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Perception of understanding COVID-19 among doctors at Patan Hospital, Nepal

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Abstract

Introduction: Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and presents with fever, dry cough, fatigue, myalgia, and dyspnea. This study aims to is find out the understanding of COVID-19 among doctors at Patan Hospital.

Method: A cross sectional was conducted among doctors at Patan Hospital, Patan Academy of Health Sciences, Nepal. The questionnaire in Google form consisted, part1 perception on COVID-19 and part-2 understanding using multiple choice questions corresponding to the one to fifteen questionnaire in part-1. Ethnical approval was obtained.

Result: Sixty-one doctors participated in the study, of which 65.5% were directly involved in management of COVID-19. Perception and understanding regarding transmission status in country was 65.6% and 63.95% respectively, about case definition 90.1% and 62.2%, about when to do diagnostic tests 75.4% and 90.2%.

Conclusion: There was difference in perception and understanding regarding COVID-19 among doctors, and areas to be reinforced were case definition, transmission classification, diagnostic tests.

Keyword: COVID-19, doctors, perception, understanding

Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] Its highly infectious, and main clinical symptoms include fever, dry cough, fatigue, myalgia, and dyspnea.[1] World health organization (WHO) declared a public health emergency of international concern on 30 January 2020.[3] There are over 2.8 million people infected and mortality over 19 hundred thousand worldwide by April 26.[4] The first case in Nepal was seen on 13 January 2020. There are 49 cases and no mortality in Nepal as of 26 April 2020.[4]

Patan Hospital (PH), Academy of health sciences (PAHS) is the first hospital in Nepal to develop and test hospital based epidemic outbreak management plan.[5] A full scale simulation exercise to test the epidemic outbreak plan was conducted in February 2018. With this preparation, it is of utmost importance for us to know the understanding of COVID-19 among doctors. This will help us device measures further reinforcement as necessary. This study aims to find out understanding of COVID-19among doctors working at PH, PAHS.

Method

This cross sectional study was conducted at PH PAHS, Nepal, on April 2020. Questionnaires were sent in Google form by email. Those not responding within 72 hours were excluded.

In the part-1 perception of participants on COVID-19 was evaluated by questionnaire, supplement 1, having four point Likert scale, 1= do not know at all, 2=do not know, 3=Know, 4=know very well. Likert scale one and two was categorized as "do not know", three and four was categorized as "Know". Frequency and proportion of each question in Likert scale was calculated. There were 15 questions representing various areas of COVID-19: definition, clinical feature, transmission, personal protective equipment (PPE), testing, waste management, patient management and epidemiology.

In the part-2, understanding of participants on COVID-19 was assessed by multiple choice questions. The questions had four options with one correct response. Fifteen questions were developed which were corresponding to the one to fifteen questionnaire of Likert scale of part-1 representing definition, clinical feature, transmission, PPE, testing, waste management, patient management and epidemiology respectively. Frequency and proportion of correct response to each question in part two was calculated.

Proportion of each question from question number one of part-1 (perception) was compared with each question from question number one of part-2 (understanding) and respectively up to question number fifteen of both parts. Difference between perception and understanding was further calculated for each question. The positive difference suggests that participants perceived that they know but actually did not have the understanding. Negative differences suggest that the participant perceived that they did not know but actually they had the understanding.

Result

Sixty-one doctors (out of 110 who were surveyed) responded. Out of 65 participants, 40 (65.6%) were directly involved in management of COVID-19. On transmission status in the country, 39 (63.9%) perceived they knew and 30 (32.8%) truly understood. On case definitions 55 (90.1%) perceived they knew, and 41 (62.2%) really understand, on when to do RDT and PCR, 46 (75.4%) perceived they know and on multiple choice questions 55 (90.2%) got the correct answer for understanding, Table 1.

