conclusions and recommendations

6.1 Conclusion

The study found that their overall adequate knowledge regarding the Covid 19 was among less than half of them (41%). The weakest areas that they reported lack of knowledge were related to the isolation period, the mortality rates of the diseases, and the risky groups for the infection. Moreover, the study showed that nearly two thirds of them had negative attitudes toward Covid 19 disease. The most areas of negative attitude among IT students were the own risk for corona infection, their agreement to be vaccinated or isolated and their overall perception toward the epidemiological situation in Sudan.

6.2 Recommendations

1. we recommend napata colleg throug ministry of health to raise awareness among students of the College of Information Technology and direct them to the correct behaviors and optimal practices to prevent disease and the correct behavior in case of infection
2. Activating the role of health awareness associations / organizations at the university and the need to target non-medical colleges at the university to raise their relevant awareness
3. Conducting direct or online lectures and seminars to enhance knowledge, correct attitudes and correct practices among students in general.

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Appendixes

Appendix 1 (Arabic version of the questionnaire)

Knowledge Attitude and Practice of Information Technology Student of Napata College toward Covid- 19

تقييم المعرفة

1. مرض كورونا فيروسي ا
 - نعم
 - لا
2. مرض كورونا ينتشر عن طريق رذاذ الجهاز التنفسي
 - نعم
 - لا
3. حمي كحه و ألم حلق و ضيق التنفس ممكن أن تكون أعراض لمرض الكورونا
 - نعم
 - لا
4. مدة العزل للشخص الذي تظهر لديه أعراض مرض الكورونا هي اسبوعين
 - نعم
 - لا
5. هل هناك تطعيم لمرض الكورونا
 - نعم
 - لا
6. غسل اليدين و لبس الكمامه ممن أن تقلل نسبه انتقال المرض من الأشخاص المصابين
 - نعم
 - لا
7. المضادات الحيوية تعد من العلاجات الفعالة ضد مرض الكورونا
 - نعم

• لا
8. التطعيم ضد مرض الكورونا يعتبر وسيلة فعالة للوقاية من المرض

• نعم

• لا

9. الفئات الأكثر عرضة للإصابة بمرض الكورونا هي

• كبار السن

• الأطفال

• الحوامل

• المصابون بالاعتلال

• اخرى، حدد ...

10. معدلات الوفيات لدى الإصابة بمرض الكورونا تتجاوز الـ 10%

• نعم

• لا

11. ماهو مصدر معلوماتك عن المرض

• التلفاز

• الاصدقاء والاسرة

• مواقع التواصل الاجتماعي

• تقارير الجهات الصحية

• موقع منظمة الصحة العالمية

• اخرى حدد ...

تقييم السلوك

12. هل تعتقد أنك قد تصاب بمرض الكورونا

• نعم قد اصاب

• لا لن اصاب

13. هل انت قلق على عائلتك أن يصابو بمرض كورونا

• نعم قلق

• لا غير قلق

14. هل ممكن ان تقي نفسك من الاصابه بمرض الكورونا عن طريق لبس الكمامه و غسل اليدين المتكرر

• موافق

• غير موافق

15. إذا ظهرت عليك أعراض مرض كورونا هل توافق على أن يتم عزلك

- اوافق
- لا اوافق

16. الوضع الوبائي لمرض الكورونا بالسودان حاليا لا يدعو للقلق

- اوافق
- لا اوافق

17. هل تعتقد ان بعض العلاجات البلدية فعالة ضد مرض الكورونا

- نعم اظن ذلك
- لا، لا اعتقد

18. هل توافق على اخذ جرعة من اللقاح ضد المرض (لغير المطعمين)؟

- اوافق
- لا اوافق

تقييم الممارسة

19. هل تلبس الكمامه عند الخروج من المنزل

- نعم
- لا

20. هل تذهب إلى أماكن مزدحمه

- نعم
- لا

21. هل تغطي فمك عند العطس

- نعم
- لا

22. هل تغسل يديك باستمرار

- نعم
- لا

23. هل تعرف الى اين تتجه مباشرة في حالة شعرت باعراض المرض او احد افراد عائلتك

- نعم
- لا

24. هل اخذت جرعة او اكثر من اللقاح ضد المرض (لغير المطعمين)؟

- نعم

Appendix 2 (English version of the questionnaire)

Knowledge Attitude and Practice of Information Technology Student of Napata College toward Covid- 19

Knowledge assessment

1. Corona virus, viral
 - Yes
 - No
2. Corona disease is spread through respiratory droplets
 - Yes
 - No
3. Fever, cough, sore throat and shortness of breath may be symptoms of corona disease
 - Yes
 - No
4. The isolation period for a person who shows symptoms of corona disease is two weeks
 - Yes
 - No
5. Is there a vaccination for corona disease?
 - Yes
 - No
6. Washing hands and wearing a mask will reduce the rate of transmission of the disease from infected people
 - Yes
 - No
7. Antibiotics are an effective treatment against corona disease

- Yes
 - No
8. Vaccination against corona disease is an effective way to prevent the disease
- Yes
 - No
9. The groups most at risk of corona virus disease are
- The elderly
 - Kids
 - Pregnant
 - Depressed
10. Mortality rates for corona disease exceed 10%
- Yes
 - No
11. What is the source of your information about the disease?
- TV
 - Friends and family
 - Social Networking Sites
 - Health Authority Reports
 - World Health Organization website

Attitude assessment

12. Do you think you might catch corona disease?
- Yes it might
 - No, I won't get hurt
13. 13. Are you worried about your family getting infected with Corona disease?
- Yes worried
 - No but worried
14. Is it possible to protect yourself from infection with corona disease by wearing a mask and frequent hand washing
- I agree

- I don't agree
15. If you develop symptoms of corona disease, do you agree to be isolated?
- I agree
 - I don't agree
16. The epidemiological situation of corona disease in Sudan currently is not a cause for concern
- I agree
 - I don't agree
17. Do you think that some municipal remedies are effective against corona disease?
- Yes, I think so
 - No, I don't think
18. Do you agree to take a dose of the vaccine against the disease (for unvaccinated people)?
- I agree
 - I don't agree

Practice assessment

19. Do you wear a mask when leaving the house?
- Yes
 - No
20. Do you go to crowded places?
- Yes
 - No
21. Do you cover your mouth when sneezing
- Yes
 - No
22. Do you wash your hands frequently
- Yes
 - No

23. Do you know where to go directly in case you or a member of your family feel symptoms of illness?

- Yes
- No

24. Have you taken one or more doses of the vaccine against the disease (for unvaccinated people)?

- Yes
- No