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Knowledge, attitude and practice regarding COVID-19 among doctors and nurses at a tertiary care maternity hospital in Nepal

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Abstract

Introduction: Knowledge, attitude, and practice (KAP) survey provides a suitable format to evaluate existing programs and to identify effective strategies for behavior change in society. This study aimed to investigate and compare KAP concerning COVID-19 among Health Care Professionals (HCPs) at Paropakar Maternity and Women's Hospital (PMWH).

Method: This was a cross sectional descriptive study conducted in HCPs (doctors and nurses) of PMWH, Nepal, from May to June 2020. A pre-validated questionnaire was used to assess the objectives where knowledge and attitude score was 10 each and practice score was 20. Collected data was entered in Microsoft excel spreadsheet and analyzed using IBM SPSS software and p-value < 0.05 was taken as statistically significant.

Result: A total of 168 doctors and nurses responded to the survey, of which 112 (66.6%) were in 25-34 years of age group, 87.5% females, and 61.9% nurses. Mean score for knowledge, attitude and practice score was 5.8 (out of 10), 8.1 (out of 10) and 17.4 (out of 20) respectively. The score was significantly different among doctors and nurses in 'knowledge' (p=0.000) and 'attitude' categories (p = 0.006). There was no significant difference in 'practice' scores (p = 0.664).

Conclusion: Doctors and nurses of PMWH have positive attitude and good practice towards COVID-19. This characteristic can prove handy in bringing about useful behavioural changes and promoting safe practices while managing maternity patients in this hospital.

Keywords: attitude, COVID-19, knowledge, maternity, practice

Introduction

The novel Coronavirus was first reported in December 2019 in Wuhan, China from where it spread rapidly worldwide by the third week of May 2020. It was declared as a global pandemic by WHO on 12th March 2020.¹

In Nepal first case of corona virus infectious disease 2019 (COVID-19) was detected on 23rd January 2020 and the 1st death was reported on 16th May 2020, which was in a postpartum lady on her 10th day of purperium.²

There is possibility of spreading Coronavirus in the absence of symptoms.³ For health care professionals (HCPs), there is a serious occupational health risk due to their exposure to infected individual.⁴ Protection of HCPs and prevention of intra-hospital transmission of infection are important aspects in epidemic response.⁵ Lack of knowledge and misunderstanding among HCPs lead to delayed diagnosis, spread of disease and poor infection control practice.⁶ Also incorrect attitudes and practices directly increase the risk of infection.⁷

This study aims to find out knowledge, attitude and practice (KAP) concerning COVID-19 among HCPs at a maternity facility. This information can be helpful to identify existing weaknesses in the above-mentioned fields and identify effective strategies for behavior change among HCPs during the outbreak.

Method

This was a cross sectional descriptive study conducted among health care professionals (HCPs) at Paropakar Maternity and Women's Hospital (PMWH) in Kathmandu, the largest maternity facility of Nepal, during May to June 2020.

A written form of questionnaire was designed which consisted of questions assessing demographics, knowledge, attitude and practice towards COVID-19. These prevalidated questions were compiled from

three studies conducted in Iran⁵ Pakistan⁷ and in Nepal⁸ and were derived from the 'World Health Organization COVID-19 facts and myth busters'⁹. Demographic characteristics included gender, age and profession. It also had queries regarding the 'source of information' obtained by the HCP about COVID-19.

All three aspects of the study including knowledge, attitude and practice section contained 10 items each. Every question on knowledge and attitude section was responded as 'agree', 'disagree' or 'not sure'. Corrected answer was given a score of 1. 'Not sure' and wrong answer was given 0 score. In practice section answer was responded as 'yes', 'no' and 'sometimes'. For correct practice a score of 2 was allotted, wrong practice and not performing a correct practice was allotted 0 score while sometimes performing correct practice was given 1 point. Knowledge, Attitude and Practice Scales were formed by adding scores of the ten items each belonging to these scales.

Approval for the study was obtained from Institutional Review Committee (IRC) of PMWH. Printed form of questionnaire was distributed among all the doctors and nurses. Strict confidentiality was maintained by making entries anonymously. Those, who consented to respond and filled up questionnaire, were included for analysis. Filled up questionnaire was collected and entered in Microsoft excel. Data was analyzed using SPSS software and presented as tabulation and bar chart.

Mean, median, standard deviation and minimum and maximum score are presented in table. Score in each of the 3-categories of KAP is presented in frequency distribution. Non-parametric (Kruskal Wallis) test was applied to compare the KAP scores across different categories of HCPs as the scores were skewed. Dunn test, was applied to know pairwise difference across HCP categories. The difference was considered significant if p value less than 0.05.

