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Effect of Covid Vaccine on Periodontal Health Among Patients Visiting to the Dental College - A Retrospective Study

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Abstract

Background: This study aimed to evaluate the effect of covid vaccine on periodontal health among patients visiting to the dental college - a retrospective study.

Methods: The study was designed by Department of Periodontology and Oral Implantology. The developed questions were selected to determine the responder's periodontal health status, demographic characters, and their awareness. The questionnaire had 16 questions and was segregated into two parts. Part one consisted of 11 questions about demographics data of the study participants who were vaccinated with booster dose vaccine Covid-19 and its side effects. Section II consists of 5 questions regarding periodic check-ups, diseases in the body, and physical check-up plans to be performed by dentists.

Results: Based on the research, the study found a significant relationship between COVID-19 vaccination and personal health. The study shows the effect of COVID-19 vaccination on physical health and COVID-19 vaccine knowledge of patients attending dental schools.

Conclusion: In summary, the study used SPSS 26.0 (SPSS Inc., Chicago, IL) to analyze data, assessing mean, standard deviation, normality, and differences between groups. Chi square test was testing association between Type of vaccine and other variables. The findings indicate a notable correlation between Covid 19 vaccination and periodontal disease.

Keywords: COVID-19, vaccine, periodontal health, awareness.

INTRODUCTION

The culprit of the 2019 disease outbreak called COVID-19 is Coronavirus SARS-CoV-2, a member of the Coronaviridae family. While most patients infected with COVID-19 have mild symptoms, approximately 2% of COVID-19 patients die, 5% of patients require intensive care, and 14% require hospitalization[1].

Viral Pathogen, Severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2), does not only attack the respiratory system, but it can also possibly result in cerebrovascular failure and failure of other vital organs. Another cause of tissue damage that is marked as one of the main mechanisms of COVID-19 is

the over exaggerated immune response such as cytokine storm, a common pathway in many inflammatory diseases.[2]

Man is not made to endure social distancing and wearing of masks for an extended amount of time. Therefore, the sole most effective approach to combat this pandemic was to create COVID-19 vaccine that would be medically and socioeconomically advantageous.

A successful COVID-19 vaccine would pass potency, efficacy and safety testing stages while being free of any adverse reaction particularly in high-risk individual‘s viz., elderly, pregnant women, people with co-morbidities, healthcare workers and others. Not to mention the fact that bad dental hygiene is believed to be a factor in the risk of contracting COVID-19. There is a strong association between COVID-19 infection and systemic inflammation, an inflammatory disease that affects the tissues that support the teeth. Risk factors such as obesity, diabetes, heart disease, obesity, age, and smoking play an important role in the severity of both diseases.

Symptoms of COVID-19 infection were observed in the cavity oral cavity, such as ulcers and erosions, white-red plaques, postinflammatory pigmentation, petechiae, erythema multiforme-like lesions, and necrotizing periodontal disease. One of the most frequent sites in the mouth to be involved is the gingiva.[1]

The SARS-CoV-2 virus enters host cells using its viral transmembrane spike (S) glycoprotein or S-protein, which binds to the human cell through angiotensin converting enzyme II (ACE2), a membrane protein that serves as a receptor for the virus. The S-protein then undergoes proteolytic cleavage by host proteases (TMPRSS2, cathepsin L, or proprotein convertase furin) upon binding to ACE2, so that viral fusion into the target cells can occur. Additionally, SARS-CoV-2 can increase the expression of ACE2 further facilitating the infection of host cells. In addition, the detection sensitivity of gingival crevicular fluid (GCF) compared to nasopharyngeal swabs is 63.64%. The finding that SARS-CoV-2 can be detected in gingival crevicular fluid (GCF) supports the hypothesis that poor oral hygiene leads to oral disease. One of the mechanisms linking between. The cytokine storm that occurs in COVID-19 disease infection is associated with an increase in IL-17 and IL-6 levels in the blood. SARS-CoV-2 increases Th17 pathway responses. The Th17 inflammatory pathway is thought to play a role in the pathology of COVID-19 pneumonia caused by cytokine storm.[1]

