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المعهد العالي للعلوم والتقنية شحات

Higher Institute of Science and Technology - Cyrene

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الشروط العامة لضمان الموافقة على النشر:

- الاهتمام بأصالة المحتوى.
- التأكد من عدم نشر البحث في أي مجلة أخرى.
- التأكد من اتباع أخلاقيات البحث في الإعداد.

هـيـئـة تـحـريـر الـمـجـلـــة

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افتتاحية العدد الثاني

بسم اللّه الرحمن الرحيم

الحمد للّه رب العالمين، والصلاة والسلام على سيد المرسلين، سيدنا محمد وعلى آله وصحبه أجمعين.

يشرفنا و يسعدنا أن نضع بين أياديكم أعزاءنا القرّاء الكرام العدد الثاني من مجلة السلفيوم للعلوم والتقنية التي تصدر عن المعهد العالي للعلوم و التقنية شحات، سائلين اللّه تعالى أن ينفع بما فيه من بحوث علمية جاءت متنوعة بين تخصصات المجلة المتعددة، وأن تفتح هذه البحوث آفاقا للمعرفة والبحث العلمي، كما هو هدف هذه المجلة وشعارها، التي ما كان لها أن تصل إلى ما بلغت لولا جهود ثلة من الأساتذة الأفاضل، الذين أثروا المجلة بأبحاثهم، وإخوانهم الذين قاموا على مراجعتها وتقييمها، يضاف إلى هؤلاء جميعا كل من أسهم بجهد في الإعداد أو الإخراج ودعم ولو بكلمة طيبة، فلهم جميعا من المجلة وهيئة تحريرها فائق تقديرها، وعظيم امتنانها، وصادق وعدها بإذن اللّه بالاستمرار والتطوير، ما بقي تواصلهم ودام تعاونهم.

وما توفيقنا إلا باللّه عليه توكلنا وإليه ننيب.

واللّه ولي التوفيق

د.منصور سالم عبدالرواف

رئيس التحرير

أهداف المجلة

- تختص المجلة بنشر نتائج الأبحاث والدراسات والمقالات التي يقوم بها أو يشترك في إجرائها أعضاء هيئات التدريس والباحثون في الجامعات والمعاهد العلمية ومراكز البحوث وهيئات البحث العلمي في مجالات العلوم التكنولوجيا (والعلوم المرتبطة بها).
- التطوير المستمر في أساليب النشر والتحكيم والتبادل العلمي مع الجهات المحلية والخارجية
- المساهمة في رفع ترتيب المعهد العالي للعلوم والتقنية شحات بين الجامعات والمعاهد العليا في ليبيا.
- المنافسة مع المجلات العالمية المتخصصة واحتلال مكانة رفيعة بينها.

رسالة المجلة

- نشر الأبحاث العلمية وفق معايير منضبطة بما يحافظ على الأصالة، والمنهجية، والقيم العلمية، ويدعم الإبداع الفكري.
- التميز في تقديم البحوث ذات الأفكار المبتكرة والتي لم يسبق نشرها بمجلات علمية أخرى والمحكمة بواسطة نخبة من العلماء والمتخصصين والإسهام في إخراج بحوث علمية متميزة، وتتحقق رسالتنا من خلال الالتزام بالمعايير العالمية للتميزفي مجالات البحث العلمي.

رؤية المجلة

- الريادة العالمية والتميز في نشر البحوث الرائدة المبتكرة الأصيلة؛ لتكون خيار الباحثين الأول لنشر بحوثهم العلمية .
- توثيق ونشر الثقافة العلمية بين الباحثين والتواصل العلمي في مختلف مجالات العلوم التقنية.
- تشجيع قنوات الاتصال بين المختصين في شتي مجالات العلوم والمؤسسات الإنتاجية والتعليمية.
- الارتقاء بمستوى العلوم والأبحاث التطبيقية لخدمة المؤسسات الإنتاجية بليبيا وتطويرها باستحداث الأساليب والوسائل المستخدمة من خلال إصدارات المجلة.

قواعد النشر بالمجلة

- يتم تقديم البحوث المعدة وفقا لشروط المجلة بإرسالها الى البريد الإلكتروني الخاص بالمجلة التالي:
((SJST@ISTC.EDU.LY)) (نسخة الالكترونية واحدة ملف Word).
- تقبل المجلة البحوث العلمية الأصيلة ذات الأفكار المبتكرة والتي لم يسبق نشرها بمجلات أخرى او مؤتمرات وذلك للنشر باللغة الانجليزية مع ملخص باللغة العربية أو باللغة العربية مع ملخص باللغة الانجليزية.
- يمكن تقديم البحوث للنشر بالمجلة بعد إعدادها حسب قواعد كتابة البحث الخاصة بالمجلة.
- تنشر البحوث في المجلة حسب أسبقية ورودها وقبول المحكمين للبحث وإعدادها من قبل الباحثين ومراجعتها من قبل هيئة التحرير في أول عدد يصدر عقب انتهاء هذه الإجراءات.
- يرسل البحث بعد استلامه الى اثنين من المحكمين في ذات التخصص وتستعجل تقارير المحكمين بعد شهر من تاريخ إرسال البحث الى المحكم ويسند تحكيم البحث الى محكم أخر عند تأخر التقرير عن شهرين.
- يرفض نشر البحث إذا رفض المحكمين البحث أما إذا كان الرفض من محكم واحد فيرسل البحث لمحكم ثالث ويكون رأيه هو الفيصل.
- بعد قيام الباحث بإجراء التعديلات المطلوبة من قبل المحكمين يرسل البحث الى أحد أعضاء هيئة التحرير للمطابقة.
- يعرض البحث في صورته النهائية علي الباحث (الباحثين) قبل وضعه Online في موقع المجلة.
- يتم طلب دفع رسوم التحكيم من قبل الباحث وطلب صورة عملية التحويل بإرسالها الى البريد الإلكتروني الخاص بالمجلة.
- يتم إبلاغ الباحث ببريد الكتروني رسمي بإتمام عملية النشرفي حال إكمال كافة الإجراءات السابقة وإنجاز عملية النشر الفعلي في عدد المجلة و يحصل الباحث على نسخة إلكترونية من العدد الذي اشتمل على البحث المطلوب نشره.
- يجب أن يشتمل البحث على الأقسام الآتية: العنوان ، المؤلف(المؤلفون) ، الكلمات المفتاحية، الملخص (بلغة البحث) ، المقدمة ، طرق البحث ، النتائج و المناقشة و التوصيات، المراجع (يجب فصل النتائج عن المناقشة) ، وأخيرا ملخص باللغة العربية أو الإنجليزية (ليست اللغة المستخدمة لمتن البحث) و يستعمل برنامج Microsoft Office على ورق مقاس A4.

