

Research Article

Evaluate the Effectiveness of Virtual Health Education Program on Covid-19 Vaccination

Dr. X.S. Blessing NimaSajai*

Associate Professor in Nursing, Applied Medical Science College for Females, Alnamas, University of Bisha, Kingdom of Saudi Arabia.

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*Corresponding author: Dr. X.S. Blessing NimaSajai, Associate Professor in Nursing, Applied Medical Science College for Females, Alnamas, University of Bisha, Kingdom of Saudi Arabia; Email: nimablessing@gmail.com

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Abstract

The Kingdom of Saudi Arabia (KSA) was one of the very first countries in the world to grant emergency use authorization to the BNT162b2 vaccine, a new type of modified RNA vaccine developed by Pfizer-BioNTech. Here, we review various COVID-19 vaccines and the success of the vaccine rollout in KSA. Pfizer/BioNTech is currently being used at all vaccination centers in the KSA. Kingdom Of Saudi Arabia aim is to make the COVID-19 vaccine available to all citizens and residents within the coming months, based on a phased strategic plan to limit the impact the COVID-19 virus on our community and our critical infrastructure. People should get knowledge regarding vaccination and get benefit of it. So, it was important to create awareness among the people residing inside the Kingdom to safeguard themselves and others, due to current pandemic situation physical gathering to give group health education is not applicable and only way to impart knowledge through online (virtual), therefore as the faculty of Applied Medical Science College For Females At Alnamas, University Of Bisha I selected this study to Evaluate The Effectiveness Of Virtual Health Education Program On Covid-19 Vaccination Among The People Residing At Selected Areas In Alnamas. The tool used for the research study was demographic data, virtual health education program, semi structured awareness scale and knowledge online questionnaire to assess the knowledge on Covid-19 vaccination. Before conducting the study, formal permission was obtained. Informed consent was obtained from the participants. The period of data collection was done for 4 weeks. The researcher introduced self to each subject and explained the purpose of the study and assessed the knowledge level before conducting virtual health education program on Covid-19 vaccination. After finishing virtual health education program again, the knowledge level was assessed. Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics. Frequency percentage mean and standard deviation were used for the analysis. Study findings reveals that the virtual health education program is effective, and which was evidenced by the gain in posttest knowledge score was significant at 0.05 level of significant and the value of z is -7.2477. and the value of p is < .00001. The result is significant at $p < .05$. Findings revealed that virtual health education program on Covid -19 vaccination among people age between 18 years to 65 years and above was an effective teaching strategy in gaining knowledge among the people. The findings also revealed that there was significant association between knowledge level and education of the participant, received any information before regarding Covid-19 vaccination. But there is no association between knowledge level and age, citizenship, family income per -month. Health care professionals can create awareness among general public regarding Covid-19 vaccination also clarify their doubts on Covid-19 vaccination and save the community from this Covid-19 pandemic.

Introduction

"Prevention Is Better Than Cure."

All over the world people were suffering from the deadly COVID-19, Corona virus disease (COVID-19), it is an infectious disease caused by a newly discovered corona virus, which is a respiratory illness that has infected more than 3 million people and killed over 250,000 and the illness has turned into a global pandemic with massive ramifications. One of the simple, safe and effective way of protecting people against these diseases is by giving vaccination, before they meet them. It uses body's natural defenses to build resistance to specific infections and makes immune system stronger. Vaccines train your immune system to create antibodies, just as it does when it's exposed to a disease. However, because vaccines contain only killed or weakened forms

of germs like viruses or bacteria, they do not cause the disease or put one at risk of its complications. Most vaccines are given by an injection, but some are given orally (by mouth) or sprayed into the nose. There are now several vaccines available for covid-19. The first mass vaccination program started in early December 2020 and the number of vaccination doses administered is updated daily. At least 13 different vaccines (across 4 platforms) have been administered.

Several different types of potential vaccines for COVID-19 are in development, including:

- *Inactivated or weakened virus vaccines*, which use a form of the virus that has been inactivated or weakened so it doesn't cause disease, but still generates an immune response.

- *Protein-based vaccines*, which use harmless fragments of proteins or protein shells that mimic the COVID-19 virus to safely generate an immune response.
- *Viral vector vaccines*, which use a safe virus that cannot cause disease but serves as a platform to produce coronavirus proteins to generate an immune response.
- *RNA and DNA vaccines*, a cutting-edge approach that uses genetically engineered RNA or DNA to generate a protein that itself safely prompts an immune response.

