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A Study to Assess the Knowledge on COVID-19 among Adults Residing at Rural Area Jolva in Bharuch, Gujarat

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Year of the study has conducted on March -2020.

Abstract: ***COVID-19 is a new threat without any antiviral therapies or vaccines, current measures to mitigate this crisis depend heavily on the national and regional preparedness and responses. However, optimal strategies to cope with the complexity of this pandemic demand substantial scientific evidence. Recently, the WHO has issued technical guidance for countries/regions and research institutions, as well as having worked closely with global researchers to update the empirical evidence. Objectives: 1. To assess the knowledge regarding COVID-19 among people residing at Jolva, Bharuch. 2. To find out the association between the level of knowledge of people regarding COVID-19 and the selected socio demographic variables.3.To provide health education that could be crucial to improve the level of knowledge. Methods: A descriptive cross sectional design was used in this study. We have selected the cases by Non probability convenient sampling Technique was used. Total 320 samples were selected from Jolva, Bharuch. It consists of demographic variables of people and Multiple choice questionnaires to assess the Knowledge regarding COVID-19. Result: In this study the distribution of level of knowledge score of the samples in that 47 (14.7%) samples had inadequate level of knowledge, 170 (53.1%) samples had moderate level of knowledge while 103 (32.2%) samples had adequate level of knowledge regarding COVID-19. Age and Occupational status there is no significance and Educational Status, Income and Source of Information were significant association between knowledge score.***

Keywords: Assess, Knowledge, COVID-19, Adult

1. Introduction

Corona virus is a Zoonotic pathogen which affects mainly on respiratory system and it produces common cold to severe acute respiratory syndrome. The mode of transmission this organism is human to human through droplets, fecal oral route and from animal to human interaction. This of corona virus in 2002 (SARS) an epidemic outbreak occurred with approximately 800 deaths. and 2010 MERS0 CoV epidemic has occurred. Now COVID-19 Pandemic has started from Wuhan city, Hubei Province, China. The world health organization (Who) declared that COVID-19 is a public health emergency of international concern on January 30 2020.WHO has given technical guidance for countries to enhance knowledge and prevention aspect of COVID-19.

Given that COVID-19 is a new threat without any antiviral therapies or vaccines, current measures to mitigate this crisis depend heavily on the national and regional preparedness and responses. However, optimal strategies to cope with the complexity of this pandemic demand substantial scientific evidence. Recently, the WHO has issued technical guidance for countries/regions and research institutions, as well as having worked closely with global researchers to update the empirical evidence. Efforts have been made around the globe to enhance the understanding of the COVID-19's dynamic transmission, develop effective vaccines and treatment regimes, as well as evaluating impacts of current responses on different populations' health and well-being. As a result, in the last four months, the number of COVID-19-related publications has increased dramatically in various forms including articles, reviews, letters to editors, or preprint documents. These contributions have proven the importance of scientific research in pandemic preparedness and helped governments to respond rapidly and effectively to the crisis.

2. Need of the Study

The first case of COVID-19 in India which originates from china was reported on 30 January 2020. The Indian Council of medical research has transitioned from dismissing community transmission into accepting there could be a reality. The big gap in our knowledge of COVID-19 is a variety of immune responses that it may endanger in different individuals and the possibility of the presence of viral carrier. A research report from Columbia university says that asymptomatic infection where first seen in china and then Italian. (The Indian Express May 22, 2020)

2.1 Statement of the problem

A Study to assess the Knowledge on COVID-19 among adults residing at Rural area Jolva in Bharuch, Gujarat.

2.2 Objectives of the study

1) To assess the knowledge regarding COVID-19 among people residing at Jolva in Bharuch, Gujarat
2) To find out the association between the level of knowledge of people regarding COVID-19 and the selected socio demographic variables.
3) To provide health education that could be crucial to improve the level of knowledge.

2.3 Hypothesis

Research Hypothesis:- there will be significance between level of knowledge and demographic variables.
Null Hypothesis: There will not be significance between level of knowledge and demographic variables.

2.4 Delimitation of the study

This study is limited to the participants those who are attending camp conducted by Welfare hospital and research center, Bharuch at rural area Jolva on 07/03/2020.

