

## REVIEW ARTICLE

# Strategies for Preventive measure and awareness tools for COVID-19 and for adherent stress and anxiety

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### ABSTRACT

Single stranded RNA corona virus affecting people worldwide Coronaviruses belong to family of viruses responsible for illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19. COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. Following WHO recommended guidelines everyone in this region are wearing mask and avoiding hand shaking and close contact, its give a drastic situation and having a atmosphere of fear for all non-medical personal and day by day increasing no of death is also one of the factor which raised the anxiety and fear around them Main objective of the study was to estimate the attitude and behavior of medical and nonmedical, physicians students towards CoVID-2.

**Keywords:** Corona virus Disease 2019, Severe Acute Respiratory Syndrome (SARS), Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)

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### INTRODUCTION

Corona virus infectious disease (COVID -19) is newly emergent respiratory infection cause by RNA virus named 2019-nCoV also formally called SARS-CoV-2. Since 2001 or in less than twenty decade this is the worst outbreak of corona virus causing death of affected individual more frequently if the patient is simultaneously having some chronic disease or if he is immunocompromised. COVID-19 is pandemic affecting approximately 189053 ( Date 17 march 2020) people up till. [1]. The most common symptoms of COVID-19 are fever, tiredness, and dry cough. Some patients may have aches and pains, nasal congestion, runny nose, sore throat or diarrhea. These symptoms are usually mild and begin gradually. Some people become infected but don't develop any symptoms and don't feel unwell. Most people (about 80%) recover from the disease without needing special treatment. Around 1 out of every 6 people who gets COVID-19 becomes seriously ill and develops difficulty breathing Older people, and those with underlying medical problems like high blood pressure, heart problems or diabetes, are more likely to develop serious illness. People with fever, cough and difficulty breathing should seek medical attention [2]

There are seven known human coronaviruses (HCoVs) have been recognized, From these Seven HCoVs four corona virus named 229E, OC43, NL63 and HKU1 are relatively low virulence respiratory pathogen causing 15 to 16 percent Flu like symptoms and common cold., These two CV 229E and OC43 are identified in 1960s in two patients suffered from Common cold and primary affect the nose, sinuses and

throat. The CV 229 and NL63 are alpha corona virus where as CV 229e is beta corona virus subgroups and given name corona because of their surface spikes resemblance with crown. Other three HCoVs, strain having various fatality rate are SARS-CoV, SARS-CoV2 and MERS-CoV.[3]

1. Severe acute respiratory syndrome is caused by subgroup of coronavirus named as (SARS-CoV),
2. Middle East respiratory syndrome virus or named as MERS-CoV
- 3 Severe acute respiratory syndrome coronavirus 2 given name to virus is SARS-CoV-2

In 2012 a patient from pneumonia and renal failure is died in Saudi Arabia, MERS-CoV is isolated from him and diagnose to be infected by one of the Corona strain known as Middle East respiratory syndrome coronavirus (MERS-CoV) [4]. According to WHO its Case Fatality rate was 34.4 % identified at that time cause 2494 reported cases and 858 deaths from 27 various countries In Jeddah and Riyadh large healthcare-associated outbreaks of MERS-CoV infection occur in 2014 in spring shows higher R0 in Jeddah (3.5-6.7) than in Riyadh (2.0-2.8) [5]. A total of 1743 MERS cases has been reported in October 2016 in which 1393 from KSA, 80 from UAE, 186 from South Korea, are recognized The majority of patients in other countries had a history of travelled to Middle east prior to the onset MERS [5].

During 2003 -2004 highly contagious SAR-CoV , another novel adherent of the coronavirus family was introduced producing severe respiratory illness in human population: SARS-CoV, causing an aggressive Respiratory problem associated with pneumonia. The SARS is cause by corona virus sub group known as SAR-Co, etiological agent SAR-Co were first isolated from cats/ civets found in a sea food and local animal market of China.