The Pfizer/BioNTech Comirnaty vaccine was listed for WHO Emergency Use Listing (EUL) on 31 December 2020. The SII/Covishield and AstraZeneca/AZD1222 vaccines (developed by AstraZeneca/Oxford and manufactured by the State Institute of India and SK Bio respectively) were given EUL on 16 February. The Janssen/Ad26.COV 2.S developed by Johnson & Johnson, was listed for EUL on 12 March 2021. The Moderna COVID-19 vaccine (mRNA 1273) was listed for EUL on 30 April 2021 and the Sinopharm COVID-19 vaccine was listed for EUL on 7 May 2021. The Sinopharm vaccine is produced by Beijing Bio-Institute of Biological Products Co Ltd, subsidiary of China National Biotec Group (CNBG). The Kingdom of Saudi Arabia (KSA) was one of the very first countries in the world to grant emergency use authorization to the BNT162b2 vaccine, a new type of modified RNA vaccine developed by Pfizer-BioNTech. Here, we review various COVID-19 vaccines and the success of the vaccine rollout in KSA. Pfizer/BioNTech is currently being used at all vaccination centers in the KSA. To boost the effort, The Saudi Food and Drug Authority (SFDA) authorized the importation and use of the Oxford-AstraZeneca and Moderna vaccines against the corona virus disease (COVID-19) in January.

The Corona-Virus Disease 2019 (COVID-19) outbreak, as a rapidly evolving situation, has influenced all members of the community and has caused tremendous disruption in all life aspects, not least in the health professions. In the state of emergency, health care professionals facing major challenges to conduct physical health awareness or education programs to their customers. In addition, there are also many free tools enabling video communications, video and audio conferencing, chats, telemedicine and webinars for patients such as Zoom, Skype, and Google Hangouts Meet. These online communication tools support collaboration and the sharing of treatment and preventive measures between health care providers and clients.

Need for the Study

The COVID-19 vaccines are expected to provide at least some protection against new virus variants and are effective at preventing serious illness and death. That's because these vaccines create a broad immune response, and any virus changes or mutations should not make vaccines completely ineffective. If any of these vaccines become less effective against one or more variants, it will be possible to change the composition of the vaccines to protect against these variants. The COVID-19 vaccines produce protection against the disease, as a result of developing an immune response to the SARS-Cov-2 virus. Developing immunity through vaccination means there is a reduced risk of developing the illness and its consequences. This immunity helps you fight

the virus if exposed. Getting vaccinated may also protect people around you, because if you are protected from getting infected and from disease, you are less likely to infect someone else. This is particularly important to protect people at increased risk for severe illness from COVID-19, such as healthcare providers, older or elderly adults, and people with other medical conditions.

Kingdom Of Saudi Arabia aim is to make the COVID-19 vaccine available to all citizens and residents within the coming months, based on a phased strategic plan to limit the impact the COVID-19 virus on our community and our critical infrastructure. To that end, the targeted population for each phase of the roll-out have been identified based on specific criteria selected by the MOH and the Saudi CDC. The targeted population is identified as following:

The targeted group in the first phase

- Citizens and residents who are over 65 years of age + those with professions most vulnerable to infection
- People who are obese and have a BMI over 40
- Those with an immune deficiency such as an organ transplant or taking immunosuppressive drugs
- Those with two or more of the following chronic diseases: asthma, diabetes, chronic kidney diseases, chronic heart diseases including coronary artery disease, chronic obstructive pulmonary disease, and those with a history of a previous stroke.

The targeted group in the second phase

- Citizens and residents over 50 years old + other health practitioners
- Those who have one of the following chronic diseases: asthma, diabetes, chronic kidney diseases, chronic heart diseases including coronary artery disease, chronic obstructive pulmonary disease, active cancer, and those with obesity have a BMI between 30-40

The targeted group in the third phase

- All citizens and residents that want to take the vaccine

The Saudi government has made it clear that the vaccination will be provided free of charge for all residents who have not yet contracted the virus. Through the Ministry of Health, the Saudi authorities are inviting all Saudis and expats to register for the vaccine by utilizing the Sehaty app. Following the download, users may then enter their personal information and apply for the jab. Users will typically receive a text message within 48 hours of submitting the application detailing the date and location of the appointment. Alternatively, one can simply call 937. People should get knowledge regarding vaccination and get benefit of it. So, it was important to create awareness among the people residing inside the Kingdom to safeguard themselves and others, due to current pandemic situation physical gathering to give group health education is not applicable and only way to impart knowledge through online (virtual), therefore as the faculty of Applied Medical Science College For Females At Alnamas, University Of Bisha I selected this study to Evaluate The Effectiveness Of Virtual Health Education Program On Covid-19

Vaccination Among The People Residing At Selected Areas In Alnamas.

