



## ASSESSMENT OF THE KNOWLEDGE OF THE RISK PERCEPTIONS ATTITUDE ABOUT THE VACCINATION AGAINST COVID-19 AND COMMUNICATION PRACTICES OF VACCINATE ABOUT COVID-19 AMONG CHILDREN'S SAUDI POPULATION

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### Abstract:

**Background:** people and Children's infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) have been increasing dramatically. COVID-19 precaution measures are essential for highly susceptible groups. However, it was not known previously to what extent chronic disease patients were perceived to know about the efficacy of prevention measures. Novel coronavirus-2019 is a highly infectious disease that caused a global pandemic around the world. Saudi Arabia is one of the countries that initiated early vaccination programs despite the global challenges concerning the availability of COVID-19 vaccines.

Massive vaccination campaigns have been undertaken in the country; however, negative perception and hesitancy toward vaccines may exist which could reduce public response to vaccination especially the children. Further, studies evaluating the current perception and attitude toward COVID-19 vaccines are scarce especially the children. People's and Children's perceptions of pandemic-associated risk are key factors contributing to increased public participation in disease preventive measures.

**Aim of the study:** To assessment of the knowledge of The Risk Perceptions Attitude About The Vaccination Against Covid-19 and communication practices of vaccinate about Covid-19 among Children's Saudi in Makkah Al-Mokarramah , Saudi Arabia 2022.

**Method:** Cross sectional study, was utilized in the present study among secondary school children and conducted from January to April 2022. conducted among Saudi Arabia primary health care center and secondary school children in Makkah Al-Mokarramah 2022. Our total participants were (200).

**Results:** Regarding Attitude of the participant toward symptoms of the Vaccinate against COVID-19 Show that is a significant correlation in attitude were p-value =0.001 and  $\chi^2$  63.64, the majority of participant in weak attitude were (57.64%) followed by average were (32.0%), regarding the practices Show that is a significant correlation in practices were p-value =0.001 and  $\chi^2$  85.72.

**Conclusion:** During the COVID-19 pandemic, communications designed to promote the adoption of preventive behaviors should focus on increasing the perception of seriousness. Health education programs that are tailored to various socio demographic categories, to improve public awareness, perceptions, and attitudes, are vital for increasing the adoption of outbreak preventive measures.

**Keywords:** Assessment, knowledge, Risk, Perceptions, Attitude ,Vaccination, Covid-19, practices, children, Makkah, Saudi Arabia.

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## Introduction

The coronavirus disease 2019 (COVID-19) outbreak, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), appears to have originated in Wuhan, China, in December 2019 [1]. Subsequently, it has spread dramatically, both inside and outside of China [2], and has grown to become an exceptional, global, public health problem [3].

The symptoms of COVID-19 infection include fatigue, cough, fever, sore throat, and myalgia. In severe cases, it can cause pneumonia, respiratory failure, cardiac arrest, and death [4]. However, it is estimated that in some studies, 30% and up to 70% of patients may be infected with the virus without showing symptoms of illness [5, 6]. Diagnostic testing in symptomatic patients is a nasal swab polymerase chain reaction and chest X-ray can show signs of viral pneumonia or pleural effusion. Many patients will have shortness of breath and may need an electrocardiogram to evaluate for cardiac injury or other causes of shortness of breathing[7]. COVID-19 treatment is largely supportive. Most treatments can be done at home. This includes rest, adequate fluid intake, and incentive spirometer or breathing exercises. Quarantining or isolating at home to prevent spread is of the utmost importance[8].

Symptomatic management and supportive interventions can be used such as antipyretics, oxygen administration, vitamins, minerals, and supplements, and antibacterial drug administration [9]. Severe and critical cases may need Intensive Care Unit admission, high flow oxygen administration, mechanical ventilation, convalescent plasma administration, and glucocorticoid therapy[10].