Both of these two strains SARS-CoV and SARS-CoV-2 were first documented in Wuhan city of China. with estimated R0 of approximately 2.2 [6]. SARS-CoV is responsible 919 deaths out of total of 8422 probable SARS reported cases, shows case-fatality rate: 11%) .Since December 2019, the SARS-CoV-2 has infected 73,230 individuals and 1871 deaths has occurred, according to the State Council Information Office in Beijing, China [5]. As of this date, the number of confirmed cases is still increasing, as well as the number of deaths, although there are some increased level of recovered patients too [7].

Fatality rates of SAR-CoV is approximately 10%.The Coronaviruses belong to family of viruses responsible for illness in humans affecting their respiratory system responsible for death of 7511 people which has propelled our capacity of understanding the function of an organism at the cellular level, how organism reproduce and replicate, and pass their subjective genetic information or infection from one person to the other.[8] It is noted that SARS-CoV-2 is more stable on plastic and stainless steel than on copper and cardboard, and viable virus was detected up to 72 hours On copper, no viable SARS-CoV-2 was measured after 4 hours and no viable SARS-CoV-1 was measured after 8 hours. On cardboard, no viable SARS-CoV-2 was measured after 24 hours and no viable SARS-CoV-1 was measured after 8 hours [8, 9]. Some studies analyze that aerosol and surface stability of SARS-CoV-2 and compared it with SARS-CoV-1, and found close similarity and that it remain in the virus can remain viable and infectious in aerosols for hours and on surfaces up to days [10]. Within the context of past years, the primary focus of research has been on constructing methods of prevention for COVID-19 in order to determine the existence of particular traits in aerosol droplets and some precaution should be taken to human to human contact and try to prevent its spread as much as possible. Although screening is one of the reliable method but it is too difficult to screen every individual who are not exposed and are scared to involve in screening process. Because of unpredictable nature of this pandemic, no vaccine and no standard treatment and increase death rate makes everyone to get answers to their questions which are in their mind to protect themselves from this vulnerable infection and find out relief of their fear and anxiety [11]

### **SIGNIFICANCE OF THE STUDY**

The Present study aims to undertake Some preventive measure on the available evidence relating to spread of Corona virus among country to country infected people by Droplet, A brief overview about sign and symptoms and how contagious it is and may cause lethal respiratory illness Corona virus will be provided to clarify the technical and terminological context for further analysis of risk factors for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) By this study aimed to identify knowledge and practice and self-reported changes in attitude and behavior in response to the pandemic SAR-CoS 2 in the region of hail In kingdom of Saudi Arabia.

Uptill now 286 cases has been reported in Saudi Arabia in which 21 corona virus cases are reported in Riyadh , 4 cases were reported in Qatif and 3 cases were found in Makka region and other are reported in Alhafuf and Dhahran , Jeddah and Mayhel Assir. According to Ministry Of health in Saudi 17 recorded cases are coming from Pakistan , U.S and Italy and other countries.

Although strict protocol and preventive measure have been taken though out the Saudi Arabia , school and university were announced to remain closed for three week from 8 march till further announcement ,

Malls and all other small clinics are also remain closed to avoid unnecessary person to person interaction in order to prevent its transmission

Ministry give its recommendations and guideline to prevent Corona infection transmission and advise regular hand washing, and everyone should their face by covering mouth and nose by mask, thoroughly cooking meat and eggs and crowding should be avoided . According to guide line all personal working in health care or private sector should avoid close contact with anyone showing symptoms of flu like illness such as coughing ,weakness and fever of 100 C or above.

**METHODS**

A questionnaire was distributed and data is collected from the people coming to Hail university clinics and students of Hail university enrolled in medical and Nursing domain. During late feb to early April 2020. Data is also collected from the people of working in restaurant and public transportation workers. Cross-sectional Survey include students of pharmacy , management and medical students affiliated with Hail university , physician and nursing Staff , assistant professor/ professor , Restaurant workers and driver who are performing their job even in these situation wearing mask and gloves. The information about Corona Virus and their suggestion about lock down were collected by filling a standardized Questionnaire . The informed consent was taken from the study respondent or participants and confidentiality was assured. The data were collected on a convenient sample of 480 respondent during the period from 01-02-2020 to 30-04-2020. The results were analyzed by using SPSS-22.00 was used to analyze the data using descriptive statistics to evaluate their frequency distribution and percentage.

