

Knowledge, Perception, and Practice toward Personal Protective Measures during COVID-19 Pandemic in the Primary Health Care Attendees in Eastern Province, KSA, 2020-2021

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ABSTRACT

The severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is an emerging viral pathogen that causes corona virus illness 2019. COVID-19 virus transmission can happen by touch, droplet, airborne, or contaminated surfaces. In order to successfully contain the COVID-19 epidemic, the World Health Organization (WHO) and the Saudi Ministry of Health (MOH) have encouraged the public to take precautionary measures to prevent virus transmission and infection. Hand cleaning, wearing masks and gloves, and avoiding contacting the face with dirty hands are among the precautions. The current study sought to assess the Saudi population's understanding and adherence to these precautionary measures during the epidemic. The current study is a cross-sectional design and targeted 400 participants. The study included 400 participants. Among them, there were 291 females (72.8%) and 109 males (27.3%). The most prevalent age group was 35-45 years (N=151, 37.8%). Vast majority of study participants were Saudi (n=394, 98.5%) and the rest 6 participants were non-Saudi. The majority of study participants were married (n=317, 79.3%). Among study participants, 78 participants suffered from chronic medical conditions such as diabetes or hypertension (19.5%). The source of information with regard to COVID-19 pandemic varied among study participants. The most common source of information was from social media only (n=84, 21%), while in the second place was World Health Organization (WHO) (n=54, 13.5%) followed by social media and television (n=53, 13.3%). Of the 400 participants 74.2% had good level of knowledge with regard to COVID-19 pandemic. In regards to perception an 78% of the Participants had good level of COVID-19 pandemic. Furthermore a 77% declared that they practice Safety measures in regards to COVID-19.

Key words: COVID-19, Saudi Ministry of Health, Endemic, Pandemic

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INTRODUCTION

Pandemic is "an endemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people" [1]. It is not a one-country outbreak at one time. There were ten pandemics in the past 300 years; three of them were in the last century. These include the great plague, six Cholera pandemics, and the influenzas pandemics. It is roughly expected to have a pandemic every 20-40 years. All the pandemics since the last century until today were

respiratory-related illnesses.

It was declared by the WHO that the COVID-19 is a pandemic, on the 11th of March 2020. The first case was diagnosed in China in December 2019. Coronaviruses are a family of RNA viruses that cause illnesses that range from the common cold to severe diseases like Middle East Respiratory Syndrome (MERS-CoV) and severe acute respiratory syndrome (SARS-CoV) [2]. In addition, infection can occur through respiratory droplets, transmitted by breathing either through mouth, nose, and through eyes; when an infected individual comes in close contact with a healthy individual. This happens either directly through coughing, sneezing, singing, or talking loudly or indirectly through handshaking.

Prevalence is over 75.5 million, and over 1.67 million deaths [3]. COVID-19 rapid rate of transmission crippled the health care system globally. Subsequently, this pandemic is a public health crisis; not only the healthcare system that has been affected even the global economy

has been shut down. Thus, it is estimated that half of the earth's population are at risk of losing their income [4]. Even before the first case was discovered in the Kingdom of Saudi Arabia (KSA), the schools were shut and the borders were closed. The battle against COVID 19 pandemic depends on the public adherence toward protective measures (such as wearing a mask, practicing safe distance, washing hands, and self-isolation when infected). This can be greatly affected by knowledge and perception regarding the nature of the disease.

LITERATURE REVIEW

Several studies were conducted worldwide to evaluate the public knowledge, perception and practice toward the protective measures during the COVID-19 pandemic.

In February 2020, a study was conducted in Hong Kong to assess the community responses during the early phase of the COVID-19 epidemic in the country. This was conducted within three days of confirming the first cases of COVID-19. Concluded that by evaluating the risk perception, information exposure and preventive measures, the risk perception towards COVID-19 in the community was high. In addition, most participants are aware of the infection progression, and were compliant to the protective measures. In conclusion, they recommended that intervention and risk communication strategies need to be informed as the pandemic progresses, this can be achieved by the assessment of the public knowledge, and behavior in a timely manner [5].

