ORIGINAL RESEARCH

Assessing Knowledge, Attitudes and Practices Towards COVID-19 Public Health Preventive Measures Among Patients at Mulago National Referral Hospital

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Background: COVID-19 has become a major global health challenge, with Uganda reporting over 20,000 cases. There is, however, a scarcity of data on the perception of patients in Uganda towards the highly infectious disease. We aimed to assess the awareness, knowledge, attitudes, and practices towards COVID-19 preventive measures among patients at Mulago National Referral Hospital (MNRH), Uganda.

Methods: A cross-sectional quantitative survey was conducted in August, 2020, among patients in surgical and medical wards at MNRH. An interviewer-administered, pre-validated questionnaire was used to collect data that was entered into Google Forms and analyzed using Microsoft Excel and STATA 16. Descriptive statistics was used to present data from univariate analysis. Patients whose knowledge and practice scores were greater or equal to the average score were regarded to have good knowledge and practices respectively. Chi-square, Fisher's Exact tests and binary logistic regression were used to assess factors associated with COVID-19 knowledge and practices. A $P<0.05$ was statistically significant.

Results: Overall, 114 patients were approached and 102 consented to participate. Most were females (53.8%), aged above 45 years (31.4%) with 40.2% reporting primary level as the highest level of education. About 55.9% (n=57) had adequate knowledge for COVID-19 and its related practices, and 52% (n=53) had good COVID-19 related practices. Knowledge significantly differed by marital status at bivariate analysis (P=0.020), however this lost significance at logistic regression. Female patients were thrice more likely to have good COVID-19 prevention practices compared to males (COR: 2.59, 95% CI: 1.2 to 5.8, P=0.020). Some 47 (46.1%) participants perceived that COVID-19 preventive measures were not difficult at all to observe.

Conclusion: About half of the patients at Mulago National Referral Hospital lack adequate knowledge and practice on COVID-19 prevention. Continued patient education is required to increase knowledge which will in turn improve adherence to COVID-19 preventive practices.

Keywords: COVID-19, knowledge, attitudes, practices, patients, Uganda

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Introduction

Coronavirus disease 2019 (COVID-19) is an illness caused by a coronavirus, currently known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). COVID-19 was first identified in Wuhan city, China in late December, 2019 and has since become a global pandemic, with cases in over 200 countries.[1,2]

As of November 24, 2020, it had infected over 57 million people and had caused over 1 million deaths globally.[3] The most common manifestations of COVID-19 are difficulty in breathing, fever, tiredness, muscle aches and pain, and dry cough.[4] People with co-morbidities like diabetes, hypertension and those who are of advanced age have been pointed out as being likely risk factors for dreadful illness and mortality.[5]

Currently, there is no approved vaccination or curative treatment for COVID-19,[6] however, as per November 20, 2020, several vaccines are under advanced testing for possible use and the current treatment is only supportive. Several measures have been set up to control the transmission of COVID-19 and its disastrous consequences on the public and health systems. Some of the measures have included: limitation of movements with lock down measures, self-isolation in addition to quarantine of the suspected cases, hand washing with soap and use of facemasks. The triumph of those preventive actions is, however, determined by the populations' compliance to the guidelines which is in turn determined by their knowledge and attitude.[7]

Uganda registered her first case of COVID-19 on March 21, 2020.[8] Between March 18 and June 1, 2020, Uganda's government declared several measures in order to prevent virus transmission and manage the few cases that the country had at that time.[8] These included strict measures like shutdown of all border movements and educational institutions, restriction on all public gatherings, and a nation-wide lockdown restricting any movements of people except those who were providing essential services. However, upon relaxation of the measures, the Ministry of Health (MOH) documented a surge in the new positive cases from within the population whose origin of infection could not be tracked down easily. MOH Uganda has since reported over 17,000 cases and over 158 deaths as of November 20, 2020.[3] Although the government has directed implementation of social distancing in all public places and wearing of face masks, adherence by the public has been questionable.[8,9] Despite this, the increase of the number of confirmed cases with COVID-19 has been of less worry to people.[10]

Uganda, just like other developing countries is faced with challenges like inadequate resources in order to take care of the huge number of COVID-19 infected patients in contrast to developed countries. Therefore, compliance to preventive measures would reduce the burden to the healthcare systems in low-resourced countries,

