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Knowledge, attitude and practice of community pharmacist towards COVID-19 and uses of zinc and doxycycline in COVID-19

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Abstract--The public must routinely practice precautionary behaviors to control the spread of COVID-19, as no vaccines and antiviral treatments are currently available. This paper examines the public's Knowledge, Attitudes, and Practices (KAP) related to COVID-19 and their relationships and identified the pandemic's vulnerable populations to provide recommendations for behavioral interventions and policies. To Determine the Knowledge, Attitude and Practice of Community Pharmacists towards COVID- 19 and use of Zinc and Doxycycline in COVID-19 and the objective is to understand the knowledge of community pharmacist regarding use of zinc and Doxycycline in COVID-19. This is the cross sectional study conducted among the Community Pharmacists in and around Avadi, Chennai. The Sample size was found to be 100 Participants and it was conducted for the period of 9 months. This study assess the knowledge attitude and perception of community pharmacist regarding Zinc and Doxycycline use in COVID- 19, In comparison of individual KAP of community pharmacist with their work experience there was no significant difference with respect to their work experience all showed a good knowledge, positive attitude and positive perception regarding the use of Zinc and Doxycycline in COVID- 19, the value are 0.3 for knowledge, 0.5 for attitude and 0.3 for perception. The study shows that there is a no significant difference found in the overall scores between work experiences. People with

work experience greater than 16 years students had better knowledge in the overall KAP scores when compared with other group of experience. In individual scores of knowledge and practices were compared there is no significant difference observed between the years of experiences.

Keywords---knowledge, attitude, community pharmacist, COVID-19, zinc, doxycycline.

Introduction

Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness (1). The best way to prevent and slow down transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow) (2).

Mechanism of Action – Doxycycline

Doxycycline is a bacteriostatic at lower concentration and bactericidal at higher concentration. Studies show that Doxycycline controlled both dengue and chikungunya. Doxycycline is a protein synthesis inhibitor (3). Doxycycline block cytokine production and prevent viral replication thereby reducing inflammation and virus production. DOX inhibit [MMPs] matrix metalloproteinase which are crucial for virus survival and replication.

Pharmacokinetics and Pharmacodynamics

DOX is administered orally followed by complete absorption in stomach and small bowel. certain measures like avoiding during bedtime and consuming with adequate water is recommended (4). The common serum half life is 18-22 hours even in case of renal impairment. As the DOX creep into the body fluids they are seen in breastmilk, lymphatic fluid, peritoneal fluid and also in CSF with mean level of 14%-26%. DOX causes teeth discolouration due to stable calcium complex formation. Elimination of oral administration of DOX takes place within 72 hours. DOX exhibit post antibiotic effect (5).

Dosage and Administration –Doxycycline

The Initial recommended dose of DOX is 200mg daily and followed by maintenance dose of 100mg in case of severe infections (6). Intake either orally or

through IV. Higher doses are recommended in case of malaria, syphilis, prophylaxis. Lower dose of 20mg is recommended for condition like acne vulgaris, rosacea. In case of children: 2.2 mg/kg dosage is recommended.

Drug Interaction

Drug absorption is inhibited by aluminium, calcium and magnesium salts. Certain measures for the intake of DOX are not taken along with Iron supplements, anticonvulsant, anticoagulants, oral contraceptives and chronic alcoholism(7).

Indications

DOX usage during tooth development causes tooth enamel hypoplasia and teeth discolouration. DOX causes gastrointestinal irritation. so intake with excessive fluids is suggested(8). As the DOX cross the placenta it should be avoided during pregnancy. Certain invivo studies show DOX is carcinogenic.

Clinical Uses

DOX is used in both community acquired pneumonia and hospital acquired pneumonia. It is used in endocarditis, pyrexia and retinitis as first line therapy (9). It is used for both natural and bioterrorism anthrax. Commonly used in treatment of malaria, dengue, chikungunya and genitourinary infections.

Role of Doxycycline in COVID-19

According to NICE UK Guideline DOX is a major choice for community and hospital acquired pneumonia to prevent mortality. According to certain studies DOX is not used in general treatment of COVID-19. These are used as Therapeutic agents to control mortality (10).

Aim

To Determine the Knowledge, Attitude and Practice of Community Pharmacists towards COVID- 19 and use of Zinc and Doxycycline in COVID-19

Objective

Primary objective

To access the contribution of community pharmacist in COVID-19 pandemic

Secondary objective

To understand the knowledge of community pharmacist regarding use of Zinc and Doxycycline in COVID-19

Methodology

This is the cross sectional study conducted among the Community Pharmacists in and around Avadi, Chennai. The Sample size was found to be 100 Participants and it was conducted for the period of 9 months.