3. Methodology

- **Research Approach**-Quantitative research Approach
- **Research design**- Descriptive Cross sectional Design
- **Variables of the Study**
- **Research variable**: Knowledge regarding COVID-19 among people residing at rural area Jolva in Bharuch.
- **Demographic variable:** Age, educational status, family income, source of information, occupation.
- **Setting of the Study:** The setting for the study is rural area Jolva in Bharuch, Gujarat.
- **Population of Study:** It consists of all the adults residing at rural area Jolva in Bharuch, Gujarat.
- **Sample:** The sample of the study comprised of 320 adults residing at rural area Jolva in Bharuch, Gujarat.
- **Sample Size:** 320 samples who met the inclusion criteria were select for present study.
- **Sampling technique:** Non probability convenient sampling technique was used in present study.

3.1 Criteria for selection of samples

Inclusion Criteria
1) Sample who are age of 21- 65 Years.
2) Sample who are able to read and communicate in Gujarati.
3) Samples who were attended the camp conducted by Welfare hospital and research center, Bharuch.

Exclusion criteria
1) Sample who are not willing to participate in study.
2) Sample who are not available during the period of data collection.

3.2 Description of tool

Section-I Socio-demographic data of sample. (Age, educational status, family income, source of information, occupation).

Section-II -Multiple choice questionnaire to assess the knowledge regarding COVID-19 among adults residing at rural area Jolva in Bharuch, Gujarat. This consist of 30 multiple choice questions, Each question is having 4 option from which instrument were clearly written to choose the best option. Each correct response was scored as "1" otherwise scored "0".

3.3 Validity and reliability

The multiple choice questionnaire were constructed by using World health Organization FAQ (Frequently Asked Questionnaire) portal. Five experts were done content validity of the questionnaire and the reliability is 0.73

3.4 Data collection procedure

Permission from institutional ethical committee was obtained. Participants who were attending camp on the day data collection was desired population. The purpose of study was explained to the participants and written informed consent was obtained. The participants were assured that the information provided by them will be kept confidential. The knowledge on COVID-19 has assessed by multiple choice questionnaire. After Administration of MCQ the health Education on COVID-19 has given based on frequently asked questionnaire about COVID-19 from World health Organization portal. Finally thank the participants.

Consideration of Human rights: No experimentation

4. Analysis and Interpretation

Section-I: Analysis and interpretation of the demographic variables of the samples

Table 1: Frequency and percentage wise distribution of demographic data, N=320

Demographic data	n (%)
1.Age (in years)	
21-30 years	96 (30%)
31-40 years	82 (25.6%)
41-50 years	69 (21.6%)
51-60 years	49 (15.3%)
61-70 years	24 (7.5%)
2.Educational status :	
Illiterate	91 (28.4%)
Primary education	90 (28.2%)
Secondary education	58 (18.1%)
Higher secondary	33 (10.3%)
Graduate	39 (12.2%)
Post graduate	9 (2.8%)
3. Income :	
<=5000	75 (23.4%)
5001-10000	139 (43.4%)
10001-15000	57 (17.9%)
>15000	49 (15.3%)
4.Sources of information :	
Electronic media	38 (11.8%)
Health workers	52 (16.3%)
Friends and family	22 (6.9%)
Newspaper and magazine	28 (8.8%)
No	180 (56.2%)
5.Occupational status:	
House wife	166 (51.8%)

Employed	68 (21.3%)
Laborer	56 (17.5%)
Own business	30 (9.4%)

The data presented in the shows the distribution of samples by age, the data shows that out of 320 samples 96 (30%) belong to age group of 21-30 years. In age, Majority of samples 96 (30%) belongs to the age group of 21-30 years. As regards educational status of the sample 91 (28.4%) samples had Illiterate, 90 (28.2%) samples had primary education. In, educational status, Majority of the women 91 (28.4%) had illiterate. In Family income, Majority of samples 139 (43.4%) had a family income between Rs.5001 - 10, 000. In Source of information, Majority of samples 180 (56.2%) not get the information. In Occupation, Majority of samples 166 (51.8%) was housewife.