These cytokines have an important role in the pathogenesis of periodontal disease. Most of the information does not mention COVID-19 either and oral health, but this is an important factor to take into account. Bleeding gums are the first stage of gingivitis and are associated with infection and inflammation. Periodontal inflammation has also been shown to be a risk factor for systemic diseases such as diabetes and heart disease. There are certain bacteria that cause periodontal disease, and those bacteria release inflammatory mediators which break down the connective tissue around the teeth. Bad breath (halitosis) is usually an oral problem, but it is also associated with other diseases and infections. The most common causes of bad breath or halitosis are gingivitis, periodontitis, and tongue coating. Periodontal disease increases the severity of bad breath, but its relationship to bad breath is controversial.[5]

The study by Rosa et al. found that patients who received COVID-19 before vaccination showed the worst adverse events (bleeding during examination, in-depth examination and test results) in patients without a history of COVID-19. However, the study was limited to one visit and a small sample of people, and a larger sample is recommended to confirm this finding. In light of these findings, the question of the effect of the vaccine against COVID-19 on conditions in the body has not been fully investigated.[6]

This study examines the effect of the COVID-19 vaccine on oral health, which may help improve the treatment outcomes of patients experiencing oral manifestations of the vaccine.

AIMS

-To assess the side effects of covid vaccine on periodontal health and general health over the period of 2 years.

OBJECTIVES

1. Prevalence and Awareness of the Covid vaccine among the patients.
2. Side effects of the vaccine on patients general health.
3. Correlation of the vaccine and periodontal health observed by the dentist.
4. Side effects enquired by the dentist.

MATERIALS AND METHODS

This is a survey that has been conducted for two years. Ethics committee approval was obtained before the study. The survey is aimed at dentists who are expected to be involved in the dental care of COVID-19 patients.

This study was organized by the Department of Periodontics and Oral Implantology. The questions were selected to determine the participant's current health status, demographic characteristics and information. interest. Expert opinions were analyzed and questions were modified. The answers were analyzed and necessary changes were made to the survey. Dentists can only participate in the survey if they agree after reading the participant information form.

The survey consists of 16 questions and consists of two parts. The first part included 11 questions about the population of study participants who received the Covid-19 vaccine and its side effects. Section 2 consists of 5 questions regarding the dentist and the periodic diagnosis of the disease and the physical therapy plan. The answer options are determined according to the questions and multiple choice options are used to evaluate the demographic characteristics and physical health of the patients.

The dentist can write his/her answer in the appropriate field after examining the patient. A person can participate in the survey only once and is not allowed to try again.

INCLUSION & EXCLUSION CRITERIA

INCLUSION CRITERIA:

The inclusion criteria for the study were patients who applied to dental clinics and dentists working in th e clinic. Patients aged 18-60 years with a valid certificate and a history of vaccination against COVID-19.

EXCLUSION CRITERIA:

Participants with a history of systemic disease and those who had not received COVID-19 vaccination in the past were excluded from the study. Dentists who act as relevant dentists should be excluded from this study. Pregnant and lactating women, patients under the age of 18 should be excluded from the study.

QUESTIONNAIRE

1. With which vaccine dose the patient were vaccinated?
   -Covaxin - Covishield -Sputnik V - None of the above
2. Are you vaccinated with the booster dose?
   -Yes - No

3. Was the vaccinated dose free of cost/ paid?
   -Free of cost - Paid
4. Were you fully aware of the advantages of the Covid-19 vaccine?
   -Yes - No - Partially Aware
5. Were you fully aware of the side effects of the Covid-19 vaccine?
   -Yes - No - Partially Aware
6. Have you experienced any side effect from the vaccination?
   -Yes - No
7. If yes, then what were the side effects experienced within few days after vaccination?
   -Pain on infection site - fever/chills - tiredness/headache -none of the above
8. Have you experienced any long term side effects?
   -Yes - No
9. If yes, then what have you experienced?
   -Chest pain/joint pain -Difficulty in breathing -depression/anxiety -none of the above
10. Do you believe vaccination reduce the risk from Covid-19 virus?
    -Yes - No
11. Are there swollen gums observed after the vaccination?
    -Yes - No
12. Is bleeding observed from gums (gingiva) observed?
    -Yes - No
13. Is any blistering or multiple ulceration (Pemphigus Vulgaris)painfull non healing and erosive lesions affecting oral mucosa and upper part of body skin observed?
    -Yes - No
14. Is there any symptoms of tingling or burning sensation /rash or blisters, fluid filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drop (Oral Herpes Zoster) observed?
    -Yes - No
15. Is there dry mouth (xerostomia) observed?
    -Yes - No