Patient selection

Inclusion Criteria

All the community pharmacists are included

Exclusion Criteria

Interns and trainees working in community pharmacy are excluded

Study Instruments

The study instrument was developed and carried out with the use of self-developed questionnaire after a thorough literature analysis which is assessed and validated by the general physicians.

Complete Study Procedure

Community pharmacists were included in the study and the study was carried out by circulating self-made, validated questionnaire to the community pharmacist in AVADI. The questionnaire consisting of questions regarding knowledge, attitude and practice regarding COVID-19 and use of zinc and Doxycycline in COVID-19. The questionnaire was given to understand the awareness, Knowledge, Attitude and Practice towards COVID-19 and use of Zinc and Doxycycline in COVID-19. The data was collected and analysed by the statistical analysis and the study assess the perception of community pharmacists towards covid19 and use of Zinc and Doxycycline in COVID-19.

Statistical Analysis

The statistical analyses were performed using the students T-test, Microsoft excel and SPSS software.

Results and Discussion

In our study, a total of 90 community pharmacist has participated and all the 90 participants gave their consent to participate in this study. The study contains different sections with different questions under each section.

Table 1
Demographic characteristics of the pharmacists

Characteristics	Frequency	Percentage
Age		
21-30 years	35	38.8%
31-45 years	42	46.6%
46-60 years	13	14.4%
Gender		
Male	63	70%
Female	27	30%
Job position		
Dispenser	65	72.2%
Store manager	25	27.7%
Year of experience		
1-5 years	32	35.5%
6-15 years	21	23.3%
above 16 years	37	41.1%

From the study the demographics characteristics of the participants were included in the table 1. Table 1 shows that 38.8% of the participants were between the age group of year 21-31. 42 participants were between the ages of 31-45- years followed by 13 participants in the age group of 46-60% which is 14.4%. 70% of the participants in the study were male and 30% of the participants were female. Male students were higher in number (63) when compared with female students (27). Out of 90 participants 65 participants were studying Dispensers, 25 students were store manager their percentage is 72.2% and 27.7% respectively. Based on years of experience participants with the experience of 1-5 years 32 persons , participants with the experience of 6-15 years includes 21 persons and greater than 16 years includes 37 persons and their percentage is 35.5% , 23.3% and 41.1 % respectively.

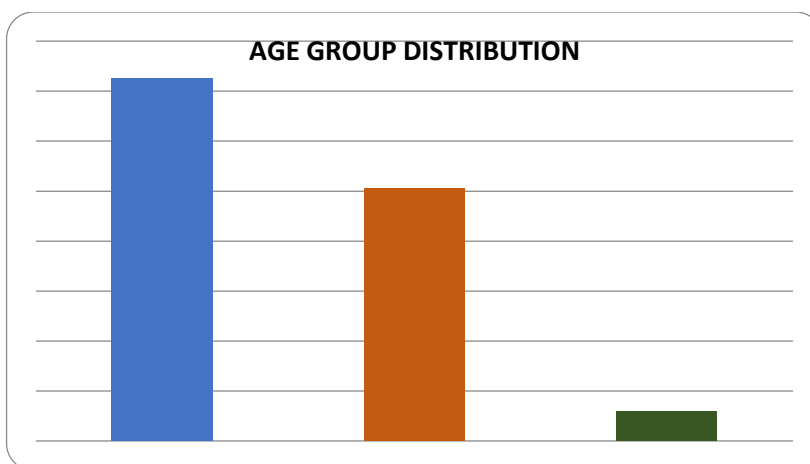


Fig 1. Age wise distribution

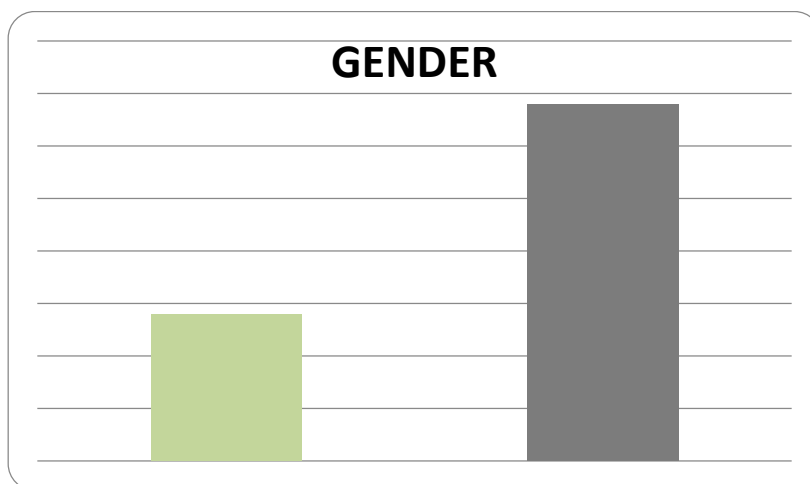


Fig 2. Gender distribution

Table 2
Knowledge and understanding of Community pharmacist towards use of
doxycycline and zinc in covid19