مواصفات تنسيق البحوث:

- يتم استخدام خط Times new Roman حجم 12 لمحتوى البحث واستخدام مسافة 1.25 بين أسطر النصوص، ويتم اعتماد خط 12 غامق اللون (Bold) للعناوين الرئيسية ، و10 لعناوين الجداول والرسومات، ويتم استخدام حجم خط 14 لعنوان الدراسة في الصفحة الرئيسية و12 لأسماء الباحثين علي أن تضبط الهوامش على مسافة 2.5 سم من جميع الاتجاهات.
- يتم كتابة أسماء الباحثين بالترتيب الطبيعي (الاسم الأول ثم الأب ثم اللقب) لكل منهم شاملة جهات عملهم و يحدد اسم الباحث المسئول (Corresponding Author) عن المراسلات بعلامة* ويذكر العنوان الذى يمكن مراسلته عليه وعنوان البريد الالكتروني.
- يجب أن لا يزيد عدد صفحات البحث عن 25 صفحة وفي حال زيادة عدد الصفحات عن المذكور فسيتم إضافة رسوم وفقا لحجم الزيادة مقارنة بعدد الصفحات المحددة في المجلة.
- يجب إرفاق ملخص مكون من 250-300 كلمة باللغتين العربية والإنجليزية، بالإضافة إلى ضرورة توفير ما لايقل عن 4 كلمات مفتاحية لمحتوى الملخص العربي والإنجليزي.

البحوث التي احتواها العدد الثاني

اولا: البحوث العربية:

واقع التمكين الإداري لدى القيادات الأكاديمية بجامعة عمر المختار من وجهة نظرهم

حسن عياد على، سليم عبدربه محمود، زكريا عبدالله العوكلي

تقييم الكفاءة الإنتاجية للدجاج البياض (هاي سكس براون) في منطقة سلوق بليبيا

محمد إدريس الشلماني، أنور ناجي الفوني، مجدي عبدالفراج خيرالله، حسين عبدالكريم امجاور

واقع تطبيق إدارة الجودة الشاملة في مدارس التعليم الأساسي ببلدية شحات

فرج عبدالرحيم فرج، ابراهيم عبدالحميد العشيبي، حسن رمضانالخضر

دراسة بعض المؤشرات الدموية والكيموحيوية المرافقة لمرضي الفشل الكلوي المزمن تحت الديلزه الدموية في منطقة مرزق

فوزية عبد اللطيف احمد، المهدي معتوق عبدالمولي، خالد رجب مختار

سلطان ثانيا: البحوث الانجليزية

Awareness of pharmacists in specific western areas of west Libya about the right administration time of antihypertensive medicines

Abdulla Faraj Almaedani, Zuhir Mussa Akrim, Giuma Haron Abdalmaula

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An observational study of side effects associated with COVID-19 vaccines among samples at El-Marj City

Rajab Saeid Mashathi Alsaliheen Ashour Lameen, Essa Ali Mussa Abdulgader

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Shear Strength Capacity of a 2-Span Continuous Reinforced Concrete T-beams Strengthened with Carbon Fiber Reinforced Polymer (CFRP) Sheets using the modified Khalifa & Nanni's Theoretical Method

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An observational study of side effects associated with COVID-19 vaccines among samples at El-Marj City

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An observational study of side effects associated with COVID-19 vaccines among samples at El-Marj City

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ABSTRACT

Background : Vaccines are one of the best interventions developed for eradicating COVID-19, saving millions of lives annually. Moreover, the best option remains an effective, safe vaccine without severe adverse reactions. The lack of effective and approved COVID-19 treatment has triggered a vaccine development race, with 259 COVID-19 vaccine projects underway from November 11, 2020. The rapid creation of vaccinations has increased the risk of vaccine safety issues.

Objective: This study aimed to evaluate the short-term side effects after receiving either Sinopharm (BBIBP-CorV) or Oxford-AstraZeneca (ChAdOx1 nCoV-19) vaccines in a sample of 18 years and older citizens and residents at El-Marj City.

Materials and methods: Cross-sectional survey-based study was carried out from 6 November 2021 to 8 January 2022. The Study units were a sample of 58 residents from El-Marj city who attended vaccination centers. Data collection: was by utilized a self-administered questionnaire.

Results: 42 of the study participants 72.4% experienced side effects due to the COVID-19 vaccines. Nearly 70.7 % reported side effects immediately on the first day of receiving the vaccine. The duration of the side effects lasted from one to three days for 77.6 % of the participants. In particular, local pain at the site of injection and fever were the most commonly reported side effects among our study participants (65.5% and 41%, respectively). Thirty-six percent of the participants reported headaches and 31% of them reported having fatigue. Muscle pain was common among the individuals of our study (31%). However, nausea and cough were less commonly reported by our study.

Conclusion: This study concluded that most of the participants reported local pain at the site of the injection fatigue, fever, and headache, and they are more common in those after the second dose of the vaccines. Moreover, only a few patients needed to see a doctor due to vaccines' side effects.

Key words: COVID-19; Vaccines; Sinopharm; Oxford-AstraZeneca; Side effects.