RESULTS

Data was analyzed using the statistical package **SPSS 26.0** (SPSS Inc., Chicago, IL) **Descriptive statistics** was performed to assess the frequency of the respective groups. **Chi square test** was testing association between Type of vaccine and other variables. Chi square test was used to find out the significant association between There was a significant association between type of injection and presence of gingivitis ($P<0.05$), Covishield reported gingivitis in 26% of patients and Covaxin in 3%. Chi-square test was used to find the association between type of vaccine and gingival bleeding and a positive association ($P<0.05$) was reported with Covishield showing gingival bleeding in 28% and Covaxin in 13%. Chi-square test was used to find the association between type of vaccine and xerostomia but no significant association was found ($P>0.05$). Chi-square test was used to find the association between type of vaccine and pemphigus vulgaris, no association was seen ($P>0.05$). Chi-square test was used to find the association between type of vaccine and presence of herpes zoster and a positive association ($P<0.05$) was reported.

Table 1 and Bargraph 1 indicates that patient were vaccinated with covaxin more as compared to covishield and other vaccines. Males were vaccinated more with covaxin and females were vaccinated

more with covishield. Percentage of covaxin among males was 65.7%. Table 2 and Bargraph 2 depicts that among booster dose covishield was vaccinated more over covaxin i.e., 59.4% over 52.5% while 47.5% to 40.6% didn't took any of the vaccination. Table 3 and Bargraph 3 depicts that both covaxin and covishield when vaccinated free of cost has higher percentage rate i.e, 76.8% and 87.1% respectively as compared to paid vaccination. Table 4 and Bargraph 4 indicates that Patients were aware of the efficacy of anti-COVID-19 drugs Covaxin and Covishield by 68.7% and 64.4% respectively. Table 5 and Bar Chart 5 show that patients are highly aware of the side effects of COVID-19. vaccine it was found that about side effects regarding covaxin and covishield were 15.2% and 28.7% respectively further60.6% and 58.4% were partially aware and 24.2% and 12.9% were not aware about covaxin and covishield respectively. Table 6 and Bargraph 6 depicts that side effects of Covaxin is more as compared to covishield i.e., 59.6% and 54.5% respectively. Table 7 and Bargraph 7 depicts that fever/chills was found more in Covishield than Covaxin while pain on injection site and tiredness/headache were more among the patient administered with Covaxin than Covishield. Table 8 and bargraph 8 indicates no long term side effects were found among both vaccines while it was observed among 16% in some of patients with both vaccines. Table 9 and Bargraph 9 depicts that the patients experienced no long term side effects but some felt difficulty in breathing and chest pain/joint pain. Table 10 and bargraph 10 depicts that both vaccines reduce risks from COVID-19 with covaxin vaccinated more than covishield. Table 11 and bargraph 11 shows that there was no swollen gums observed after the vaccines while some felt swollen gums in case of covishield. Table 12 and Bargraph 12 shows that there was no bleeding from gums (gingiva) observed after the vaccines while some shows bleeding gums in case of covishield. Table 13 and bargraph 13 shows that in case of covaxin there was xerostomia observed after vaccination. Table 14 and bargraph 14 shows that there was no blister were found among both vaccines. While in cases of covaxin there is some blisters found as compared to Covishield. Table 15 and Bargraph 15 shows that Covishield shows tingling/burning sensation/ rash or blisters, fluid filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drops (Oral Herpes Zoster) than the patients administered with Covaxin.

		Frequency	Percent
Covaxin	**F**	**34**	**34.3**
	M	**65**	**65.7**
	Total	**99**	**100.0**
Covishield	**F**	**51**	**50.5**
	M	**50**	**49.5**
	Total	**101**	**100.0**

