



A Cross Section Assessment Study on the Awareness of COVID-19 during the Onset of the Pandemic among the Urban Population of Saudi Arabia

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This study was aimed to seek out the awareness and knowledge about the covid-19 during the onset of the pandemic among the urban population of the Saudi Arabia. This study was carried out for a period of three months from 01.04.2020 to 31.07.2020 and a sample of 1000 participants. The significant difference of P-value obtained by performing the Pearson Chi-Square test for all the questionnaires to analyse the study of assessment. This study was a small attempt for conducting such valuable studies in preventive medicine. Thus, this study suggests that the community's overall satisfactory report is well aware of the preventive measure procedures and well prepared to tackle the covid-19 pandemic.

Keywords: COVID-19; urban population; cross section assessment; Saudi Arabia; pandemic.

1. INTRODUCTION

The corona virus which caused Covid-19 resulting in the pandemic outbreak which caused severe damage to the mankind by impacting on the both monetary and human lives throughout the world resulting as the one of the biggest disasters of the century [1,2,3]. This study was aimed to seek out the awareness and knowledge about the covid-19 during the onset of the pandemic among the urban population of the Saudi Arabia [4,5,6]. This study was carried out for three months from 01.04.2020 to 31.07.2020, and a sample of 1000 participants was taken for the study through structured online survey questionnaires. The data was collected in the form of well designed specific questionnaires related to the awareness of covid-19 and other related information associated with the bio-informatics of the individual, etc, both in English and Arabic language. This cross-sectional survey study was conducted by blending both qualitative and quantitative methods of data collection protocol. The collected data were analysed by the Microsoft Excel and SPSS. The values were presented as numbers (%). IBM SPSS Statistics for Windows, version 23 was utilized for analysis (IBM SPSS, IBM Corp., Armonk, N.Y., USA). Statistical comparisons were made by the Pearson Chi-Square test. The data were significant if P-values were < 0.05 [7,8].

The Coronavirus, which causes covid-19, impacts various individuals in different ways. Most individuals who were infected may have experienced gentle to mild ailment and recuperated without hospitalization. The most sought symptoms in the affected individuals include fever, cough, tiredness, loss of taste or smell, sore throat, headache, aches and pains, diarrhoea, a skin rash, discolouration of fingers or toes, red or irritated eyes, etc. [9,10,11,12]. However, the severity of the disease leads to high mortality among the individuals. It requires

immediate action to get the prescribed laboratory investigation done in the suspected individuals who were to be isolated in the hospitals in a separate ward to prevent the spread of the disease to the other patients [1,13,14]. The lack of breathlessness leads to severe pneumonia due to the virus possessed severe threat, and the hospitalization becomes mandatory for such individuals to get the appropriately prescribed treatment. The World Health Organization has warned against self-prescribed remedies for the treatment of covid-19, which may cause more severe consequences. The WHO prompts individuals to ensure themselves and other people around them by knowing current realities to avoid potential risk and follow the guidance given by your neighbourhood wellbeing authority [9,11].

2. METHODOLOGY

This study was carried out for a period of three months from 01.04.2020 to 31.07.2020 and a sample of 1000 participants was taken for the study by means of well structured online survey questionnaires. The data was collected in the form of well designed specific questionnaires related to the awareness of covid-19 along with other information related to the bio-informatics of the individual, etc, both in English and Arabic language. This cross-sectional survey study was conducted by blending both qualitative and quantitative methods of data collection protocol. Reliability Analysis of Questionnaire: A pilot study was conducted among the study population to examine the questionnaire's reliability and validity. The reliability test for the questionnaire yielded a Cronbach's alpha of 0.77, indicating that it has a good internal consistency. The participants in the pilot study were excluded from the final data analysis. The collected data were analysed by Microsoft Excel and SPSS. The values were presented as numbers (%). IBM SPSS Statistics for Windows,

version 23 was utilized for analysis (IBM SPSS, IBM Corp., Armonk, N.Y., USA). Statistical comparisons were made by Pearson Chi-Square test. The data were significant if P-values were < 0.05 [7,8,15].