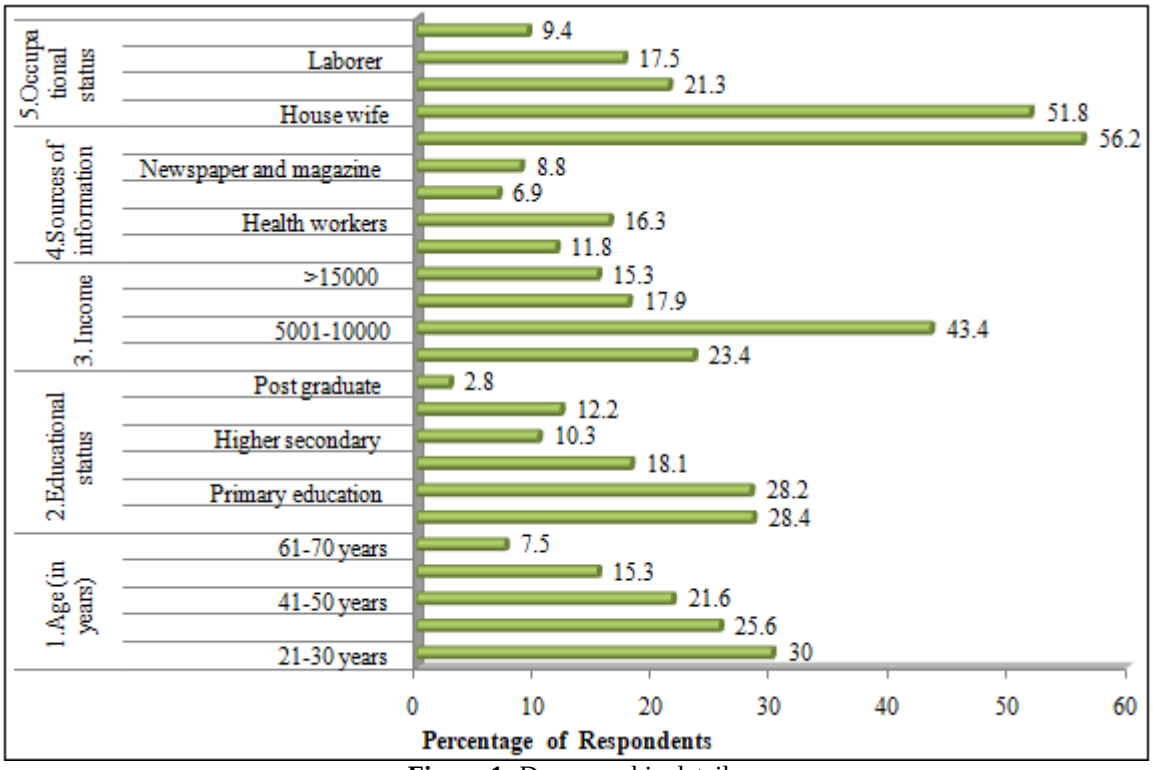

Figure 1: Demographic details

Fig 1 shows that five different demographic variables and their responds percentage.

Section-II: Analysis and interpretation of the data related to level of knowledge score of the samples.

Table 2: Mean and SD wise distribution of knowledge regarding covid-19

Level of Knowledge	Max Score	Median (IQR)	Knowledge Score		
			Mean	SD	Mean %
Overall	30	18 (21-15)	17.81	5.59	59%

IQR =Inter quartile range, , Q1- 1st quartile and Q3 -3rd quartile

Table 2 reveals that overall knowledge score of mean 17.81 and mean percentage 59%.The standard deviation of knowledge score is 5.59 in the first quartile and third quartile.

Section-III: Analysis and interpretation of the data related to level of knowledge score of the samples.

Table 3: Frequency and percentage wise distribution on level of knowledge regarding covid-19

Level of knowledge	Score	
	f	%
Inadequate	47	14.7%
Moderate	170	53.1%
Adequate	103	32.2%
Total	320	100%

The data presented in the table 3 shows the distribution of level of knowledge score of the samples in that 47 (14.7%) samples had inadequate level of knowledge, 170 (53.1%) samples had moderate level of knowledge while 103 (32.2%) samples had adequate level of knowledge regarding COVID-19.