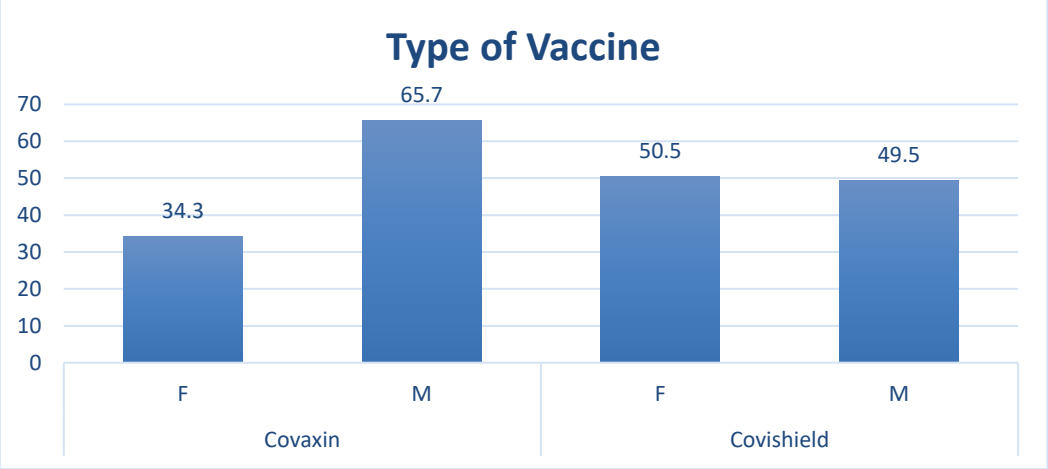


Table 1 and Bargraph 1 indicates that patient were vaccinated with covaxin more as compared to covishield and other vaccines. Males were vaccinated more with covaxin and females were vaccinated more with covishield. Percentage of covaxin among males was 65.7%.

		Frequency	Percent
Covaxin	**no**	**47**	**47.5**
	yes	**52**	**52.5**
	Total	**99**	**100.0**
Covishield	**no**	**41**	**40.6**
	yes	**60**	**59.4**
	Total	**101**	**100.0**

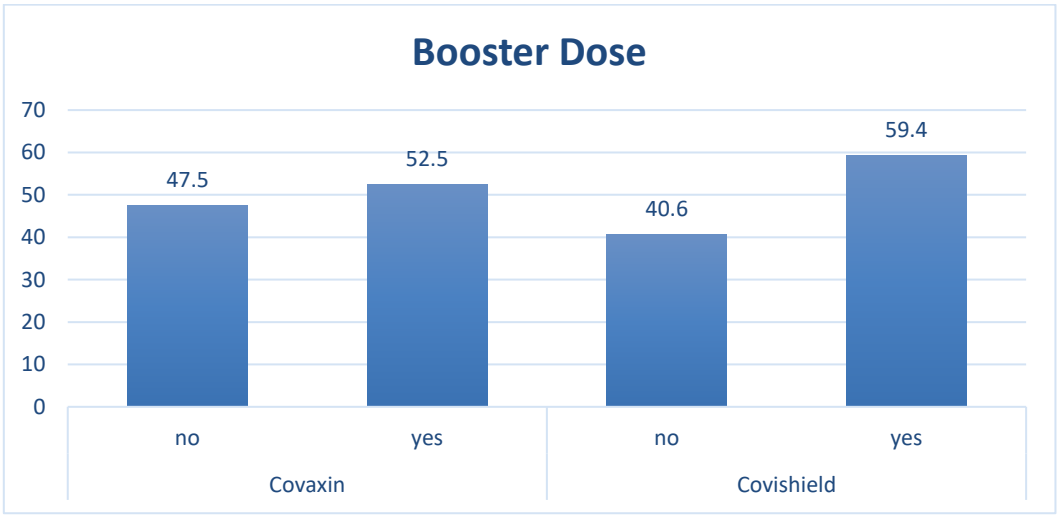


Table 2 and Bargraph 2 depicts that among booster dose covishield was vaccinated more over covaxin i.e., 59.4% over 52.5% while 47.5% to 40.6% didn't took any of the vaccination.