3. RESULTS AND DISCUSSION

The target population for the sample collection for this study was 1000 samples but received overwhelming responses, but we collected about 1000 samples participants in this survey as per the strategy. The collected data were well tabulated in Table 1. The appropriate responses were categorily separated and depicted in the form of well brewed chart Figs. 1 to 7 for better understanding about the explanation of the study.

This study was conducted among the urban population of the different regions of the Kingdom of Saudi Arabia, including Riyadh, Makkah, Madina, Eastern province cities and other urban areas of the region. The study showed Makkah and Riyadh participants were in large numbers, with the participants of Makkah were 27%, Riyadh were 29%, Madina were 13%, Eastern province was 15%, and other regional urban areas were 16 %. The distribution of the participants was described in the form of chart Fig. 1. Symbolically, the P-value obtained by performing the Person Chi-Square test was < 0.07 for the Makkah and Riyadh compared to the other regions, which showed significant differences in the participants in the region studied.

Table 1. Assessment study data report of the awareness of covid-19 among the urban population of the Saudi Arabia

Questionnaires	Response percentage	p-value significance
Distribution of Region		<0.07
Riyadh	29	
Makkah	27	
Madina	13	
Eastern	15	
Others	16	
Age groups		<0.003
12 to 18	10	
19-24 years	24	
25 to 40 years	34	
41-60 years	27	
More than 60	5	
Gender		<0.087
Male	19	
Female	81	
Nationality		<0.06
Saudi	93	
Non-Saudi	7	
Language		<0.913
Arabic	95	
English	5	
Education levels		<0.002
Undergraduate	21	
Graduate	52	
Post Graduate	19	
Others	8	
Do you Suffer from chronic disease		<0.003
yes	27	
No	73	
Do you take any medications		<0.001
yes	53	
No	47	

Questionnaires	Response percentage	p-value significance
How worried are you to be infected with corona virus		<0.02
worried	39.5	
Not worried	16	
Little bit worried	44.5	
Do you think you are infected with corona virus		<0.426
Yes	12.2	
No	24.5	
May be	63.3	
Do you prepared to tackle pandemic		<0.213
Yes	44	
No	34	
May be	22	
Are you regular in wearing face mask		<0.133
Yes	77	
No	09	
May be	14	
Do you apply social distance		<0.346
Yes	53	
No	34	
May be	13	
Propability of you or any one of you know him is infected with corona		<0.001
High propability	11.2	
Medium probability	66.8	
No propability	16.5	
Never any one will be infected	5.5	
What do you think the fatality rate of corona patients		<0.202
Less than 10 %	56	
Between 10 to 25%	28.8	
25 to 50%	9.7	
More than 50 %	5.5	
What is the rate of corona patients suffer from mild symptoms		<0.001
Less than 10 %	15	
Between 10 to 25%	24	
25 to 50%	26	
More than 50 %	35	
What are the symptoms of corona virus do you think		<0.04
High fever	27	
Dyspnea and chest pain	9	
Sore throat	11	
Anosomia	8	
Dry cough	22	
Diarrhea	5	
Fatigue, Body ache&Headache	12	
Rash or change color of finger nails	6	
How can you protect yourself from corona		<0.325
Wearing a face mask	35	
Stay at home	22	
Disinfecting Hand	11	
Social Distancing	27	
others	5	
What will be the impact rate of the virus corona in public health in the scale of 1 to 10		<0.28
1	2.5	

Questionnaires	Response percentage	p-value significance
2	1.5	
3	2.6	
4	5.5	
5	14.6	
6	9.2	
7	12.8	
8	16.4	
9	6.8	
10	27.9	

