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# The Awareness of COVID-19 Pandemic among Educators at Amran University (a Quick Cross-Sectional Exploration Study) (*)

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# The Awareness of COVID-19 Pandemic among Educators at Amran University (a Cross-Sectional Exploration Study)

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## Abstract:

This study aimed to explore Amran University educators' awareness (AUEs'A) toward COVID-19. To fulfil this aim, an on line survey using a scale of COVID-19 (SCOVID-19) was used to collect data from a sample consisted of 87 participants selected from 206 of Amran University's educators and their assistants. Descriptive statistics, one-way ANOVA and multiple regression (MR) were applied to analyze data. Results of the study revealed that participants had a good awareness about this pandemic; since they had a very good knowledge and positive attitudes and practice towards it. Besides, results of t-test revealed that there are no differences between the mean scores of AUEs'A on the SCOVID-19 at ($\alpha$=0.05) referred to gender and specialization variables. In addition, results of one-way ANOVA revealed that there are no statically significant differences between and within groups' mean scores on the scales of knowledge, and practice referred to the participants' degree of education variable (DEV), while significant differences on the attitudes scale referred to this variable and the differences were in favor of professor degree. Also results revealed significant differences referred to the faculty variable (FV) only on the knowledge and attitudes scales and the differences were in favor of faculty of medicine. According to MR, results revealed a positive correlation between the variables. Also an effect of independent variables (IVs), i.e. knowledge and attitudes, on the dependent variable (DV), i.e. practice, at ($\alpha$=0.05) was revealed by these results. based on the results of the study, some recommendations were recommended.

**Key words:** Awareness, Corona Virus, Pandemic, Amran University

# وعي أعضاء هيئة التدريس في جامعة عمران بجائحة كرونا (دراسة استكشافية مقطعية)

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**الملخص:**

هدفت هذه الدراسة إلى استكشاف وعي أعضاء هيئة التدريس ومساعديهم حول جائحة كرونا. تم استخدام مقياس الوعي بجائحة كرونا لجمع البيانات من عينة تكونت من 87 مشاركًا، تم اختيارهم من بين 206 عضوًا من أعضاء هيئة تدريس في جامعة عمران. لغرض تحليل البيانات؛ تم تطبيق الإحصاء الوصفي، وتحليل التباين الأحادي، بالإضافة إلى تحليل الانحدار المتعدد. كشفت نتائج هذه الدراسة أن أفراد عينة الدراسة يمتلكون وعيا جيدًا حول جائحة كرونا؛ وذلك لمعرفتهم الجيدة، واتجاهاتهم الإيجابية، والممارسة الجيدة التي تمكنهم من الوقاية من هذه الجائحة. كما كشفت نتائج اختبار 't' عن عدم وجود فروق دالة إحصائيا بين متوسط درجات أفراد العينة على كافة محاور المقياس عند مستوى الدلالة ($\alpha$=0.05) تعزى إلى كل من متغير الجنس أو التخصص. ولم تظهر النتائج أية فروق ذات دلالة إحصائية بين وداخل متوسط درجات المجموعات على محور المعرفة والممارسة تعزى لمتغير الدرجة العلمية للمشاركين، بينما أظهرت فروقا ذات دلالة إحصائية على مقياس الاتجاهات تغزى لهذا المتغير، وكانت الفروق لصالح درجة الأستاذ. كما كشفت النتائج عن وجود فروق ذات دلالة إحصائية تعزى إلى متغير الكلية فقط في محوري المعرفة والاتجاهات، وكانت الفروق لصالح كلية الطب. وفيما يتعلق بنتائج تحليل الانحدار المتعدد، فقد كشفت الدراسة عن علاقة ارتباط موجبة بين المتغيرات. كما كشفت النتائج عن تأثيرٍ للمتغيرات المستقلة على المتغير التابع.

## Introduction:

Globally terror and stigma from the COVID-19 as a new pandemic is a tremendous effect. COVID-19 has invaded most of the world countries, it has been firstly known in Wuhan City, China (WHO, 2020; Roy, 2020; Zhou et al., 2020). Therefore, it is a vital to avoid such terror and stigma; since it can make people conceal their infection and not seek health care immediately. Thus, separating awareness of COVID-19 among people is important to protect people from such terror and stigma.

In fact, COVID-19 threat is not comparable with other health threats because of COVID-19 has not a vaccine for prevention, but it is not the case; if people have enough good awareness (1) about this new pandemic threat. The value of people's awareness about COVID-19 can be recognized from different angles: Hygienically, socio-economically, etc. WHO, 2020).