دراسة قائمة على الملاحظة للاثار الجانبية المرتبطة بلقاحات COVID19 في عينة بمدينة المرج

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الملخص

اللقاحات هي واحدة من أفضل التدخلات التي تم تطويرها للقضاء على كوفيد - 19 ، وإنقاذ ملايين الأرواح سنويًا. علاوة على ذلك ، يظل الخيار الأفضل هو لقاح فعال وآمن بدون اثار جانبية شديدة. أدى عدم وجود علاج فعال ومعتمد لـ كوفيد - 19 إلى بدء سباق تطوير اللقاح ، مع تنفيذ 259 مشروع لقاح كوفيد - 19 اعتبارًا من 11 نوفمبر 2020. وقد أدى التطوير السريع للقاحات إلى زيادة مخاطر مشكلات سلامة اللقاحات.
الهدف من الدراسة تقييم الآثار الجانبية قصيرة المدى بعد تلقي لقاحات سينو فارم و الاسترا زينيكا في عينة سكان مدينة المرج – ليبيا بشرط ان تكون اعمارهم من 18 عاما فاكثر.
المواد والطرق: أجريت الدراسة المسحية المقطعية في الفترة من 6 نوفمبر 2021 إلى 8 يناير 2022. كانت عناصر الدراسةعبارة عن عينة من 58 من سكان مدينة المرج الذين حضروا الى مراكز التطعيم. وتم جمع البيانات باستخدام استبيان تعبئية شخصية.
النتائج: اظهرت النتائج شكوى 42 من المشاركين في دراستنا 72.4٪ من آثار جانبية بسبب لقاحات كوفيد-19 . أبلغ ما يقرب من 70.7٪ عن آثار جانبية على الفور في اليوم الأول من تلقي اللقاح. استمرت مدة الآثار الجانبية من يوم إلى ثلاثة أيام لدى 77.6٪ من المشاركين. على وجه الخصوص ، كان الألم عند موضع الحقن و ارتفاع الحرارة أكثر الآثار الجانبية التي تم الإبلاغ عنها شيوعًا بين المشاركين في الدراسة (65.5٪ و 41٪ على التوالي). أفاد 36 %من المشاركين أنهم يعانون من الصداع و 31٪ منهم يعانون من التعب. كان ألم العضلات شائعًا بين الأفراد في دراستنا (31٪). ومع ذلك ، كان الغثيان والسعال أقل شيوعًا في دراستنا.
الخلاصة: خلصت هذه الدراسة إلى أن معظم المشاركين أبلغوا عن ألم موضعي في موقع الحقن،إرهاق وحمى وصداع، وهي أكثر شيوعًا من بعد الجرعة الثانية من اللقاحات. علاوة على ذلك، احتاج عدد قليل فقط من المرضى لرؤية الطبيب بسبب الآثار الجانبية للقاحات.

الكلمات المفتاحية: فيروس الكورونا- 19؛اللقاحات؛سينوفارم. أكسفوردأسترازينيكا؛ آثارجانبية.

1. Introduction

Severe Acute Respiratory Syndrome Coronaviruses (SARS-CoV-2), causing Coronavirus disease 2019 (COVID-19) has spread fast worldwide, resulting in various levels of illness (Habas, et al., 2020). On March 11, 2020, it was announced that SARS-CoV-2 is a worldwide pandemic, and it is with us to this day (Lai, et al., 2020). Although numerous therapeutic medications have been presented to resist COVID-19, they remain supportive and require more randomized control studies to determine their efficacy and potency (Trivedi, et al. 2020).Yet, as there is no approved antiviral treatment for COVID-19, several trials for vaccine development were immediately initiated with the hope to control this pandemic (Arashkia, et al., 2021). By the beginning of 2021, some international health authorities announced various vaccine candidates for emergency use authorization (EUA) (Ledford, et al., 2020).

Vaccines are one of the best interventions developed for eradicating COVID-19, saving millions of lives annually. Moreover, the best option remains an effective, safe vaccine without severe adverse reactions. The lack of effective and approved COVID-19 treatment has triggered a vaccine development race, with 259 COVID-19 vaccine projects underway from November 11, 2020. The rapid creation of vaccinations has increased the risk of vaccine safety issues (Haidere, et al., 2021).

Several candidate COVID-19 vaccines were developed from diverse platforms. One of these was the BBIBP-CorV vaccine (also known as the Sinopharm COVID-19 vaccine) which was made by the Chinese state-owned pharmaceutical business Sinopharm in China (Zhang, et al., 2021).

Sinopharm COVID-19 vaccine is an inactivated vaccine that introduces a dead copy of SARS-CoV-2 into the body by a two-dose schedule, with 14 or 21 days between the 2 doses. By inserting the vaccine dose intramuscularly, the dead antigens from the virus are employed to make antibodies that prepare the immune system for future attacks by the virus (Xia, et al., 2020).

The traditional inactivated whole-virus vaccines do not lead to clinical disease. In this technology, the inactivated viruses maintain their ability to replicate in vivo with mild or no symptoms (Forni, et al., 2021).

Phases 1 and 2 of the clinical trials for the Sinopharm COVID-19 vaccine were carried out in China over 1 trial for each phase. A total enrolment of 640 participants showed that the vaccine triggered a COVID-19 neutralizing antibody response with a low rate of adverse reactions. The most common side effects were pain at the site of injection and fever; however, these were mild and self-limiting and did not require treatment (Sharma , et al., 2020).

Another type of vaccine was, developed in the United Kingdom by Oxford University and British-Swedish Company AstraZeneca named as Oxford/AstraZeneca vaccine which uses viral vector vaccines for COVID-19 technology to protect against COVID-19. This type of vaccine uses an unrelated harmless virus (the viral vector) to deliver SARS-CoV-2 genetic material. When administered, a vaccinated person's cells use the genetic material to produce a specific viral protein, which is recognized by the immune system and triggers a response. This response builds immune memory, so the body can fight off the virus in the future (British Society for Immunology, 2021).

This study was aimed to evaluate short-term side effects after receiving Sinopharm (BBIBP-CorV) or Oxford-AstraZeneca (ChAdOx1 nCoV-19) vaccines in a sample of residents at EL-Marj City in Libya. It was also aimed to make a comparison between the appearances of side effects in both vaccines.

2. Methodology

2.1. Study Design: This study was a cross-sectional descriptive study

2.2. Study Place and Time:

This study was carried out on sample of residents from El-Marj city and was in the period from 6 November 2021 to 8 January 2022.

2.3. Sampling

The Sample was taken from 58 residents from El-Marj city who have been attending vaccination centres. The inclusion criterion was a person aged 18 or older, and he had been vaccinated with the COVID-19 vaccine.

2.4. Data collection

The study utilized a self-administered questionnaire that had been randomly delivered to individuals (aged ≥18 years) by the students from the high institute for medical sciences and techniques - El-Marj. The questionnaire was divided into two main sections. The first section was designed to collect general information about the participants such as gender, age, chronic diseases, and infection status with SARS-CoV-2. The second section focused on the COVID-19 vaccine-related data such as type of COVID-19 vaccine, the first or second doses, side effects that are commonly associated with the COVID-19 vaccine, timing, and duration of the side effects. In the side effects subsection, we have included the most common side effects which were reported in previous studies including pain at the sites of injections, fever, fatigue, headache, muscle pain, nausea, and cough. Doctors' visits after vaccination were also included in the questionnaire.