Uganda included. A study by Zhang and colleagues showed that patients with comorbidities (especially chronic diseases like diabetes) are more vulnerable to a dreadful form of COVID-19, hence considering them as the high risk group.[11] Inadequate knowledge of the disease in high risk groups has been implicated in the increase of the death toll due to the disease, therefore, successful containment and lessening of mortality due to COVID-19 necessitates behavioral change, which is directly determined by perception and knowledge of the people.[12]

Patients in hospitals are also at high risk of contracting COVID-19 from other patients or the healthcare workers, especially in national referral hospitals who admit patients from diverse sociodemographic backgrounds. There are however limited studies in sub-Saharan Africa and globally, reporting knowledge, attitudes, and practices (KAPs) of patients towards COVID-19. Among patients with chronic diseases in Ethiopia, poor knowledge and practices towards COVID-19 were significantly high.[13] In Uganda, studies on COVID-19 related KAPs have been limited to healthcare workers, university students and market vendors.[14–16] In this study, we aimed to assess the level of KAPs towards COVID-19 preventive measures among patients admitted in the medical and surgical wards of Mulago National Referral Hospital (MNRH), Uganda's largest public hospital.

Methodology
Study Design
A descriptive cross-sectional survey using quantitative techniques was conducted in August, 2020 over two weeks from August 11, 2020 to August 25, 2020.

Study Site and Population
The study was carried out in Mulago Hospital which is the largest national referral and doubles as the teaching hospital for Makerere University. The hospital is located on Mulago Hill, 5 kilometers by road north of Kampala city. MNRH has both outpatient and inpatient departments offering services in most surgical and medical subspecialties, in addition to dentistry, emergency medicine, pediatrics, and intensive care. The study was done in three wards which were selected randomly: gastrointestinal surgical, neurosurgery and medical wards. Each ward contained a minimum of 45 patients at the time of the study.

Selection Criteria

Patients who were 18 years and above, admitted in the gastrointestinal surgical, neurosurgery and medical wards at MNRH who had consented to take part in the study were eligible. Patients who were severely ill subjectively and were mentally incapacitated to respond to the survey were excluded.

Data Collection

An interviewer-administered questionnaire was used to collect data from the eligible participants. A translator was as well provided to those who could not understand English because the questionnaire was in English language only. Appendix II is the questionnaire which was used in collecting the data. Patients were conveniently selected based on their physical and mental health condition. The three wards had a total 143 patients, of which 114 were considered eligible to participate in the study. Forty-one patients were from the gastrointestinal surgery ward, 25 from neurosurgery ward and 36 from the medical ward. Data was collected over two weeks.

The questionnaire was developed according to the guidelines for community of COVID-19, by the Centers for Disease Control and Prevention (CDC) and World Health Organization. The questionnaire consisted of four sections:

  (i) six questions on socio-demographic characteristics;
 (ii) ten questions for knowledge and awareness about COVID-19;
(iii) five questions on attitudes towards the measures put in place to prevent the spread of COVID-19; and
(iv) eight questions on practices towards the preventive measures put in place.

Data Processing and Analysis

Fully completed questionnaires were entered into Microsoft Excel 2016 for coding and cleaning. The coded and cleaned data was thereafter exported to STATA 16 (StataCorp LLC, College Station, TX, USA) for analysis. Independent variables were summarized as frequencies and percentages. Questions on knowledge and practices were categorized into correct and incorrect answers. Each correct answer obtained 1 point and incorrect ones were awarded 0 points, with a maximum total score of 27. The total scores for questions on knowledge were converted to percentage and knowledge was thereafter categorized. Participants who scored above the mean score ($\geq$50.6%) were considered to have adequate knowledge and below 50.6% was considered poor/inadequate knowledge. For practice, the practice scores were not normally distributed and a median score of 75% was taken as the cutoff. Those who scored $\geq$75% were considered to have good COVID-19 related practices whereas below 75% had poor practices. Responses for attitudes were presented as frequencies and percentages. Chi-square test or Fisher's Exact tests were applied to assess the factors associated with good knowledge on COVID-19 at bivariate analysis. A binary logistic regression was used to assess the strength of the association of risk factors which were significant at bivariate analysis with knowledge and practice and presented as crude odds ratio (COR) with a 95% confidence interval (CI) and p-values. A $P<0.05$ was considered statistically significant.