**RESULTS**

Of the 480 respondent that responded, 270 (55.1%) were males and 220 (44.8%) were females. The mean age of the students who participated in the study was 21.30 ± 1.92 years. Study was conducted in the Hail region of Saudi Arabia although no cases of corona has been recorded her but knowing the news about day by day increasing no of reported cases by the ministry ,people are very scared and 83 % of them know about the SARS-COV 2 and only 7.4% are still did not know about this new emergent COVS-2 .and these are the people belong to lower socio economic people and drivers who work temporary on daily wages in the city. Data was collected between ages 20 year to 60 years.

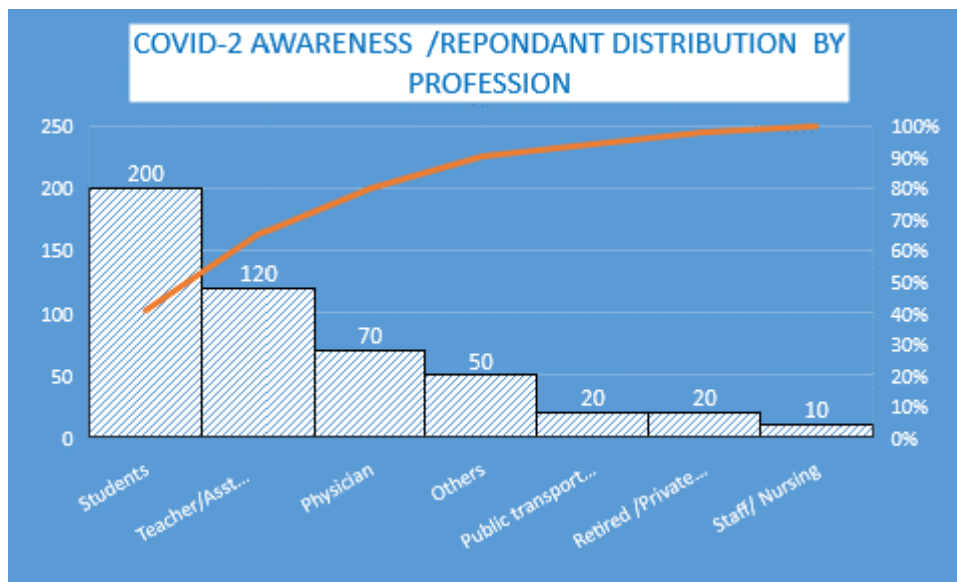
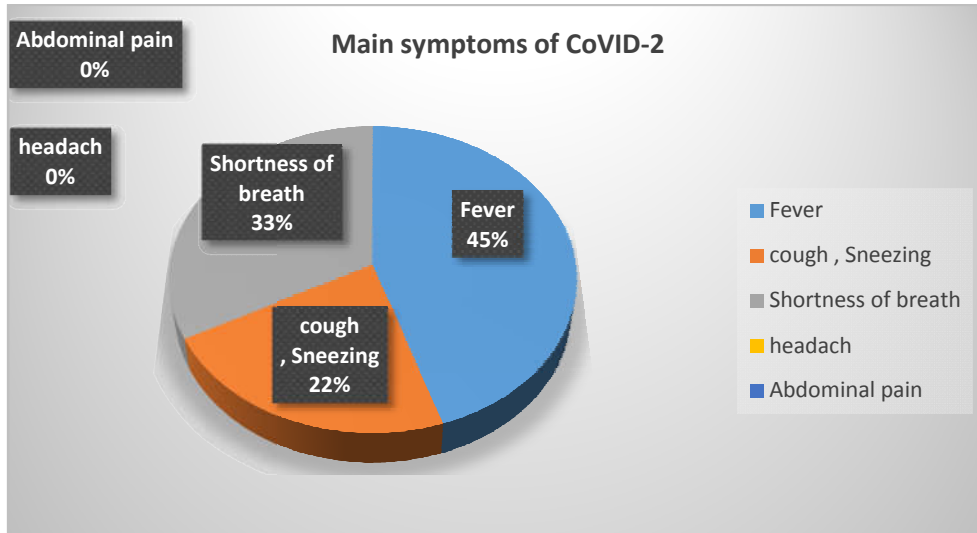
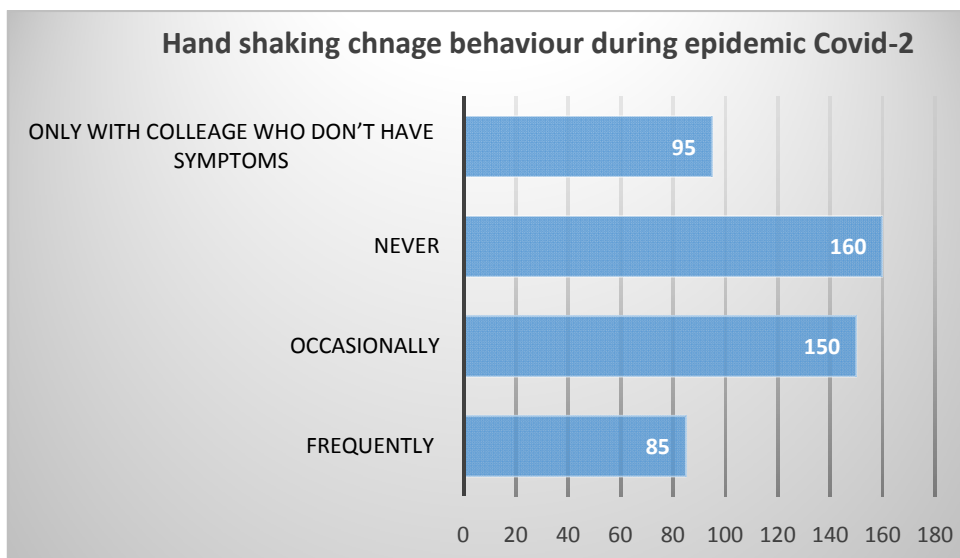


