Awareness and practice about nCovid-19 in Chinese residents: A Google form questionnaire based survey

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Abstract*—Corona virus pandemic was initiated from China. There is no vaccine and specific antiviral treatment available for this nCovid-19, so preventive measures play a very important role in controlling the disease. So this cross-sectional survey was conducted on Chinese residents to know their awareness and practices regarding nCovid -19 diseases. For the study purpose a questionnaire was sent to various groups of Chinese residents on 'We-Chat' from 9th March 2020 to 27th March 2020. Total of 823 filled questionnaires were received. Out of 823 responders', mean age was 38 years with M:F ratio 0.54. Mean score for awareness and practice was 82.14% and 73.44% respectively. All the study variables i.e. age, sex, education and occupation were found to associated (p value <0.001) with awareness and practices regarding nCovid-19 disease among Chinese residents. Awareness and practice score were found maximum in females, 30-45 years of age, resident with master degree and medical care persons than their counterparts.*

Keywords: nCovid-19, Awareness, Practice, Chinese Resident.

I. INTRODUCTION

This nCovid-19 disease pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of nCovid-19 disease caused by a noval virus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was identified in Wuhan, capital of Hubei province, China, in December 2019.[1] This new novel coronavirus was identified on 8 January.[2] of which sequencing was soon published on an open-access database.[3] By 19th March 2020, this infection spread throughout china having 81300 cases and 3253 deaths due to coronavirus.[4]

The virus is primarily spread between people during close contact through droplets produced by coughing, sneezing and talking.[5] People may also get infection by touching a contaminated surface and then touching their face. On surfaces, the amount of virus declines over time until it is insufficient to remain infectious, but it may be detected for hours or days.[6,7]

Common symptoms of nCovid-19 include fever, cough, loss of smell, shortness of breath, myalgia and fatigue. It may get complicated to pneumonia and acute respiratory distress syndrome.[8] Infection may be spread from before the onset of symptoms to 14 days after symptoms.[9] It spared very fast in susceptible population[10] in special reference to the cases with co morbidity.[11] There is no vaccine and specific antiviral treatment is available, so primary treatment is symptomatic and supportive.[9]

For better management of COVID-19 in China, there is an urgent need to understand the public's awareness and practice of antiquates in prevention of COVID-19. So this study was designed to know the awareness and practice of antiquates in prevention of COVID-19 in Chinese residents.

II. METHODOLOGY

This cross sectional survey was conducted on Chinese resident to know their awareness and practices regarding nCovid-19 disease in Guiyang city of Hauxi district (Guizhou Province) China in March 2020.

Because of social distancing in corona virus epidemic, community-based survey could not be conducted, so a pre-designed semi-structured Google form questionnaire was used to collect desired data. The link of this Google form questionnaire was posted at the groups of Wechat (similar to "WhatsApp") to approach more individuals with the request to fill the attached Google form questionnaire and send at earliest within one week. The request was enforced with the commitment to provide correct answers after 25th March 2020 to those who would send filled these questionnaire forms. This commitment was for motivating to participate in survey, to provide correct answers and for ethical reasons. Data collection for study was started on 9th March and ended on 25. March 2020. Persons who were of Chinese nationality, understand English and agreed to participate in the study were instructed to complete the questionnaire via clicking the link.

Questionnaire was having two parts, part one was having questions related to their socio-demographic information and part two was related to questions related to their awareness & practice regarding nCOVID-19. Part one was having five questions first question was regarding willingness to participate in survey. Participants had to answer either Yes" or 'No' to confirm their willingness to participate voluntarily. If 'Yes' then participants were instructed to fill the questionnaire form. Other questions in part one were regarding name, age, sex with mobile number. Part two was having seven questions regarding awareness and five questions regarding practices. Questions regarding awareness include one question regarding cause (out of five option choose one), one question regarding transmission routes (out of ten option choose maximum four), one question regarding incubation period (out of five option choose one), one question regarding communicability (out of five option choose one), one question regarding clinical presentations (out of ten option choose maximum four), one questions regarding treatment (out of five option choose one) and one questions regarding prevention and control (out of ten option choose maximum four). Two scores is assigned for each correct answer. Partially answered question was given half (one) mark. Awareness score ranges from '0'to '14'. Practice was assessed of last 15 days. Questions regarding practice include one question regarding going to a crowded place, wearing a mask when going out, maintaining social distancing when going out, washing clothes after coming from outside and washing/sanitizing hands. Questions were answered on five scale linker scale from never to always. And never was given 'zero' and always is marked with score '4'. But question one was answered never to daily and is negative so scores of question one were deducted from sum of scores of question '2' to question number '5'. So, score for practice ranges from '0' to '16'.