Safety Precautions

Face masks were worn by the research assistants who were distributing the questionnaire as per the guidelines for prevention of COVID-19. In order to minimize further risks of COVID-19 transmission, participants' hands were sanitized before and after giving them the paper questionnaire. Face masks were also provided to patients who were not wearing them and the recommended social distance was observed between the study staff and participants.

Ethical Considerations

The study was approved by Mulago Hospital Institutional Review Board (Protocol Number: MHREC 1900). Additional permissions were sought from the hospital administration and the ward in-charges. The study was conducted according to the Declaration of Helsinki. All participants provided a written informed consent prior to participating in the study. Appendix I is the informed consent form used in collecting consent from the study participants.

Supplementary Material

The Supplementary Material for this article contains Appendix I and Appendix II. Appendix I shows the informed consent form used in collecting consent from the study participants. Appendix II shows the questionnaire used in collecting data.

Results

Demographics

A total of 102 participants were involved in this study. Of these, the majority were females (53.9%) and the majority age range was above 45 years. Regarding the educational status, most of the respondents (40.25%, n=41) ended their education at primary level. 75.4% resided in the central region of Uganda, 52.9% were self-employed and 54.9% were married. Table 1 presents the socio-demographics of the participants. Of the 102 participants, a majority (94.12%) responded that they were aware that COVID-19 exists as presented.

Table 1 Socio-Demographic Characteristics of Study Participants

Demographics (N=102)	Frequency	%
Age in years		
18–24	25	24.5
25–34	16	15.7
35–44	29	28.4
≥45	32	31.4
Sex		
Female	55	53.9
Male	47	46.1
Marital status		
Married	56	54.9
Single	36	35.3
Divorced	7	6.9
Widowed	3	2.9
Occupation		
Self-employed	54	52.9
Not employed	20	19.6
Employed	19	18.6
Student	9	8.8
Level of education		
Primary	41	40.2
Secondary (O-level)	32	31.4
Secondary (A-level)	7	6.9
Diploma	10	9.8
Bachelor's Degree	12	11.8
Region of origin		
Central	76	74.5
Western	12	11.8
Eastern	9	8.8
Northern	5	4.9
Are you aware that COVID-19 exists?		
Yes	96	94.1
No	3	2.9
Maybe	3	2.9

Knowledge

About 81% of the participants reported cough as being the most common symptom as summarized in Figure 1.

Table 2 shows responses of the participants to questions about knowledge on COVID-19. The majority (83.3%, n=85) of the participants reported that everyone was at risk of getting COVID-19 and one-third (66.7%, n=68) reported that people of age ≥45 years and those with other diseases were at the highest risk of severe illness of COVID-19. Only 61.8% and 45.1% knew that COVID-19 did not currently have a vaccine nor a cure, respectively. Overall, 55.9% (n=57) of the participants scored 50% or more and were regarded as having adequate knowledge (Table 3).

At Fisher's Exact test analysis, marital status was significantly associated with knowledge (P=0.020) but this lost significance at logistic regression [married (COR: 1.2, 95% CI: 0.5 to 2.8, P=0.695); and divorced (COR: 0.11, 95% CI: 0.01 to 1.1, P=0.06)]; with patients who have never married as the reference.

Practices

Whereas 64.7% (n=66) of the respondents reported that they always wore a mask when in public, only 22.6% could maintain the 2 meters of social distance. Some 59.8% always often wash their hands with soap and 78.4% always cover their nose and mouth with either a handkerchief or crease of elbow (Table 4).

Overall, about half (52%, n=53) of the participants were regarded to have good COVID-19 related practices (Table 3).

At bivariate analysis (chi-square or Fisher's Exact test), sex (P=0.031) and awareness about COVID-19 existence (P=0.010) were significantly associated with good COVID-19 related practices (Table 3). Age, marital status, occupation and level of education were not statistically significant.

At binary logistic regression, female patients were thrice more likely to have good COVID-19 prevention practices compared to their male counterparts (COR: 2.59, 95% CI: 1.2 to 5.8, P=0.020). Patients with good knowledge were twice more likely to have good practices although this was not statistically significant (COR= 1.72, 95% CI: 0.78 to 3.78, P=0.178).