Also, there is another study done to evaluate the public Knowledge and Perceptions of COVID-19 in the United States and the United Kingdom. The study was conducted from February to March 2020 using a Cross-sectional Online Survey. It concluded that there are major misconceptions about COVID-19 in the general population in those targeted countries. Therefore, it is important to target these misconceptions in campaigns as well as in the media coverage [6].

Besides, there is another multinational study done to assess the public protective measures perception during the COVID-19 pandemic. The study was done in March 2020 including three European countries which are the Netherlands, Germany and Italy. It shows that in the early stage of the pandemic, the participants from the three countries believed in the efficacy of the protective measures. Additionally, the adherence to the protective measures was different between those countries. It was highest among the Italian participants, who were subjected to a strict lockdown, and they suffered the most from the COVID-19 sequel [7].

There is another cross-sectional online survey done in India to assess the public knowledge, perception, and practices towards COVID-19 pandemic. The study was done in May 2020. It concluded that the participants who are more than 40 years old; with higher education, living in the cities, and working as a healthcare profession scored high in the knowledge, perception, and practices

towards COVID-19. Nevertheless, there is still a gap that needs to be filled between the myths and facts about COVID-19 [8].

In the middle east, several studies were done regarding the same subject. One was conducted in March 2020 in Egypt. It assessed the public knowledge, perceptions, and attitude toward COVID-19. The study conducted using a cross sectional survey. It shows that the participants had good information and a positive perspective towards using the protective measures. However, the knowledge was significantly less among different groups such as, older people, come from rural areas, less educated, or with lower income [9].

By reviewing the local literature, among the studies found was a study done in Riyadh, it was conducted during the first ten days of April, 2020, to explore the relationship between the awareness, attitude and practice of COVID-19 with the socioeconomic data. It found that there is a strong positive relationship between the high level of education and the high income with increased level of knowledge and awareness [10].

Moreover, another study was conducted through a web-based questionnaire between March 25th and April 17th, 2020. It aimed to study the awareness and practice of stay-at-home. More knowledge and better practice were noticed in females with high level of education and income in the middle region of KSA [11]. However, all previously mentioned studies were web based survey; there were no studies performed on site. Beside all studies were during the lockdown period; there could be changes in perception and practice during the current period. Furthermore, there were no national studies in the Eastern province regarding protective measures commitment. Community safety can be achieved when the chain of infection is broken through public adherence to safety measures. This can be achieved by education and correcting any misconceptions. The assessment of the public knowledge, perception, and practice toward the COVID-19 pandemic is a cornerstone in promoting positive behavior in the Eastern Province area.

AIM

To evaluate the knowledge, perception and practice with associated factors toward personal protective measures during the period of COVID 19 in Primary Health Care attendees in Eastern Province, KSA.

OBJECTIVES

- ✓ To assess the knowledge about COVID-19 pandemic of the adult population attending Primary Health care Centers.
- ✓ To assess the perception and beliefs toward COVID-19 and associated factors among the adult population attending the Centers.
- ✓ To assess what people practice to protect themselves and families from COVID19, and its association with

the knowledge and demographic factors.

MATERIAL AND METHODOLOGY

Design

Community-based cross-sectional study.

Study setting and time

The Study will be conducted in the Primary Health Care Centers in three sectors; Alkobar, Dammam, and Alqatif. From the period of April 2021 to May 2021.

Study population

All Adult above 18 years old attending the primary Health Center in Khobar, Dammam, and Qatif will be included.

Inclusion criteria

All Adult above 18 years old attending the primary Health Center in non-isolation section will be included.

Exclusion criteria

Individual bellow 18 years will be, adults with symptoms suspicious of COVID-19; who are attending isolated section of the health center, And Tatamen Centers (COVID-19 centers) will be excluded.