Data thus collected were compiled in MS excel worksheet. Scores of awareness and practices of different persons with different socio-demographic characteristics were compared with independent-samples *t* test, one-way analysis of variance (ANOVA) Post-hoc test as appropriate. Data analysis was conducted with Statistical software primer version 6. The statistical significance level was set at $p < 0.05$ (two-sided).

III. RESULTS

Out of 823 responders', 289 (35.12%) were males and 534 (64.88%) were females with M:F ratio 0.54. Mean age of participant was 38 years with age range 14 years to 76 years. Majority (55.53%) were in age group of 30-60 years. Majority (40.1%) of responders' were beyond middle but not bachelor followed by upto middle, bachelor and master degree educated. By occupation majority of responders' were shop keepers followed by medical care person, IT person etc. (Table 1).

Table No. 1

Socio-demographic characteristics of study participants (N=823)

S. No.	Variables		Number	%
1	Sex	Male	289	35.12
		Female	534	64.88
2	Age groups (in Years)	Equal to and Less than 16	12	1.46
		16-30	168	20.41
		30-45	226	27.46
		45-60	231	28.07
		more than 60	186	22.60
3	Education	Upto Middle	197	23.94
		beyond middle but not Bachelor	330	40.10
		Bachelor	164	19.93
		Masters	132	16.04
4	Occupation	Shop Keeper	252	30.62
		Medical worker	227	27.58
		IT Worker	186	22.60
		Other	158	19.20

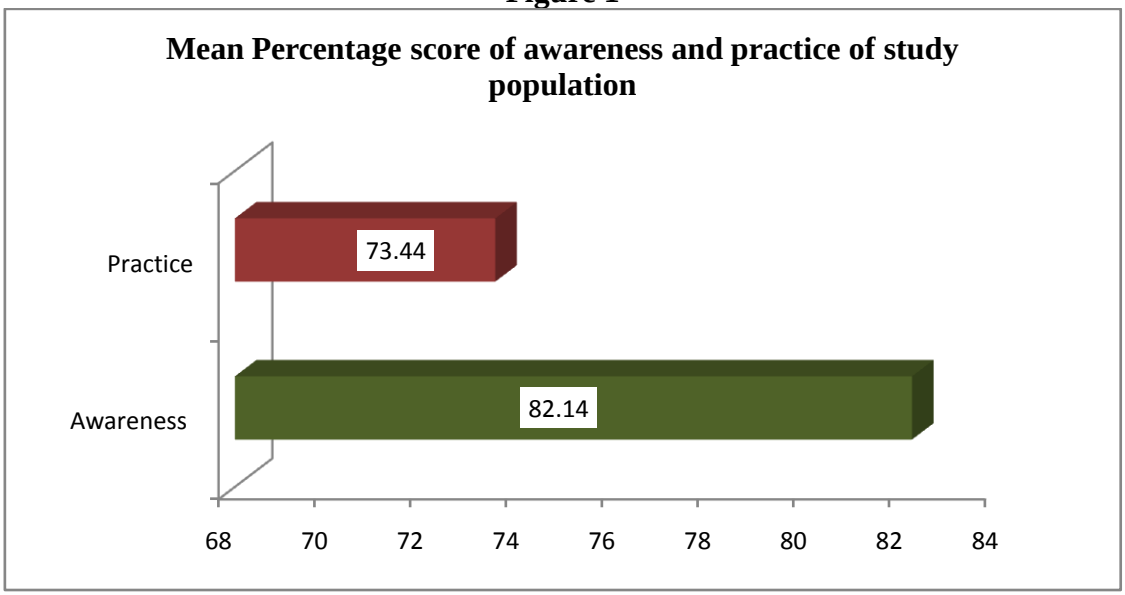
Mean score for awareness and practice was 11.75 and 11.5 respectively out of total 14 and 16 scores respectively. When these scores were calculated in percentage it was 82.14% and 73.44% respectively. (Table 2 & Figure 1)

Table No. 2

Status of Awareness and practice of study participants (N=823)

Variables	Mean	SD	Percentage Score
Awareness	11.75	2.5	82.14
Practice	11.5	3	73.44
P Value LS	0.066 NS		