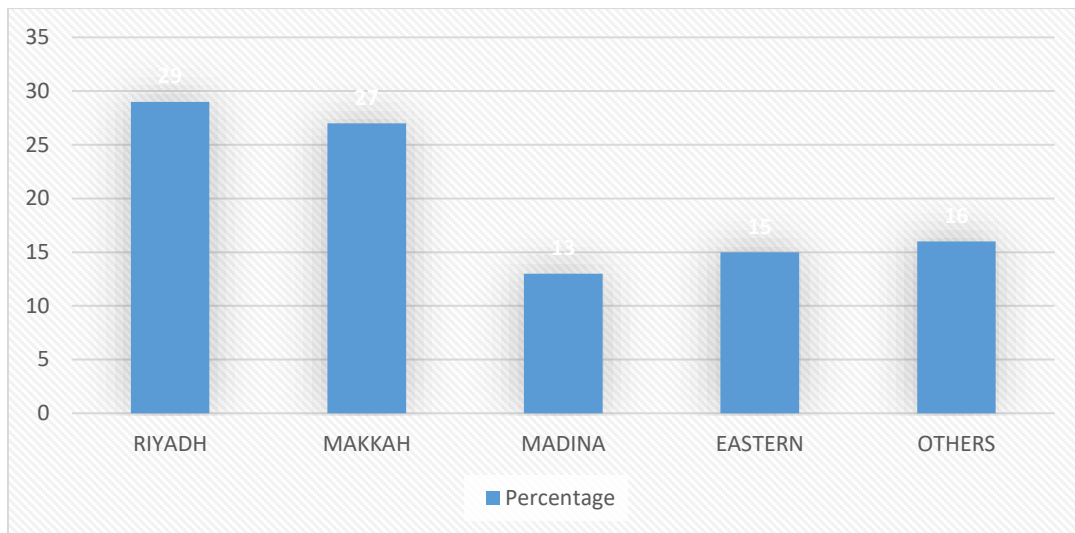


Fig. 1. Distribution of the region

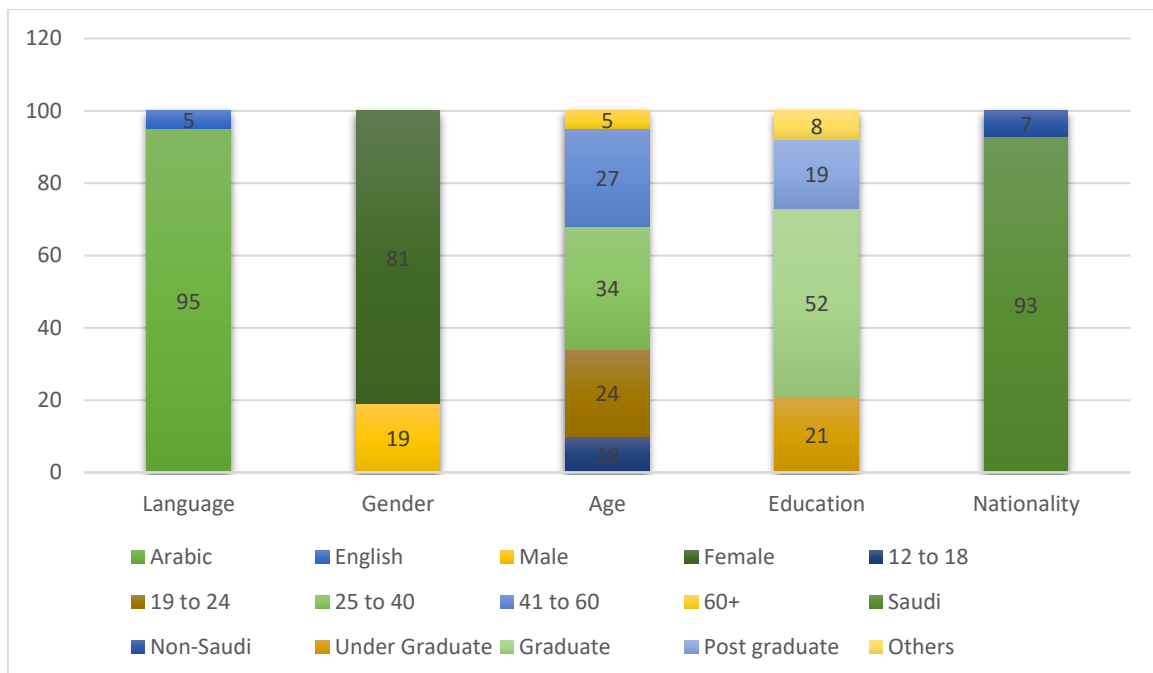


Fig. 2. General bio-information

The general bio-information survey questionnaires were conducted based upon nationality, age group, gender, language and education and was depicted in the form of chart Fig. 2 based on the participants. Most of the participants were Saudi nationals, with 93% to the 7% non – Saudi participants with a clear significant difference of < 0.06 P-value was obtained by performing the Pearson Chi-Square test. The most that participated in the survey group of aged 25-40 years which were 34%, with 27% in the age group of 41-60 and 24.% were between 19-24 whereas 10% were between 12-18 years old, while 5% participants were more than 60 years old respectively. The significant difference in the P- value obtained by performing the Pearson Chi-Square test was < 0.003 . Regarding the gender distribution, about 81% were female participants and 19%. were male participants with the P-value obtained by performing the Pearson Chi-Square test was < 0.087 . There was a clear significant difference in the P-value obtained by performing the Pearson Chi-Square test, which was < 0.913 regarding the language distribution of the participants, with 95% being Arabic and only 5% being English participants. The distribution of education level showed that the large group of participants were graduates with 52%. Followed by graduates with 21%, postgraduate 19% and others with 8%, the P-value obtained by performing the Pearson Chi-Square test was < 0.002 .

The set of public awarenessbased questionnaires about the onset of covid-19 pandemic were described in the chart Fig. 3 based on the percentage of responses received. Regarding the questionnaire "Do you suffer from chronic disease, " 27% of participants answered Yes. In comparison, 73% answered No while none answered Maybe with the significant difference of < 0.003 P- value obtained by performing the Pearson Chi-Square test. The P-value of < 0.001 was obtained by performing the Pearson Chi-Square test to continue the previous questionnaire "Do you take any medications" which received the response rate of 53% answered Yes while 47% answered No. For answers to the questionnaire "How worried are you to be infected with coronavirus", the response answers of 39.5% felt worried with 16 % not worried and little worried were 44.5% was achieved with the significant difference of < 0.02 P- value obtained by performing the Pearson Chi-Square test for the questionnaire. The next questionnaire in this category was about "Do you think you are infected with coronavirus" for which