The COVID-19 outbreak is a worldwide traumatic event, creating a unique and unprecedented change in health care systems[11]. Therefore, nursing care should focus on limiting the exposure and spread of the virus. Control practices are used to provide safe, quality supportive care and education[12]. Nurses' interventions include history taking, triage, sample collection, administration of drugs as prescribed for symptomatic management such as antipyretic for fever, antibiotics for associated bacterial infection, oxygen administration to sustain  $SpO_2 > 90\%$  [13, 14]. Vaccine hesitancy, which is defined as a delay in acceptance or refusal of vaccines despite availability, is reported as a major threat to the effectiveness of vaccination programs [15,16] The phenomenon of vaccine

hesitancy is not novel. Hesitancy towards vaccination was reported since the introduction of the immunization concept by Jenner in the 1800s in Europe against smallpox [17]. Concerns about vaccine hesitancy are growing worldwide [18]. More recently, a report issued by the World Health Organization (WHO) has listed vaccine hesitancy as one of the top ten threats to global health [19]. This conclusion was achieved after a noticeable reduction in the global immunization rates for the measles, mumps, and rubella vaccines, which fell to 85% compared to the required immunization target (95%), resulting in several measles outbreaks around the globe [20]. Anti-vaccination activists against COVID-19 vaccines have mediated the spread of misinformation through multiple channels which may have had a substantial impact on vaccine acceptance [21,22]. Governments and public health sectors must be prepared to address hesitancy and build confidence in vaccination, so immunization would be accepted when implementation is needed. Several factors can affect the public acceptance of pandemic vaccines including, risk perception of the disease, trust in health care systems, past vaccination and general populations' knowledge about vaccine safety and efficacy, perception of vaccine safety and efficacy, and recommendations from healthcare personnel [23].

## Literature review:

Studies in Hong Kong revealed that those with higher levels of education were more likely to undertake precautionary behaviors to defend against SARS [24] and avian influenza [23], including frequent hand washing, respiratory hygiene, mask-wearing, the proper use of utensils, and hand washing after touching contaminated surfaces.

More educated individuals in Australia also reported a higher intention to wear face masks during pandemic influenza events [25]

El-Zoghby et al. [26], in their study in Egypt, reported that higher educational levels were associated with higher awareness, which can increase participation in preventive measures and precautionary practices in cases of suspected infection, limiting their feelings of stress. Abdelhafiz et al. [27] demonstrated that individuals with university-level or higher educations had drastically greater awareness mean scores regarding COVID- 19 compared with participants with lower levels of education.[24]

Participants' willingness to perform preventive measures against COVID-19, in the current study, was primarily driven by a feeling of responsibility toward their own health, followed by the desire to prevent coronavirus transmission to other people, and the feeling that coronavirus can be serious. The perception of personal infection risk and the perceived seriousness of the health-related consequences have both been linked to engagement with disease-preventive behaviors. [28] Because COVID-19 is spread relatively rapidly by direct human to human contact, fighting this disease has been more challenging and has required governments to inform the public of the risks and necessary precautions for protecting themselves and others. However, the feeling of personal responsibility was evidenced in the Arab culture. [25]

On July 2020 a Cross-Sectional Study in Indonesia was directed to survey perceptions attitude about symptoms of the Vaccinate against COVID-19 and practices of Vaccinate about COVID-19 among adult awareness about acceptance of a COVID-19 attitude about symptoms and practices of Vaccinate about COVID-19 in Southeast Asia. They found that among 1,359 respondents, 93.3% of respondents (1,268/1,359) might want to be vaccinated for a 95% successful vaccine, but this acceptance diminished to 67.0% (911/1,359) for a vaccine with half viability. For a 95% compelling vaccine, being a healthcare worker and having a higher seen danger of COVID-19 disease were related with higher acceptance, changed chances proportion (aOR): 2.01; 95%CI: 1.01, 4.00 and an OR: 2.21; 95%CI: 1.07, 4.59, separately; compared to civil servants, being resigned was related with less acceptance, (aOR: 0.15; 95%CI: 0.04, 0.63). For a 50% compelling vaccine, being a medical care specialist was likewise connected with more noteworthy acceptance, aOR: 1.57; 95%CI: 1.12, 2.20. They inferred that acceptance of a COVID-19 immunization was profoundly affected by the pattern viability of the vaccine. Preparing the general population to accept a vaccine with relatively low effectiveness may be difficult.[29] Wibawa (2021) Vaccines are the main public health measure and best methodology to shield the populace from COVID-19, since SARS-CoV-2 is profoundly infectious infection and influences populaces broadly and universally. The opposition for COVID-19 antibody creation and advancement against the spread and cataclysmic impacts of the sickness is continuous [30].