Figure 1; Showing responding participated in the crosssectional convenient study By Profession



Fig;2 Show Respondent behavior about main symptom/sign of COVID -2



Fig;3 Shows hand shaking with friends and colleagues during pandemic CoVID-2

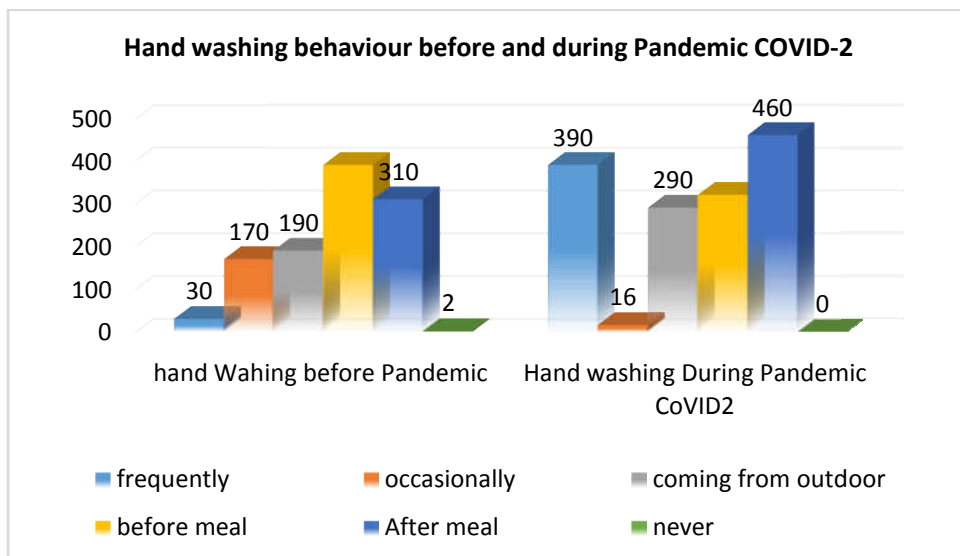


Figure 4; shows Change in behavior toward hand washing before and during the pandemic CoVID-2