the response answer for Yes was 12.2%. In comparison, No was 24.5% and Maybe was 63.3%, with the significant difference of < 0.426 P-value obtained by performing the Pearson Chi-Square test. The important questionnaire of this category was "Do you prepared to tackle pandemic" for which the significant difference of P-value obtained by performing the Pearson Chi-Square test for the questionnaire was < 0.213 with the majority of the participants answered Yes with 44% while No was 34% and Maybe with 22%. The second last questionnaire of this category was "Are you regular in wearing face mask" for which the significant difference of P-value obtained by performing the Pearson Chi-Square test for the questionnaire was < 0.133 with majority of the participants answered Yes with 77% while No was 09% and May be with 14% answers respectively. The final questionnaire in this category of the questionnaire was regarding "Do you apply social distance " for which a significant 53% answered Yes. In comparison, 34% responded. No, while maybe it was 13% with the substantial difference in P- value obtained by performing the Pearson Chi-Square test for the questionnaire was < 0.346 .

A category of questionnaires was designed specifically based upon the presumption and probability-based scenario towards the target population presented in the chart Fig. 4 based upon the percentage of responses achieved for each. The response for the first questionnaire of this category was based on the questionnaire "Probability of you or any one of you know him is infected with corona" for which answer for the option high probability was 11.2% while for medium probability was 66.8% and less probability was 16.5 with never anyone will be infected was 5.5% with the significant difference of P-value obtained by performing the Person Chi-Square test for the questionnaire was < 0.001 . The second questionnaire of this category was "What do you think the fatality rate of corona patients" for which the significant difference of P-value obtained by performing the Pearson Chi-Square test for the questionnaire was < 0.202 with the majority of the participants answered for less than 10 % with 56% while for 10 to 25% was 28.8% and for 25 to 50 % with 9.7% while for more than 50% it was 5.5% answers respectively. The next target questionnaire of this category was "What is the rate of corona patients suffer from mild symptoms" for which the response answer of less than 10% was 15% while 10 to 25% was 24% with 25 to 50% was

26% and more than 50% was with 35% with the significant difference of < 0.001 P- value obtained by performing the Pearson Chi-Square test.

