



Assessment of knowledge attitude and practices regarding COVID 19 effects among community pharmacists in rural area of trivandrum

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ABSTRACT

Back ground Research has shown that health care professionals particularly community pharmacists had an important role in prevention in COVID 19 . Present study aims to assess the knowledge, attitudes and practices regarding COVID 19 effects among community pharmacists in rural area of Trivandrum.

Materials and methods

This is a prospective, observational study was done for a period of 3 months from March – June 2023. Data were collected from 300 pharmacists working in few community pharmacies in rural of Trivandrum. The questionnaire divided into two sections includes first part related to socio-demographic characteristics and second part related to knowledge, attitudes and practice among community pharmacists.

Result

In this study revealed that most of community pharmacists had great level of experience, good knowledge, practice and attitude on COVID 19.

Conclusion

Our study shows the importance of updating knowledge conducting or attending seminars, conferences, training programmers helps community pharmacists to improve their awareness for managing the next episodes or further consequences for controlling this dreadful disease. In this study was concluded that level of experience and good knowledge, practice and attitude on COVID 19 contributed significantly to CPs for the pandemic control.

Key words

COVID 19, Community pharmacists, Knowledge, Attitude, Practice

people may show mild to moderate respiratory illness and recover without any special treatment. The infected persons can spread virus through droplets when they cough, sneeze or speak. The best method of prevention includes informing people properly about its transmission, avoiding crowd, keeping at least 1 meter distance from others, wearing a properly fitted mask, cleaning hands using alcohol based sanitizers, practicing respiratory etiquette that is by coughing to a flexed elbow and self-isolation till recovery[1].

Origin of COVID 19

Corona virus was first identified in 1960. Based upon the Canadian study conducted in year 2001, approximately 500 patients were presented with flu like symptoms. Until 2002 corona was treated as a simple non-fatal viral disease. However in 2003, various studies reported that this disease is transmitted to many other countries such as Vietnam, Taiwan, Singapore, US, Thailand and around 1000 patients were died. Another study conducted in Hong Kong revealed that out of 50 patients of SARS, 30 were infected with this virus [2,3,4]. In 2012, a study reported in Saudi Arabia revealed that a person who was infected with Middle East Respiratory Syndrome (MERS) COVID 19 died due to renal failure and acute pneumonia [5]. In December 2019, a large number of pneumonia cases were reported in Wuhan, China due to beta corona virus. In January 2020 WHO entitled a new name for beta corona virus as 2019 novel corona virus (2019-nCoV) later, on 11 February 2020 WHO renamed this disease as corona virus disease 2019 (COVID 19)[6].

Epidemiology

An outbreak of extensively spreading pandemic of pneumonia cases were reported in Wuhan, China in 12th December 2019 [7]. Hence, WHO announced it as a public health emergency as an international concern [8]. Still, research works

I. INTRODUCTION

Corona virus disease is highly infectious, caused by the Severe Acute Respiratory Syndrome Corona Virus (SARS Cov -2). Usually infected



are undergoing to know more about the severity, transmission and other unknown features of COVID 19[9]. In 1 march 2021, 120 million people were infected with this disease, but unfortunately among these 3 million people were died [10].

In India, the first case of COVID 19 pandemic was reported from Kerala on 30th January 2020[11]. Compared to other countries, COVID 19 cases were reported from urban areas in India due to high population density and mortality rate increased because of its transmission potential [12]. As per the report of 31 January 2020, it was stated that the infectivity of COVID 19 in India 16, 95,988 and mortality rate among this is 35,747 [13].

In India, first positive case was reported from Kerala among three students who travelled from Wuhan province of China on 30th January 2020. They belonged to Thrissur, Alappuzha and Kasaragod districts of Kerala and two of them were medical students at a university in Wuhan[14 15]. In Kerala 52, 47,177 COVID 19 positive cases were confirmed among these 10% of the mortality rate is reported from Trivandrum district [16]. Risk and prevalence rate of COVID 19 in Trivandrum district is extensively high because of high population density [17].

The outbreak of COVID-19 affected the lives of all sections of society and people were asked for self-quarantine in their homes to prevent the spread of this disease that causes serious implications on mental health, which leads to frustration, stress, and depression [18].The COVID-19 pandemic has triggered one of the worst jobs crises and that increases poverty and also widen the inequalities, with the impact felt for years to come.