Table 1. Participant's doctors working at Patan Hospital, perception and understanding of COVID-19, N=61

S.no	Area	Questions	Part 1	Part 2	Difference
1	Definition	Case definition of suspect, probable and confirmed case of COVID-19	55 (90.1%)	41 (62.2%)	14 (27.9%)
2	Definition	Definition of contact	55 (90.1%)	44 (72.1%)	11 (18%)
3	Clinical feature	Understanding of clinical feature of COVID-19	59 (96.7%)	57 (93.4%)	2 (3.3%)
4	Transmission	Transmission of COVID-19	59 (96.7%)	58 (95.1%)	1 (0.4%)
5	PPE	PPE required to see COVID patient	59 (96.7%)	38 (62.3%)	21 (34.4%)
6	PPE	PPE required to see non COVID patient	33 (54.1%)	34 (55.7%)	-1 (-.16%)
7	Testing	Clearly know when to do PCR and RDT	46 (75.4%)	55 (90.2%)	-9 (-14.8)
8	Testing	Diagnostic reliability of PCR	43 (70.5%)	28 (24.6%)	28 (45.9%)
9	Testing	Diagnostic reliability of RDT	31 (58.8%)	43 (70.5%)	-12 (-11.7%)
10	Testing	Technique of obtaining sample	42 (68.8%)	36 (59%)	6 (8.8%)
11	Testing	Safety precaution for transporting sample to laboratory	39 (64.9%)	55 (90.2%)	-13 (-25.3%)
12	Waste management	Waste management	22 (36.1%)	30 (49.2%)	8 (13.2%)
13	Management	When to quarantine	52 (85.3%)	56 (91.8%)	-4 (-6.5%)
14	Management	When to isolate	51 (83.6%)	55 (90.2%)	-4 (6.6%)
15	Epidemiology	Transmission classification (Sporadic, Cluster, Community transmission)	39 (63.9%)	30 (32.8%)	9 (30.1%)

Part-1= perception of participants on COVID-19, Part-2 = understanding of participants on COVID-19, PPE: Personal Protective Equipment, RDT: Rapid diagnostic test, PCR: Polymerase chain reaction

Discussion

We found gaps between perception and knowledge of COVID-19 among doctors surveyed, and gap needs to be bridged with orientation and training. It appears that doctors need clinical discussions on case definition, transmission classification and PCR as a diagnostic tool. Similarly, the skill of obtaining sample, demonstration of waste management and understanding of PPE while managing non COVID patient.

We found that on case definition of suspected, probable and confirmed case of COVID-19, 55 (90.1%) perceived they knew but only 41 (62.2%) understand as per their correct answer for knowledge questions. It is very crucial to understand case definition and transmission classification. This has been provided by World Health Organization (WHO).[6,7] Case definition and transmission status of the country is closely relate to each other. It is necessary to understand which transmission state are we in, at present. As of 26 April 2020, Nepal is in the countries which has sporadic transmission which means that all the cases of pneumonia should not be considered as COVID-19.[7] Once the transmission of disease is at community level, all pneumonia presenting to hospital needs to be suspected as COVID-19. So, the transmission status of disease in the country has direct relationship to the case definition. A treating physician needs to understand this clearly, this will decrease anxiety amongst healthcare workers.

Understanding of PCR was also found to be lower than other areas, 43 (70.5%) perceived they knew but only 28 (24.6%) actually understand as per their correct answer for knowledge questions. It is necessary to understand sensitivity and specificity of the test. Mild cases are found to have an early viral clearance with patient testing negative by day 10 post onset, however some may test positive for longer duration.[8] This is essential core knowledge that is useful in managing patient and planning discharge for the patient. Beside these waste management is also an important issue that needs to be addressed. All clinician must have basic idea of waste management in hospital. There are guidelines released by WHO on waste management of hospital.[9]

Understanding the use of PPE in COVID-19 is equally important to understanding when not to use PPE, or the rational use of PPE. This study has seen necessity of educating health care worker on use of PPE while seeing non COVID patients. The guideline has been published from WHO regarding use of PPE and also the rational use of PPE.[10,11]

Conclusion

Perception and understanding of transmission status of country was low. Participant doctors perceived that they knew case definition but their understanding was low. On diagnostic test, participants understanding was higher than what they have actually perceived.

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Conflict of Interest

None

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None

Author Contribution

All authors had equal contribution in writing the proposal, data collection, analysis and writing the manuscript.