Hygienically, if people have a well knowledge, attitudes, and practice (KAP) towards COVID-19, they will safeguard themselves from some harmful outcomes that may be lead to a collectively death. For example, if people know well that incidence of Covid-19 leads to death, they will do their best (i.e. taking care of personal hygiene, staying away from crowded places etc.) to prevent such a risk. Therefore, spread of the awareness about COVID-19 among citizens is an indispensable to prevent COVID-19 outbreak.

Prevention of COVID-19's pandemic, therefore, is a great responsibility (i.e. social, theological, economical, ethical and ecological responsibility) for the human-being society over the world. For instance, Yemeni people, as Muslims, should be aware about the pandemic of COVID-19 hence teachings of the prophet Mohammed (PBUH) guide Muslims to be practically aware about any communicable pandemic disease. Since 14 centuries and 4 decades ago, the Prophet PBUH gave humanity vital instructions deals with such pandemic. He, PBUH, said: “If you hear of an

(1) "Awareness is the state or ability to perceive, to feel, or to be conscious of events, objects, or sensory patterns. In this level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. More broadly, it is the state or quality of being aware of something. In biological psychology, awareness is defined as a human's or an animal's perception and cognitive reaction to a condition or event." Source: https://www.definitions.net/definition/awareness (May 21, 2020).

outbreak of plague in a land, do not enter it; if the plague breaks out in a place while you are in it, do not leave that place." (2). Furthermore, Apostle of Allah, PBUH, guides us that "the cattle (sheep, cows, camels, etc.) suffering from a disease should not be mixed up with healthy cattle" which means "Do not put a patient with a healthy person)."(3)

Thus, without sufficient and effectiveness awareness toward COVID-19, people are universally run out and the world would lose lots of people which would be a cycle of socio-economic crisis rather than maximizing the morbidity and mortality that would increase the negative COVID-19's socio-economic impact (Buheji, 2018; Li et al., 2020).

In the context of Yemen, due to the rareness of studies that dealt with studying this pandemic during its prevalence, there is a necessity to study Yemeni people's awareness of COVID-19. Therefore, this study focused on exploring the awareness of Yemeni universities' educators, because if universities' educators have sufficient awareness of COVID-19, they will share such awareness with other people of the whole society. Specifically, this study aimed to explore Amran university's educators' awareness of COVID-19.

## Aim of the Study:

It is well-known that spread of the disease such COVID-19 among people is associated with different factors like overcrowding, absence of cleanness, and environmental pollution etc. Yet, it is compounded by the fact that some people have insufficient awareness (i.e. KAP) of infection prevention. Knowledge of a pandemic, such as COVID-19, can influence people attitudes and practice about it, and inappropriate attitudes and practice directly rise the risk of such pandemic. Thus, realizing people's awareness of COVID-19 helps to predict the outcomes of planned behavior. Moreover, educators at universities may have an impact in shaping and spreading the awareness of such pandemic in their societies. Therefore, this study aimed to explore AUEs'A of COVID-19 and it is restricted to only a

(2) Bukhari 5728, Book 76, Hadith 43, Vol. 7, Book 71,-Bukhari 5728: Sahih al-Sahih al2 Hadith 624, https://sunnah.com/bukhari/76/43 (May 21, 2020).
(3) http://www.iium.edu.my/deed/hadith/bukhari/071sbt.html (May 21, 2020).

sample of the educators at Amran University. Specifically, the aim of this study was to answer the following questions:

1- What is the level of AUEs'A towards COVID-19?
2- Are there any differences between the mean scores of AUEs'A on the COVID-19's scales at (α=0.05) can be referred to the participants' gender variable (GV)?
3- Are there any differences between the mean scores of AUEs'A on the COVID-19's scales at (α=0.05) can be referred to the participants' specialization variable (SV)?
4- Are there any differences between the mean scores of AUEs'A on the scales of COVID-19 at (α=0.05) can be referred to the participants' Educational Degree Variable (EDV)?
5- Are there any differences between the mean scores of AUEs'A on the scales of COVID-19 at (α=0.05) can be referred to the participants' Faculty Variable (FV)?
6- Is there any effect for the independent variables (IVs) of the study (i.e. knowledge, and attitudes scales) on its dependent practice variable (DPV) at (α=0.05)?

## Hypotheses:

To answer the 2nd, 3rd, 4th, 5th, and 6th questions, the null and alternative hypotheses were put forward as follows:

1. a. Null hypothesis (H0: μ=0): There are no statistically significant differences between the participants' mean scores on the COVID-19's scales can be referred to participants' GV at (α=0.05)?
1. b. Alternative hypothesis (H1: μ≠0): There are no statistically significant differences between the participants' mean scores on the COVID-19's scales can be referred to participants' GV at (α=0.05)?
2. a. Null hypothesis (H0: μ=0): There are no statistically significant differences between the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to participants' SV?
2. b. Alternative hypothesis (H1: μ≠0): There are no statistically significant differences between the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to participants' SV?
3. a. Null hypothesis (H0: μ=0): There are no statistically significant differences between and within the participants' mean scores on the

COVID-19's scales at (α=0.05) can be referred to the participants' major variable.