Sample size and technique

Multi-stage sampling method

Total number of health centers in Khobar, Dammam, and Qatif is 61 have been clustered into; Dammam twenty (33%), Qatif thirty (49%), and

Al Khobar eleven (18%). The study will involve randomly chosen ten health centers; five centers from Qatif, three from Dammam, and two from Alkhobar. For the sample size, the total number of Health Center Beneficiaries at the three selected sectors is 1,300,000. A sample size of 385 was calculated using the Raosoft calculator, assuming the expected responded distribution is 50%, 5% accepted error, and 95% confident interval.

The sample will be increased to 400 to overcome any statistical error; 196 participants from Qatif, 132 participants from Dammam, and 44 from Khobar. Random sampling by enrolling every 3rd visitor at each randomly chosen health center.

Study variables

Independent variables

Age; Gender; Nationality; Education level; Income; Job; the history of the previous infection; parenthood; extended Family; losing a loved one to the pandemic.

Dependent variables

Knowledge, perception, and practice of protective measures during the COVID-19 pandemic.

Study tool

Self-administered Questionnaire of 4 parts (demographic data, knowledge, perception, and practice). The questionnaire will be through google forms that will

be delivered to each participants own device. Each participant will be answering the questionnaire at the waiting area.

Validity and reliability

English questionnaire was adopted from previously published literature; "Knowledge, Perception, and Practices toward Covid-19 Pandemic among General Public of India"⁸. Some questions will be modified then translated to the Arabic version. Content validity will be conducted through 7 consultants to review the questionnaire. Content validity will be through rating the questions and calculating the scale. Translation back to English will be performed by a native English speaker. The original questionnaire and the back-translated will be compared by English teachers. A pilot of 30-40 participants will be conducted in a public area, As three panels. Cronbach's alpha coefficient will be calculated after the pilot.

The questionnaire consisted of 4 parts:

- ✓ The first section focuses on demographic data.
- ✓ The second is about the knowledge.
- ✓ Third about the perception.
- ✓ Fourth is concerning the practice.

Data processing

- ✓ Response rate will be calculated, and any questionnaire less than 50% filled will be canceled.
- ✓ All variables will be coded before entry and will be checked before analysis.
- ✓ Data will be entered into a personal computer and will be analyzed by using SPSS software -version 22.
- ✓ We will apply a suitable statistical test to the data and a p-value less than 0.05 will be considered significant.
- ✓ Mean, median and Standard deviation will be calculated for all continuous data while the percentage will be calculated for categorical data.

RESULTS

The study included 400 participants. Among them, there were 291 females (72.8%) and 109 males (27.3%). The most prevalent age group was 35-45 years (N=151, 37.8%). Figure 1 shows the age groups distribution among study participants. Vast majority of study participants were Saudi (n=394, 98.5%) and the rest 6 participants were non-Saudi. The majority of study participants were married (n=317, 79.3%). Figure 2 shows the distribution of marital status among study participants.

Among participants who are married or divorced, 303 of them had children and 100 participants of them are living in an extending family. The educational level varied among study participants with 262 of participants (65.5%) had bachelor degree or higher. Figure 3 shows

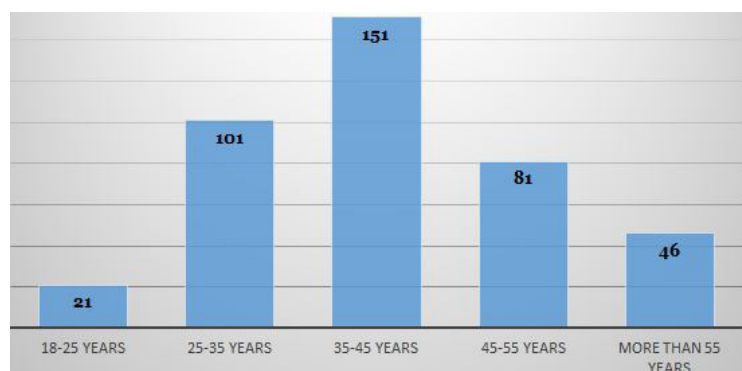


Figure 1: Age groups distribution among study participants.