Figure 1



When association of socio-demographic factors with awareness and practices were analyzed, all the study variables i.e. age, sex, education and occupation were found to associated (p value <0.001) with awareness and practices regarding nCovid-19 disease among Chinese residents. Awareness and practice score were found maximum in females, 30-45 years of age, resident with master degree and medical care persons than their counterparts. (Table 3)

Table No. 3

Association of Socio-demographic characteristics with awareness and practice scores (N=823)

S. No.	Variables		Number of Subjects	Awareness scores (Out of Total 14)		Practice scores (Out of Total 16)		P Value	
				Mean	SD	Mean	SD	Awareness	Practice
1	Sex	Male	289	11	2.5	11.5	3	<0.001	<0.001
		Female	534	12	1.5	12	1.5		
2	Age groups (in Years)	Equal to and Less than 16	12	10	3	10	3	<0.001	<0.001
		16-30	168	12	2	11	3		
		30-45	226	12.5	1.5	12.5	2		
		45-60	231	11.5	2	12	1.5		
		more than 60	186	11.5	2	13	1.5		
3	Education	Upto Middle	197	10.5	3	9.5	3.5	<0.001	<0.001
		Beyond middle but not Bachelor	330	11	2.5	12	3		
		Bachelor	164	12	1.5	12.5	2		
		Masters	132	12.5	1	13	1.5		
4	Occupation	Shop Keeper	252	10.5	3	11.5	3	<0.001	<0.001
		Medical worker	227	13	0.5	13	1.5		
		IT Worker	186	12.5	1	12.5	2		
		Other	158	10	3.5	10	4.5		

For further analysis a stepwise multiple comparisons by Student–Newman–Keuls (SNK) test was used to compare means within various studied variable groups. It was found regarding knowledge scores that comparison between each group of each studied variable was found with significant variation except between knowledge scores of age group 45-60 years & above 60 years and in education groups between bachelor & master degree holders. Regarding comparison of practice scores between each group of each studied variable was also found significant except between practice scores of education groups between bachelor & master degree holders and in bachelor degree holder and having above middle but not bachelor degree. Likewise, comparisons of practice scores in various occupational groups were found with significant difference except medical care persons and IT persons. (Table 4)

Table No. 4
Association of Awareness and practice with various variables

S. No.	Variables	Awareness			Practice		
		Comparison Groups	P Value	Significant Difference	Comparison Groups	P Value	Significant Difference
1	**Sex**	M v/s F	<0.05	Yes	M v/s F	<0.05	Yes
2	**Age Groups Comparison***	3 v/s 1	<0.05	Yes	5 v/s 1	<0.05	Yes
		3 v/s 5	<0.05	Yes	5 v/s 2	<0.05	Yes
		3 v/s 4	<0.05	Yes	5 v/s 4	<0.05	Yes
		3 v/s 2	<0.05	Yes	5 v/s 3	<0.05	Yes
		2 v/s 1	<0.05	Yes	3 v/s 1	<0.05	Yes
		2 v/s 5	<0.05	Yes	3 v/s 2	<0.05	Yes
		2 v/s 4	<0.05	Yes	3 v/s 4	<0.05	Yes
		4 v/s 1	<0.05	Yes	3 v/s 1	<0.05	Yes
		4 v/s 5	>0.05	**No**	3 v/s	<0.05	Yes
3	**Education Groups Comparison***	4 v/s 1	<0.05	Yes	4 v/s 1	<0.05	Yes
		4 v/s 2	<0.05	Yes	4 v/s 2	<0.05	Yes
		4 v/s 3	>0.05	**No**	4 v/s 3	>0.05	**No**
		3 v/s 1	<0.05	Yes	3 v/s 1	<0.05	Yes
		3 v/s 2	<0.05	Yes	3 v/s 2	>0.05	**No**
		2 v/s 1	<0.05	Yes	2 v/s 1	<0.05	Yes
4	**Occupation Groups Comparison***	2 v/s 4	<0.05	Yes	2 v/s 4	<0.05	Yes
		2 v/s 1	<0.05	Yes	2 v/s 1	<0.05	Yes
		2 v/s 3	<0.05	Yes	2 v/s 3	>0.05	**No**
		3 v/s 4	<0.05	Yes	3 v/s 4	<0.05	Yes
		3 v/s 1	<0.05	Yes	3 v/s 1	<0.05	Yes
		1 v/s 4	<0.05	Yes	1 v/s 4	<0.05	Yes