3. b. Alternative hypothesis (H1: μ≠0): There are no statistically significant differences between and within the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to the participants' major variable.
4. a. Null hypothesis (H0: μ=0): There are no statistically significant differences between and within the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to FV.
4. b. Alternative hypothesis (H1: μ≠0): There are no statistically significant differences between and within the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to FV.
5. a. Null hypothesis (H0: μ=0): There is an effect for the IVs of the study (i.e. knowledge, and attitudes scales) on its DV at (α=0.05)?
5. b. Alternative hypothesis (H1: μ≠0): there is no effect for the IVs of the study (i.e. knowledge, and attitudes scales) on its DV at (α=0.05)?

## Back Ground and Literature Review

Since more than one hundred years ago, scientists have repeatedly changed their collective mind over what viruses are; viruses were thought as poisons, as life forms, and biological chemicals (Villarreal, 2005). Due to the increasing virus numbers after entrance the host's cell as well as its chemical structure, virus is seen as a being in a gray area between living and nonliving thing, i.e. it disables to replicate on its own, whereas it can do so in its host's cells, (Villarreal, 2005). Recently, some researchers stated that virus can be described as chemistry set than as an organism entity, since it consists of nucleic acid, i.e. DNA, or RNA, (Villarreal, 2005).

Fundamentally, metabolism and self-sustaining replication are key basics of the life definition; based on such fundamentals, therefore, viruses are not alive (Brown & Bhella, 2016). Likewise, some scientists thought that possession of ribosomes as well as genes (e.g. viruses) play a vital role in replicating which is concerned as a key component of life definition (Brown & Bhella, 2016; Bhella, 2016).

Although a number of studies, over the world, aimed to explore people's awareness of COVID-19 have been carried out, it was rarely studied in the

context of Yemen. While some of those studies were performed on a sample selected from the health care workers (HCWs), other studies were carried out on a sample of students, or some peoples else (Zhou et al., 2020; Deguenon et al., 2020; Taghrir, et al., 2020; Peng et al., 2020). Besides, some studies used questionnaires for collecting data (Zhou et al., 2020; Taghrir, et al., 2020; Peng et al., 2020), while others used an interview for the same purpose (Zhou et al., 2020).

For instance, Zhou et al. (2020) aimed to find out the knowledge, practices, and attitudes of a sample selected from health care workers' (HCWs) on the subject of COVID-19. To this end, Zhou et al. conducted a questionnaire to the sample that was selected form HCWs across 10 hospitals in Henan, China. Results of this study revealed that 89% of the participants (i.e. HCWs) had a sufficient knowledge of COVID-19, more than 85% feared self-infection with it, and 89.7% followed correct practices concerning COVID-19.

In the context of Yemen, Alrubaiee et al. (2020) aimed to explore knowledge, attitudes, anxiety, and preventive behaviors among Yemeni HCPs towards COVID-19. To this end, researchers used a web-based-cross-sectional study using an on line Google forms questionnaire via different electronic devices (i.e. emails, WhatsApp, Telegram as well as other social media). Data were collected from 1244 of Yemeni healthcare providers. Results of this study revealed that most (69.60%) of the healthcare providers had an adequate knowledge level regarding COVID-19 pandemic, while (29.80%) of them had moderate knowledge, and only (0.60%) had inadequate knowledge about COVID-19 pandemic. The findings indicated that the majority (85.00%) of the respondents had a positive attitude, while (15.00%) of them had a negative attitude toward COVID-19 pandemic. However, although the vast majority of the respondents exhibited a high level of optimistic attitude toward COVID-19 pandemic, (75.1 %) of them still thought that they would not get the disease and almost (29.4%) willing to move to other places within the country to be safe during the pandemic. Also findings of study indicated that nearly above (50%) of the respondents had a moderate level of anxiety toward COVID-19 pandemic, whereas (27.70%) of them had a high level and (21.50%) had a low level of anxiety toward COVID-19 pandemic. Moreover, finding revealed that the vast

majority (87.60%) of respondents exhibited sufficient preventive behaviors, while only (12.40%) demonstrated low preventive behaviors.

## Methods and materials:

This study aimed to explore AUEs'A toward COVID-19. It was conducted as a cross exploration sectional study, i.e. a study involves studying groups of participants in different categories/ groups at the same point in time, (Ciogl, 2009).

### Sampling:

An online survey was conducted. A total of 87 Participants were selected from a population consisted of 206 (42%) educators who taught at Amran University, Yemen, as it is illustrates in Table (1).