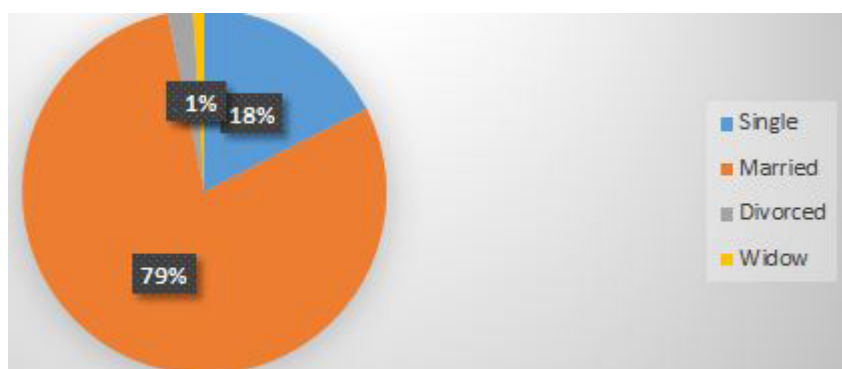


Figure 2: Marital status distribution among study participants.

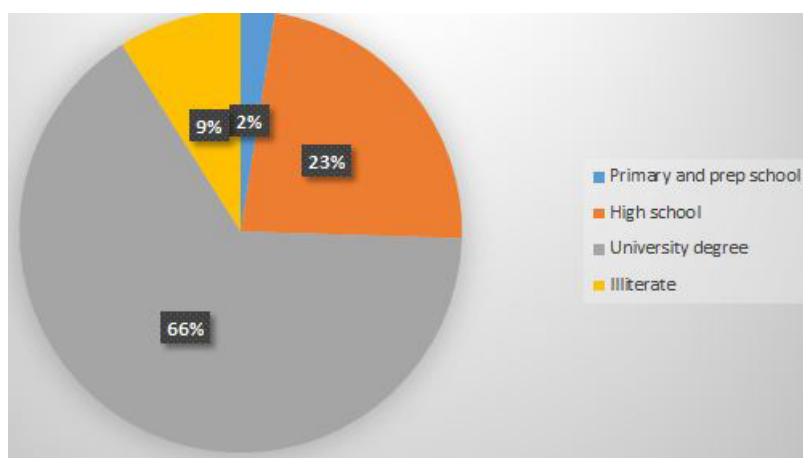


Figure 3: Educational level distribution among study participants.

the distribution of educational level among study participants.

Among study participants, 78 participants suffered from chronic medical conditions such as diabetes or hypertension (19.5%). Participants were also asked about some information with regard to COVID-19 presented in Table 1. The source of information with regard to COVID-19 pandemic varied among study participants. The most common source of information was from social media only (n=84, 21%), while in the second place was World Health Organization (WHO) (n=54, 13.5%) followed by social media and television (n=53, 13.3%). Other sources of information included Saudi ministry of health, friends or family members and health care professionals. Participants provided other

baseline characteristics such as their occupation and monthly income which are demonstrated in Table 2.

The study assessed participant's knowledge with regard to COVID-19 pandemic using the following questions and participants responses are provided in Table 3. Answering 7 questions correctly and more out of the total 11 is considered good knowledge. From Table 3, it is shown that 74.2% of participants had good level of knowledge with regard to COVID-19 pandemic. Furthermore, authors assessed participant's perception as presented in Table 4. Answering 9 and more questions out correctly out of 14 is considered a good perception.

From Table 4, it is shown that 78% of participants had good level of perception with regard to COVID-19

Table 1: Participants status with regard to COVID-19 infection.

COVID-19 information	Yes	No	May be
Previous COVID-19 infection	160	205	35
Was the infection during the last week or less?	30	130	-
Have you lost someone due to COVID-19 infection?	146	224	-

Table 2: Participants characteristics.