2.5. Data analysis

Microsoft Excel and SPSS version 21 were used to analyze data by means of tables and figures to explain the association and relationship between several variables in this study.

2.6. Ethical approval

The study did not require a review board approval because this study does not involve any risk to participants, also the participant's name is anonymous (no need to write the participant's name). AS well as, orally informed consent was obtained before participation in the study.

3. Results

3.1. Demographic characteristics

The demographic data of participants: 39 (67.2 %) were female, 19 (32.8%) male. As shown in table1. The mean age was 32.4 ±13.1 years. 31 (53.4%) were in the age period from 18 to 30 years, as shown in table 2. Where 34(58.6%) were single, 22 (37.9%) married, and 3.7% were betrothed as shown in table 3. According to nationality, the participants were 55 (94.8 %) Libyan, and 3(5.2 %) non-Libya as shown in table 4. According to the occupation of participants, 22(37.6%) were students, 9 (15.5 %) were teachers, 6 (10.3%) were housewives as shown in table 5.

Table (1) Distribution of the participants according to gender.

Gender of the participant.	Frequency	Percent	Valid Percent	Cumulative Percent
male	19	32.8	32.8	32.8
female	39	67.2	67.2	100.0
Total	58	100.0	100.0	

Table (2) Distribution of the participants according to age

The period age of the participants	Frequency	Percent	Valid Percent	Cumulative Percent
18-30 year	31	53.4	53.4	53.4
31-40 year	5	8.6	8.6	62.1
41-50 year	11	19.0	19.0	81.0
51-60 year	5	8.6	8.6	89.7

60 year and over	**6**	**10.3**	**10.3**	**100.0**
Total	**58**	**100.0**	**100.0**	

Table (3) Distribution of the participants according to marital state

The marital status of the participants	Frequency	Percent	Valid Percent	Cumulative Percent
single	**34**	**58.6**	**58.6**	**58.6**
marrid	**22**	**37.9**	**37.9**	**96.6**
Betrothed	**2**	**3.4**	**3.4**	**100.0**
Total	**58**	**100.0**	**100.0**	

Table (4) Distribution of the participants according to nationality

The nationality of participants	Frequency	Percent	Valid Percent	Cumulative Percent
Libyan	**55**	**94.8**	**94.8**	**94.8**
non-Libyan	**3**	**5.2**	**5.2**	**100.0**
Total	**58**	**100.0**	**100.0**	

Table (5) Distribution of the participants according to occupation

The occupation of participants	Frequency	Percent	Valid Percent	Cumulative Percent
student	**22**	**37.9**	**37.9**	**37.9**
teacher	**9**	**15.5**	**15.5**	**53.4**
employee	**5**	**8.6**	**8.6**	**62.1**
engineer	**2**	**3.4**	**3.4**	**65.5**
doctor	**1**	**1.7**	**1.7**	**67.2**
housewife	**6**	**10.3**	**10.3**	**77.6**
lab technician	**1**	**1.7**	**1.7**	**79.3**
military	**1**	**1.7**	**1.7**	**81.0**
ther's no work	**4**	**6.9**	**6.9**	**87.9**
journalistic	**1**	**1.7**	**1.7**	**89.7**
dentist	**1**	**1.7**	**1.7**	**91.4**
sociologist	**1**	**1.7**	**1.7**	**93.1**
agricultural guide	**1**	**1.7**	**1.7**	**94.8**
free business	**2**	**3.4**	**3.4**	**98.3**
pharmacist	**1**	**1.7**	**1.7**	**100.0**
Total	**58**	**100.0**	**100.0**	

3.2. COVID-19 vaccines-related characteristics in the study

About fourteen percent of the study participants have been previously diagnosed with COVID-19. According to the type of COVID-19 vaccine, Most of the participants received the Sinopharm COVID-19 vaccine (56.9 %), followed by Oxford-AstraZeneca (34.5%) and the Sputnik vaccine (8.6%). about 23 (39.7 %) of the participants have received two doses from the vaccine. About 86 % of the participants denied having a history of any chronic diseases.27.6 % (16) of the study subjects in our study have reported side effects due to the COVID-19 vaccine

Table (6). History of Past COVID-19 infection among the study group

Past COVID-19 INFECTION	Frequency	Percent	Valid Percent	Cumulative Percent
yes	8	13.8	13.8	13.8
no	50	86.2	86.2	100.0
Total	58	100.0	100.0	

Table (7). Types of the vaccines among the study group

Types of the vaccines	Frequency	Percent	Valid Percent	Cumulative Percent
Sinopharm COVID-19 vaccine	33	56.9	56.9	56.9
AstraZeneca COVID-19 vaccine	20	34.5	34.5	91.4
Sputnik vaccine	5	8.6	8.6	100.0
Total	58	100.0	100.0	

Table (8). Number of COVID-19 vaccine doses taken

Number of doses taken	Frequency	Percent	Valid Percent	Cumulative Percent
one dose	23	39.7	39.7	39.7
two doses	35	60.3	60.3	100.0
Total	58	100.0	100.0	

Table (9). Chronic diseases among the study group

Suffering from chronic diseases	Frequency	Percent	Valid Percent	Cumulative Percent
yes	8	13.8	13.8	13.8
no	50	86.2	86.2	100.0
Total	58	100.0	100.0	

3.3. Participants Who Reported Side Effects

Forty-two of our study participants 72.4% experienced side effects due to the COVID-19 vaccines. Nearly 70.7 % reported side effects immediately on the day of receiving the vaccine, while 12.1 % and 5.2% of the participants started to notice such side effects on the second and third-day post-vaccination, respectively as in figure (1). The duration of the side effects lasted from

one to three days for 77.6 % of the participants, and from four to five days for 6.9 % of them, with only 3.4% reported extended duration of the side effects (more than 5 days), as it explained in figure (2). In particular, local pain at the site of injection and fever were the most commonly reported side effects among our study participants (65.5% and 41%, respectively) (fig 3& 4). Thirty-six percent of the participants reported headaches and 31% of them reported having fatigue(fig 5& 6). Muscle pain was common among the individuals of our study (31%). However, nausea and cough were less commonly reported by our study