Questions	Correct responses	Percentage
1.What is the mode of transmission of COVID19.	65	72.2%
2. What group of patients have high risk of death from COVID19?	54	60%
3. What is WHO recommended management choice for COVID19	67	74.4%
4What is the dose of Doxycycline.	63	70%
5. What is the indication of Doxycycline	58	64.4%
6. Which organ does corona virus infect first?	69	76.6%

Table 2 shows the Knowledge and understanding of participants towards doxycycline and zinc use in covid 19 which comprises of six questions.

Table 3
Community pharmacist attitude towards the antibiotics use and its resistance

Questions	Correct responses	Percentage
1.Zinc can be used as an adjuvant along with antiviral	54	60%
2. The transmission of COVID19 can be minimized	70	77.7%

by\ following WHO recommendations		
3. Zinc is the second most abundant trace mineral in your body	65	72.2%
4. Zinc helps the immune system fight off invading bacteria and virus.	49	54.4%
5. Doxycycline is a broad spectrum antibiotic	59	65.5%
6. Upon taking revised WHO recommendations on COVID19 management would stop dispensing doxycycline to the patients	62	68.8%

Table 3 comprises of SIX questions regarding the community pharmacists' attitude towards the use of zinc and doxycycline in covid 19.

Table 4
Community pharmacist perception towards antibiotic use and its resistance

Questions	Correct responses	Percentage
1. Do you think Doxycycline can be used as the cure of covid 19?	68	75.5%
2. Do you think pregnant woman can take zinc tablets?	54	60%
3. Would you think doxycycline can reduce mortality rate?	47	52.2%
4. Do you think whether your pharmacy has adequate service related to COVID19?	76	84.4%
5. Whether any preventive measures have been taken in your pharmacy to protect the staff from COVID19?	57	63.3%
6. By only using N95 respirator we can provide adequate level of protection from the risk of transmitting the virus	62	68.8%
7. Do you think effectiveness of doxycycline can be increased by combining with ivermectin	56	62.2%

Table 5
Comparison of Individual KAP scores among Pharmacy students

Years of experience	Knowledge		Attitude		Perception			
	>4	<4	>3	<3	>3	<3		
1-5 years	18	14	20	12	19	13		
6-15 years	13	8	10	11	9	12		
More than 16 years	27	10	20	17	23	14		
P value	0.31		0.5		0.3			
P value <0.05* is considered to be significant difference								

Table 5 shows the comparison of the individual KAP scores among community pharmacists with work experience of 1-5 years 6-15 years and greater than 16 years.

Table 6
Comparison of Overall KAP scores among Community pharmacists

Years of experience	No of participants with adequate KAP scores	No of participants without adequate KAP scores	P value
1-5 years	19	13	0.8
6-15 years	13	8	
above 15 years	24	13	
P value <0.05* is considered to be significant difference			

Table 6 represents the comparison of Overall KAP scores among Community pharmacists.

Discussion

This study assess the knowledge attitude and perception of community pharmacist regarding zinc and Doxycycline use in COVID 19, In comparison of individual KAP of community pharmacist with their work experience there was no significant difference with respect to their work experience all showed a good knowledge, positive attitude and positive perception regarding the use of zinc and Doxycycline in COVID 19, the value are 0.3 for knowledge, 0.5 for attitude and 0.3 for perception. When comparing the overall KAP score among the community pharmacists once again there was no significant difference between the years of experience all had a good overall KAP score, the p value is 0.8 in this section. Male community pharmacist were more in number(70%) than that of female participants(30%) most of them were dispenser 72.2% and 27.7% were store managers .Most of them were in the age group of 31-45 which is 46.6% , 38.8% were in the age group 21-30 years and 14.4% were in the age group 46-60 years.

Conclusion and Summary

This study was conducted to highlight the differences in the knowledge, attitude, perception of use of zinc and Doxycycline in covid19 (11). The study shows that there is a no significant difference found in the overall scores between work

experiences. People with work experience greater than 16 years students had better knowledge in the overall KAP scores when compared with other group of experience. In individual scores of knowledge and practices were compared there is no significant difference observed between the years of experience (12). The study also observed that students had good Knowledge, positive attitudes and perceptions regarding the use of zinc and Doxycycline in COVID 19(13). But there are some limitations education qualification is not noted which could have helped to bring out better output, further lack of understanding of questions is also possible which could result in positive or negative results (14).Future studies must be undertaken including education qualification and providing some educational training (15).

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