## Rationale

The COVID-19 pandemic continues to ravage the world, with KSA being significantly affected. A vaccine affords the best hope for a permanent solution to controlling the pandemic. Several COVID-19 vaccines like AstraZeneca, Sputnik V, and Pfizer BioNTech have been rolled out and in use. Nonetheless, to be efficacious, a vaccine must be accepted and used by a large majority of the population. In KSA, however, barely one per cent of the general population has been inoculated owing to vaccine hesitancy. While vaccines are accessible, especially in developing countries, there is also the issue of acceptability by the general population. This study, therefore, aims To assessment of the knowledge of The Risk Perceptions Attitude About The Vaccination Against Covid-19 and communication practices of vaccinate about Covid-19 among Children's Saudi population in Makkah Al-Mokarramah , Saudi Arabia2022. Although education on COVID-19 has been rife, especially on traditional media – television, radio, and print but point to non-adherence .

## Aim of the Study

Assessment of the knowledge of The Risk Perceptions Attitude About The Vaccination Against Covid-19 and communication practices of vaccinate about Covid-19 among Children's Saudi in Makkah Al-Mokarramah , Saudi Arabia2022

## Objectives:

Assessment of the knowledge of The Risk Perceptions Attitude About The Vaccination Against Covid-19 and communication practices of vaccinate about Covid-19 among Children's Saudi in Makkah Al-Mokarramah , Saudi Arabia2022

## SUBJECTS AND METHODS

### Study design:

This cross-sectional survey has been conducted among Children's in the city of Makkah Al-Mukarramah. The study carried for 4 month, from the 1st till the 25 the from January to April 2022, among Children's Saudi attend to the secondary school in Makkah, participants aged between 30 and above 60 years old, the study investigators will share the survey link in social media (Twitter, Whats App, Telegram channel and in Secondary Schools) and through emails to their primary contacts

### Study setting / study area:

A study participant has been recruited on Makkah Al-mukarramh including Secondary Schools under

supervision of directorate of Health Affairs of Makkah Al-Mukarramah in Saudi Arabia. The study has been carried out in the city of Makkah Al-Mokarramah, Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. The most important cities in Saudi Arabia . It is the holy city for all Muslims, and is located in the western region. It is located in the western area in Kingdom of Saudi Arabia .Contains a population around 2.578 million.

#### **Study population:**

The study has been conducted among student in secondary schools in the schools in the Makkah Al-Mokarramah at Saudi Arabia.

#### **Selection criteria:**

##### **Inclusion Criteria :**

- All Saudi student who are more than 30years of age. A study participant has been recruited from Makkah Al-Mukarramah and they got vaccinated.

##### **Exclusion criteria:**

- Saudi younger than 30 years
- Participants who did not consent to participate in the study, and/or did not answer the questions of the study.
- Student with language barriers.
- Saudi younger than 30 years

#### **Study Sample:**

The sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%, Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is () of adult Saudi Population attending in PHC and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been (200). Computer generated simple random sampling technique was used to select the study participants.

#### **Sampling technique:**

Systematic random sampling technique is adopted. By using systematic sampling random as dividing the total students by the required sample size; (200)

#### **Data collection methods:**

The self-administered questionnaire is designed based on previous studies and frameworks to assess the knowledge of attitude and practices about symptoms of the Vaccinate against COVID-19 among students Saudi Population.

The questionnaire was developed in English and was then translated into Arabic. The questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take 10 min to complete.

To collect the information, a set of questions were constructed and developed.

The questionnaire consisted of two main sections; the first section focuses on Socio demographic and background information such as age, education level, outcome and gender of the participants.

Attitude about signs and Symptoms of the Vaccinate Against COVID-19 .

Practices of Vaccinate about COVID-19 among students Saudi Population.

#### **A Pilot study**

Was carried out at the questions were first pre-tested and were revised and finalized after it was pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. This study has been conducted and all suggestions taken into consideration.

#### **Data analysis**

The Statistical Package for Social Sciences (SPSS) software version 24.0 has been used for data entry and analysis. Descriptive statistics (e.g., number, percentage) and analytic statistics using test for the association and the difference between two categorical variables were applied. A p-value  $\leq 0.05$  has been considered statistically significant.

#### **Ethical consideration:**

- Permission from family medicine program was obtained.
- Permission from the regional Research and Ethical Committee was be given to conduct our study.
- All the subjects has been participate voluntarily in the study.
- Privacy of information and confidentiality has been maintained.
- Full explanation about the study and its purpose was carried out to obtain their participation.