Table (10).Distribution of the participants according to appearing of side effects

	Appearing of side effects	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	42	72.4	72.4	72.4
	no	16	27.6	27.6	100.0
	Total	58	100.0	100.0	

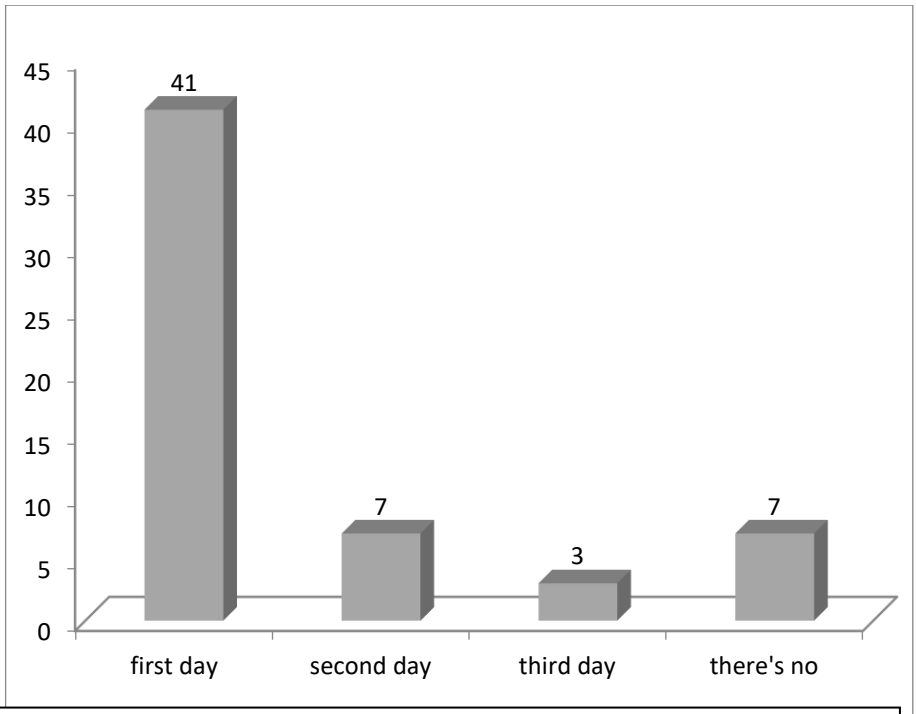

Fig.1 Distribution of the participants according to starting of the side effects

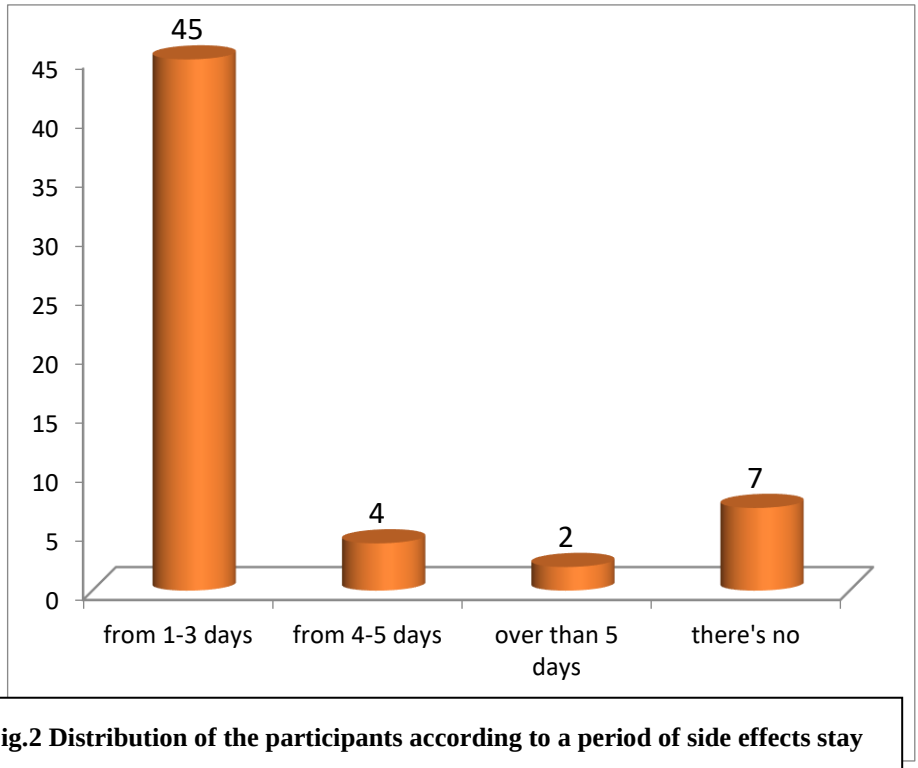

Fig.2 Distribution of the participants according to a period of side effects stay

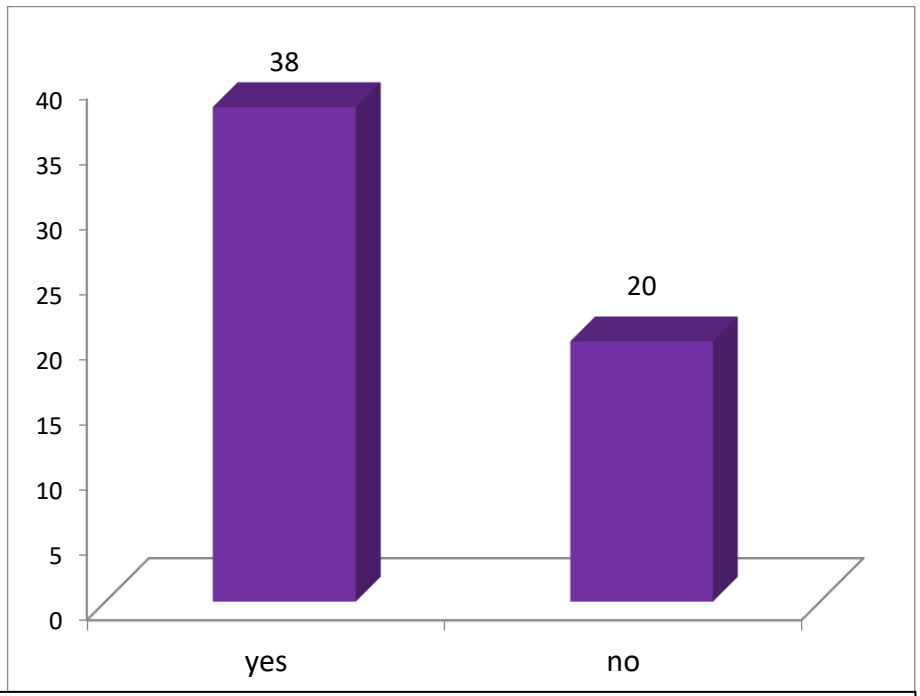

Fig.3. Distribution of the participants according to the suffering from Local pain