Statement of the Problem

Evaluate The Effectiveness of Virtual Health Education Program on Covid-19 Vaccination Among the People Residing at Selected Areas in Alnamas.

Aim of the Study

To Evaluate the Effectiveness of Virtual Health Education Program on Covid-19 Vaccination Among the People Residing at Selected Areas in Alnamas.

Objectives of the Study

- ❖ To assess the pre-test knowledge level among the people before administering virtual health education program on Covid-19 vaccination
- ❖ To assess the post-test knowledge level among the people before administering virtual health education program on Covid-19 vaccination
- ❖ To evaluate the effectiveness of Virtual Health Education Program on Covid-19 Vaccination Among the People Residing at Selected Areas in Alnamas.
- ❖ To find out the association between knowledge level with their selected demographic variables.

Operational Definition

Evaluate: Evaluate refers to determination of the knowledge level

Virtual Health Education Program: Virtual health education program refers to instruction in a learning environment where instructors and participants are separated by time or space, or both, and the instructors provide health education through multimedia resources, the Internet, videoconferencing, etc. Participants receive the content and communicate with the instructor via using the same technologies

Hypothesis

Research hypotheses: The following research hypotheses were formulated to achieve the aim of the current study: H1 - There will be a statistically significant difference in awareness level before and after virtual health education program in imparting knowledge on Covid-19 vaccination. H2- There will be a significant association between the knowledge level of study subjects with their selected demographic variables

Assumption

Virtual health education program will help to impart knowledge on Covid-19 vaccination among people residing at selected areas in Alnamas.

Delimitation

The data collection is delimited to 4 weeks People aged between 18 years to 65 years and above and who are willing to participate during data collection

Limitation

The study was conducted among people residing in selected area at Alnamas, Kingdom of Saudi Arabia, generalization can be done but with caution

Projected Outcome

The study finding helps to gain adequate knowledge regarding Covid-19 vaccination.

Methodology

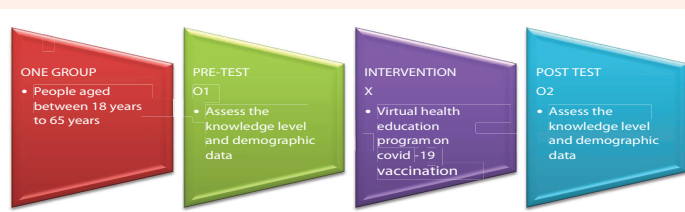
This chapter includes research design, the setting of the study, the sample size, the criteria for sample selection, the methods of sample selection the instruments and tools for data collection, the technique of data analysis and protection of human subjects. The present study was designed to evaluate the effectiveness of virtual health education program on covid-19 vaccination among the people residing at selected areas in Alnamas.

Research Approach

The research approach used for this study was quantitative approach.

Research Design

The research design selected for the present study was quasi experimental one group pre-test post-test design. The Investigator had conducted virtual health education program on covid-19 vaccination to impart knowledge, semi structured knowledge questionnaire to assess the knowledge regarding Covid-19 vaccination and demographic data. The research design adopted for the study is diagrammed as:



Key

O1 = It is the first observation means assessment of pre-test score of knowledge level & Demographic data among people residing at selected areas in Alnamas.

X = Treatment to the group is the administration of virtual health education program on Covid-19 vaccination

O2 = It is the second observation means assessment of post-test score of knowledge level & Demographic data among people residing at selected areas in Alnamas.

Setting of the study

The study was conducted at selected areas in Alnamas, Kingdom of Saudi Arabia. 110 people were selected as samples for this study. This setting was selected because of the availability of participants and feasibility of conducting the study. Researcher's convenience and familiarity with settings were added reason.

Population

The target population for this study is people residing at selected areas in Alnamas, Kingdom of Saudi Arabia.

Sample

Sample consisted of 110 people ages between 18 years to 65 years and above residing at selected areas in Alnamas, Kingdom of Saudi Arabia.

Sampling Technique

110 people ages between 18 years to 65 years and above residing at selected areas in Alnamas, Kingdom of Saudi Arabia were selected by convenient sampling method.

Criteria for sample selection

Inclusion Criteria: The people age between 18 years to 65 years and above and who are willing to participate in the study.

Exclusion Criteria: Children, pregnant mothers and who have busy schedule were excluded.

Research tool and technique

The tool used for the research study was demographic data, virtual health education program, semi structured knowledge online questionnaire to assess the knowledge on Covid -19 Vaccination.

Description of the tool

The tool used for the study includes two section that is section I, II and section III.

Section I: It had items related to demographic data consists of age in years, citizenship, education, family income, received any information before regarding Covid-19 vaccination.