**Table 1. Subjects' Distribution Among the Categories of the Study's Sample**

| Category | Sub- Category | N | % |
|---|---|---|---|
| Gender | Male | 72 | 83 |
| | Female | 15 | 17 |
| Level of Education | Prof. Dr. | 3 | 3 |
| | Associate Prof. | 11 | 13 |
| | Dr. | 42 | 48 |
| | Master | 21 | 13 |
| | Teaching Assistance | 13 | 15 |
| Specialization | Scientific | 29 | 33 |
| | Non- Scientific | 58 | 67 |
| Faculty | Education, Art, & Applied Sciences | 58 | 66.7 |
| | Administration | 12 | 13.8 |
| | Engineering | 10 | 11.5 |
| | Medicine | 7 | 0.8 |

### Instrumentation:

A scale, multiple choice questions, of COVID-19 (SCOVID-19) was developed by the 1st researcher as an instrument to fulfill this study. The scale included four demographic variables: gender, specialization, educational level, and faculty that participants belong to. The scale consisted of 38 items that covered three sub-scales, as it is illustrated in table 2.

**Table 2. Items' Distribution Among SCOVID-19' s Sub-scales**

| Sub-Scales | Items | Total | α |
|---|---|---|---|
| Knowledge | 1-12 | 12 | 0.22 |
| Attitudes | 13-24 | 12 | 0.47 |
| Practice | 25-38 | 14 | 0.69 |
| Total | | 38 | 0.60 |

Furthermore, validity and reliability of the scale were figured out. For validity, SCOVID-19 was sent to 10 Experts who were asked to evaluate its items in terms of the scale clarity and accuracy. Experts were also asked to be free in adding, removing, or modifying any part/s of the scale. Eighty percent of consensus among the experts were taken as a criterion to accept the item. As regard to the reliability, Cronbach alpha (α) was figured out and it found as (0.60) which is a suitable coefficient for such study (Taber, 2016), as it is showed in table 4.

**Table 3. α value for the entire scale and Its Sub-scales**

| Scale | A |
|---|---|
| Knowledge | 0.22 |
| Attitudes | 0.47 |
| Practice | 0.69 |
| Total | 0.60 |

## Data Analysis

To collect data of the study, participants were on line exposed to SCOVID-19. Then, the collected data were coded and analyzed using Excel and SPSS, version 23. Different statistical tools (e.g. frequencies, means, percentages, orders, standard deviation, t-test, ANOVA, ANCOVA, MANOVA, MANCOVA, etc.) are used to analyze the data of such study (Pallant, 2005). For this study, therefore, percentages, means, orders, standard deviation, t-test, ANOVA, Tukey-HSD, and multiple regression analysis were used for analyzing its data.

## Results and Discussion

To answer the 1st study's question, what is the level of AUEs'A towards COVID-19, descriptive statistics (i.e. percentages, means, standard deviation and orders) were used, as it is presented in the following Tables (i.e. table 4, 5, 6, and 7). As for the scales, results were found as showed in Table (4).

**Table 4 Means, St. Ds, Percentages, and Orders of COVID-19's scales**

| N | Order | Scale | Mean | St. D | % | Verbal Sign |
|---|---|---|---|---|---|---|
| 1 | 3 | Knowledge | 0.81 | 0.12 | 89.7 | Very Good |
| 2 | 2 | Attitudes | 2.80 | 0.27 | 97.7 | Accepting |
| 3 | 1 | Practice | 2.85 | 0.38 | 98.9 | Often |

Table (4) indicates that the scale of practice was ranked as the 1st order (i.e. 98.9%, mean= 2.85, and St, D= 0.38), the 2nd order was the scale of attitudes (i.e. 97.7%, mean= 0.80, and St, D= 0.27) and the scale of knowledge was the 3rd one (i.e. 89.7%, mean= 0.81, and St, D= 0.12). these results indicated that participants have a positive attitudes and practice towards COVID-19 as well as a very good knowledge about it.

Regarding to the 1st scale's items (i.e. items of the knowledge scale), percentage of each item were calculated. Table (5) shows the percentages of each item of this scale.