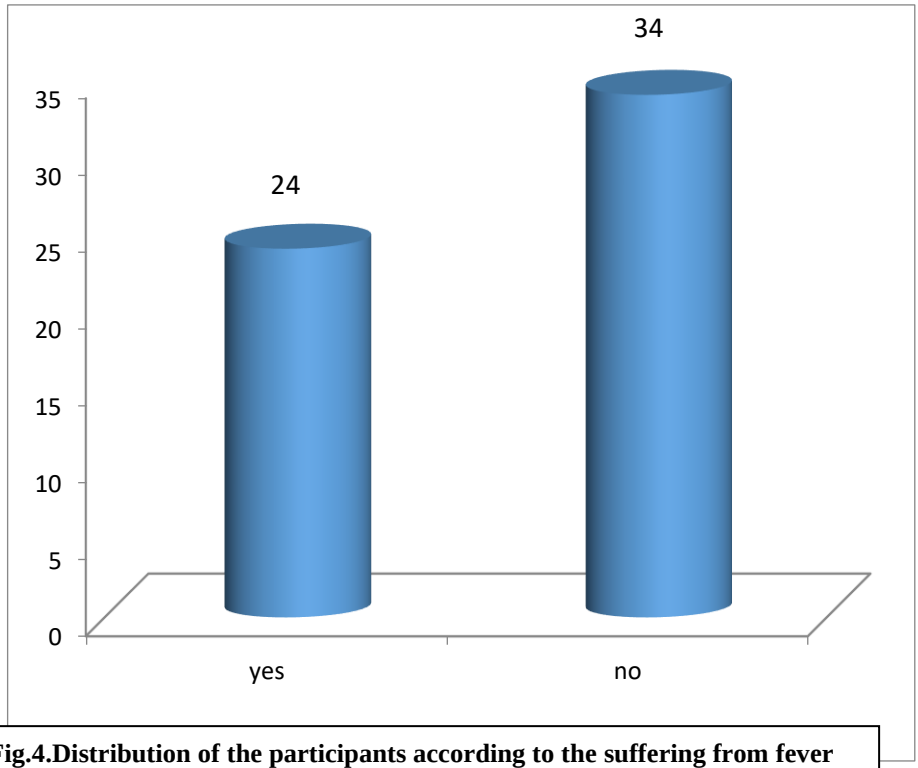

Fig.4.Distribution of the participants according to the suffering from fever

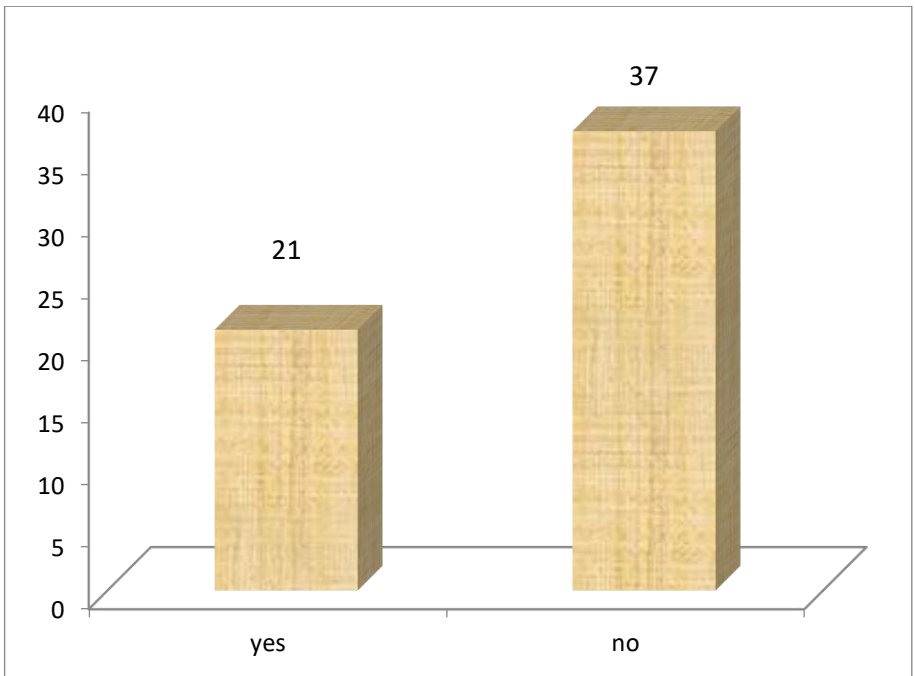

Fig.5. Distribution of the participants according to the suffering from headache.