Section II: Online Questionnaire to assess the Covid -19 Vaccination. It consists of 25 statements.

Scoring Procedure

The items were multiple choice type knowledge online questionnaire. Each correct response carries one score and incorrect response carry zero score and total 25 score.

Knowledge on covid-19 vaccination

Between (20-25 Score) 80 and 100% - Adequate knowledge

Between (10- 19Score) 40 and 78% - Moderate knowledge

Below (0-9Score) 36 % - Inadequate knowledge

Section III: Virtual health education program power point.

Data collection procedure

Before conducting the study, formal permission was obtained. Informed consent was obtained from the participants. The period of data collection was done for 4 weeks. The researcher introduced self to each subject and explained the purpose of the study and assessed the knowledge level before conducting virtual health education program in imparting knowledge on Covid -19

vaccination. After finishing virtual health education program again, the knowledge level was assessed.

Plan for data analysis

Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics.

Descriptive statistics

Frequency percentage mean and standard deviation were used for the analysis.

Inferential statistics

Paired "T" test was used for testing effectiveness of virtual health education program in imparting knowledge on Covid-19 vaccination. Chi - square was used to determine the association between demographic variables with knowledge level.

Protection of human subjects

After the problem statement was approved formal permission was obtained before starting the study. The oral & written consent was obtained from each participant of the study before starting the data collection. Assurance was given to the subject that the anonymity of everyone would be obtained.

Results & Discussion

This section shows the result findings of the study which is based on data analysis and interpretation of data collected from the participants. The data collected during the present study were analyzed based on the objectives formulated for the study.

Organization of the findings

In order to find out the relationship between the variables and to be assess the awareness value the data gathered were tabulated, analyzed and interpreted using both descriptive and inferential statistics. The data are presented under the following headings (Table 1).

- Frequency and percentage distribution of sample characteristics of the study.
- Findings related to frequency and distribution of knowledge level of the participants.
- Association between knowledge level and demographic variables such as age in years, citizenship, education, family income, received any information before regarding Covid-19 vaccination.

The data from the above (Table 2 & 3) shows that scoring difference between pre-test and post-test. It shows that in pre-test among all people majority of 49(44.5%) inadequate knowledge, 34 (30.9%) were have moderate knowledge and 27 (24.5%) were have adequate knowledge on Covid-19 vaccination. In the post-test there was marked improvement in the knowledge level of people. In post-test scored 04(3.6%) inadequate knowledge, 17(15.5%) scored moderate knowledge and 89 (80.9%) were have adequate knowledge on Covid-19 vaccination.

The virtual health education program on Covid -19 vaccination is effective and which was evidenced by the gain in posttest knowledge score was significant at 0.05 level of significant and the value of z is -7.2477. and the value of p is $<.00001$. The result is significant at $p < .05$. Findings revealed that virtual health education program on Covid -19 vaccination among people age between 18 years to 65 years and above was an effective teaching strategy in gaining knowledge among the people. The findings also revealed that there was significant association between knowledge level and education of the participant, received any information before regarding Covid-19 vaccination. But there is no association between knowledge level and age, citizenship, family income per -month.

Table 1: Distribution of frequency and percentage of demographic variables (N=110).

Demographic factor	Category	% Of Sample
Age	18 -20 years	27.3
	21-40years	23.6
	41-50years	21.8
	51-65years	15.5
	Above 65 years	11.8
Citizenship	Saudi	60.9
	Non-Saudi	39.1
Education	School Education	57.2
	Under graduation	33.6
	Post-graduation and above	9.1
Family income per-month	Less than 5000SR	16.3
	5001SR-6000SR	13.6
	6001SR-7000SR	60.9
	7001SR and above	9
Have you received any information before regarding Covid-19 vaccination?	Yes	31.8
	No	68.2

Table 2: Frequency and percentage of distribution of pre-test knowledge level (N=110).

Knowledge level	Frequency	Percentage
Adequate Knowledge	27	24.5%
Moderate Knowledge	34	30.9%
Inadequate Knowledge	49	44.5%

Table 3: Frequency and percentage of distribution of post-test knowledge level (N=110).

Knowledge level	Frequency	Percentage
Adequate Knowledge	89	80.9%
Moderate Knowledge	17	15.5%
Inadequate Knowledge	04	3.6%

Conclusions

All citizen and residents should have adequate knowledge on Covid-19 vaccination and follow the government rules to protect themselves and others by taking vaccination against Covid-19. Health care professionals can create awareness among general public regarding Covid-19 vaccination also clarify their doubts on Covid-19 vaccination. We can save our community and the whole world from Covid-19 pandemic through vaccination [1-10].

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