Result

A total of 168 doctors and nurses returned the filled-up forms of which 147 (87.4%) were females. Of them 112 (66.6%) were in the age group of 25-34 years. The respondents include 104 (61.9%) nurses and 64 (38.1%) doctors (33; 19.7% Residents and 31; 18.4% Consultants), Table 1.

The ‘Source of acquiring information on COVID-19’ was ‘social media’ followed by ‘radio and television’, Figure 1.

Mean ‘knowledge’ score was 5.8 with standard deviation of 1.68 and median was 6. Likewise mean ‘attitude’ score was 8.1, standard deviation was 1.5 and median score was 8.5. In the ‘practice scale’, mean score was 17.4, standard deviation was 1.7 and median score was 18, Table 2.

Distribution of ‘knowledge’ score, ‘attitude’ score and ‘practice’ score were right skewed in all three categories, Figure 2a, b, c.

As the KAP scales did not follow normal distribution, Kruskal Wallis test, a non-parametric test, was applied to compare the KAP scores across different categories of HCPs. Distribution of ‘knowledge’ score ($p=0.000$) and attitude score ($p=0.006$) were found significantly different among HCPs, and no significant difference in ‘practice’ score distribution ($p=0.664$). Further pair wise comparison (post hoc) test, Dunn test, was performed to know which group’s scores differed in ‘knowledge’ and ‘practice’ categories. Knowledge score was significantly different in Nurse vs Resident ($p=0.000$), in Resident vs Consultant ($p=0.006$), and ‘attitude’ score was significantly different in Nurse vs Resident ($p=0.005$), Table 3.

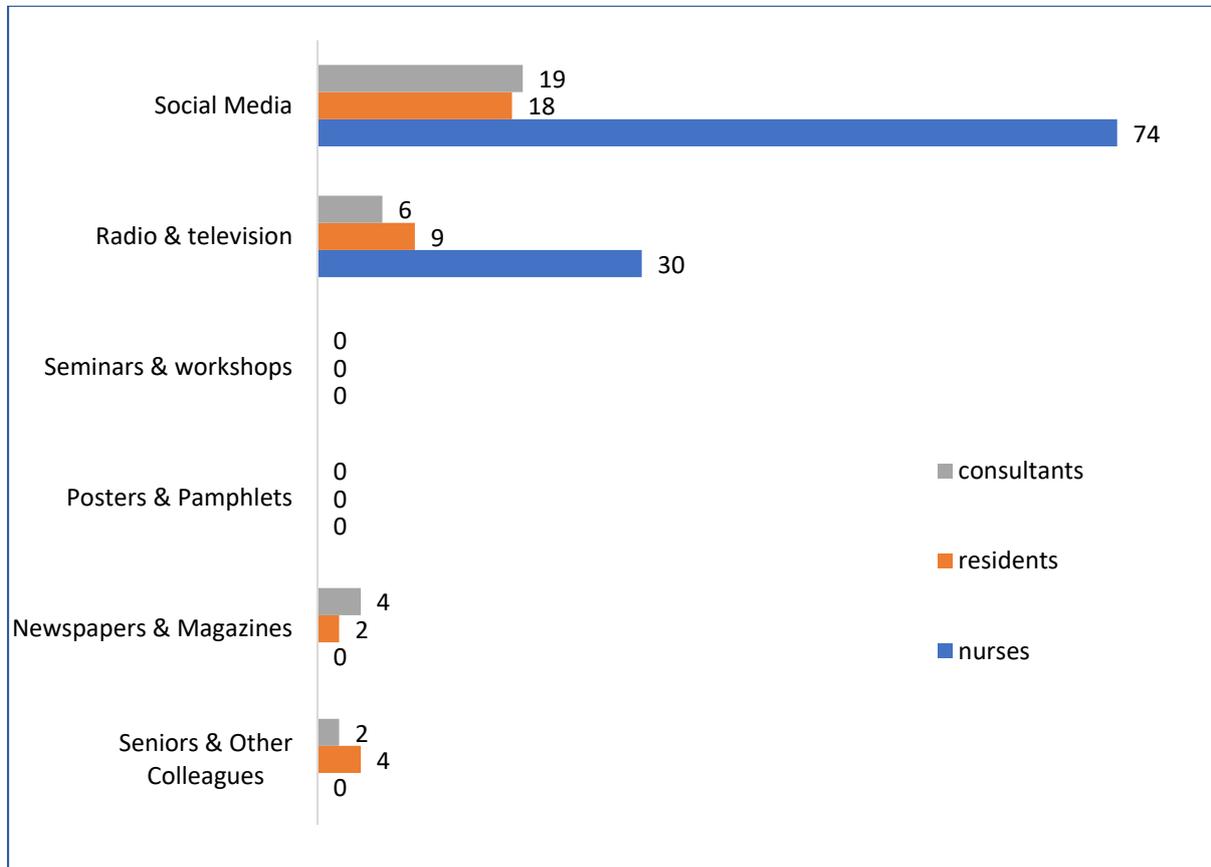


Figure 1. Source of information regarding COVID-19 among HCPs (N=168)