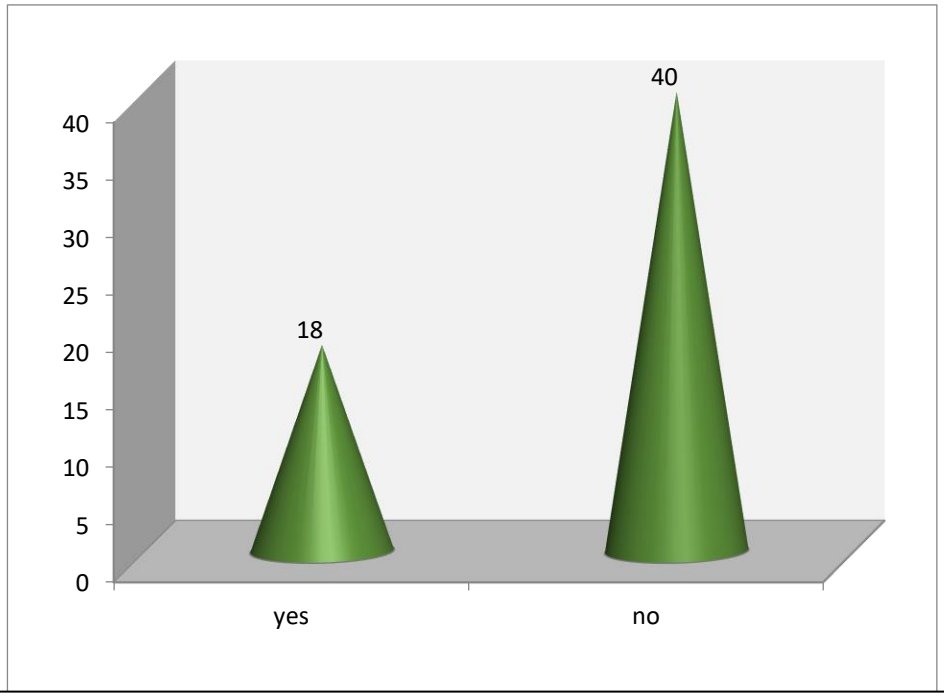

Fig.6.Distribution of the participants according to the suffering from muscle pain

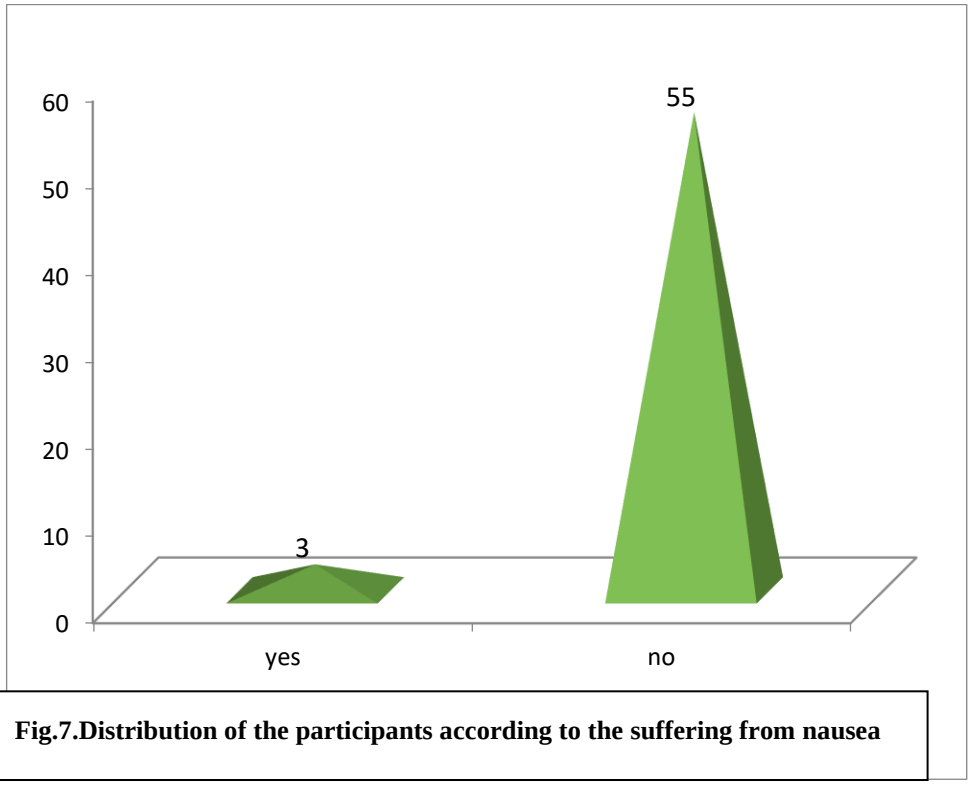

Fig.7.Distribution of the participants according to the suffering from nausea

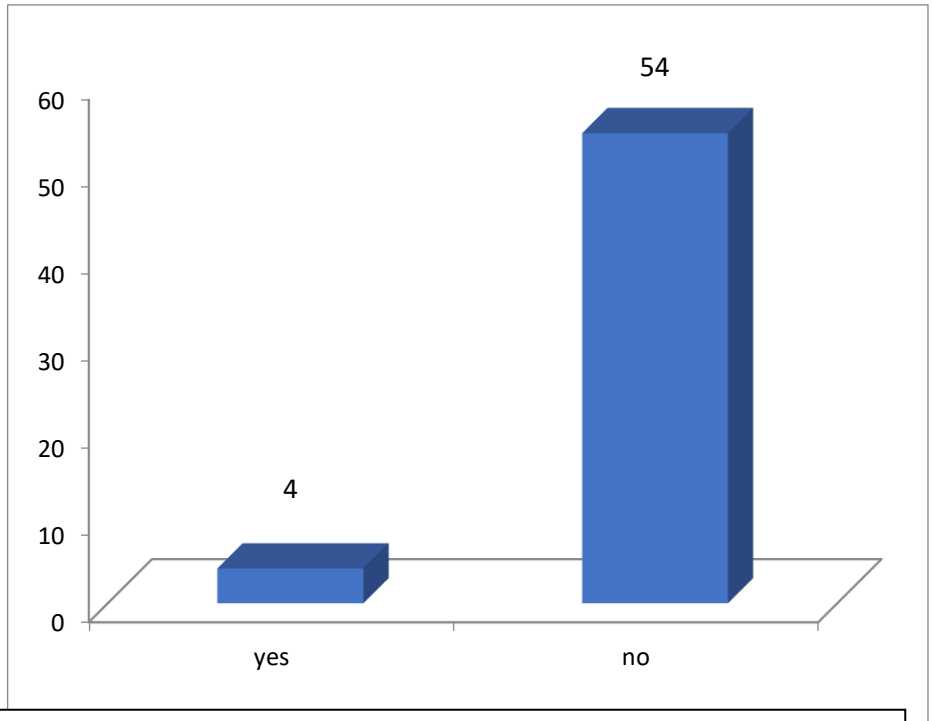

Fig.8.Distribution of the participants according to the suffering from cough

Table (11). Distribution of the participants according to taking medication to mitigate side effects.

Taking medication to mitigate side effects		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	34	58.6	58.6	58.6
	no	24	41.4	41.4	100.0
	Total	58	100.0	100.0	

Table (12). Distribution of the participants according to visiting a physician due to side effects.