Attitudes

The majority of the participants had a good attitude towards the authenticity of COVID-19 tests (Table 5).
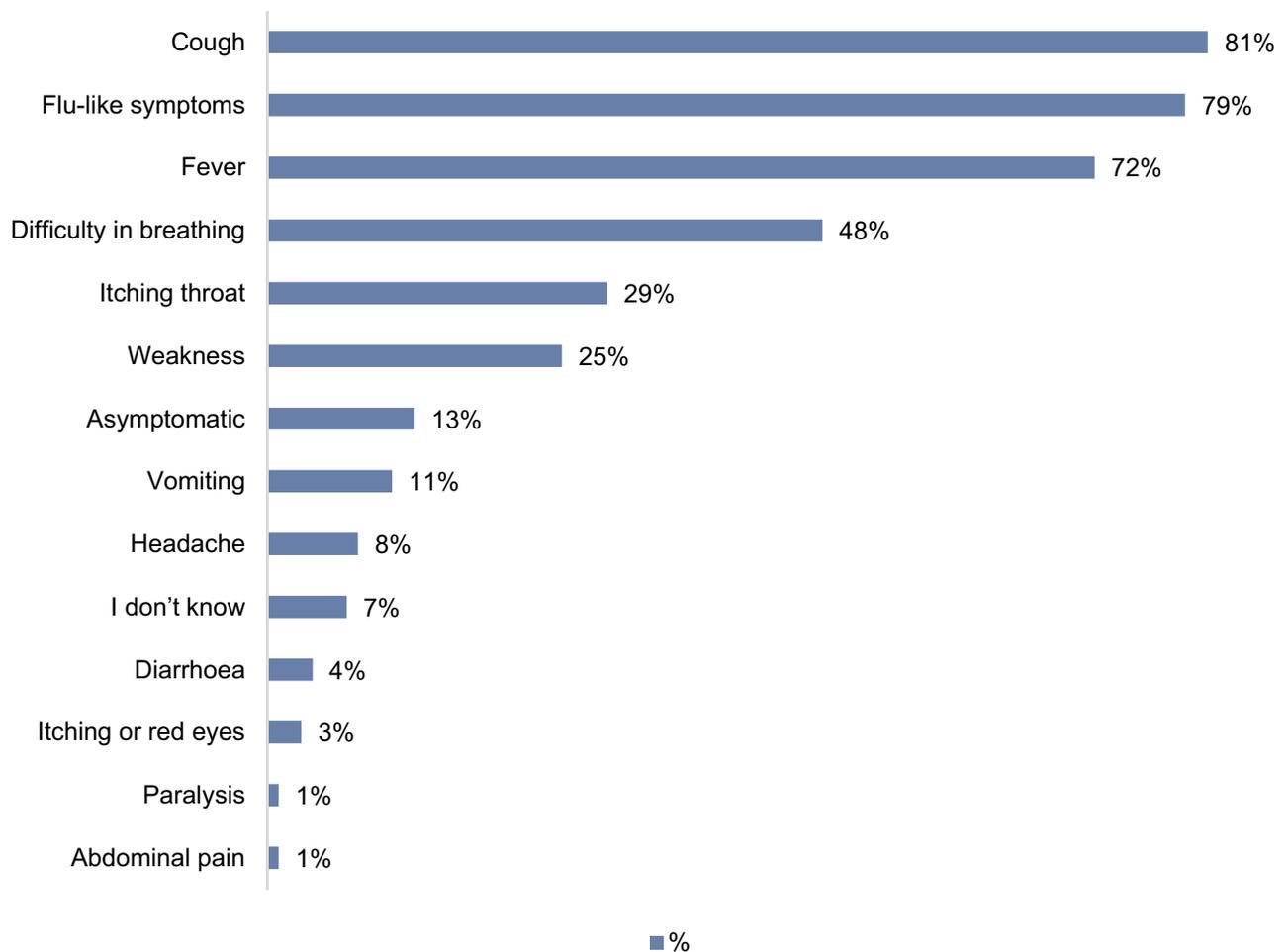
Figure 1 Knowledge of Participants on the symptoms of COVID-19 (N=102). Data shows majority of the participants (81%) knew cough as the most common symptom of COVID-19.

About 56.9% of the participants rated government's efforts of controlling the spread of COVID-19 as being good and 82.4% thought that nation-wide lockdown helped in controlling the spread of COVID-19 (Table 5). Less than half of the participants (46.1%) as well thought that the COVID-19 preventive measures of staying at home, wearing face mask, hand hygiene and social distance were not difficult at all to practice (Table 5).