Table 4: Two way analysis of variance comparison of mean score on level of knowledge and demographic variables

	n	Knowledge score			Post hoc analysis
		Mean± SD	F-value	P-value	Multiple comparison tukey HSD Test –Significant
1.Age (in years)					
I.21-30 years	96	17.68±5.63	F=0.240	p=0.915	Nil
II.31-40 years	82	17.99±5.55			
III.41-50 years	69	18.06±5.78			
IV.51-60 years	49	17.22±5.14			
V.61-70 years	24	18.25±5.81			
2.Educational status:					I vs IV (p=0.025)
I.Illiterate	91	16.2±5.42			II VS IV (P=0.01*)
II.Primary education	90	15.94±4.91	F=14.18		III VS IV (P<0.001***)
III.Secondary education	58	18.36±4.75		p<0.001***	I VS V (p<0.001***)
IV.Higher secondary	33	19.39±4.50			II VS V (p<0.001***)
V.Graduate	39	23.13±4.47			III VS V (p<0.001***)
VI.Post graduate	9	20.44±8.26			IV VS V (p=0.024*)
3. Income :					
I.<=5000	75	16.71±5.09	F=13.53		I vs IV (p<0.001***)
II.5001-10000	139	17.0±5.32		p<0.001	II vs IV (p<0.001***)
III.10001-15000	57	17.42±5.84		***	III vs IV (p<0.001***)
IV.>15000	49	22.18±4.56			
4.Sources of information :					
I.Electronic media	38	19.2±4.14			II vs III (P=0.003**)
II.Health workers	52	21.4±4.67	F=9.315	P<0.001***	II vs IV (p<0.001***)
III.Friends and family	22	16.5±5.01			II vs V (p<0.001***)
IV. Newspaper and magazine	28	16.4±5.86			
V. Nil	180	16.8±5.6			
5.Occupational status:					
I.House wife	166	17.4±5.6		P=0.407	Nil
II.Employed	68	18.7±5.7	F=0.971		
III. Laborer	56	17.55±5.48			
IV. Own business	30	18.3±4.6			

Table 4 shows that the two way ANOVA with sociodemographic variable by using post hoc analysis. The result shows that the test of significant between knowledge score and Educational status, Income and Source of information with P value of lesser than 0.001.

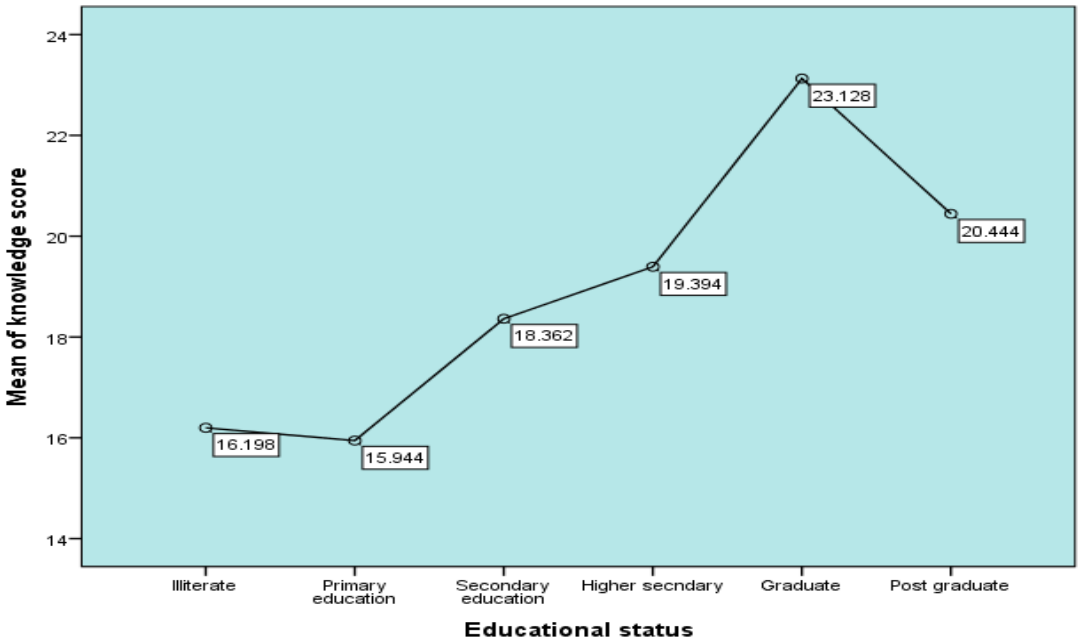

Figure 2: Two way ANOVA between Knowledge score and educational status

Fig 2 shows that statistically significant score in Educational variable and mean knowledge score **16.2**±5.42 , 15.94±4.91, 18.36±4.75, 19.39±4.50, 23.13±4.47, 20.44±8.26 in P value 0.001