**Table 5. Percentages, and Orders of the Knowledge Scale's Items**

| N | Order | Item | % | Verbal Sign |
|---|---|---|---|---|
| **Knowledge on COVID-19** | | | | |
| 1 | 12 | Nature of COVID-19 in terms of living ability. | 55 | Acceptable |
| 2 | 5 | COVID-19 in terms of its belonging. | 86 | Very good |
| 3 | 6 | Covid-19 may be a major cause of Pulmonary failure | 86 | Very good |
| 4 | 3 | The first country in which the first case of COVID-19 was diagnosed. | 99 | Explant |
| 5 | 9 | The most appropriate test to diagnose COVID-19. | 72 | Good |
| 6 | 7 | The most appropriate treatment for Covid-19 infection. | 82 | Very good |
| 7 | 10 | Patients who are more infected by COVID-19. | 62 | Acceptable |
| 8 | 1 | Ways of infection with Covid-19. | 100 | Explant |
| 9 | 8 | Symptoms of infection with Covid-19. | 79 | Good |
| 10 | 11 | The most appropriate way to prevent infection with Covid-19. | 59 | Acceptable |
| 11 | 2 | The most likely place, in Yemen, to spread COVID-19. | 100 | Explant |
| 12 | 4 | Wearing masks' effectiveness on limiting Covid-19's spreading. | 89 | Very good |

As it is showed in table (5), percentages of the knowledge scale's items were ranged from (55% to 100%). the smallest percentage was found for the

1st item (55%), while the largest was (100%) for the items (8 and 11). On the other hand, percentages for the rest items were ranged from (62% to 99%). Seventy percent or more (70%≥) was taken as an indicator for accepting participants as a knowledgeable on COVID-19. Based on this criterion, only three items (1, 7 and 10) that their percentages were less than (70%). Therefore, it can be deduced that participants, in general, were knowledgeable about corona virus. This is may be due to their affiliation to the higher education, as educators at faculties of the university.

As for the 1st item (i.e. Nature of COVID-19 in terms of living ability), the lack of participants' knowledge about the nature of COVID-19 maybe due to the multiple theoretical perspectives of biological scientists towards the nature of viruses according to their ability to be alive. Virus is seen as a being in a gray area between living and nonliving thing, hence it disables to replicate on its own, whereas it can do so in its host's cells, (Villarreal, 2005; Brown & Bhella, 2016).

Regarding to the 7th item, participants showed a lack of knowledge related to the issue of patients who are more infected by COVID-19. This lack maybe refers to the differentiations between participants' specializations. For instance, participants from scientific fields, such as biology, and medicine fields, are supposed to be more knowledgeable about such issue because they are supposedly exposed to plentiful information about pathogens (e.g. viruses), diseases, and patients.

As for the 2nd scale's items (i.e. items of the attitudes scale), percentage of each item were calculated. Table (6) shows the percentages of each item of this scale.

**Table 6. Means, Standard Deviations, and Orders of the Attitudes Scale's Items**

| N | Order | Item | Mean | Stand. D | Verbal Sign |
|---|---|---|---|---|---|
| Attitudes towards COVID-19 | | | | | |
| 1 | 5 | I'm trusting that stat of Yemen will control the problem of COVID-19. | 2.99 | 0.79 | Agree |
| 2 | 9 | I am confident that the State of Yemen will overcome the problem of Covid-19. | 2.53 | 0.83 | Agree |
| 3 | 11 | I think the COVID-19 hype is not a real issue. | 2.15 | 0.69 | Disagree |
| 4 | 7 | I get anxious whenever I hear of COVID-19 infections. | 2.75 | 0.76 | Agree |
| 5 | 12 | I do not sleep with anxiety about catching Covid-19 the more I read and hear about it. | 1.76 | 0.66 | Disagree |
| 6 | 8 | My anxiety about COVID-19 is limited because it is not a source of death. | 2.70 | 0.72 | Agree |
| 7 | 6 | Most of those infected with COVID-19 in Yemen will recover. | 2.87 | 0.65 | Agree |
| 8 | 10 | Most of the deaths in Yemen suspected of having COVID-19 are not real. | 2.53 | 0.73 | Agree |
| 9 | 1 | Health facilities in Yemen lack the necessary equipment to diagnose COVID-19 infection. | 3.85 | 0.45 | Completely agree |
| 10 | 2 | I think that mass quarantine in Yemen is not working to reduce the incidence of COVID-19. | 3.24 | 0.73 | Agree |
| 11 | 3 | I will stay in my area, if a case of COVID-19 is announced. | 3.28 | 0.54 | Agree |
| 12 | 4 | I don't think that I will die from Covid-19. | 3.05 | 0.70 | Agree |

As it is showed in table (6), the responses of participants on the attitudes toward the pandemic COVID-19 were almost 'agree'. Only 2 (i.e. 3, 5) of 12 items (16.67%) of their responses was 'disagree'. Thus, it can be concluded that participants have positive attitudes towards the issue of protection people from infection of COVID-19.

Similarly, percentages of each item of the practice scale's items were figured out, as it is showed in table (7).