Discussion

The rapid transmission of COVID-19 is a major public health issue in Uganda and the world, especially after easing the extreme and strict preventive measures like lockdowns. Currently no vaccine or treatment has been officially approved for use against COVID-19, hence making prevention a better option in the fight against COVID-19. For prevention to be successful, the population should have a good understanding of the pandemic coupled with good

attitudes towards the preventive measures. Therefore, this study was done to assess the level of knowledge, attitudes and practices of COVID-19 preventive measures among inpatients at Mulago hospital.

From the study, we found that more than half of the respondents had adequate knowledge of COVID-19 and its preventive measures. This finding was similar to studies done by Zhong and colleagues among Chinese residents,[17] and Olum et al, among Ugandan healthcare workers.[15] However, it is in contrast to the study done by Akalu and colleagues which showed a high prevalence of poor knowledge among chronic diseases patients in Addis Zemen Hospital, Northwest Ethiopia.[13] This could be due to the reason that the country was from a nation-wide lockdown due to COVID-19 and the Ministry of Health educative messages on COVID-19 that were disseminated countrywide during the lockdown. In addition, a majority of the respondents were aware that COVID-19 exists. This

Table 2 COVID-19 Related Knowledge Among Patients at Mulago Hospital

Question	Frequency	%
Who do you think is at risk of getting COVID-19?		
Everyone	85	83.3
Adults	12	11.8
I do not know	5	4.9
Who do you think is at highest risk for severe illness of COVID-19?		
Adults (40+ years)	50	49.0
Everyone	18	17.7
People with other diseases	18	17.7
I do not know	12	11.8
Adults (18–40 years)	2	2.0
Children	2	2.0
How long does it take for a person with COVID-19 to develop symptoms?		
5–14 day	34	33.3
I do not know	26	25.5
14+ days	23	22.6
2–5 days	10	9.8
One day	9	8.8
Does COVID-19 have an approved vaccine?		
No	63	61.8
I do not know	24	23.5
Maybe	9	8.8
Yes	6	5.9
Does COVID-19 have a cure?		
No	46	45.1
Yes	25	24.5
Maybe	17	16.7
I do not know	14	13.7
What is the recommended social distance?		
4 meters	41	40.2
2 meters	34	33.3
1 meter	19	18.6
3 meters	8	7.8

was similar to the study done in India on mental illness patients[18] and that done in China among workers.[19] Cough, flu-like symptoms and fever were the most commonly known symptoms of COVID-19. This finding is in relation with studies done by Huynh et al, and Reuben et al, which indicated adequate knowledge towards COVID-19 symptoms.[20,21] Though 55.9% of the respondents had adequate knowledge, the 44.1% with poor knowledge is quite significant to be ignored given the

fact that the country had just relaxed the COVID-19 preventive measures. Therefore, continued education of the public on COVID-19 and its preventive measures is greatly needed. Patients with good knowledge were 9 times more likely to have good practices as evidenced in Table 5. This association can be elucidated by the reasoned action theory.[22]

From our study, some 7.8% of the participants said that they would not believe they are COVID-19 positive once their results come positive. This is indicative of the negative attitudes held by these respondents. However, the majority responded that they would believe, hence having good attitudes. This finding is in line with studies done on Ugandan medical students that showed positive attitudes among 74% of the participants.[14] From the study, we also found out that majority of the respondents rated the government's efforts in preventing transmission of COVID-19 as being good. This could have been due to the quick and efficient actions the government of Uganda took towards preventing COVID-19. This finding was similar to the study done in Malaysia and in China where the authors credited the positive attitudes to the rigorous measures their governments put in combating the COVID-19 transmission.[19,23] From our study as well, majority of the respondents thought that the lockdown helped in controlling COVID-19 transmission. This finding is in relation with the study done by Atalan where he concluded that COVID-19 can be subdued by a lockdown.[24] Furthermore, a majority of the respondents thought that the government was right to put up the measures it did to prevent COVID-19 transmission. This could be attributed to the presidential addresses before any measure was instituted in addition to the constant engagement of the public on COVID-19 prevention by the Ministry of Health.