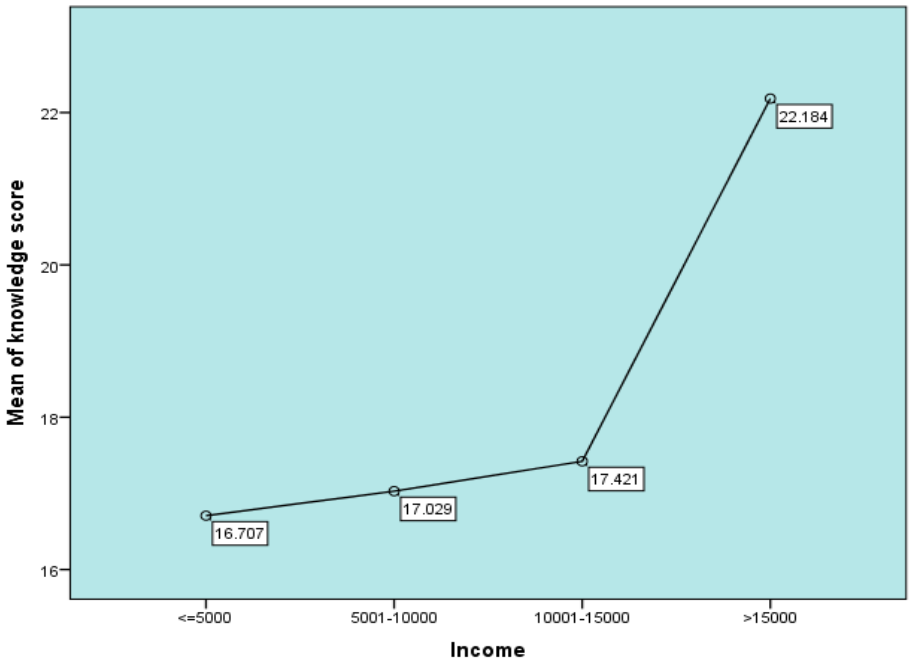

Figure 3: Two way ANOVA between Knowledge score and Income

Figure 3: Shows that statistically significant score in Income variable and mean knowledge score **16.71**±5.09, 17.0±5.32, 17.42±5.84, 22.18±4.56 in P value 0.001