**Table 7. Means, Standard Deviations, and Orders of the Practice Scale's Items**

| N | Order | Item | Mean | Stand. D | Verbal Sign |
|---|---|---|---|---|---|
| **To protect myself from COVID-19 I:** | | | | | |
| 1 | 3 | avoid crowded places. | 3.184 | .601 | Often |
| 2 | 14 | avoid going to wedding parties. | 2.16 | .901 | Sometimes |
| 3 | 13 | wash my hands, many times by soap and water. | 2.34 | 0.74 | Often |
| 4 | 4 | use a medical mask. | 3.17 | 0.72 | Often |
| 5 | 2 | use medical gloves. | 3.30 | 0.85 | Always |
| 6 | 12 | cancel my meetings with friends. | 2.61 | 1.28 | Often |
| 7 | 1 | reduce eating out. | 3.38 | 1.06 | Always |
| 8 | 7 | cut back on visiting sports clubs. | 2.95 | 0.81 | Always |
| 9 | 9 | gave up chewing Khat habit. | 2.67 | 0.90 | Often |
| 10 | 6 | gave up smoking habit. | 3.00 | 0.68 | Often |
| 11 | 10 | reduce use of public transportation. | 2.66 | 0.76 | Often |
| 12 | 8 | do not touch disinfect tools and surfaces. | 2.78 | 0.83 | Often |
| 13 | 5 | eat foods that are strong for the immune system. | 3.02 | 0.80 | Often |
| 14 | 11 | talk about Covid-19. | 2.656 | 0.81 | Often |

As it is illustrated by table (7), all responses on the practicing's scale were 'often' except for (3) items (2,5, and 7). While the participants used word 'sometimes' as an answer for only the 2nd item, they used word 'always' for responding the 5th, and 7th items. The result which relates to the practice scale indicates that participants have a good behavior according to the issue of pandemic COVID-19.

To answer the 2nd question of the study (i.e. Are there any differences between the mean scores of AUEs'A on the COVID-19's scales at (α=0.05) can be referred to the participants' GV?), researchers tested the 1st null hypothesis (i.e. there are no statistically significant differences between the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to participants' gender?). Thus, independent sample t-test was used to test this hypothesis (please see table (8).

**Table 8. T-test for Independent Groups Comparison in Terms of GV**

| Scale | Variable | N | Mean | S. D | T | F | P |
|---|---|---|---|---|---|---|---|
| Knowledge | Male | 72 | 0.7963 | 0.12104 | -1.954 | 1.294 | 0.26 |
| | Female | 15 | .8611 | 0.09272 | -2.326 | | |
| Attitudes | Male | 72 | 2.7859 | 0.24218 | -0.997 | 3.095 | 0.08 |
| | Female | 15 | 2.8611 | 0.36279 | -0.768 | | |
| Practice | Male | 72 | 2.8661 | 0.38098 | 0.918 | .055 | 0.82 |
| | Female | 15 | 2.7667 | 0.38415 | 0.913 | | |

*** At (α=0.05)**

Result of t-test for independent groups comparison indicates that there are no differences between the mean scores of AUEs'A on the COVID-19's scales at (α=0.05) referred to the participants' GV, since the 'p value' for all scales was greater (i.e. 0.026, 0.008, and 0.082) than α=0.05. This result may be due to the affiliation of the stuff of educators and their assistants i.e. (both male and female), since all of them affiliate to the higher level of education as well as having an approximate level of knowledge, attitudes and practicality about the Corona pandemic. Thus, the 1st null hypothesis was accepted, while the alternative hypothesis for this hypothesis was rejected.

Similarly, to answer the 3rd question (i.e. there are no statistically significant differences between the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to participants' specialization?) independent sample t-test was used to test the 2nd null hypothesis (i.e. there are no statistically significant differences between the participants' mean scores on the COVID-19's scales at (α=0.05) can be referred to participants' specialization?). Table (9) illustrates the result of t-test of the 2nd hypothesis.

**Table 9. t-test for Independent Groups Comparison in Terms of SV**

| Scale | Variable | N | Mean | S. D | T | F | P |
|---|---|---|---|---|---|---|---|
| Knowledge | Scientific | 58 | 0.7974 | 0.10368 | -1.119 | 1.863 | 0.176 |
| | Literary | 29 | 0.8276 | 0.14422 | -1.004 | | |
| Attitudes | Scientific | 58 | 2.8477 | 0.25561 | 2.497 | 0.093 | 0.761 |
| | Literary | 29 | 2.7011 | 0.26307 | 2.473 | | |
| Practice | Scientific | 58 | 2.8264 | 0.36718 | -0.780 | 0.329 | 0.568 |
| | Literary | 29 | 2.8941 | 0.41060 | -0.751 | | |

*** At α (0.05)**

As it is showed in table (9), results of the independent sample t-test revealed that there are no statistically significant differences between the participants' mean scores on the COVID-19's scales (i.e. KAP) at (α=0.05) can be referred to the SV, hence the value of 'P' for all compressions was insignificant (i.e. it was more than the expected sign (α=0.05). Therefore, the 2nd null hypothesis was accepted, while the alternative hypothesis for this hypothesis was rejected.