The Ministry of Health directed people with flu-like symptoms to always stay at home, however, from this study it was found that most of the participants that had had at least flu-like symptoms prior to the study never stayed at home as directed. This could be due to the fact that most of the people survive on menial and hand-to-mouth jobs hence staying at home being impossible for their survival. With this result, therefore, government should make testing facilities available to every individual for quick detection of the infected people before they transmit the virus to a bigger population.

Ministry of Health also prohibited people being in public gatherings/places unnecessarily, however from this study, most of the participants had been in public

Table 3 Factors Associated with Knowledge and Practices Towards COVID-19

Variables (N=102)	Knowledge; Frequency (%)			Practices; Frequency (%)		
	Good (n=57)	Poor (n=45)	P	Good (n=53)	Poor (n=49)	P
Overall	57 (55.9)	45 (44.1)		53 (52)	49 (48)	
Age in years			0.365			0.740
18–24	15 (26.3)	10 (22.2)		15 (28.3)	10 (20.4)	
25–34	9 (15.8)	7 (15.6)		7 (13.2)	9 (18.4)	
35–44	19 (33.3)	10 (22.2)		14 (26.4)	15 (30.6)	
≥45	14 (24.6)	18 (40)		17 (32.1)	15 (30.6)	
Sex			0.613			0.031
Female	32 (56.1)	23 (51.1)		34 (64.2)	21 (42.9)	
Male	25 (43.9)	22 (48.9)		19 (35.8)	28 (57.1)	
Marital status			0.020			0.374
Married	35 (61.4)	21 (46.7)		31 (58.5)	25 (51)	
Single	21 (36.8)	15 (33.3)		18 (34)	18 (36.7)	
Divorced	1 (1.8)	6 (13.3)		4 (7.5)	3 (6.1)	
Widowed	0 (0)	3 (6.7)		0 (0)	3 (6.1)	
Occupation			0.743			0.939
Self-employed	32 (56.1)	22 (48.9)		27 (50.9)	27 (55.1)	
Not employed	9 (15.8)	11 (24.4)		10 (18.9)	10 (20.4)	
Employed	11 (19.3)	8 (17.8)		11 (20.8)	8 (16.3)	
Student	5 (8.8)	4 (8.9)		5 (9.4)	4 (8.2)	
Level of education			0.268			0.252
Primary	20 (35.1)	21 (46.7)		22 (41.5)	19 (38.8)	
Secondary (O-level)	16 (28.1)	16 (35.6)		18 (34)	14 (28.6)	
Secondary (A-level)	6 (10.5)	1 (2.2)		5 (9.4)	2 (4.1)	
Diploma	7 (12.3)	3 (6.7)		2 (3.8)	8 (16.3)	
Bachelor's Degree	8 (14)	4 (8.9)		6 (11.3)	6 (12.2)	
Region of origin			0.906			0.342
Central	43 (75.4)	33 (73.3)		37 (69.8)	39 (79.6)	
Western	7 (12.3)	5 (11.1)		9 (17)	3 (6.1)	
Eastern	5 (8.8)	4 (8.9)		5 (9.4)	4 (8.2)	
Northern	2 (3.5)	3 (6.7)		2 (3.8)	3 (6.1)	
Are you aware that COVID-19 exists?			0.098			0.010
Maybe	1 (1.8)	2 (4.4)		0 (0)	3 (6.1)	
No	0 (0)	3 (6.7)		0 (0)	3 (6.1)	
Yes	56 (98.2)	40 (88.9)		53 (100)	43 (87.8)	

gatherings of more than 2 people on the day of the study. This could have been due to the fact that the wards where the study was being conducted were congested and the patients were from different areas of residence given that the hospital is a national referral. With this, therefore, there should be expansion of the treatment units of inpatients in order to reduce congestion while in the wards.

While assessing the wearing of masks whenever in public, most of the participants reported to at least wear a face mask whenever they had gone to public places. This finding is in contrast with the study done by Echoru and colleagues, that indicated reluctance of wearing facemasks among some faith groups in Uganda.[25] This variation can be explained by the fact that the two studies were carried out at different times of the pandemic. The study done by Echoru and colleagues was carried out in April 2020 when the pandemic was not very widespread in Uganda and the publicity of the disease was relatively low. In addition by

Table 4 Practices of Patients at Mulago Hospital Towards COVID-19 Preventive Measures