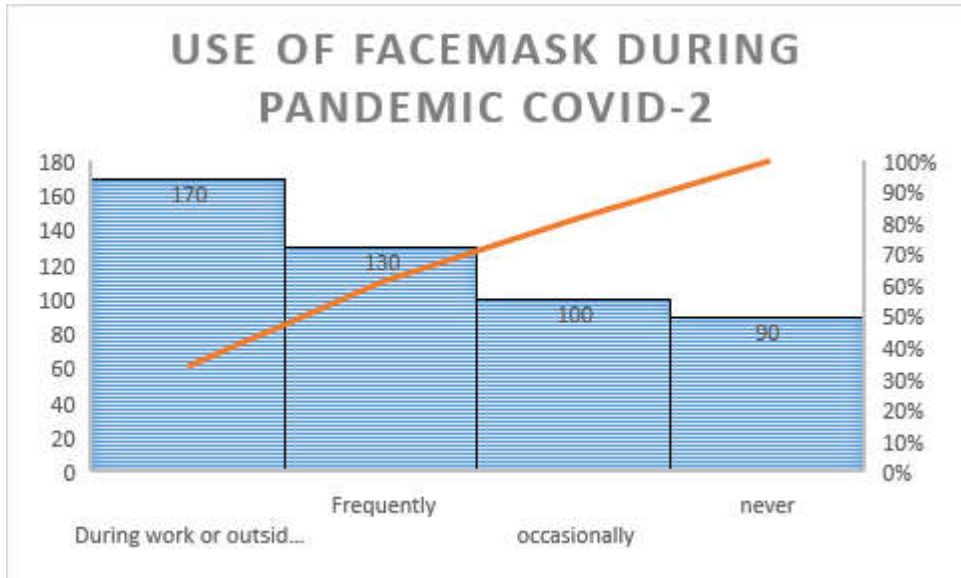


Figure 5; Showing use of face mask During Pandemic CoVID-2

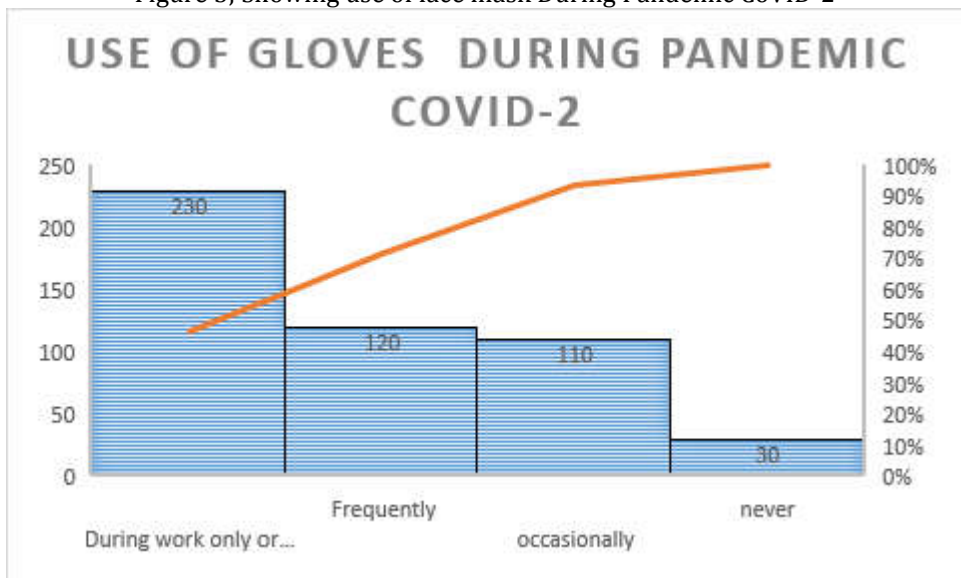


Figure 6 ; Showing respondent behavior towards use of Gloves During Pandemic CoVID-2