As regard to the 4th question (i.e. are there any differences between and within groups' mean scores on the COVID-19's scales at (α=0.05) can be referred to the participants' DEV?), the 3rd null hypothesis, i.e. there are no statistically significant differences between and within the participants' mean scores on the COVID-19's scales at (α= 0.05) can be referred to the participants' DEV, was tested using One-way ANOVA, as it is showed in table (10).

**Table 10. One-way ANOVA between and within sample groups on the SCVOID-19 in Terms of EDV**

| Scale | | Sum of Squares | Mean Squares | Df | F | P |
|---|---|---|---|---|---|---|
| Knowledge | Between | 0.047 | 0.012 | 4 | 0.825 | 0.51 |
| | Within | 1.166 | 0.014 | 82 | | |
| | Total | 1.213 | | 86 | | |
| Attitudes | Between | 0.890 | 0.222 | 4 | 3.516 | 0.01 |
| | Within | 5.187 | 0.063 | 82 | | |
| | Total | 6.077 | | 86 | | |
| Practice | Between | 0.397 | 0.099 | 4 | 0.672 | 0.61 |
| | Within | 12.098 | 0.148 | 82 | | |
| | Total | 12.494 | | 86 | | |

*** At α (0.05)**

As it is showed in table (10), results of one-way ANOVA that related to the variable of participants' DEV revealed that there are no statically significant differences between and within groups' mean scores on the scales of knowledge, and practice that referred to this variable at (α=0.05); since the calculated significant, 'p', was greater (0.51, and 0.61) than expected one (α=0.05). Whereas, these results revealed that there are differences between and within groups referred to this variable at the same level of significant on the attitudes scale; since the calculated significant was lesser (0.01) than (α=0.05). Based on these results, the 3rd null hypothesis was partial rejected. So the part which deals with the attitudes scale of the alternative hypothesis was accepted (i.e. there is a statistically significant difference between and within the participants' mean scores on the attitudes scale at (α=0.05) referred to the participants' DEV.

In order to find out the direction of these difference, Tukey's HSD was used. Results of Tukey's HSD are exposed in table (11).

**Table 11. Results of Tukey's HSD in Terms of Participants' EDV**

| Prof. Dr. | Educational Degree | Mean | Means differences | Sta. Errors | P |
|---|---|---|---|---|---|
| Mean | Associate Prof. Dr. | 2.7576 | .54798* | 0.163 | 0.011 |
| 3.3056 | PhD | 2.7698 | .53571* | 0.150 | 0.005 |
| | Master | 2.8426 | .46296* | 0.156 | 0.033 |
| | Bachelor | 2.7500 | .55556* | 0.161 | 0.008 |

*** At α (0.05)**

As it is illustrated in table (11), the difference between and within the participants' mean scores on the attitudes scale at (α=0.05) was in favor of professor. This result can be interpreted that participants who have a professor degree spend more time for searching in different areas to widen their scientific awareness including the awareness on coronavirus pandemic.

Regarding to the 5th question (i.e. Are there any differences between the mean scores of AUEs'A on the scales of COVID-19 at (α=0.05) referred to the participants' FV?), the 4th null hypothesis, i.e. there are no statistically significant differences between and within the participants' mean scores on the COVID-19's scales at (α=0.05) referred to the FV was tested using One-way ANOVA. Table (12) showed the result of One-way ANOVA.

**Table 12. One-way ANOVA between and within sample groups on the SCVOID-19 in Terms of FV**

| Scale | | Sum of Squares | Mean Squares | df | F | P |
|---|---|---|---|---|---|---|
| Knowledge | Between | 0.188 | 0.063 | 3 | 5.064 | 0.003 |
| | Within | 1.025 | 0.012 | 83 | | |
| | Total | 1.213 | | 86 | | |
| Attitudes | Between | 0.866 | 0.289 | 3 | 4.599 | 0.005 |
| | Within | 5.211 | 0.063 | 83 | | |
| | Total | 6.077 | | 86 | | |
| Practice | Between | 0.503 | 0.168 | 3 | 1.160 | 0.330 |
| | Within | 11.99 | 0.144 | 83 | | |
| | Total | 12.49 | | 86 | | |

*** At α (0.05)**

Results of One-way ANOVA related to FV, revealed that there are statically significant differences between and within groups' mean scores on the scales of knowledge, and attitudes that referred to this variable at (α=0.05); since 'P' value was less (i.e. 0.003, and 0.005) than (α=0.05). On the other hand, results revealed that there are no differences between and within groups referred to this variable at the same level of significant (α= 0.05) on the practice scale; since the value of 'p' was greater (0.33) than (α=0.05). Based on these results, the 4th null hypothesis was partially accepted, while the alternative hypothesis was partially rejected.

