



KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS COVID-19 AND HEALTH SEEKING BEHAVIOUR AMONG PETROL PUMP WORKERS DURING COVID-19 PANDEMIC IN TAMILNADU: CROSS – SECTIONAL STUDY

Community Medicine

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ABSTRACT

Introduction: The environment of petrol pump station exposes the attendants to numerous risks and health hazards. These workers are at increased risk of getting COVID-19 infection due to their work nature and also studies about the petrol pump workers are very limited in India. Hence the study has been taken up to assess their Knowledge, Attitude and Practice towards COVID-19 and their Health Seeking Behaviour during pandemic situation. **Methodology:** A cross-sectional study conducted among petrol pump workers working in Chengalpattu district, Tamil Nadu in August 2021. Data was collected by person-to-person interview method using pretested semi-structured questionnaire. Data was analysed using SPSS Version 25. Statistical tests like Chi-square and Pearson correlation were used appropriately in the study. **Results:** Among the participants who had good knowledge, 92.2% had good attitude and 70.3% had good practice respectively. Statistically significant, average relationship between knowledge vs attitude. 81.6% of the participants took allopathy treatment for illness. 52.6% of the participants from urban areas had health insurance. **Conclusion:** KAP about COVID-19 and COVID Vaccines was better among the participants but they need increased awareness for regular health check-up and improve their health seeking behaviour.

KEYWORDS

Covid-19, Petrol Pump Workers, KAP Study, Healthy Seeking Behaviour.

INTRODUCTION:

The Indian economy displayed signs of recovery in a tentative global economic condition during 2015-16¹. Demand for petroleum products increased by 10.86% during April-March, 2015-2016 over the same period last year¹. As years passed by demand for petroleum products increased rapidly and emerged as one of the major deciding factors for Indian economy.

All the industries were affected by COVID-19 pandemic throughout the world and some remained shut down. But petroleum industries were running even during the pandemic situation as they are part of the essential services. Workers under the petroleum and natural gas industries were working even during the lockdown period and all the petrol pump and gas stations remained opened. The environment of gas stations exposes gas station attendants to numerous risks and health hazards, which should be considered harmful to the health status of these workers². The risks are contact with fuels and other chemical products, remaining close to fuel pumps, noise, heat, cold, risk of being run over, robbery, repetitive movements, standing for long hours, and work overload due to the different functions they perform².

In a study in Brazil, physical hazard was reported by 88.2% of the petrol station attendants³. These workers are exposed to both the hydrocarbon in fuel and the fumes from the exhaust of vehicles³. Long term exposure of petrol attendants to petrol vapour have been reported to cause hepatotoxicity, nephrotoxicity and cardiotoxicity⁴. Benzene in petrol is harmful to the bone marrow and can decrease the number of red blood cells leading to anaemia⁵. These workers are at increased risk of getting COVID-19 infection due to their work nature. They are at risk of getting infection when people come to petrol pumps without protective measures and also if they didn't follow COVID appropriate behaviour. Therefore, it is important for the workers in petrol pumps to have awareness about COVID-19 and also studies about the petrol pump workers were very limited in India. Hence the study has been taken up to assess their Knowledge, Attitude and Practice towards COVID-19 and association with baseline characteristics and their Health Seeking Behaviour during pandemic situation.

METHODOLOGY:

- **Study design :** Cross sectional study
- **Study setting:** Petrol Pump Stations in Chengalpattu district,

Tamil Nadu

- **Study duration:** August 2021 to November 2021
- **Study population:** Persons working in petrol pumps in Chengalpattu district (within 10 kms of radius from our institution).
- **Sampling technique:** Convenience sampling.
- **Sample size:** The Petrol Pumps within 10 kilometres of radius from KIMS&RC was taken for the study. We got around 20 petrol pumps and in an average 10 people were found to be working in each petrol pump in each shift. Sample was collected from 206 participants.
- **Inclusion criteria:** Petrol pump workers currently working in the bunk for more than a year and who are giving consent for the study.
- **Exclusion criteria:** Petrol pump workers who did not work during pandemic
- **Study instruments:** A semi structured questionnaire containing information on their socio demographic details, knowledge, attitude and practice towards COVID-19 and health seeking behaviour. The KAP questionnaire consists of 18 questions pertaining to knowledge towards COVID-19, 8 questions regarding attitude towards COVID-19, 8 questions concerning practice towards COVID-19.