Characteristic	Frequency	Percent
Have you travelled during the last year?	Yes	135
	No	235
Monthly income	Less than 5000 SR	116
	5000-1000 SR	94
	More than 10000 SR	160
		40
Occupation	Student	21
	Governmental employee	126
	Private sector employee	79
	Retired	53
	No work	91
Are you working in health care?	Yes	43
	No	237

Table 3: Participants knowledge assessment.

Item	Yes	No	No answer
A COVID-19 is an infectious disease caused by the most recently discovered novel coronavirus in Wuhan, China	355	15	30
The time between catching the novel coronavirus and beginning to have symptoms will be up to 14 days	255	115	30
Fever, dry cough, tiredness, and body pains are the most common symptoms in COVID 19	365	5	30
The person infected with novel coronavirus definitely develops symptoms	101	269	30
he majority of people (about 80%) who get COVID-19 becomes seriously ill and develops breathing problem	84	286	30
Old age people, and those with underlying medical problems like high BP, heart problems, or diabetes, are more likely to develop serious illness	337	33	30
People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets	354	16	30
Social distance means stay more than 1.8 m (6 feet) away from a person who is sick	316	54	30
COVID-19 can be transmitted through the air outside a medical facility	209	161	30
Regular hand wash, social distancing, avoiding crowds, wearing a mask, and stay at home can protect the person from getting COVID-19	354	16	30
An asymptomatic person can transmit the infection	329	41	30

Table 4: Participants perception assessment.

Item	Yes	No	No answer
If I am infected, I will feel ashamed	7	363	30
COVID-19 virus CANNOT be transmitted in areas with hot and humid climates	12	358	30
Taking a hot bath CANNOT prevent the novel Coronavirus disease	9	361	30
The novel Coronavirus CAN be transmitted through mosquito bites	32	338	30
Hand dryers are NOT effective in killing the novel Coronavirus	122	248	30
Spraying alcohol or chlorine all over your body cannot harm the skin and mucous membranes	49	321	30
Vaccines against pneumonia can protect you against the novel Coronavirus	55	315	30
Eating garlic helps in the prevention of infection with novel Coronavirus	86	284	30
Antibiotics are NOT effective in preventing and treating the novel Coronavirus	228	142	30
Holding breath for more than 10 seconds is a test for COVID-19	64	306	30
Medicines are available in the global market to prevent or treat the novel Coronavirus	90	280	30
COVID-19 virus transmission can be prevented using Niqab	98	272	30
Minimizing the number of attendees in restaurants and public area reduce the transmission of COVID-19 virus	349	21	30
The virus may be more dangerous for children	171	199	30

pandemic. Furthermore, authors assessed participants practice as presented in Table 5. Answering a total grade of 33 and more out of 55 is considered good knowledge. From table 5, it is shown that 77% of participants had good level of practice with regard to COVID-19 pandemic.

DISCUSSION

The attack of another irresistible ailment, COVID-19, has demonstrated hard for medical services foundations all through the world. Without even a trace of demonstrated treatments and a very much tried antibody, and with

Table 5: Participants practice assessment.

Item	Never	Seldom	Sometimes	Frequently	Always	No answer
Do you cover your mouth and nose with a tissue or elbow when sneezing?	5	4	30	89	242	30
Do you follow social distancing (>1.8 m) when you go and meet other people?	4	10	97	150	109	30
Do you perform regular hand wash in your daily routine activities?	4	3	41	124	198	30
Do you wear a mask when you are with people outside your house?	12	6	56	121	175	30
Have you traveled to any area affected by COVID-19?	305	31	26	4	4	30
Do you sanitize the surfaces which are suspected of infection exposure?	15	23	87	85	160	30
Do you use the Tawakalna application given by the government of Saudi Arabia	3	5	5	19	338	30
Do you perform hand shaking upon the meeting of friends/family members/others?	106	99	115	33	14	33
Do you touch routinely your mouth, nose, and eyes?	46	96	171	38	19	30
If you come in contact with an infected individual, would you seek medical advice?	33	37	105	80	115	30
If you develop symptoms suggestive of COVID-19 infection, would you seek medical advice?	14	11	45	81	219	30