		Frequency	Percent
Covaxin	free of cost	76	76.8
	paid	23	23.2
	Total	99	100.0
Covishield	free of cost	88	87.1
	paid	13	12.9
	Total	101	100.0

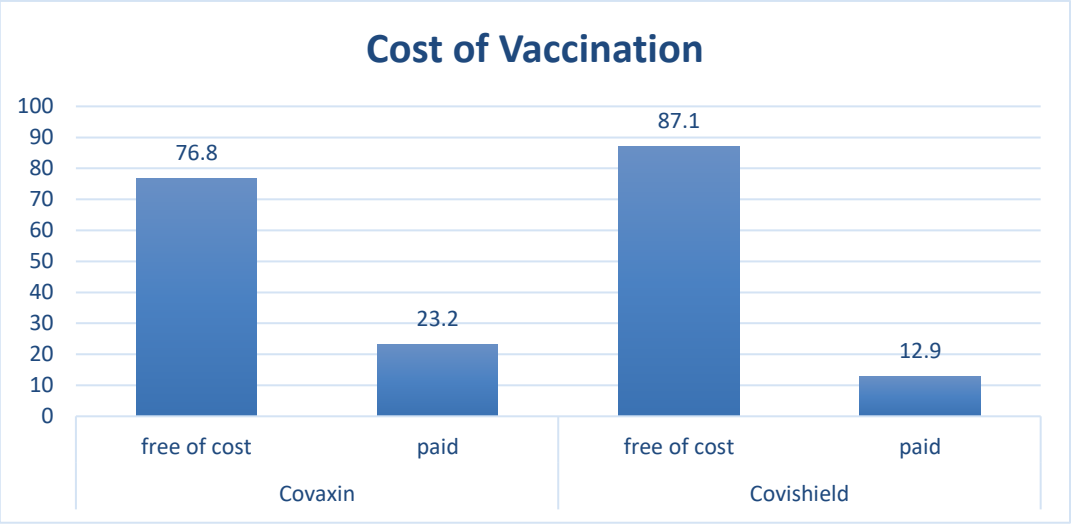


Table 3 and Bargraph 3 depicts that both covaxin and covishield when vaccinated free of cost has higher percentage rate i.e, 76.8% and 87.1% respectively as compared to paid vaccination.

		Frequency	Percent
Covaxin	partially aware	31	31.3
	yes	68	68.7
	Total	99	100.0
Covishield	partially aware	36	35.6
	yes	65	64.4
	Total	101	100.0

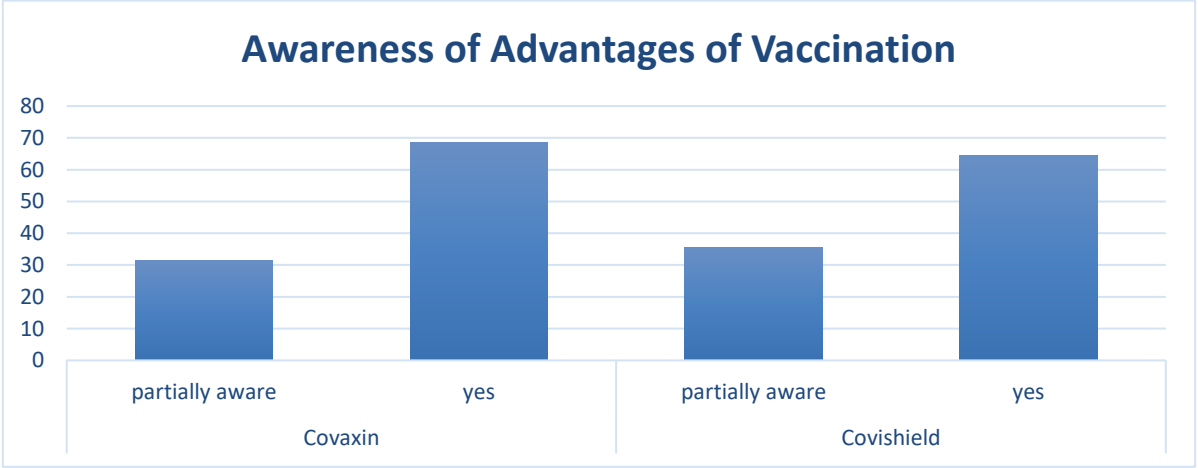


Table 4 and Bargraph 4 indicates that patients were fully awared about advantages of COVID-19 vaccine both covaxin and covishield and percentage i.e., 68.7% and 64.4% respectively.