**Budget:** Self-funded

**Results:**

**Table 1 distribution of demographic characteristics of the research. (n=200)**

	N	%
<b>Age</b>		
<30	36	18
30-40	44	22
40-50	46	23
50-60	32	16
Above 60	42	21
<b>Gender</b>		
Male	76	38
Female	124	62
<b>Nationality</b>		
Saudi	130	65
Non-Saudi	70	35
<b>Number of children</b>		
<3	84	42
>3	116	58
<b>level of education</b>		
Primary/ Intermediate	44	22
Secondary school	70	35
University	78	39
Postgraduate Studies	8	4

**Table 1** shows that most of the participants (23.0%) were in the age group 40-50 years, the majority of them were female (62.0%) while male(38.0%), also regarding the nationality most of participants Saudi were(62.0%), regarding the

Number of children most of participants >3 were(58.0%), regarding level of education the majority of participant are University education were(39.0%)

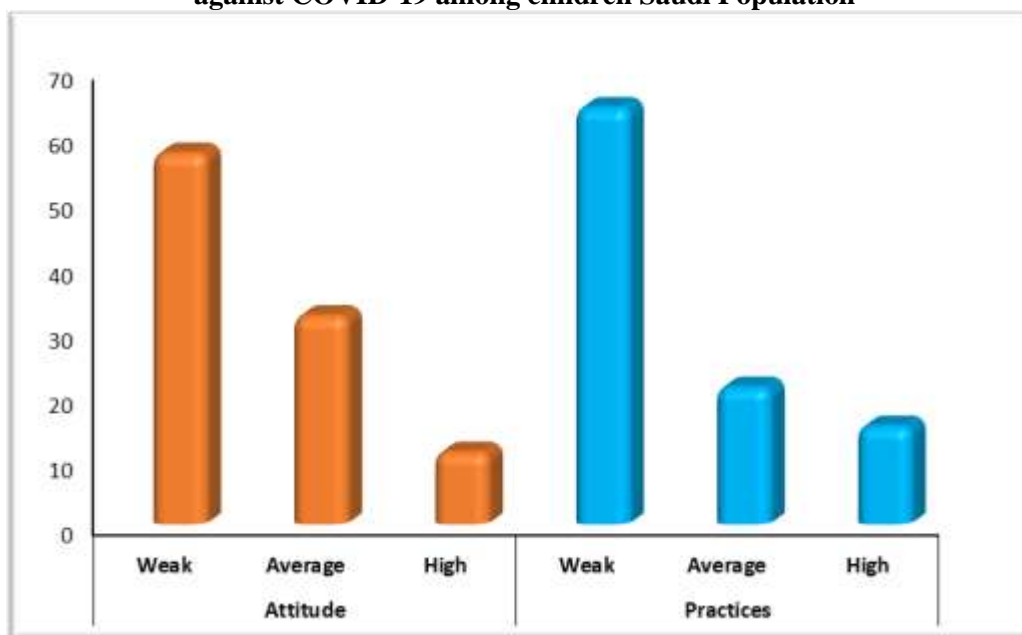
**Table 2 Distribution of the perceptions attitude about symptoms of the Vaccinate against COVID-19 among adult Saudi Population**

		N	%	Chi-square	
				X <sup>2</sup>	P-value
<b>Attitude</b>	<b>Weak</b>	114	57	63.64	<0.001*
	<b>Average</b>	64	32		
	<b>High</b>	22	11		
<b>Practices</b>	<b>Weak</b>	128	64	85.72	<0.001*
	<b>Average</b>	42	21		
	<b>High</b>	30	15		

Table 2 and figure(1) Regarding Attitude of the participant toward symptoms of the Vaccinate against COVID-19 Show that is a significant correlation in attitude were p-value =0.001 and X<sup>2</sup> 63.64, the majority of participant in weak attitude

were(57.64%) followed by average were(32.0%), regarding the practices Show that is a significant correlation in practices were p-value =0.001 and X<sup>2</sup> 85.72, the majority of participant in weak practise were(64.0%) followed by average were(21.0%).