Visiting a physician due to side effects		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	2	3.4	3.4	3.4
	no	56	96.6	96.6	100.0
	Total	58	100.0	100.0	

3.4. Comparing between the Sinopharm and the AstraZeneca COVID-19 vaccines

Table (13): Comparison between types of vaccine used in El-Marj city according to the occurrence of side effects.

Parameters	Type of vaccine: Sinopharm COVID-19 vaccine, n= 33 (83%)	AstraZeneca COVID-19 vaccine, n= 20 (34.5%)	Sputnik vaccine, n= 5 (8.6%)	total	p-value
Side effects	24 (72.7%)	13 (65%)	5 (100%)	42	0.153
Local pain	18 (54.5%)	17(85%)	3 (60%)	38	0.060
Fever	14(42.4%)	10 (50%)	0(0%)	24	0.051
Fatigue	10 (30.3%)	7 (35%)	1 (20%)	18	0.794
Headache	10 (30.3%)	7 (35%)	4 (80%)	21	0.103
Muscle pain	8 (24.2)	8 (40%)	2 (40%)	18	0.354
Nausea	1 (3.03%)	0 (0%)	2 (40%)	3	0.019
Cough	1 (3.03%)	1 (5%)	2 (40%)	4	0.065

Table (14) Comparison between types of the vaccine according to starting appearance of side effects.

Time of side effects starting	Type of the vaccine: Sinopharm COVID-19 vaccine, n= 33 (83%)	AstraZeneca COVID-19 vaccine, n= 20 (34.5%)	Sputnik vaccine , n= 5 (8.6%)	Total	p-value
First Day	21 (63.6%)	16 (80%)	4 (80%)	41	
Second Day	4	2	1	7	0.113
Third Day	1	2	0	3	
There's No	7	0	0	7	
Total	33	20	5	58	

Table (15): Comparison between types of the vaccine according to the duration of side effects.

The duration of side effects.	Type of the vaccine: Sinopharm COVID-19 vaccine, n= 33 (83%)	AstraZeneca COVID-19 vaccine, n= 20 (34.5%)	Sputnik vaccine , n= 5 (8.6%)	Total	p-value
from 1-3 days	24 (72.7%)	17 (85%)	4 (80%)	45	
from 4-5 days	2	1	1	4	0.038
over than 5 days	0	2	0	2	
there's no	7	0	0	7	
Total	33	20	5	58	

4. Discussion

Since the beginning of the COVID-19 pandemic in January 2020, most countries have taken precautionary measures to control SARS-CoV-2 transmission with the hope of rapid production of safe and effective vaccines . In response, different vaccine candidates have been simultaneously developed and only a few of them were authorized for emergency use authorization. Libya is one of the countries that have started an early vaccination campaign as a continuum for its early unprecedented efforts and actions to combat the SARS-CoV-2 spread. Despite the availability of the vaccine for the population in Libya, there is a variation in people's acceptance to take the vaccine and this is probably due to the fact that these vaccines were developed in a short time compared to the previously approved vaccines which usually take years before approval. Another reason for this variation could be related to the usage of a newly emerging technique for some of the COVID-19 vaccines. These two major factors may raise the concern among some individuals about potential severe post-vaccination side effects, although several reports describing the expected side effects have been issued recently. Thus, this study aimed to evaluate the short-term side effects associated with the COVID-19 vaccines which are currently used in Libya. Sinopharm and Astra-Zenica COVID-19 vaccines have been approved recently in Libya to use to prevent COVID-19 infection, where 56.9% of the participants were vaccinated by Sinopharm, while 34.5% were vaccinated by Astra-Zenica and 8.6 % were vaccinated by sputnik vaccine. In this study, 72.4% of the participants reported some side effects. The most common side effects were local pain at the site of injections (65.5%), followed by fever (41.4%), headache (36.2 %), and fatigue (31%), most of the participants reported that side effects occurred in the first day of vaccination, (70.7%) with a one-day duration of the side effects (77%). Similar data were also reported in a study conducted by Menni and his group(Menni, et al., 2021). This study found that tenderness and local pain around the injection site are the most commonly reported side effects, and it occurred on the same day after the injection and lasted for about one day. When comparing our study's outcomes with results of other study conducted in Saudi Arabia found 60% of the participants reported some side effects. The most common side effects were fatigue (90%), pain at the site of injections (85%), followed by fever (66%), and headache (62%). Most of the participants reported having side effects on the first day upon receiving the vaccines (85%) with one-day duration of the side effects (75%)(Alhazmi, et al., 2021). These findings are consistent with our study. At the comparing between the two vaccines which are studied in this study, the finding showed similar percents between Sinopharm and Oxford-AstraZeneca vaccines in the appearance of side effects. that means don't differences between the two vaccines in the side effects appearance.

5. Conclusion

In this study, we assessed the short-term side effects associated with COVID-19 vaccines approved for use in Libya; Sinopharm COVID-19, and Oxford-AstraZeneca vaccines. We found that most of the participants reported local pain at the site of the injection fatigue, fever, and headache, and they are more common in those after the second dose of the vaccines. Moreover, only a few patients needed to see a doctor or be admitted to the hospital due to vaccines' side effects. the two vaccines have the same side effects appearance percentage.

6. Limitations

This study has many limitations. The data have been collected by a self-administered questionnaire and this could result in a reporting bias. Because COVID-19 pandemic and the recommendation to continue the social distancing and preventive measures in Libya, we preferred to conduct this study as a distance-based study to ensure the safety of all study participants. Moreover, community-based surveys would be difficult to be done during this pandemic. Therefore, data collection is a self-reported survey, and the distribution of this survey depends on the investigators' relationship. As such, most of the participants were young, because the contributors in the study were students of the high institutes for medical sciences and techniques.

7. Recommendations

In this study can be recommended the following advice:

- Everyone in the society should take the vaccine against COVID-19 to constitute herd immunity which limits the prevalence spread of the disease.
- We advise putting strategies for manufacturing vaccines inside the country to allow concerned people with molecular medicine and manufacturing of vaccines to develop many ideas.
- Encouraging researchers to do research about the vaccine especially coronavirus vaccines to identify the efficacy, effectiveness, safety, and adverse effects of vaccines

8. Acknowledgments

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