A questionnaire was framed to study the category about the awareness of the general covid-19 symptoms to assess the participants'

knowledge and the percentage of the results described in the chart Fig. 5. The framed questionnaire towards the target population was "What are the symptoms of corona virus do you think" coronavirus response for the High fever symptom was 27% which outperformed other symptoms due to its regularity associated with the majority of the infections The different

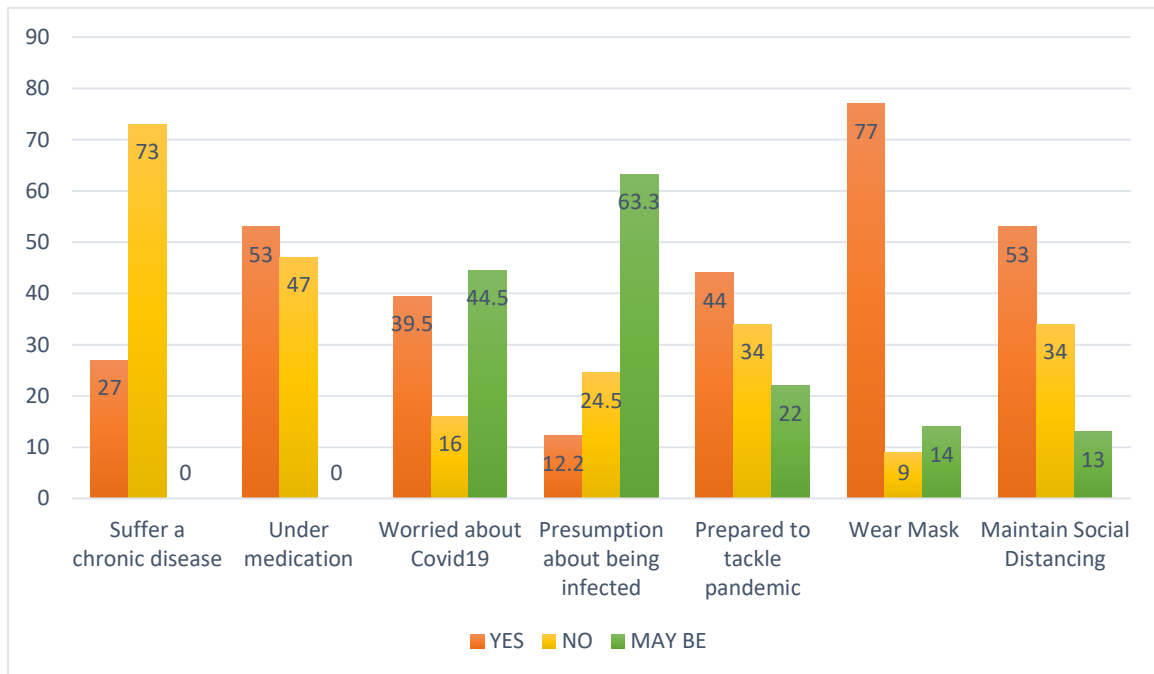


Fig. 3. Public awareness based questionnaire percentage

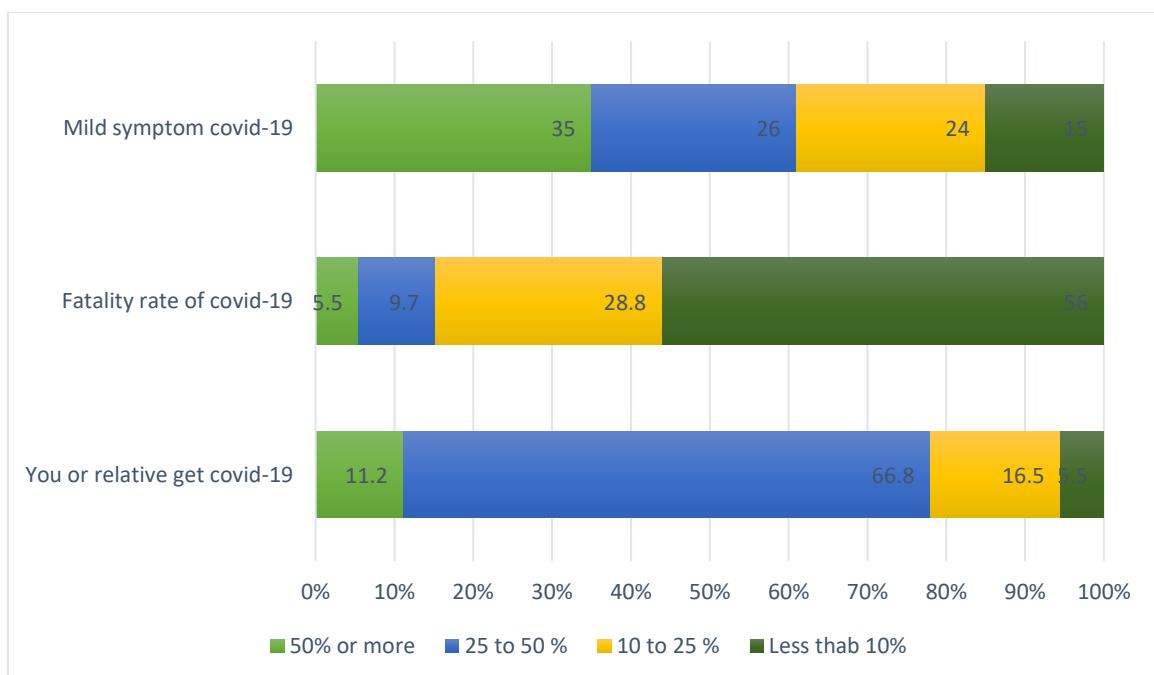


Fig. 4. Probability scenario based questionnaire percentage

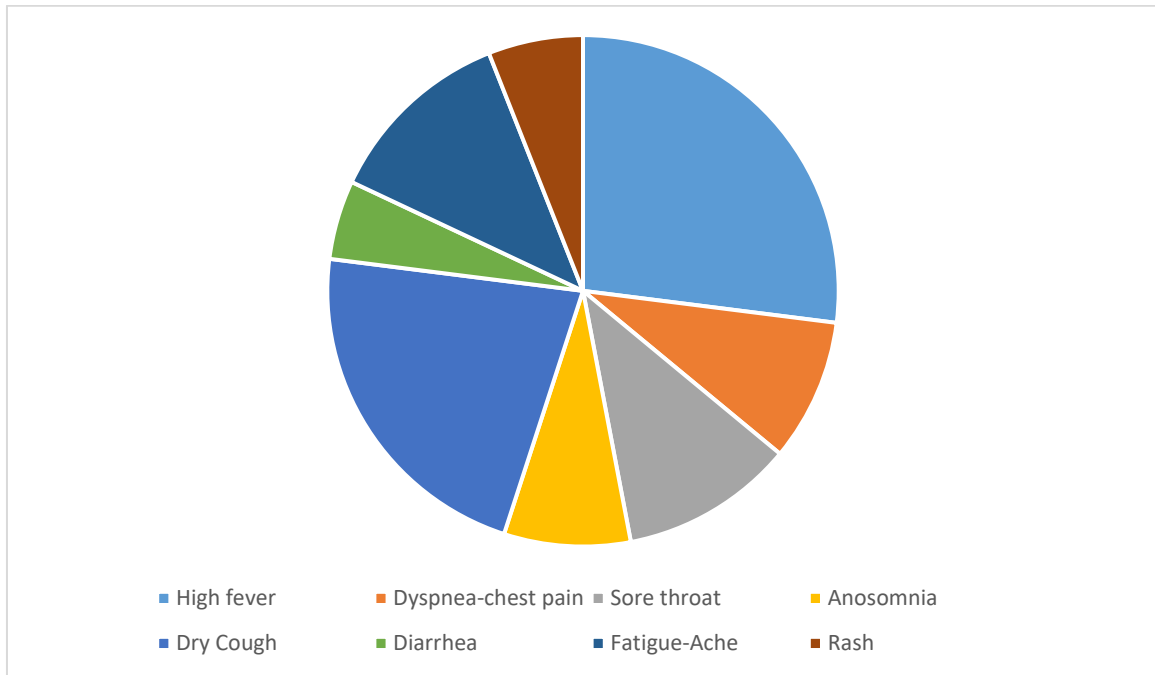


Fig. 5. Public awareness about general Covid-19 symptoms questionnaire percentage