the quantity of new diseases proceeding to increase at a disturbing rate all through the world, protection measures are basic in breaking the infection's chain of transmission and controlling contamination rates. Proof shows that public information and safeguard rehearses are significant in plague the executives. Accordingly, wellbeing specialists have put forth fundamental attempts to continually circulate right data to screen and oversee public way of behaving [12-18]. The WHO and the Saudi Ministry of Health urged everybody to go to explicit prudent lengths to battle the COVID-19 pandemic, including as cleaning hands, staying away from hand shaking, trying not to contact the face with messy hands, and wearing veils [10,15]. Assuming general society follows these actions thoroughly, it is conceivable that the occurrence of sickness in everybody will drop and the risk of transmission will be decreased. Therefore, the reason for this study was to lay out the Saudi populace's level of information and familiarity with SARS-CoV2 transmission and to appraise the utilization of proposed defensive and safeguard estimates consistently and while going out during the ongoing COVID-19 plague. Different financial perspectives were concentrated on in this review to comprehend the circumstances affecting announced results and to assess the overall population's lacks in information, appreciation, and conduct in changing in accordance with and carrying out proposed alleviation measures.

In our overview, most of respondents showed a serious level of understanding and adherence to suggested protection measures. Occupants of Eastern region; including Khobar, Dammam, Qatif areas showed a level of 74.2% of population have good knowledge. In regards to perception 78% demonstrate good perception. A few equivalent investigations have additionally observed that everyone is knowledgeable in COVID-19 [19,20]. Our study's members were generally middle age. This pattern might be made sense of by segment insights given by the General Authority for Statistics, Kingdom of Saudi Arabia [21], as well as the somewhat energetic populace's proclivity to utilize cellphones and web-based entertainment consistently. Members' familiarity with SARS-CoV2 transmission through debased surfaces contrasted. Occupants of the Kingdom's western region, for instance, exhibited preferred degrees of information

over their partners from different districts. It is obvious that those from more unfortunate financial foundations and with lesser degrees of training have less data of COVID-19 transmission. Comparative outcomes have been archived in past exploration [22-24], which might be inferable from trouble in getting to or understanding distributed material.

By far most of study members (88%) showed solid comprehension of hand cleanliness including washing hands prior to contacting their appearances to limit transmission. Hand washing by everybody is probable perhaps the savviest way to deal with forestall the spread of SARS-CoV2 in networks. With regards to earlier research, females [22-25] and grown-ups matured 38 to 47 years showed more grounded comprehension of legitimate hand washing strategies than different members. Altogether, the MOH's few mindfulness programs embraced by means of different directs may have brought about elevated degrees of understanding about COVID-19 transmission and preventive activities to battle its spread [13]. This is on the grounds that, as indicated by a past report, the Saudi MOH was the essential wellspring of information with respect to COVID-19 and related protection measures for by far most of members [13].

Occupants of the northern district would in general be less mindful of the need of hand washing, which is steady with a past examination in which inhabitants of AlJouf, north of the Kingdom, had just unobtrusive cognizance of the hatching time frame and clinical signs of MERS [26]. Inhabitants of northern pieces of the Kingdom might stick to preventive measures, for example, hand cleanliness and wearing gloves and veils in open not as much as occupants of different pieces of the Kingdom on the grounds that affirmed instances of COVID-19 were just a brief time after the main revealed cases in the nation [27].