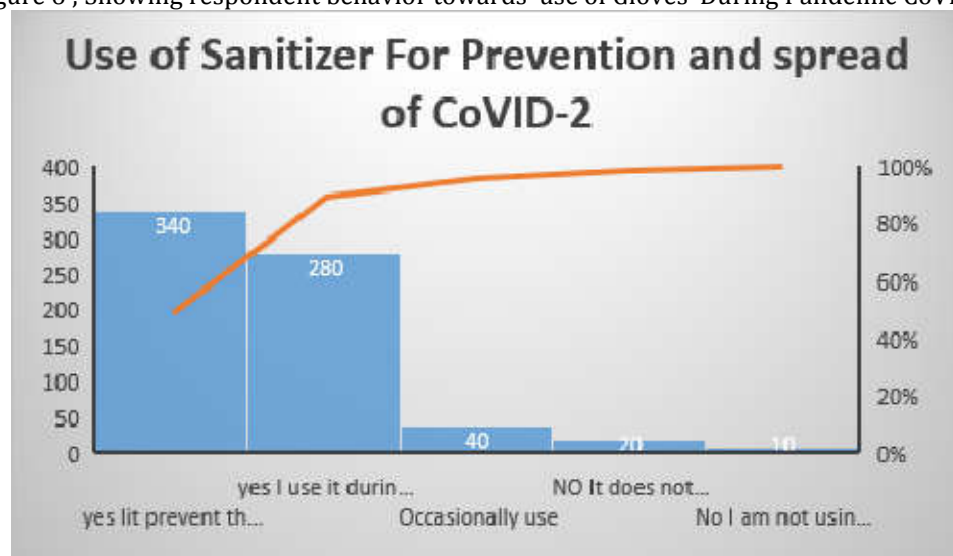


Figure 7; Showing use of Sanitizer For prevention from CoVID-2



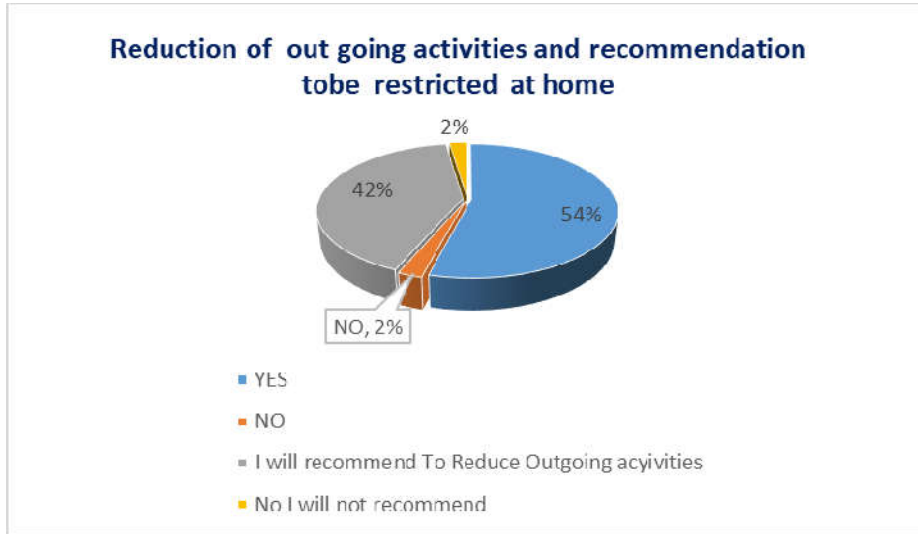


Figure 8; Reduction of outgoing activities and recommend to be restricted at home