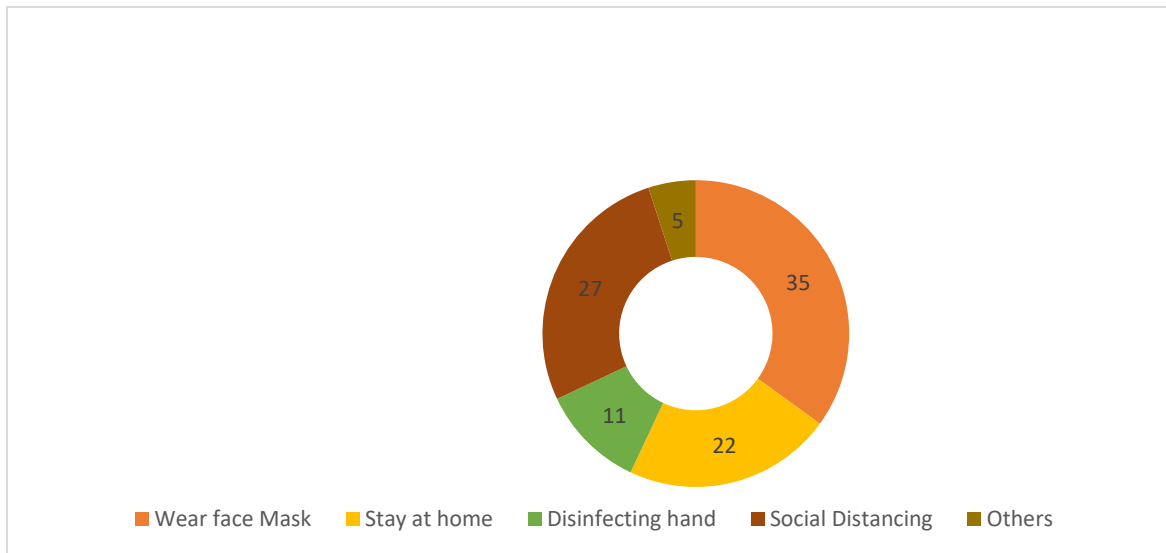


Fig. 6. Awareness about self protection questionnaire percentage

responses were 9% for Dyspnea or chest pain while sore throat was 11% with the insomnia received 8%, and dry cough symptom response received 22%. The response for diarrhoea symptom received 5% and Fatigue, body ache or Headache received 12%, while 6% response was received for the sign of rash or change of colour of the finger. The P-value obtained by performing the Pearson Chi-Square test was < 0.04 , which was a clear significant difference.

A questionnaire was framed to study the category about the awareness of the general covid-19 precautionary measures to assess the participant's knowledge and the percentage of the results described in the chart Fig. 6. The framed questionnaire towards the target population was "How can you protect yourself from corona". The response for wearing the mask was 35% which outperformed other responses due to its popularity associated with the majority of the infections and ease of