**Figure 1 Distribution of the perceptions attitude and practices about symptoms of the Vaccinate against COVID-19 among children Saudi Population**



**Table 3 Distribution the relation of socio-demographic data (Age, gender, nationality, Number of children, level of education and region) and Attitude about the Vaccinate against COVID-19 among children Saudi Population**

Demographic data		N	Attitude		F or T	ANOVA or T-test	
			Mean	± SD		Test value	P-value
Age	<30	36	9.636	± 0.634	F	24.189	<0.001*
	30-40	44	11.656	± 2.751			
	40-50	46	17.624	± 5.777			
	50-60	32	20.984	± 5.419			
	Above 60	42	21.169	± 6.563			
Gender	Male	76	15.361	± 5.515	T	0.367	0.713
	Female	124	15.671	± 5.955			
Nationality	Saudi	130	14.217	± 5.333	T	2.81	0.0054
	Non-Saudi	70	16.534	± 5.964			
Number of children	<3	84	13.855	± 5.455	T	3.749	0.0002
	>3	116	16.885	± 5.771			
level of education	Primary/ Intermediate	44	11.982	± 6.726	F	31.211	<0.001*
	Secondary school	70	13.272	± 5.134			
	University	78	18.399	± 4.193			
	Postgraduate Studies	8	22.519	± 0.333			

Table 3 Regarding age, results show a significant relation between the attitude and age were  $F=24.189$  and  $P\text{-value}=0.001$ , increase(above 60 years) the mean +SD were  $(21.169\pm 6.563)$ , regarding gender show no significant relation between the attitude and gender were  $T=-0.367$  and  $P\text{-value}=0.713$ , increase(female), the mean +SD were  $(15.671\pm 5.955)$ .

Regarding nationality show no significant relation between the attitude and nationality were  $T=2.81$  and  $P\text{-value}=0.0045$ , increase(non-Saudi) the mean +SD were  $(16.534\pm 5.964)$ . Regarding Number of children show a significant relation between the attitude and Number of children were  $T=3.749$  and  $P\text{-value}=0.0002$ , increase(>3), the mean +SD were  $(16.885\pm 5.771)$ , regarding level of education show a significant relation between the attitude and level of education were  $F=31.211$  and  $P\text{-value}=0.001$ , increase(Postgraduate Studies), the mean +SD were  $(22.519\pm 0.333)$ .

**Table 4 Distribution the relation of socio-demographic data (Age, gender, nationality, Number of children, level of education and region) and practices about the Vaccinate against COVID-19 among children Saudi Population**

		N	Practices		F or T	ANOVA or T-test		
			Mean	±		SD	Test value	P-value
Age	<30	36	3.470	±	0.293	F	19.548	<0.001*
	30-40	44	4.013	±	0.542			
	40-50	46	4.131	±	0.664			
	50-60	32	4.525	±	0.298			
	Above 60	42	5.111	±	0.851			
Gender	Male	76	4.123	±	0.515	T	0.15	0.8812
	Female	124	4.136	±	0.641			
Nationality	Saudi	130	3.946	±	0.582	T	3.693	0.003*
	Non-Saudi	70	4.266	±	0.589			
Number of children	<3	84	3.999	±	0.611	T	2.776	0.006
	>3	116	4.234	±	0.576			
level of education	Primary/ Intermediate	44	3.416	±	0.624	F	12.3644	<0.001*
	Secondary school	70	3.820	±	0.522			
	University	78	4.702	±	0.318			
	Postgraduate Studies	8	4.653	±	0.206			

Table 4 show regarding age, results show a significant relation between the practices and age were  $F=19.548$  and  $P\text{-value}=0.001$ , increase(above 60 years) the mean +SD were  $(5.111\pm 0.851)$ , regarding gender show no significant relation between the practices and gender were  $T=0.158$  and  $P\text{-value}=0.8812$ , increase(female), the mean +SD were  $(4.136\pm 0.641)$ , regarding nationality show a significant relation between the practices and nationality were  $T=3.693$  and  $P\text{-value}=0.003$ , increase(non-Saudi) the mean +SD  $(4.266\pm 0.589)$ .

Regarding Number of children show no significant relation between the practices and Number of children were  $T=-2.776$  and  $P\text{-value}=0.006$ , increase(>3), the mean +SD were  $(4.234\pm 0.576)$ , regarding level of education show a significant relation between the practices and level of education were  $F=12.3644$  and  $P\text{-value}=0.001$ , increase(University), the mean +SD were  $(4.702\pm 0.318)$ .