Validation

The questionnaire was selected under the sub-heading knowledge, attitude, practice, and health seeking behaviour based on international and national guidelines towards COVID-19 and a review of literature. A pilot study was conducted among 30 petrol pump workers and modifications were made in the content of the questionnaire based on expert opinion. Internal reliability between the variables in the questionnaire was assessed by Cronbach's alpha. For health seeking behaviour, internal reliability for 15 variables was found to be good with a Cronbach's alpha score of 0.626. Under knowledge, 18 variables have been included and internal reliability was found to be good with a Cronbach's alpha score of 0.688. For attitude, eight variables have been included and internal reliability was found to be better with a Cronbach's alpha score of 0.725. Nine variables had been included under practice, and internal reliability was found to be good with a Cronbach's alpha score of 0.619. Overall Cronbach's alpha score for the questionnaire is 0.781 for 50 variables, and internal reliability was found to be better, so the questionnaire has been used for the main

study purpose.

Data collection

Among the Petrol Pumps in Chengalpattu district, Petrol Pumps within 10 kilometres of radius from KIMS&RC were selected on our convenience. 20 Petrol Pumps were selected and all the workers in the petrol pump station was included in our study. After obtaining permission from the respective petrol pump station in charge, with their help workers were encouraged to participate in the study. Data was collected by person-to-person interview method using the semi structured questionnaire tool. Informed consent was obtained from the individual and the questionnaire was explained in local language. If the workers were not available, second visit was made.

Operational definitions

Petrol Pump Station

Any premises specially prepared for the fuelling of motor vehicles and includes such places within the premises which have been specially approved by the licensing authority⁸.

Knowledge, Attitude and Practice (KAP) Survey

KAP surveys are representative of a specific population to collect information on what is known, believed and done in relation to a particular topic, and are the most frequently used study tool in health-seeking behaviour research⁹.

Health Seeking Behaviour

Any action or inaction undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy⁸.

Data analysis: Data was entered into a Microsoft Excel spreadsheet and analysed using SPSS version 25 software. Descriptive and inferential statistics were used. Based on the responses given by the participants, scoring was done and categorization of knowledge, attitude, and practise was done. Questions were given two options, yes and no. For a yes response, 1 point is given, and for a no response, 2 points are given. Individuals with a score ≤ 25 were taken as having good knowledge, and those with a score ≥ 26 were taken as having poor knowledge. Those with a score of ≤ 9 were classified as having good attitude, while those with a score of ≥ 10 were classified as having poor attitude. Those with a score ≤ 11 were categorised as good practice, and those with a score ≥ 12 were categorised as poor practice.

Ethical issues: Approval from the Institutional ethics committee of Karpaga Vinayaga Institute of Medical Sciences and Research Centre was obtained. Participants were explained about the study in local language and their consent was obtained before participation. Privacy and confidentiality of data was maintained.

RESULTS

Table 1: Distribution of baseline characteristics of the respondents (n=206)

Variables	Frequency (n=206)	%
Gender		
Male	190	92.20
Female	16	7.80
Residence		
Urban	76	36.10
Rural	130	63.90
Marital status		
Married	164	79.60
Unmarried	42	20.40
Type of working hours		
Shift basis	164	79.6
Regular hours a day	42	20.40

A total of 206 participants were included in our study. 92.2% were males and 7.8% were females. 36.1% were from urban area and 63.9% were from rural area (Table 1).

Table 2: Association between Gender and Knowledge

	Level of Knowledge		P - Value
Gender	Good Knowledge	Poor Knowledge	0.034
Male	122(64.2%)	68(35.8%)	
Female	6(37.5%)	10(62.5%)	

64.2% of the males and 37.5% of the females had good knowledge towards COVID-19 and the association between gender and knowledge of the participants towards COVID-19 was found to be statistically significant (Table 2).

Table 3: Association between education and Knowledge

Education	Good knowledge	Poor knowledge	P-value
Illiterate	8(66.7%)	4(33%)	0.043
Primary school	24(50%)	24(50%)	
High school	58(65.9%)	30(34%)	
Higher Secondary school	16(66.7%)	8(33.3%)	
Diploma	12(50%)	12(50%)	
Graduate	10(100%)	0	

66.7% of the participants having education up to higher secondary had good knowledge towards COVID-19 and all the graduates had good knowledge towards COVID-19 and the association between education and knowledge is found to be statistically significant (Table 3).