Multiple comparison by Student's-Newman-Keuls (SNK) Test

IV. DISCUSSION

This present study was conducted by using Google Form questionnaire to know the awareness and practice status of Chinese residents. In the present study, 823 subjects responded with fully filled questionnaire forms. Among responders' 35.12% were males and 64.88% were females with M:F ratio 0.54. Mean age of participant was 38 years with age range 14 years to 76 years and majority (55.53%) were in age group of 30-60 years. Majority (40.1%) of responders' were beyond middle but not bachelor followed by upto middle, bachelor and master degree educated. By occupation majority of responders' were shop keepers followed by medical care person, IT person etc.

In this study, mean percentage score for awareness was found 82.14%. Bao-Liang Zhong etall[12] reported 90% knowledge score regarding nCovid-19 among Chinese residents in their study. Bao-Liang Zhong et. all subjects were also predominantly female and well-educated like the present study. These higher scores of knowledge may be found because of this female preponderance and well educated subjects in supra said both studies. On the above because of the grave situation of the epidemic in China, there are the overwhelming news reports on this public health emergency. Chinese residents are actively learning about this infectious disease from various channels of information. The significant positive association between levels of education and COVID-19 knowledge scores supports this speculation.

It was also revealed in the present study that awareness and practices regarding nCovid-19 disease of Chinese residents were found to associated with age, sex, education and occupation (p value <0.001). Awareness and practice score were found maximum in females, 30-45 years of age, resident with master degree and medical care persons than their counterparts. And on further analysis, knowledge scores were found with significant variation in between each age group and between various education level except between age group 45-60 years & above 60 years and in education groups between bachelor & master degree holders. Bao-Liang Zhong etall[12] also found that knowledge scores significantly differed across genders, age-groups and education levels (P<0.001). Multiple linear regression analysis showed that male gender (vs. female, β: -0.284, P<0.001), age-group of 16-29 years (vs. 30-49 years, β: -0.302, P<0.001) and education of bachelor's degree or lower (vs. master degree and above, β: -0.191, P<0.001). That mean they found higher scores in females, 30-49 years age groups and highly educated subjects than their counterparts.

In this study, mean percentage score for practice was found 73.44%. Bao-Liang Zhong etall[12] found 97.2% (96.4% for going crowded places and 98% for wearing mask when going outside) in versus the present study where it was 73.44%. This difference may be because of in present study along with going crowded places and wearing mask other measures like maintaining social distancing when going out, washing clothes after coming from outside and washing/sanitizing hands were also asked.

Regarding practice scores in present study, it was found with significant variation in between each age group, between various education level and between various occupation level except between bachelor & master degree holders, bachelor degree holder & having above middle but not bachelor degree, between medical care persons and IT persons. Bao-Liang Zhong etall[12] found that the practices significantly differed across demographic groups (P<0.05) i.e. male gender and lower age groups especially students were having lesser practice scores than their counterparts. Previous studies[13-15] also reported that men and late adolescents are more likely to engage in risk-taking behaviors. In line with these previous study present study also found significant association of risk behavior (lower practice scores) in male gender, younger age groups and relatively less educated.

In present study higher COVID-19 knowledge scores were found to be with higher practice scores, although it was not found significantly associated which was found significantly associated in significantly Bao-Liang Zhong etall[12] study. This indicate the importance of improving knowledge via health education, which may also result in improvements in their practices towards COVID-19. These findings further suggest that the health education intervention would be more effective if it specifically designed & targets certain demographic groups which were found to have more risk behavior i.e., for men and persons with a low level of education.

Limitation of this present study is that participants were not a true representative of Chinese residents due to limited access to internet in them. So other researches with broader platform are the further concern.

V. CONCLUSION

In the present study, mean score for awareness and practice was 82.14% and 73.44% respectively. Age, sex, education and occupation were found to associated (p value <0.001) with awareness and practices regarding nCovid-19 disease among Chinese residents. Awareness and practice score were found maximum in females, 30-45 years of age, resident with master degree and medical care persons than their counterparts. As higher COVID-19 knowledge scores were found to be with higher practice scores. This suggest that health education has an important role in improving practice. So specially designed and targeted health education activities should be done.

As this study has its limitation due to limited internet access so researches based on community survey are to be conducted in future.

CONFLICT OF INTEREST

None declared till now.

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