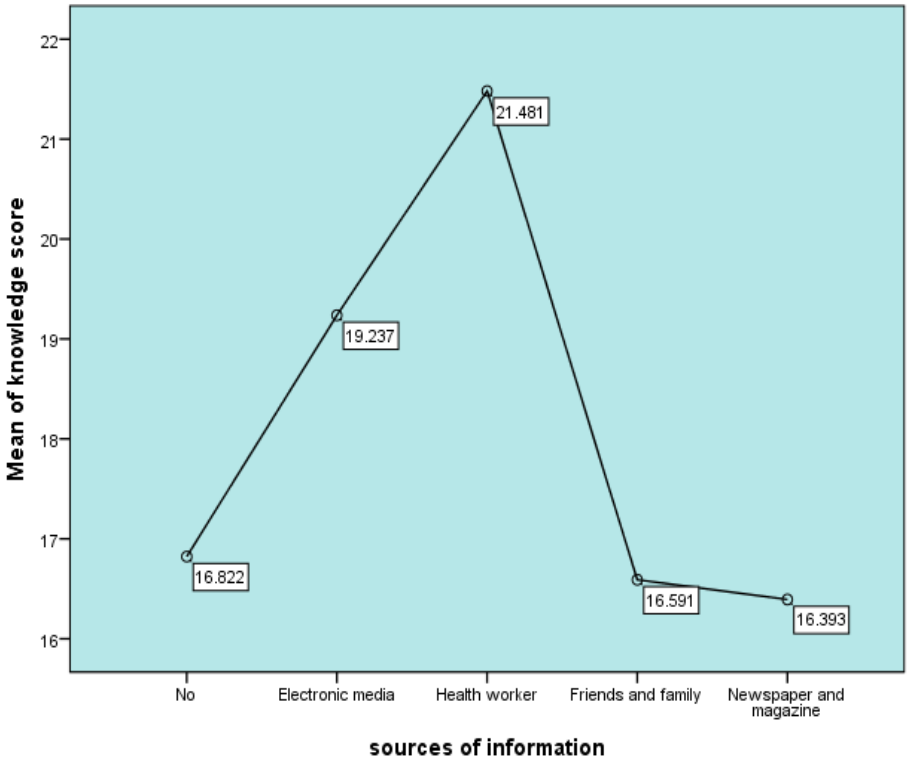

Figure 4: Two way ANOVA between Knowledge score and Source of Information

Fig 4 shows that statistically significant score in Source of Information variable and mean knowledge score in **19.2**±4.14, 21.4±4.67, 16.5±5.01, 16.4±5.86, 16.8±5.6 P value 0.001.

Section-III Analysis and Interpretation of the data related to association of level of knowledge with selected demographic variables of the samples.

Table 5: Association between level of knowledge and selected demographic data

Demographic variables	Inadequate		Moderate		Adequate			
	f	%	f	%	f	%	χ2-value	p-value
1.Age (in years)								
21-30 years	15	4.7	55	17.2	26	8.1	7.165 (df=8)	0.519 NS
31-40 years	8	2.5	45	14.1	29	9.1		
41-50 years	12	3.8	31	9.7	26	8.1		
51-60 years	9	2.8	28	8.8	12	3.8		
61-70 years	3	0.9	11	3.4	10	3.1		
2.Educational status :								
Illiterate	17	13.4	58	18.1	16	5	77.49 (df=10)	P<0.001*** HS
Primary education	19	13.2	57	17.8	14	4.4		
Secondary education	4	1.3	34	10.6	20	6.3		
Higher secondary	4	1.3	14	4.4	15	4.7		
Graduate	1	0.3	7	2.2	31	9.7		
Post graduate	2	0.6	0	0	7	2.2		
3. Income :								
<=5000	12	3.8	49	15.3	14	4.4	48.97 (df=6)	P<0.001*** HS
5001-10000	22	6.9	82	25.6	35	10.9		
10001-15000	11	3.4	28	8.8	18	5.6		
>15000	2	0.6	11	3.4	36	11.3		
4.Sources of information :								
Electronic media	1	0.3	21	6.6	16	5	39.13 (df=8)	P<0.001*** HS
Health workers	0	0	20	6.3	32	10		
Friends and family	4	1.3	13	4.1	5	1.6		
Newspaper and magazine	7	2.2	14	4.4	7	2.2		
No	35	10.9	102	31.9	43	13.4		
5.Occupational status:								
House wife	29	9.1	88	27.5	49	15.3	4.93 (df=6)	0.553 NS
Employed	7	2.2	33	10.3	28	8.8		
Laborer	7	2.2	33	10.3	16	5		
Own business	4	1.3	16	5	10	3.1		

***p<0.05 significant, ** p<0.01 & ***p<0.001 Highly significant.**

Table 5 shows age and Occupational status there is no significance and Educational Status, Income and Source of Information were significant association between knowledge score.