Table 1. Demographic characteristics of HCPs (N=168) in a KAP survey for COVID-19 at a tertiary care maternity hospital in Nepal

Parameters		No of subjects N (%)
Gender	Female	147 (87.5%)
	Male	21 (12.5%)
Age (in years)	20-24	22 (13.1%)
	25-34	112 (66.6%)
	35-44	28 (16.7%)
	45-54	4 (2.4%)
	>55	2 (1.2%)
Profession	Doctor	Residents N (%)
	(N= 64)	Consultants N (%)
	Nurse N (%)	104 (61.9%)

Note: KAP-Knowledge, Attitude and Practice, HCPs-health care professionals (doctors and nurses)

Table 2. Descriptive statistics for KAP scales among HCPs (N=168)

HCP		Knowledge Scale	Attitude Scale	Practice Scale
Consultant	Mean	5.6129	8.2581	17.5161
	N	31	31	31
	Std. Deviation	1.97783	1.43684	1.52471
	Median	6.0000	8.0000	17.0000
	Minimum	1.00	4.00	15.00
	Maximum	9.00	10.00	20.00
Nurse	Mean	5.5385	7.8654	17.4231
	N	104	104	104
	Std. Deviation	1.51960	1.70697	1.76642
	Median	5.0000	8.0000	18.0000
	Minimum	2.00	.00	8.00
	Maximum	9.00	10.00	20.00
Residents	Mean	7.0000	8.8182	17.6970
	N	33	33	33
	Std. Deviation	1.39194	1.13067	1.79382
	Median	7.0000	9.0000	18.0000
	Minimum	4.00	6.00	14.00
	Maximum	9.00	10.00	20.00
Total	Mean	5.8393	8.1250	17.4940
	N	168	168	168
	Std. Deviation	1.68235	1.59786	1.72338
	Median	6.0000	8.5000	18.0000
	Minimum	1.00	.00	8.00
	Maximum	9.00	10.00	20.00

Table 3. Pairwise Comparison of knowledge and attitude scales using Dunn test among HCPs (N=168)

Comparison category	Adjusted significance (p value) of 'knowledge' score	Adjusted significance (p value) of 'attitude' score
Nurse – Consultant	1.000	0.964
Nurse – Resident	0.000	0.005
Consultant – Resident	0.006	0.265

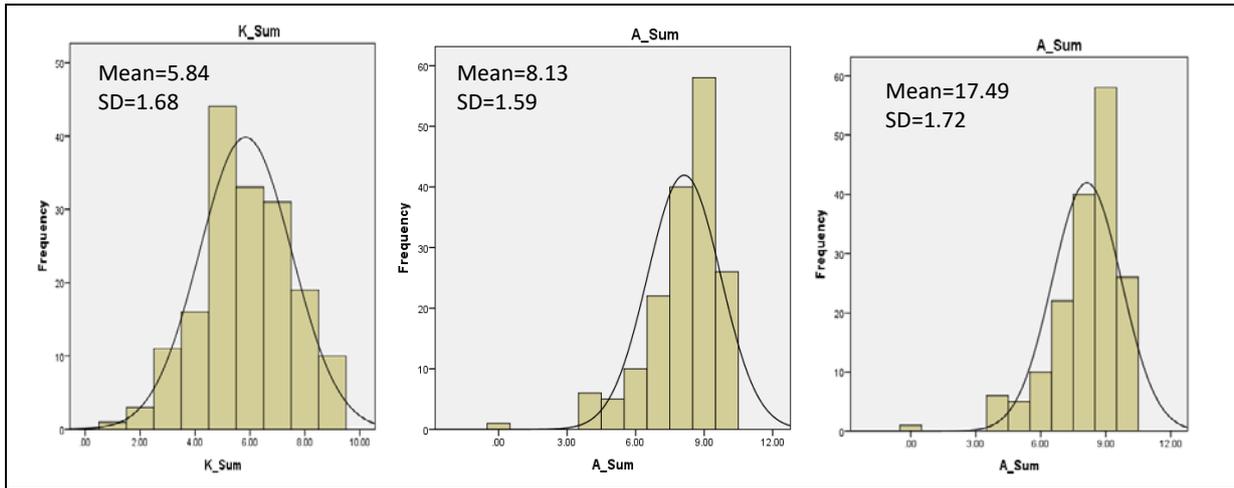


Figure 2a. Distribution of knowledge, 2b. Attitude, and 2c. Practice score among HCPs (N=168)