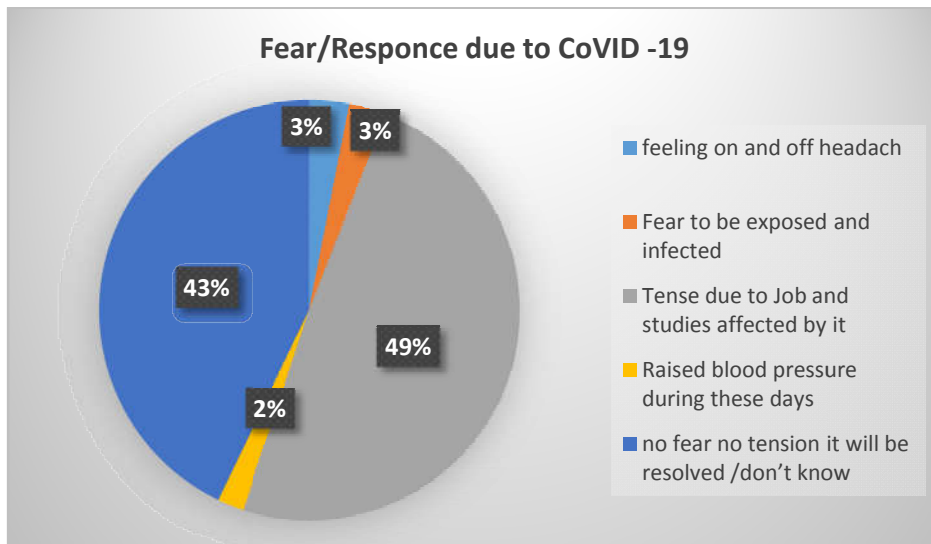


Figure ; 9 showing Respondent behavior toward COVID-2 fear , anxiety or Headache during these days.

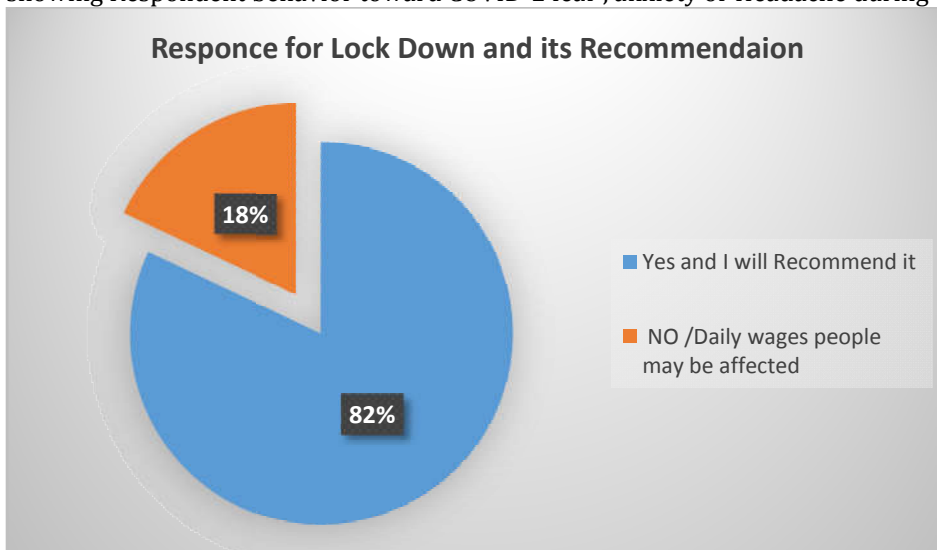


Figure 10; Respondent Recommendation for lock down during contagious disease or pandemic CoVID-2

Table 1 shows Self-reported behavior change in response to SARS OR CoVID2 PANDEMIC

Self reported change	N	Percent %
Improvement in hand washing	460	93.7%
Reduction in out door activities	390	79.5
Use of Hand Sanitizer /Disinfectant	380	77.5
Mask wearing	430	87.7
Improvement on Home ventilation	370	75.5
Use of Gloves	320	65.3
Use of medication/ Home remedy (Vitamin C , Vitamin A , Steam, Gargles )	260	53.1
Other measure	50	10.2
Recommendation for Blackboard or e Learning	480	97.8
Reduction in Hand shaking with colleague and friend	400	81.6
Recommend lock down	440	89.7