II. MATERIALS AND METHODS

This is a prospective, observational study was done for a period of 3 months from March – June 2023. Data were collected from 300 pharmacists working in few community pharmacies in rural of Trivandrum. A due permission from all community pharmacists before initiation of study. The questionnaire was developed with reference to relevant literature review and expert consultation to match the scope of study. Community pharmacists were enrolled and subjected for a face to face interview by using KAP questionnaire. The questionnaire comprises of two parts, first part related to socio-demographic characteristics and second part related to KAP among community pharmacists. The socio-demographic characteristics includes the details of age, gender, education level, experience. Data was collected using structured questionnaire consisting

of 45 questions and it is subdivided into three sections. 15 question related to knowledge assessment 15 question for evaluating attitude and 15 related to assessment of practice. The section regarding the knowledge was assessed on the basis of way of response of Cps to all questions. The session regarding the attitude was evaluated on the basis of statements focusing on the confidence of Cps during dispensing the safest drug to COVID 19 patients. The session regarding the practice was assessed on the basis of dispensing drug practices during COVID 19. This is measured by including the way of providing advice by Cp to infected patients on their relatives especially or proper uses of non – prescription / prescription drug. After gathering all the data, the obtained data are checked, sorted and categorized accordingly. The gathered data were characterized into different groups, and subjected to statistical analysis.

III. RESULTS

Demographics

A total of 300 community pharmacists were participated in the study among these, majority of the participants were male 172(57.3%) and 128(42.8%) of participants were female and majority of the participants were included in an age group of 3039(56.7%). Only 2 pharmacists had completed their post-graduation, 64 participants were graduated and 234 participants were having a diploma in pharmacy. In this study, majority had only diploma but they had good awareness and most of them had a great level of experience (45%) in dispensing, monitoring and ensuring the rational use of medications.

Knowledge of community pharmacists related to COVID19

In our study 149 (49.7%) were well informed about transmission of disease. 78% were correctly known about the isolation period for infection and 73.3% also well informed about that better quarantine can prevent the spread of illness. Corona virus is generally found in domestic as well as wild animals but infection from animal to human is rare.78%of participants were well known about the consequences associated with animal contact during their infective period.. 182 patients were well informed about the consequences associated with this infection. Acetaminophen and paracetamol are widely used in the treatment of initial symptoms of COVID 19[55].Among these use of NSAIDs causes increase the risk of pleuropulmonary complications [56]. In this study most of the patients were treated



with acetaminophen (78%) whereas, 22% received NSAIDS for their treatment.

The study showed that community pharmacists were depended upon social media to collect information (62.3%). A person who has already infected can receive vaccination after 12 weeks after recovery. Initially the vaccine had a great effectiveness in prevention of COVID 19 but later the emergence of different variants of corona virus results in decrease in effectiveness.

Generally, vaccination offers good protection, but vaccination cannot be considered as means of complete cure of disease. The patients should strictly follow the preventive methods. In our study, 93% of CPs agreed that vaccination offered a good protection and 96.3% assured that people can receive vaccination once they already being infected and 86.3% of participants pointed out that alcohol 70% offered a greater protection. Our study proved that most of the community pharmacists had a good knowledge to prevent the transmission of this disease.

Attitude of community pharmacists related to COVID 19

Community pharmacists had a positive attitude towards prevention of COVID 19 since their active participation results in control of infection to a great extent. CPs recommended (99.3%) vaccination to their family and friends and only 51% could educate their parents about COVID 19 due to their shortage of time. Here, 93% of CPs offers counseling to the public. In our study 274 CPs agreed that early diagnosis and providing immediate medical attention is the best method to prevent further complications and (81.7%) of CPs reported that COVID 19 can be resolved in near future. In our study all participants (100%) were ready to

update their knowledge. Here all the CPs were ready to offer their services all the time even their job is at high risk. CPs are also taken necessary steps to prevent infection by providing tele pharmacy services (91%) and keeping 1 meter apart (100%) for disease prevention.