Table 6: Multiple Regression for impact on knowledge across demographic variables

Demographic variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)		17.835	4.811		3.707	P<0.001	8.367	27.302
Age	31 to 40 years	0.368	0.355	0.058	1.038	0.3	-0.33	1.067
	41 to 50 years	-0.092	0.262	-0.02	-0.35	0.726	-0.609	0.425
	51 to 60 years	-0.036	0.214	-0.009	-0.169	0.866	-0.458	0.386
	61 to 70 years	-0.099	0.219	-0.023	-0.451	0.652	-0.529	0.332
Education	primary education	-0.233	0.35	-0.038	-0.666	0.506	-0.922	0.456
	Secondary education	0.575	0.283	0.12	2.03	0.043	0.018	1.133
	Higher Secondary Education	0.599	0.249	0.131	2.408	0.017	0.109	1.088
	Graduate	1.279	0.183	0.377	6.978	P<0.001	0.918	1.64
	post graduate	0.546	0.284	0.098	1.922	0.056	-0.013	1.106
Income	5001 to 10000	0.404	0.343	0.072	1.178	0.24	-0.271	1.08
	10001 to 15000	0.053	0.286	0.011	0.187	0.852	-0.509	0.616
	> 15000	1.196	0.226	0.31	5.297	P<0.001	0.751	1.64
Source of Information	No	-3.605	4.769	-0.322	-0.756	0.45	-12.99	5.78
	Electronic media	-1.116	4.691	-0.066	-0.238	0.812	-10.348	8.117
	Health Worker	0.368	2.353	0.049	0.156	0.876	-4.262	4.997
	friends and family	-0.985	1.624	-0.132	-0.607	0.545	-4.18	2.21
	Newspaper and magazine	-0.994	1.21	-0.202	-0.821	0.412	-3.375	1.388
Occupation	Employed	0.007	0.35	0.001	0.019	0.985	-0.682	0.695
	laborer	0.061	0.246	0.013	0.249	0.804	-0.423	0.546
	Own business	0.118	0.241	0.025	0.49	0.624	-0.356	0.592
a. Dependent Variable: Knowledge score , 1st category was reference category.								
Model fit F (20, 299) = 8.479 , p<0.001***								
R VALUE=0.602, R square =0.362, Adjusted R square =0.319.								

Table 6 shows that multiple regression with impact of knowledge score and sociodemographic variables. The result shows that the test of significant between knowledge score and Educational status, Income and Source of information with P value of lesser than 0.001 and R-value 0.602

5. Discussion

In this session the discussion were based on objectives of the study.

1) To assess the knowledge regarding COVID-19 among people residing at Jolva in Bharuch, Gujarat
2) To find out the association between the level of knowledge of people regarding COVID-19 and the selected socio demographic variables.
3) To provide health education that could be crucial to improve the level of knowledge.

1. To assess the knowledge regarding COVID-19 among people residing at Jolva, Bharuch. Based on this objective the level of knowledge has evaluated by using multiple choice questionnaire. The final score of the samples in that 47 (14.7%) samples had inadequate level of knowledge, 170 (53.1%) samples had moderate level of knowledge while 103 (32.2%) samples had adequate level of knowledge regarding COVID-19.the similar study has conducted by Akshaya skrikanth Bhagavathula et al. on knowledge and perception of human health workers about COVID-19 through web based study among 529 participants UAE, Abudhabi. The result shows 61% had poor knowledge on transmission and symptom onset.63.3% had positive perception. In contrast to the above mentioned study done in UAE the present study participants were adequate knowledge on COVID-19.This may be due to health education propaganda strictly followed by the Indian Government through mass media, telephone campaign for achieve the desire level of knowledge is remarkable milestone in controlling the COVID-19.

2. To find out the association between the level of knowledge of people regarding COVID-19 and the selected socio demographic variables. Based on this objective Educational status, Income and source of information were significant with their level of knowledge. A similar study has done by Arina Anis Azalan on public knowledge, attitude and practices towards COVID-19 in Malaysia. The data collection has done through online survey monkey platform. After obtaining ethical approval from kebangssan Malaysia the sample collection was done. The data collection period between 27 march 2020 to 3 April 2020.Total 4850 sample collection has done through online. The Yes/No question has used to assess the knowledge area that focused on clinical presentation, transmission Route, prevention and control. The final research shows that 80.5% were given correct answer on knowledge questionnaire. The association shows with low income with their level of knowledge was significant. In this study income of samples and their knowledge was highly associated. This may be due to access of internet, News paper reading among high income group because awareness through advertisement in social media has fast reach.

6. Conclusion

Enhancing the knowledge level will reduce the new occurrence of COVID-19. Rather than treatment prevention is better than cure. Prevention can achieve through best awareness propaganda.

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