Table 1; Study shows remarkable change during the Pandemic COVID-2 as they prefer frequently hand washing and like to use of sanitizer, 77.5 % respond were use Disinfectant and sanitizer and recommend their use for prevention of contagious diseases . Individual also reduce the hand shaking with their friends and not following the custom of greeting just to avoid unexpected exposure with Corona virus 97% of study group is following the attitude of not shaking hand with their friends . Almost 53 % respondent were also taking some home remedy and recommend some antioxidant medication for the purpose of improve their immunity. Ministry of education has announced the closure of school and college so 97% individuals agree to continue blackboard or e learning during these days and preferable method instead of classroom teaching. Although 89.7% individual are agree for lock down of the city or country still 11 % respondent are worried and disagree for it.[12]

Most of respondents restricted to their home and avoid travelling to nearby areas even in market and other places and took action and cover their faces by mask ,and motivated for hand washing frequently. Self-reported wearing of mask and increase use of alcohol sanitizer by health care worker and students and social workers and shop keeper and guards due to notification by the ministry of Health Saudi Arabia. Self reported attitude behavior change among people here although no corona virus case is still noticed here in the Hail city. It may be due to the fear induced by the pandemic CoVID -2 related Death in other countries or may be due to health and hygiene promotion awareness activities by government and health care worker on social media and patients education when they come to seek medicine in local clinic.

## DISCUSSION

A Noval corona virus is the most lethal RNA virus among all known Corona virus discovered since 1960 till now 2020.[12] It have worst prognosis if patient have some risk factor or co morbid like Diabetes ,Renal failure or Asthma or Chronic obstructive lung disease along with late diagnosis of 2019 novel coronavirus disease in old age.[3,14].Although Exact mechanism is still obscure but highly contagious and seems to be spread by aerosol or droplet transmission from person to person contact so this is the reason people have changed the behavior of greeting and avoid face to face contact. [WHO; Corona outbreak 2020]. Novel corona virus mainly produce high fever and shortness of breath along with weakness and fatigue by affecting the trachea, Bronchi causing pneumonia and progressive bronchitis of varying age.[ 15,16]

In short duration of three month Corona virus spread throughout the world involving more than 150 countries. By 24:00 March, 21<sup>st</sup> 2020 total confirmed cases 292142 with total deaths of 12784 were documented in the various region of world including western pacific, European region, South east Asia and amerce and Africa region among them Madagascar . Angola and Uganda are the advanced enlisted territories. In Eastern Miditerian Asia region total confirmed case 151293 and deaths of 7426 cases were documented. [14] Isolation of disease individual from others is crucial as there is no treatment OR therapy to cure or preventive medication , no vaccine approved or recommended by WHO, Patient with intensive supportive care and symptomatic treatment mostly recover. Some protective measure are use of Face mask or covering face with bend elbow and frequently cleaning of Hand and avoid touching nose and face with contaminated hand.[17]. Coronavirus diseases (COVID-19) advice for the public. 2020.Distance of 3 feet should be maintained especially individual who do not have preexisting immunity as chances of develop more severe disease with worst prognosis[ 18]. People can catch COVID-19 from others who have the virus. The disease can spread from person to person through small droplets from the

nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets [19]. This is why it is important to stay more than 1 meter (3 feet) away from a person who is sick and help to prevent the disease Spread [20].

### PRECAUTIONS /RECOMMENDATION

1. Education of the public on diseases sign and symptoms and what measures to take on a personal basis to prevent spread of contagious disease like Proper hand wash technique; Short video and audio and printed material should be used , given or distributed to the small shops and will be viral by social networking[14.15]
2. Immunity has very important role, in order to education about some use of antioxidant elements and use of healthy diet awareness we will have some pictorial aid and will be posted by common way.
3. Awareness lectures about virus, its contagious nature, way of infection will be taught by audio visual short videos.
4. For children and under age of 12 year small video will be help full.
5. Close contact is avoid and also market and school are now temporary being closed but when after certain time when school and social places are allowed or reopen after a month then air sample should be recored to measure or check the presence of droplet of virus in the air
6. Clinician online availability for guidance of education about sign and symptoms of the disease

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