Practice of community pharmacists related to COVID 19

Our study clearly indicating that the community pharmacists had a good knowledge about hand hygiene which is the simplest and least expensive measure. Before approaching the counter pharmacists should check the availability (98.3%) of hand gels (hydro alcoholic) for patients and indoor items and equipments were properly disinfected or not. Most of the participants were taken necessary steps to prevent transmission of disease (100%) and also strictly restricted the number of patients entering the pharmacy (97.7%). Tele pharmacy services had great role in providing the healthcare facilities to the remote areas and ensure the effective distribution of medications at the time of pandemic. [61]Our report showed that community pharmacists (27%) also provided the home delivery services to minimize the contact with patients. Our pharmacists also ensured the availability of key medication (84%) and also advised the patient about the importance of following balanced diet (93%). Majority of the pharmacists (85.7%) have suggested to quarantine their family members with positive symptoms and also to seek medical attention immediately. Our study demonstrated that the pharmacists had a major role in prevention of this disease. Among all the health care professional pharmacists are the most accessible one to the public.

Questions	frequency	Percent
About Covid		
Person to Person transmission can occur by droplets	149	49.7
Transmission can be airborne	133	44.3
Most common symptoms include fever , diarrhea and dyspnea	18	6.0
Isolation in Covid		
7 Days	66	22.0
14 Days	234	78.0
Quarantine		
No, if quarantine <14 Days	80	26.7



No, if quarantine ≥ 14 Days	220	73.3
Protection		
Wash your hands with soap and water for at least 20s	40	13.3
Avoid close contact. keep 1.5m - 2 m from others	124	41.3
Wear face mask and stay home if you have any respiratory symptom	136	45.3
Test -ve +ve		
Yes	300	100.0
Animal Contact		
No	235	78.3
Yes	31	10.3
I don't Know	34	11.3
Symptoms		
Fever,Productive cough,Rhinorrhoea	182	60.7
Fever, Dry cough,Dyspnoea	111	37.0
Fever,Diarrhoea,Pharyngitis	7	2.3
Treatment		
Acetaminophen	234	78.0
NSAIDS	66	22.0
Source of information		
Social media	187	62.3
Newspaper	110	36.7
Medical Bulletin	3	1.0
Lifelong vaccination		
Agree	79	26.3
Disagree	69	23.0
Neutral	152	50.7
Vaccine protection		
Disagree	279	93.0
Neutral	21	7.0
Recovered covid can receive vaccination		
Agree	289	96.3
Neutral	11	3.7
Preventive measures		
Yes	300	100.0
Contraindication		
Pregnancy and lactation	13	4.3
Hypertension	1	0.3
Cardiac disease	25	8.3
None of the above	261	87.0
Disinfectant		



Alcohol 60%	17	5.7
Alcohol 70%	259	86.3
Alcohol 95%	24	8.0
Side effect		
Agree	270	90.0
Neutral	30	10.0
Vaccination to family and friends		
Agree	298	99.3
Neutral	2	0.7
Cannot educate parents		
Agree	129	43.0
Disagree	155	51.7
Neutral	16	5.3
counsel the public		
Agree	279	93.0
Neutral	21	7.0
Preventive method		
Agree	293	97.7
Neutral	7	2.3
Seek immediate attention		
Agree	274	91.3
Neutral	26	8.7
High risk for Covid-19		
Agree	299	99.7
Disagree	1	0.3
Work are sufficient		
Agree	300	100.0
Preventable disease		
Agree	72	24.0
Disagree	7	2.3
Neutral	221	73.7
Resolve in near future		
Agree	245	81.7
Disagree	39	13.0
Neutral	16	5.3
Update information		
Yes	300	100.0
Atleast 1 m distance		
Yes	300	100.0
Tele pharmacy		
Yes	273	91.0
No	27	9.0



community pharmacist's contribution		
Agree	268	89.3
Disagree	10	3.3
Neutral	22	7.3
Reduce spread and transmission		
Agree	241	80.3
Neutral	59	19.7
Management of Covid-19		
Agree	300	100.0
contribution		
Agree	282	94.0
Disagree	18	6.0
Make hand gel		
Yes	295	98.3
No	5	1.7
Restrict the number of patients		
Yes	293	97.7
No	7	2.3
Wearing the mask		
Yes	300	100.0
How long put your mask		
For one day	300	100.0
Wash your hands during shift		
Often	116	38.7
Always	184	61.3
Avoid touching your eyes		
Rarely	87	29.0
Often	96	32.0
Always	117	39.0
Avoid contact with people		
Rarely	33	11.0
Often	117	39.0
Always	150	50.0
Stay home not well		
Never	146	48.7
Rarely	93	31.0
Often	42	14.0
Always	19	6.3
Home delivery		
Agree	71	23.7
Disagree	47	15.7
Neutral	182	60.7