Table 4: Association between residence and practice of the participants

Residence	Good practice	Poor practice	P – Value
Urban	54(71%)	22(28.4%)	0.015
Rural	70(53.8%)	60(46.2%)	

71% of the participants from urban area had good practice towards COVID-19 which is higher when compared with participants from rural area which is 53.8% and the association between residence and practice is found to be statistically significant (Table 4).

Table 5: Association between Working hours of the participants and their knowledge, attitude and practice

Workin g hours	Good Knowl edge	Poor Knowle dge	P- Val ue	Good attitu de	Poor attitu de	P- Val ue	Good pract ice	Poor pract ice	P- Val ue
Shift basis	108 (65.9%)	56 (34.1%)	0.030	132 (80.5%)	32 (19.5%)	0.011	106 (64.6%)	58 (35.4%)	0.010
Regular hours a day	20 (47.6%)	22 (52.4%)		26 (61.9%)	16 (38.1%)		18 (42.9%)	24 (67.1%)	

Among the participants working under shift basis 65.9%, 80.5% and 64.6% had good knowledge, good attitude and good practice towards COVID-19 respectively which is higher when compared with participants working regular hours a day and the association between type of working hours and knowledge, attitude and practice are found to be statistically significant (Table 5).

Table 6: Association between Knowledge, Attitude and Practice of the Participants

Knowledge category	Good attitude	Poor attitude	P - Value	Good practice	Poor practice	P - Value
Good Knowledge	118 (92.2%)	107 (7.8%)	0.000	90 (70.3%)	38 (29.7%)	0.000
Poor Knowledge	40 (51.3%)	38 (48.7%)		34 (43.6%)	44 (56.4%)	

Among the participants who had good knowledge 92.2% and 70.3% had good attitude and good practice respectively. The association between knowledge, attitude and practice of the participants are found to be statistically highly significant (Table 6).

Table 7: Pearson correlation between knowledge vs attitude vs practice

Variable	r - value	P - Value
Knowledge vs Attitude	0.581**	0.000
Knowledge vs Practice	0.458**	0.000
Attitude vs Practice	0.415**	0.000

We found highly significant, moderate correlation between knowledge vs attitude. Then we found highly significant, moderate correlation between knowledge vs practice. It is shown that highly significant, moderate correlation between attitude and practice (table 7).

Table 8: Association between place of treatment for mild illness

and knowledge, attitude and practice of the participants

Place of treatment for mild illness	Good Knowledge	Poor Knowledge	P-Value	Good Attitude	Poor Attitude	P-Value	Good Practice	Poor Practice	P-Value
Private	58(72.5%)	22(27.5%)	0.020	64(80%)	16(20%)	0.005	58(72.5%)	22(27.5%)	0.002
Government	42(55.3%)	34(44.7%)		58(76.3%)	18(23.7%)		46(60.5%)	30(39.5%)	
Pharmacy	26(61.9%)	16(38.1%)		34(81%)	8(19%)		18(42.9%)	16(57.1%)	
Self-medication	2(25%)	6(75%)		2(25%)	6(75%)		2(25%)	6(75%)	

Table 8 shows that among the participants those who took treatment from private hospital 72.5%, 80% and 72.5% were found to be having good knowledge, good attitude and good practice respectively which is higher when compared with those who took treatment from government hospitals. The association between the place of treatment of mild illness and knowledge, attitude and practice of the participants were found to be highly significant.

Table 9: Distribution of Participants based on intake of type of medicine (n=206)

Type of medicine	N	%
Ayurvedha	10	4.9
Siddha	2	1.0
Homeopathy	10	4.9
Allopathy	168	81.6
Others	16	7.8
Total	206	100

Table 9 shows that 81.6% of the participants preferred allopathy type of medicine for any illness followed by homeopathy and siddha.

Table 10: Association between place of residence and place of treatment

Residence	Private	Government	Pharmacy	Self-medication	P-Value
Urban	42(55.3%)	24(31.6%)	8(10.5%)	2(2.6%)	0.001
Rural	38(29.2%)	52(40%)	34(26.2%)	6(4.6%)	

Table 10 shows that 55.3% of the participants from urban areas preferred private hospitals for treatment of any illness and 40% of the participants from rural areas preferred government hospitals for treatment of any illness. Very few participants from both urban and rural areas preferred self-medication for any illness. The association between place of residence and place of treatment for the illness is found to be significant. Hence place of residence plays a vital role in getting treatment for mild illness.