Practices	Frequency	%
I stay home when I feel flu-like symptoms		
No	72	70.6
Yes	30	29.4
When I cough or sneeze, I cover my mouth and nose with the:		
Tissue paper or Handkerchief.	56	54.9
Crease of Elbow.	24	23.5
Hands.	22	21.6
How often do you wash your hands with soap?		
Always	61	59.8
Sometimes	41	40.2
Approximately how many times did you wash your hands or use a hand sanitizer yesterday (median, range)?	7	0 to 20
When was the last time you were in a public gathering/place with more than 2 people?		
Today	91	89.2
Last two days	6	5.9
More than one week ago	3	2.9
Last 3 to 6 days	2	2.0
When in the public, I wore the face mask		
Always	66	64.7
Sometimes	35	34.3
Never	1	1.0
When in public, I maintain a distance of at least 2 meters between us		
Yes, Sometimes	57	55.9
Yes, Always	23	22.6
No, Never	22	21.6

Table 5 Attitudes of Patients at Mulago Hospital Towards COVID-19 Diagnosis and Prevention

Attitudes	Frequency	%
If you are tested for COVID-19 and results are positive, would you believe?		
Yes	88	86.3
Maybe	8	7.8
No	6	5.9
If your friend or family member is tested positive for COVID-19, would you believe?		
Yes	90	88.2
Maybe	8	7.8
No	4	3.9
Do you think the government was right to put up the measures to prevent spread of COVID-19?		
Yes	93	91.2
Maybe	7	6.9
No	2	2.0
Do you think the lock down helped in preventing/controlling spreading COVID-19?		
Yes	84	82.4
Maybe	10	9.8
No	8	7.8
How do you rate government's efforts towards COVID-19 prevention and treatment?		
Excellent	9	8.8
Good	58	56.9
Fair	31	30.4
Not Good	4	3.9
How difficult is it for you personally to follow the protective measure of staying home/hand hygiene as much as possible?		
Not difficult all	47	46.1
Slightly difficult	14	13.7
Moderately difficult	22	21.6
Very difficult	4	3.9
Extremely difficult	15	14.7

the time our study was done, the government of Uganda had distributed free masks for use to the public, hence easing accessibility of these face masks. When asked how many times they washed their hands the previous day, the median time was 7 with a range of 0 to 20 times. This was because the hospital provided hand washing supplies and everyone was required to wash their hands before and after entering the wards.

Overall, from our study, it was found that about half of the respondents practiced COVID-19 preventive measures adequately. This finding is in relation with the study done by Olum and colleagues among medical students in Uganda with the prevalence of good practices at 57%.[14] The finding was as well similar to the study done in Pakistan among healthcare workers[26] and in contrast to

that done by Akalu and colleagues, which showed poor COVID-19 related practices among chronic disease patients in Addis Zemen Hospital, Northwest Ethiopia.[13]

Awareness about COVID-19 was significantly associated with COVID-19 related practices. This could be due to the fact that COVID-19 related practices are practiced after being aware of the disease and the activities themselves. It is also worth noting that, from this study, majority of the participants reported that it was not difficult to follow the stipulated COVID-19 preventive

measures (hand washing, staying home or wearing face masks) which could as well explain the adequate practicing of the measures by the participants.

Our study has some important limitations that should be considered while interpreting the findings of the study. The study sample size was relatively small, thus limiting its generalization. Our study reports perceived practices rather than observed responses. Strict enforcement of COVID-19 guidelines at the time of the study therefore might have influenced some participants to give socially acceptable responses. The questionnaire used to assess KAPs was not standardized though internal reliability was checked using Cronbach's alpha and were within acceptable levels. Data on the medical condition of the patients were also not assessed during our study since it can have an impact on the KAPs towards COVID-19.

Conclusion

In conclusion, the study found that more than half of the participants had adequate knowledge and good practices on COVID-19 and its preventive measures, which is encouraging given that patients are a high risk group for severe COVID-19 illness. However, with the lifting and relaxation of the extreme preventive measures like lockdowns, continuous public education is recommended. Provision of hand-washing facilities and personal protective equipment like facemasks to all patients are recommended.

Abbreviations

COVID-19, coronavirus disease 2019; MOH, Ministry of Health; WHO, World Health Organization; MNRH, Mulago National Referral Hospital.

Data Sharing Statement

Data obtained for the study will not be made available to others.

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Author Contributions

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Disclosure

The authors report no potential conflicts of interest for this work and declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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