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Supplement

Questionnaire

Perception of understanding COVID-19 among healthcare workers at Patan Hospital, Nepal
PART I
Name:
Age:
Sex:
Department:
Involvement in COVID19 management: Yes/No

Part II
1= do not know at all, 2=do not know, 3=Know, 4=know very well

S. No	Area	
1.	Definition	Case definition of suspect, probable and confirmed case of COVID-19
2.	Definition	Definition of contact
3.	Clinical feature	Understanding of clinical feature of COVID-19
4.	Transmission	Transmission of COVID-19
5.	PPE	PPE required to see COVID patient
6.	PPE	PPE required to see non COVID patient
7.	Testing	Clearly know when to do PCR and RDT
8.	Testing	Diagnostic reliability of PCR
9.	Testing	Diagnostic reliability of RDT
10.	Testing	Technique of obtaining sample
11.	Testing	Safety precaution for transporting sample to laboratory
12.	Waste management	Waste management
13.	Management	When to quarantine
14.	Management	When to isolate
15.	Epidemiology	Epidemiological pattern (Sporadic, Cluster, Community transmission)

Part III

1. A 24 years male, with travel history to Italy, presents with complain of fever upto1020F, cough and cold. What is your diagnosis?
   a) Suspected case of COVID
   b) Probable case of COVID
   c) Definite case of COVID
   d) Contact COVID

2. A 30-year patient with provisional diagnosis was brought to the hospital in ambulance. The patient was brought by two visitors. What will be the status of visitor till patient's report are available?
   a) Positive
   b) Suspect
   c) Contact
   d) Non COVID

3. As per WHO criteria which of the following patient need isolation?
   a) Fever without any contact
   b) Patient with travel history to non COVID area
   c) Health care staff
   d) Fever with history of contact with COVID patient

4. Route of transmission of COVID-19 is
   a) Feco-oral
   b) Respiration droplet
   c) Sexual contact
   d) Vector borne

5. A 40-year patient is referred from Dhading district hospital. What level of PPE is required?
   a) Head cover, Eyeshield, Surgical Mask, Gown, Gloves, Boot cover
   b) Head cover, Goggles, N95, Gown, Gloves, Boot Cover
   c) Coverall, Goggles, N95, Gown, Gloves, Boot Cover
   d) Coverall, Goggles, PPE, Gloves, Boot Cover

6. A radiology department demands full PPE to do ultrasound for every patient. What will be your recommendation?
   a) Full PPE
   b) Head cover, Goggles, Mask, Gloves
   c) Surgical Mask and Gloves
   d) N95 and Gloves

7. Acute COVID-19 infection is diagnosed by?
   a) RDT with IgG
   b) Blood C/S
   c) RT-PCR
   d) COVID-19 culture

8. On an average PCR is positive till
   a) 5 days of infection
   b) 10 days of infection
   c) 15 days of infection
   d) 20 days of infection

9. RDT is usually positive after
   A) 10 days of infection
   b) 15 days of infection
   c) 20 days of infection
   d) 25 days of infection

10. While obtaining Nasopharyngeal sample, how deep will you insert swab?
    a) Till patient sneezes
    b) Till red mark
    c) As tolerated by patient
    d) Near nasal orifices

11. You are transporting Nasopharyngeal and throat swab. How will you seal the swab for transportation?
    a) VTM, Zip Lock Bag, Ice box
    b) VTM, Ice Box
    c) VTM, Zip Lock back
    d) VTM only can be transferred

12. How will be disinfect the waste that is collected from infected zone?
    a) Can be thrown after packing in biohazard bag
    b) With 5000 ppm Chlorine
    c) Collected in biohazard bag and autoclaved
    d) Burial deep in soil

13. A family members brings a suspected COVID19 patient to hospital. What will you suggest family member?
    a) Can come to hospital
    b) Need isolation
    c) Stay in quarantine
    d) Get admitted as well

14. A 40 year asymptomatic male comes to hospital with positive RDT. At present context what will be your action?
    a) Isolate till report is available
    b) Home quarantine
    c) No intervention
    d) Followup weekly in OPD

15. At present what is the epidemiological status of Nepal?
    a) No cases
    b) Sporadic
    c) Cluster
    d) Community transmission