Likewise, to find out the differences' direction of knowledge, and attitudes scales, also Tukey's HSD was used. Table (13) shows the Tukey's HSD in Terms of FV.

**Table 13. Results of Tukey's HSD in Terms of FV**

| Medicine | Faculty | Mean | Means differences | Sta. Errors | P |
|---|---|---|---|---|---|
| 3.3056 | Edu & Ap. S | 2.7698 | 0.53571* | 0.150 | 0.005 |
| | Admiration | 2.8426 | 0.46296* | 0.156 | 0.033 |
| | Engineering | 2.7500 | 0.55556* | 0.161 | 0.008 |

*** At α (0.05)**

As it is showed in table (13), results of HSD indicated that the both differences of knowledge, and attitudes scales in terms of FV were in favor of medicine faulty. This result can be referred that participants who belong to medicine faculty to the nature of the work of doctors who are more

familiar with the Corona pandemic, since they are supposed to be more knowledgeable about such issue because they are supposedly exposed to plentiful information about pathogens (e.g. viruses), diseases, and patients.

As regard the 6th question (i.e. is there is not any effect for the study's IVs (i.e. knowledge, and attitudes scales) on its dependent practice variable at (α=0.05), a multiple regression (MR) was run to predict this effect. Therefore, the 5th null hypothesis (i.e. there is no effect of participants' knowledge and attitudes on their practice towards COVID-19), hence the variables of knowledge and attitudes were considered as IVs, while their practice it considered as the dependent variable. Please see table (14).

**Table 14. Results of Multiple Regression**

| DV | IVs | R2 | F-value | F-sign | B | Beta | t-value | t-sign | VIF |
|---|---|---|---|---|---|---|---|---|---|
| Practice | K* | 0.97 | 2932.27 | 0.00 | 3.47 | 0.986 | 54.15 | 0.00* | 1 |
| | A | 0.97 | 3138.04 | 0.00 | 1.01 | 0.987 | 56.02 | 0.00* | 1 |

*** At α (0.05), K means 'Knowledge' and A means ' Attitudes'.**

Table (14) showed the results of MR. Results indicated that MR is suitable for exploring the effect IVs (knowledge and attitudes) have an effect on DV (i.e. practice) at (α=0.05); since the value of 'F' was high (2551.3) at (p=0.00) and the value of 'R2' interprets (97%) of the IVs' effect on the protection practice from COVID-19. Besides, results revealed a positive correlation between the variables; since the value of 't' was (50.510) at t-sign (0.00). Moreover, the results indicated that there is no problem deals with the linear multicity within the variables of the used module; since the value of VIF was one (i.e. that is less than 3).

## Conclusion and Recommendation

As the global threat of COVID-19 continues to emerge, it is critical to improve the awareness of people about this pandemic. It is well-known that spread of such pandemic among people is associated with different factors like overcrowding, absence of cleanness, environmental pollution and people awareness on COVID-19 pandemic. Yet, it is compounded by the fact that some people have insufficient awareness of this pandemic and the prevention of its infection.

Knowledge about COVID-19 pandemic can influence people attitudes and practice about it, and unsuitable attitudes and practice directly rise the

risk of such pandemic. Thus, this study was as an attempting to explore the AUEs'A of COVID-19. Therefore, an on line survey of educators' awareness on COVID-19 pandemic at Amran university was conducted to collect data of this study. Yet this study is restricted to only a sample of the educators at Amran University.

Results of this survey indicated that participants had a good awareness about COVID-19 pandemic. According to the results of t-test, it was revealed that there are no statically significant differences between the mean scores of AUEs'A on the COVID-19's scales at (α=0.05) referred to gender and specialization variables. In addition, results of one-way ANOVA revealed that there are no statically significant differences between and within groups' mean scores on the scales of knowledge, and practice referred to the participants' DEV, while significant differences on the scale of attitudes scale referred to this variable and the differences were in favor of professor degree. Also results revealed significant differences referred to FV only on the knowledge and attitudes scales and the differences were in favor of faculty of medicine. In relation to the results of MR, results revealed a positive correlation between the variables and there is an effect of IVs (i.e. knowledge and attitudes) on DV (i.e. practice) at (α=0.05).

As the awareness of people about COVID-19 pandemic is one of the most important factors that influence in prevent such pandemic, we strongly recommend that Amran's university should has a room in spreading awareness about this pandemic using the capabilities of its staff of educators and their assistants to fulfill such responsibility. In addition, we recommend that similar studies to assess the awareness of this pandemic on other samples from different populations should be conducted.

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## Conflicts of interest

There are no conflicts of interest were declared.

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