Practically most members (77%) had high practice scores (>33 out of 55) for adherence to defensive measures while going out, but 33% had a score of less than 33. Great utilization of these individual defensive measures ought to make up for Saudis' acknowledged levels of social division [13]. In contrast with their partners, females, big time salary people, and city tenants were significantly

related with high scores as far as recurrence and method of hand washing and wearing individual defensive hardware. This end is steady with prior research close by cleanliness and conduct shifts in numerous countries toward protection measures, which found that females [20,29,30], metropolitan occupants [30], and people with high financial status [19,28] rehearsed the most. As per a past review, 66% of Arab people thought it was pointless for youngsters and youngsters to wear facial covers and gloves while going out [31]. Be that as it may, SARS-CoV2 has obviously tainted various youngsters and youngsters over the world, including Saudi Arabia [27,32]. Individuals in these age classes are in many cases more portable, dynamic, and less affected by the infection. Subsequently, insufficiency or resistance with safeguard measures might improve the probability of sickness spreading all through networks, especially among multigenerational families. This could make sense of the negative connection found in the ongoing concentrate between the utilization of prudent steps and more youthful members (those younger than 35). Consequently, public mindfulness missions and local area commitment techniques zeroing in on viable gamble correspondence as well as security and counteraction measures are suggested for spreading mindfulness among low practice gatherings, especially in conditions visited by youth, for example, bistros and sports focuses.

The reasons for low adherence to various safeguard intercessions were contemplated. Members who didn't keep away from hand shaking demonstrated delay attributable to feelings of hatred toward others or the thought that such an action was fruitless in lessening SARS-CoV2 transmission. Hand shaking is exceptionally related with social qualities in many societies, including Arab culture [33], and the issues engaged with staying away from such ceremonies, while justifiable, should be helped by bringing issues to light. To effectively limit the spread of COVID-19 all through networks, neighborhood wellbeing specialists ought to address such data holes.

While returning home, everybody was urged to clean their hands with cleanser for something like 40 seconds or with liquor gel for somewhere around 20 seconds [12]. One in each seven review members revealed cleaning their hands with cleanser and water or liquor gel for more limited than the necessary time frame, which might bring about insufficient sterilization. Practically 4.5% of members said they didn't clean up in the wake of returning home or didn't utilize the recommended approach.

As a rule, the COVID-19 pandemic has been associated with social changes in the Saudi people group as far as standard precaution activities [23,24,34]. The Saudi public's evident commitment and conduct changes in light of the reception of security measures could have ramifications for decreasing the spread of SARS-CoV2 ailment.

CONCLUSION AND RECOMMENDATION

The public's adherence to WHO-suggested individual defensive measures, like hand tidiness and the utilization of gloves and veils, is basic to controlling the COVID-19 pandemic. As indicated by the discoveries of this review, the Saudi populace of Eastern region including Khobar, Dammam and Qatif areas has a sensibly elevated degree of understanding and execution of hand cleanliness, as well as the utilization of facial covers and gloves. Females, those with a high financial standing, and those with a serious level of instruction had more elevated levels of mindfulness and practice. Low utilization of preventive measures was considerably related with youth (under 35 years of age). People with unfortunate practice should improve their general act of individual defensive estimates through custom fitted instruction programs and a spotlight by general wellbeing experts on supported consistence of defensive estimates by people in general.

ETHICAL CONSIDERATION

IRB approval is obtained from The Saudi Commission for Health Specialties, AL-Ahsa and Qatif Central hospital. All the information from the questionnaire are confidential. By answering the questionnaire, informed consent will be taken. Article titled "Knowledge, Perception, and Practices Toward Covid-19 Pandemic among General Public of India" [8] correspondent author Goruntla Narayana is contacted before adopting the questionnaire.

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ANNEX: DATA COLLECTION TOOL

Dear participants

The aim of this study is to evaluate the knowledge and the factors associated with community perception and practice toward personal protective measures during the period of COVID 19 in Dammam & Qatif areas in KSA.

Approval for participation

By answering the questionnaire, agreement to voluntarily participate in this research project will be taken. All the information from the questionnaire will be kept confidential. You may stop answering the

questionnaire at any time if you desire.

It takes about 7 minutes to complete this questionnaire.

LIST OF ABBREVIATIONS

WHO: World Health Organization.

COVID-19: Coronavirus disease 2019.

RNA: Ribonucleic acid.

SARS: Severe Acute Respiratory Syndrome.

KSA: Kingdom of Saudi Arabia.