Discussion

Our study showed that most of the HCPs acquire information on the COVID-19 outbreak via social media and mass media (radio and television). The finding is similar to that shown in a study conducted in Taiwan¹⁰. Similarly, a study conducted among 453 HCPs found that more than 60% respondents use social media to seek information regarding COVID-19.¹¹ As COVID-19 is an emerging, highly infectious disease and a global problem, and researches are going on, it has good coverage on social media and television news. Moreover, research articles are shared on social media like Facebook, WhatsApp and Viber which has become the most important source of information. But it is important that HCPs carefully evaluate COVID-19 information sources and utilize authentic and valid content to seek information as in this global pandemic, there is also a pandemic of misinformation regarding COVID-19 that might lead to xenophobia in the world as already warned by scientists and WHO officials.^{12,13}

Knowledge, Attitude, and Practice (KAP) survey provides a suitable format to evaluate existing programs and to identify effective strategies for behavior change in society. This study is the first study conducted comparing KAP towards COVID-19 among doctors and nurses at a maternity hospital in Nepal. Because of the ongoing pandemic and highly

infectious nature of COVID-19 healthcare professionals' good knowledge and practice creates awareness among patients as also it gives an important message to the society.⁷ Application of safe practices is mandatory to safeguard the interests of both the HCPs and their patients. Our study was mainly responded to by the nurses. Compared to the doctors there are more nursing staff at the hospital. The nurses are more easily reachable.

Knowledge assessment was based on etiology, vertical transmission, precautions to be taken by laboring women, and HCP, fatality of the disease and use of vaccine against Coronavirus. The findings show that the mean score in 'knowledge' was between 5 and 6. This is in contrast to the findings of Gao et al¹⁰ who reported that 88.4% participants have sufficient knowledge and Shi et al who found that 89.51% healthcare workers have good knowledge.⁴ Most of the issues regarding COVID-19 are controversial and researches are still going on especially with regard to pregnant women. So, information on issues like mode of transmission, vertical transmission, guidelines on women in labor etc. are changing frequently and are at times conflicting even at the time of writing this article.

Mean 'attitude' score above 8 in all HCPs is a remarkable finding. This positive attitude has been reflected in good practice with mean

practice score of above 17 in all categories. The distribution of good practice score did not differ across the 3-categories of HCP ($p=0.664$) and is a remarkable finding of this study. These findings are similar to another study conducted among Nepalese residents¹⁴ and study of Gio et al.¹² This could be because of the fact that COVID-19 had already spread globally when this study was conducted and by this time, based on evidence from different parts of the world, WHO had already put forth recommendations and Nepal government was implementing most of them making it possible for the HCPs to be well aware of them.

Major preventive measures against COVID-19 like using masks, washing hands after touching each patient, avoiding going out of home was consistently found to be practiced by all HCPs. This can be again explained by the massive dissemination of safe practice behaviors by different communication methods among public via daily update by the government, strict government rules to implement safe practices like putting on mask in public, frequent hand washing and avoiding going out of home. The attitude score however among the 3-categories of HCP was significantly different ($p=0.006$).

Analyzing the category of HCP having best score, it was found that residents had significantly better knowledge score. The distribution of 'knowledge' was significantly different between Nurse – Resident and Consultant – Resident pairs ($p=0.000$ and $p=0.006$ respectively). In both cases the Residents were the more knowledgeable. This is probably because the residents keep themselves updated more with regard to social media and TV news due to more availability of time as compared to consultants. Also, they remain longer in hospital where they can share more information.

The reason behind a majority of consultants not willing to participate in this survey could have been the cause of their poor knowledge

of the disease. Their busy schedule may also have contributed to this poor score.

Also pair wise comparison of 'attitude' showed better attitude of residents as compared to nurses ($p=0.005$) but the difference was not significant when compared with the consultants ($p=0.2$).

Some of the limitations of our study include, internal consistency reliability was not computed using Pilot Test data to modify the tool as some of the questions were not clear to the respondents which could have been modified after the pre-test.