Key medication		
Agree	252	84.0
Disagree	1	0.3
Neutral	47	15.7
Nutritional balance diet		
Yes	271	90.3
No	29	9.7
Family members has symptoms		
Contact medical practitioner	257	85.7
Quarantine yourself	43	14.3
Disinfectant and indoor items		
Yes	300	100.0

IV. DISCUSSION

The community pharmacist always put forward their maximum effort for providing the rational use of medicine. The current study shows that the community pharmacists were actively participated for control of COVID 19 and they possess outstanding knowledge, confident attitude and good practice. In our study we examine the knowledge attitude and practices of community pharmacist in Trivandrum by using predefined KAP questionnaire.

KNOWLEDGE

The participants could answers 80 – 90 % of knowledge – based questions regarding preventive measures, duration of isolation, quarantine, protection, contact with animals, common symptoms, treatment, acetaminophen use, source of information, contraindications, alcohol content in disinfectant. These results can be explained by the characteristics that included young pharmacists, fresh graduates, and senior pharmacy students are participated in our study. Our results are similar to those of Zhong et al. who found an overall knowledge rate of 90% among Chinese residents [19]. Same as Huynh et al. showed that healthcare workers, particularly pharmacists, had a high level of knowledge about the COVID-19 outbreak in Vietnam [20]. About 300 community pharmacist were participated in the study, from which about 86 (28.7%) were in between 20-29 years, 170 (56.7%) were in between 30-39 and 44 (14.7%) were in between 40-49 years. Among the pharmacists, only 2 (0.7%) were M.Pharm, while majority are from either B.Pharm 64 (21.3%) and D.Pharm 234 (78%). Most of the community pharmacists were well aware about how the infection being transmitted

among those some are (49%) were stated that it can be transmitted from droplets and some of them stated that it is transmitted through airborne (44.3%) A larger number of pharmacists were known about the isolation period of the infected persons is by 14 days (78.0%) and the rest of them were said that it is 7 days (22.0%). Majority of pharmacists should provide the public with the right preventive methods (eg :- face mask, social distance) in 293 (97.7%). In many participants suspect someone may have COVID 19 they make sure that they seeks immediate attention was reported 274 (97.3%). A majority of the participants were well known about no contact with pets or animals during infection period (78.3%) and this shows that the pharmacists are known that contact can lead infection to their pets also.

People with COVID 19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. Symptoms may appears 2 – 14 days after exposure to the virus. The symptoms are reported in our study was found fever, productive cough, rhinorrhea is 182 (60.7%), fever, dry cough, dyspnea is 111 (37.0%). A drug used in the treatment of COVID 19 was acetaminophen. Acetaminophen acts as an antipyretic agent, inhibiting prostaglandin production in the brain. So acetaminophen is used in COVID 19 was reported in our study is 234 (78.3%), NSAIDS are also used which was reported as 66 (22%). Our analysis report shows that most of the participants were gathered the information about the COVID 19 pandemic through different sources like social media 187 (62.3%), newspaper 110 (36.7%), medical bulletin 3 (1.0%) and this results shows that the community pharmacists were enthusiastic to in social media to collect the information and this implies that need of



collecting information from the relevant documents. Most of the participants were well known about single dose of COVID 19 vaccine is not sufficient for enough protection (93%) and participants were well known about the need of preventive measures like social distancing, hand washing and wearing mask even they are vaccinated (100%) and this shows that majority of pharmacist were well informed about this particulars. Community pharmacists have an important role in the reporting contraindications for COVID 19 vaccines. Most of the pharmacists were reported the contraindications such as cardiac diseases (8.3%), pregnancy and lactation (4.3%), hypertension (0.3%). For the prevention of COVID 19 were disinfectants are used. The disinfectant products are recommending to patients and the products which contains alcohol percentage is well known the participants that are alcohol 60% (5.7%), alcohol 70% (86.3%), alcohol 95% (8.0%).