### Discussion

The coronavirus disease is a highly infectious disease that has caused a global pandemic and poses a significant threat to public health. The purpose of this study was to assessment of the knowledge of The Risk Perceptions Attitude About The Vaccination Against Covid-19 and communication practices of vaccinate about Covid-19 among Children's Saudi in Makkah Al-Mokarramah , Saudi Arabia 2022, characteristics of the target population that most of the participants (23.0%) were in the age group 40-50 years, the majority of them were female (62.0%) while

male(38.0%), also regarding the nationality most of participants Saudi were(62.0%), regarding the Number of children most of participants >3 were(58.0%), regarding level of education the majority of participant are University education were(39.0%) (See Table 1)

This finding is similar to [31] who stated that the mean age of the respondents was 40-50 years. This age emphasizes the importance of delivering educational programs on pandemic numbers in order to avoid infection spread and enhance the quality of life.

Since the initial outbreak of COVID-19 disease in China, it has spread widely to various countries. According to the MOH update on the 20th of April 2020, the number of COVID-19 cases raised to 10,484 in Saudi Arabia. Many studies have reported the importance of awareness, perceptions of attitude and practice about symptoms of the Vaccinate against COVID-19 society to reduce the spreading rate during epidemics and pandemics [32]. Similarly, lack of awareness contributes to undesirable perceptions of attitudes and practice, about symptoms of the Vaccinate against COVID-19 which leads to negative impacts on infection-control [33]. Therefore, in this study, the awareness about the risk perceptions attitude about symptoms of the Vaccinate against COVID-19 among children Saudi Population. In this study, we found a significant relation between attitude, indicating that the weak the level of vaccines was reflected in their attitude. The same was also true for the correlation between attitude and practice. Data from this study indicated weak general knowledge level of COVID-19 (see table 2,3)



During the COVID-19 outbreak, a similar the awareness about the risk perceptions attitude about symptoms of the Vaccinate against COVID-19 among children Saudi Population . Was detected in Riyadh and Al-Jouf . [34]A similar level of awareness was detected among health care providers in UAE , Vietnam and Uganda [35], also my study is similar to another study the vaccine, and COVID-19 vaccines can cause side effects, most of which are mild or moderate and go away within a few days on their own. As shown in the results of clinical trials, more serious or long-lasting side effects are possible. Vaccines are continually monitored to detect adverse events.[32] Reported side effects of COVID-19 vaccines have mostly been mild to moderate and have lasted no longer than few days. Typical side effects include pain at the injection site, fever, fatigue, headache, muscle pain, chills and diarrhea. The chances of any of these side effects occurring after vaccination differ according to the specific vaccine. COVID-19 vaccines protect against the SARS-CoV-2 virus only, so it's still important to keep yourself healthy and well [24]. This is corroborated with [22] who recommended health education interventions to the vulnerable population at risk of contracting COVID-19 to have better knowledge and practices. awareness attitude participants had weak about Vaccinate against COVID-19 , like other studies [30]. On the other hand, other studies showed 57% had weak attitude about symptoms of Vaccinate against COVID-19 [35]

A study in China found that 48% of respondents postponed vaccination before confirmation of the safety of the vaccine, which shows their doubt regarding vaccine safety. Worryingly, the exceptionally rapid pace of vaccine development, the skepticism of certain groups of science and health experts might elevate doubt about COVID-19 vaccine [26]

The participants' the socio-demographic data (Age, gender, nationality, Number of children, level of education and region) and attitude and practices about symptoms of the Vaccinate against COVID-19 among children Saudi Population are significantly associated with participants' awareness, as evidenced by this study.

Participants' age, results show a significant relation between the attitude and age were P-value=0.001. Also nationality show a significant relation between the attitude and practices and nationality were P-value=0.002 and P-value=0.005. Participants in Saudi Arabia [13] In agreement with this study, other studies found similar findings, as awareness of the perceptions

and attitude towards symptoms of the Vaccinate against COVID-19 was significantly among level of education people with higher levels of education were more knowledgeable compared with other categories. Also, number of children was positively correlated with better awareness. [29], China, USA and Nepal [31]. Participants from business and governmental sectors have significantly shown the highest COVID-19 This finding is similar to other studies with higher KAP among number of children [27], had a higher level of positive attitudes towards COVID-19 as they cared for close family members, including young children [30].

## 6. Conclusion

It was concluded that the majority of the study sample had weak knowledge, and weak attitude towards the preventive measures of COVID-19. Meanwhile, there was incompetent practice toward preventive measures of COVID-19. In this current pandemic, people should follow the ministry of health instructions and avoid close contact with others, especially immune compromised individuals.

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