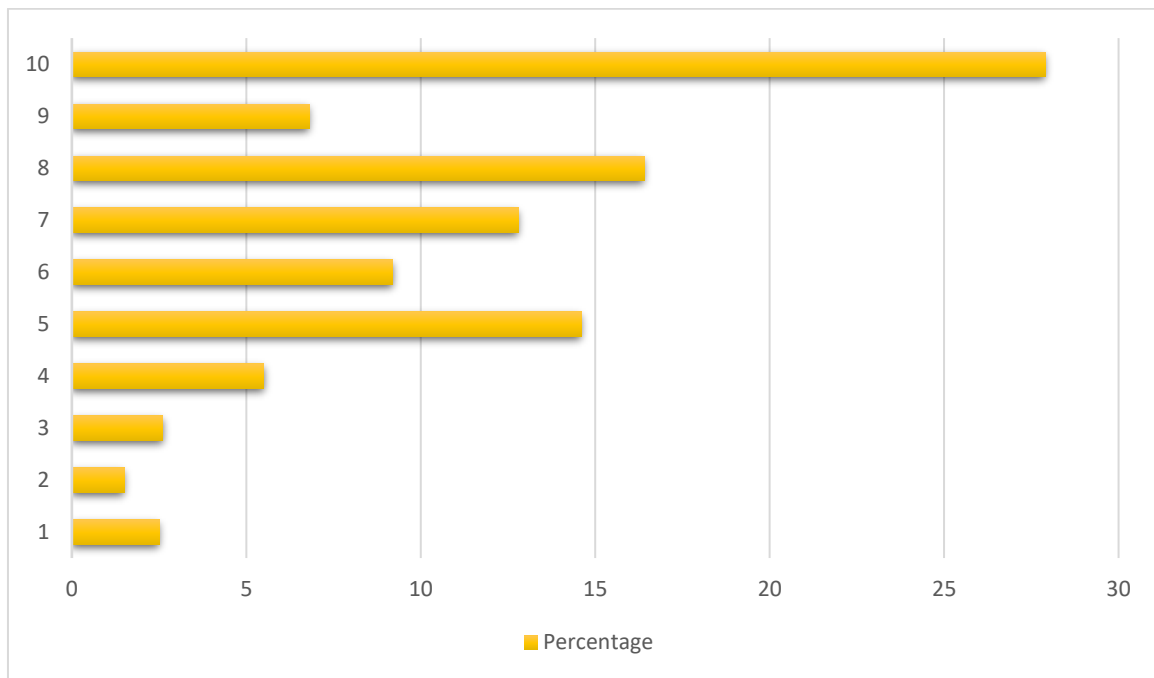


Fig. 7. Impact rate scale of Covid-19 on public health

availability. The other responses were 22% for Stay at home while Disinfecting hand received 11% response with the social distancing received 27%, and other responses received merely just 5%. The P-value obtained by performing the Pearson Chi-Square test was < 0.325 , which was a clear significant difference.

The final questionnaire category of this cross-sectional study was specifically designed to study the impact of the covid-19 on public health, which was analysed by the scale rating 1 to 10, and the response percentage was depicted in the form of chart Fig. 6. This questionnaire was strategically placed at the end of the cross-sectional survey to create awareness among the target population regarding the awareness of the target population to understand the psychological condition of the participants towards the onset of the pandemic condition. The questionnaire designed was "What will be the impact rate of the virus corona in public health in a scale of 1 to 10". The procured responses for this questionnaire were the majority of the participants felt the impact rate of 10 with 27.9% while the impact rate of 5,7 & 8 received almost the same percentage responses of average 14.6%, 12.8% and 16.4%, respectively. The mere percentage of responses were received for the other impact rate scales of 1,2,3,4,6 and 9 with the response percentages of 2.5%, 1.5%, 2.6%, 5.5%, 9.2% and 6.8% respectively. The

significant difference of P-value obtained by performing the Pearson Chi-Square test for the questionnaire category was < 0.028 .

4. CONCLUSION

In this cross-section, assessment study received responses regarding the well-formulated questionnaires regarding prevalence of awareness of covid-19 during the onset of the pandemic situation among the urban population of the Kingdom of Saudi Arabia, it was observed that the community was well aware of the knowledge regarding the covid-19 situation. Overwhelming satisfactory responses were received from the target population, and the data were limited to the planned 1000 participants for the study was procured. The collected data were well tabulated in Table 1 and depicted in the form of chart Figs. 1 to 7, respectively. The significant difference of P-value was obtained by performing the Pearson Chi-Square test for all the questionnaires to analyse the assessment study. This conducted study was well satisfactory. More such studies need to be conducted to assess the psychological factors of the community to support the valuable efforts taken by the authorities, which clearly suggests the most encouraging facts. This study was a small attempt for conducting such valuable studies in preventive medicine. Thus, this study suggests that the community's overall satisfactory report is

well aware of the preventive measure procedures and well prepared to tackle the covid-19 pandemic.

ETHICAL APPROVAL AND CONSENT

Participants were automatically led to the informed consent page after clicking the questionnaire link; the study objectives were described to all participants in the consent form page, followed by the survey questionnaires. Throughout the study, the participants' rights and integrity were protected. The work was approved by ISNC Ethics Committee. Participants were assured that their participation in the study was completely voluntary and that they might withdraw at any time. The principles of the Helsinki Declaration were observed in this research.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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