Table 11: Association between place of residence and Health insurance

Residence	Health Insurance		P-Value
	Yes	No	
Urban	40(52.6%)	36(47.4%)	0.006
Rural	44(33.8%)	86(66.2%)	

Table 11 shows that 52.6% of the participants from urban areas had health insurance whereas from rural areas only 33.8% of the participants had health insurance. The association between place of residence and preference of health insurance is found to be significant. Hence place of residence plays a vital role in having health insurance.

Table 12: Distribution of Participants who had COVID-19 infection

COVID-19 infection	Frequency (N=206)	%
Yes	40	19.4%
No	166	80.6%

Table 12 shows that 19.4% of the participants had got infected by COVID-19 previously.

Table 13: Distribution of participants based on health insurance,

annual health check-up and COVID vaccination

	Health insurance	Annual health check up	COVID-19 vaccinated
Yes	84(40.7%)	16(7.7%)	120(58.2%)
No	122(59.3%)	190(92.3%)	86(41.8%)
Total	206(100%)	206(100%)	206(100%)

Table 13 shows that 7.7% of the participants had practice of doing annual health check-up and 40.7% of the participants had health insurance. 58.2% of the participants had been vaccinated for COVID-19.

DISCUSSION :

Most of the participants were males in present study which is in contrast to the study conducted by Johnson OE et al⁹ in Nigeria where females were more in number than males in petrol pump stations. Due to the work nature in petrol pump stations more males were employed than females and that is the reason for greater number of male participants in our study.

In this study it is shown that there is significant association between gender and level of education with knowledge towards COVID-19 which is similar to the study done by Minjung Lee et al¹⁰ in South Korea.

Thomas JS et al¹¹ conducted a study among petrol pump workers in Bengaluru city and found that higher the education greater is the knowledge about respiratory morbidities among the respondents which is similar to this study where it is found that there is significant association between level of education and knowledge towards COVID-19.

In this study it is found that association between knowledge, attitude and practice of the participants were statistically significant which is similar to the study done by Minjung Lee et al¹⁰ in South Korea. Various types of advertisement and awareness campaign was followed by government during the pandemic situation for COVID appropriate behaviour and COVID vaccination which also would have contributed to the better KAP of the participants towards COVID-19 in this study.

In this study, it is found that majority of the participants took treatment for any illness from hospitals or nursing homes rather than from pharmacy or self-medication which is similar to the findings in study done by Latunji et al¹² in Nigeria. This may be due to the fact that our study has been conducted during the pandemic situation.

Among those who took treatment from Hospitals for their illness, private hospitals were preferred more in present study which is similar to the study done by Asfaw et al¹³ in Southern Ethiopia. However, participants from rural areas preferred government hospitals more than private hospitals in our study.

In present study nearly half of the participants have been having health insurance which is also similar to the study done by Latunji et al¹² in Nigeria. Central and state government had introduced various health insurance schemes and cost of various treatment modalities are covered under this scheme and increased awareness among the public about the schemes is also one of the major factors for this finding.

Very few participants were practising self-medication for their illness in this study which is in contrast to the study done by Dawood OT et al¹⁴ in Penang, Malaysia where more than half of the respondents practised self-medication. Present study was carried out during the pandemic situation and government had issued various restrictions on the use of over-the-counter (OTC) drugs during the pandemic which might also have been attributed to the above finding.

CONCLUSIONS:

Among the participants who had good knowledge, most of them had good attitude and good practice. The level of education of the participants played a vital role in their knowledge towards COVID-19. Most of the participants took treatment from private hospitals for mild illness. Most of the participants preferred taking allopathic treatment for mild illness followed by Homeopathy and Ayurveda. More than half of the participants were vaccinated for COVID-19. Very few participants had practice of doing annual health check-up. KAP about COVID-19 and COVID Vaccines was better among the participants but they need increased awareness for regular health check-up and to

improve their health seeking behaviour.

Recommendations: For improvement of the health seeking behaviour a more focused approach and appropriate schemes could be brought up for the petrol pump workers for their welfare and health needs.

Conflict of interest: Nil

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