Conclusion

We found positive attitude and good practice towards COVID-19 among doctors and nurses at the tertiary care maternity hospital of Nepal. Main source of information on COVID-19 was media and social network. This could have impact in disseminating useful behavioral change and safe practices.

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Conflict of Interest

None

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None

Author Contribution

All authors read and approved the final proposal. SA designed the study, performed literature review, collected data, analyzed data and contributed in the preparation of the final manuscript and is the guarantor; IA performed literature review, analyzed data, and prepared the final manuscript. MJ and RU collected data and analyzed data.

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Supplement (questionnaire)

Knowledge, Attitude and Practice Towards COVID-19 Outbreak

Form no-

Profession - A. Nurse

B. Resident doctor

C. Gynecologist/Obstetrician

Gender - Female/ Male

Age -

Q. What is the main Source of your Information regarding COVID-19? (Tick one option)

- Seniors & Other Colleagues
- Newspapers & magazines
- Posters & Pamphlets
- Seminars & workshops
- Radio & television
- Social Media

Knowledge (Tick 1 answer)

- K1. COVID 19 is an airborne disease.
a. Agree b. Not sure c. Disagree
- K2. Coronavirus has generally not been detected in amniotic fluid, cord blood and placenta.
a. Agree b. Not sure c. Disagree
- K3. When temperature rises coronavirus will go away.
a. Agree b. Not sure c. Disagree
- K4. Thermal scanners are not effective in detecting people infected with the new coronavirus.
a. Agree b. Not sure c. Disagree
- K5. Spraying alcohol or chlorine all over your body can kill the new coronavirus.
a. Agree b. Not sure c. Disagree
- K6. Vaccines against pneumonia do protect you against the new coronavirus.
a. Agree b. Not sure c. Disagree
- K7. Mask, gown and gloves provides protection from droplet infection.
a. Agree b. Not sure c. Disagree
- K8. You can recover from COVID-19. Catching the new coronavirus does not mean you will have it for life.
a. Agree b. Not sure c. Disagree
- K9. Majority of patients affected by Corona virus require critical care.
a. Agree b. Not sure c. Disagree
- K10. In obstetric department all laboring women should be provided with triple layer mask
a. Agree b. Not sure c. Disagree

Attitude

- A1. Healthcare workers must acknowledge themselves with all the information about COVID-19.
a. Agree b. Not sure c. Disagree
- A2. Prevalence of COVID-19 can be reduced by active participation of healthcare workers in the hospital.
a. Agree b. Not sure c. Disagree
- A3. COVID-19 patients should be kept in isolation.
a. Agree b. Not sure c. Disagree
- A4. Gowns, gloves, mask and goggles must be used when dealing with COVID-19 patients.
a. Agree b. Not sure c. Disagree
- A5. It is my opinion that early detection of COVID-19 can improve treatment and outcome.
a. Agree b. Not sure c. Disagree
- A6. It is my opinion that health education can help prevent COVID-19.
a. Agree b. Not sure c. Disagree
- A7. It is my opinion that if there is an available vaccine for the disease it should be used
a. Agree b. Not sure c. Disagree
- A8. It is my opinion that the awareness considering COVID-19 disease in society is sufficient.
a. Agree b. Not sure c. Disagree
- A9. It is my opinion that COVID-19 disease results in death in all cases.
a. Agree b. Not sure c. Disagree
- A10. It is my opinion that in the event of an increase in the number of cases of COVID-19, authorities should close educational institutes.
a. Agree b. Not sure c. Disagree

Practice

- P1. You educate your patient about the disease.
a. Yes b. No c. Sometimes
- P2. You use face mask in crowds.
a. Yes b. No c. Sometimes
- P3. You avoid touching your eyes, nose or mouth as far as you can.
a. Yes b. No c. Sometimes
- P4. You throw the used tissue in the trash.
a. Yes b. No c. Sometimes
- P5. You cover your nose and mouth with a tissue during sneezing or coughing.
a. Yes b. No c. Sometimes
- P6. You use soap or hand sanitizer to wash your hands after touching each patient.

- a. Yes b. No c. Sometimes

P7. In order to prevent contracting and spreading COVID-19, you avoid going out of your home.

- a. Yes b. No c. Sometimes

P8. In order to prevent contracting and spreading COVID-19 you avoid handshaking, hugging and kissing.

- a. Yes b. No c. Sometimes

P9. In order to prevent contracting and spreading COVID-19, you use disinfectant and solutions.

- a. Yes b. No c. Sometimes

P10. In order to prevent contracting COVID-19, you take vitamin supplements.

- a. Yes b. No c. Sometimes

-X-