ATTITUDE

Community pharmacists educate the public to prevent the spread of COVID 19 infection from their knowledge and experience. In our study states that community pharmacists should have the responsibility to counsel the public about the current available therapeutic options for COVID 19 which is supported by 279 (93.0%). Pharmacists can provide many services that include pharmacotherapy, preventive measures, and protective care. Our study was reported as the community pharmacist suspect someone may have COVID 19 they should make sure that they seeks immediate attention is agreed by 274 (91.3%).

Our study report was shows that the update information on COVID 19 every day is 100%. The minor side effects are usually mild and begin gradually. Some people become infected but don't develop any symptoms and don't feel unwell. Our analysis report was shows that minor side effects of COVID 19 vaccines in patients are 270 (90%). Many participants were recommended COVID 19 vaccination in their family and friends. In our study was reported 298 (90.3%) pharmacists were recommended COVID 19 vaccination in their family and friends. Our study was reported as community pharmacists cannot educate parents regarding COVID 19 pandemic due to their shortage of time which is agreed by 129 (43.0%) and it is disagreed by 155 (51.7%). The arrangement of community pharmacy has put pharmacist high risk of infection because they offer only very limited space and reparatory droplets of the infected person

deposited on the counter top while enquiry with infected person[]. A large number of community pharmacists job put at high risk for COVID 19 was reported 100% and the infection control measures in the pharmacy where they work are sufficient are 100%. The COVID 19 is preventable disease agreed by 72(24%). The COVID 19 situation will resolved in the near future is reported as 81.7%. The community pharmacists are dispensing medicines to maintain at least one meter distance between the pharmacists and customers to the prevention of pandemic infection was reported as 100%. The some advanced pharmacies contains tele pharmacy services for the control spread of infection these was supported by pharmacist are 91%. Community pharmacists should contribute to COVID 19 diagnosis and treatment of minor cases was agreed by 98.3%. Major participants should counsel the public about COVID 19 and how to reduce its spread and transmission was reported as 241 (80.3%).

PRACTICE

From the perspectives of medical staff, this study shows that pharmacists played a positive role in ensuring the supply of non-routinely stocked drugs such as TCM preventive preparations, providing drug consultation, and identifying adverse drug reaction and interactions during the COVID 19. Community pharmacists have important role in the management of COVID 19 through their pharmacy was reported in our study is 100%. Hand hygiene is the simplest and least expensive measure proven to be effective in preventing HCAs [2,3]. WHO and the centers for the Disease Control and Prevention recommend using Alcohol Based Hand Rub (ABHR) for hand hygiene in health care settings, unless physical removal of microbes with soap and water is required [3,4]. The pharmacists should make hand gel (hydro alcoholic) available for patients to use before approaching the counter was analyzed as 98.3%. Most of the participants restrict number of patients entering the pharmacies are done by 97.7%. 100% of community pharmacists are wearing a mask while performing their job at pharmacy. Our analysis report was show that community pharmacists should provide home delivery services to minimize the contacts with patients and also minimize the pandemic control is obtained is 71 (23.7%). Pharmacists should ensure the availability of key medication is agreed by 252 (84%). The pharmacists should check the patients with proper balanced diet is required for the minor side effects caused by the COVID 19. Our participants are agreed with the proper balanced diet



is 271 (90.3%). The majority of pharmacists on their family members has symptoms that suggests COVID 19 infection to contact medical practitioner is 257 (85.7%) and quarantine yourself is recommended 43 (14.3%). Our study shows that large number of community pharmacists should disinfect indoor items and equipment in the pharmacies are 100%.

V. CONCLUSION

In our study shows importance of updating knowledge conducting or attending seminars, conferences, training programme helps Cps to improve their awareness for managing the next episodes or further consequences for controlling dreadful disease. Many effective measures against the spread of this dangerous virus were applied in pharmacies. The demand for applying the knowledge, attitude and practice of COVID 19 among CPs are supportable and need extra attention. From our study it can be concluded that the level of level of experience and good knowledge, practice and attitude on COVID 19 contributed significantly to CPs for the pandemic control.

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