		Frequency	Percent
Covaxin	**no**	**24**	**24.2**
	partially aware	**60**	**60.6**
	yes	**15**	**15.2**
	Total	**99**	**100.0**
Covishield	**no**	**13**	**12.9**
	partially aware	**59**	**58.4**
	yes	**29**	**28.7**
	Total	**101**	**100.0**

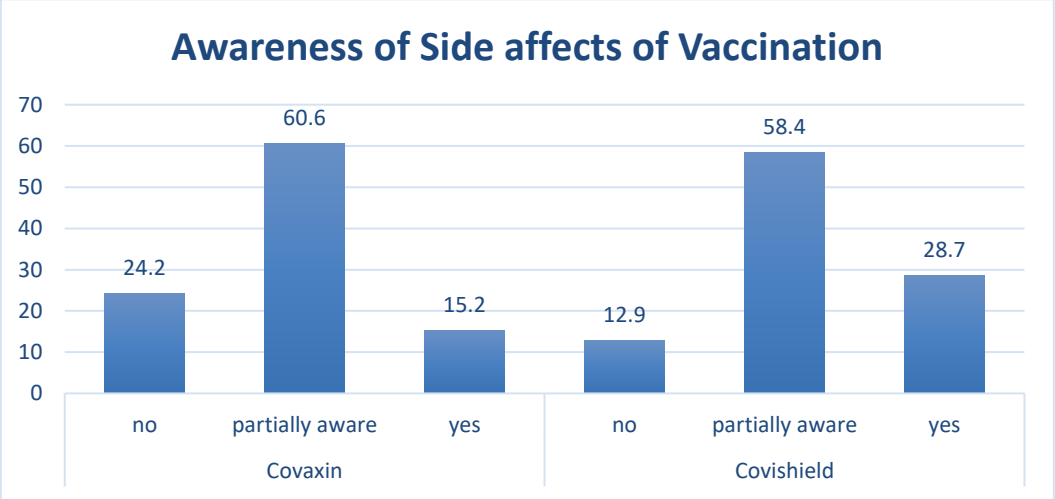


Table 5 and Bargraph 5 indicates that patients were fully aware about side effects of COVID-19 vaccine it was found that about side effects regarding covaxin and covishield were 15.2% and 28.7% respectively further60.6% and 58.4% were partially aware and 24.2% and 12.9% were not aware about covaxin and covishield respectively.

		Frequency	Percent
Covaxin	**no**	**40**	**40.4**
	yes	**59**	**59.6**
	Total	**99**	**100.0**
covishield	**no**	**46**	**45.5**
	yes	**55**	**54.5**
	Total	**101**	**100.0**

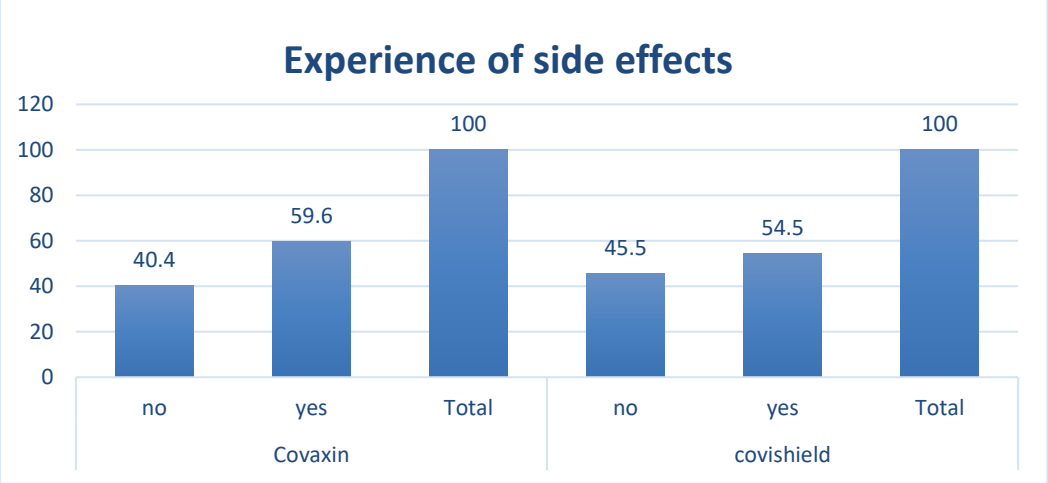


Table 6 and Bargraph 6 depicts that side effects of Covaxin is more as compared to covishield i.e., 59.6% and 54.5% respectively.

		Frequency	Percent
Covaxin	**fever/chills**	**34**	**34.3**
	none of the above	**9**	**9.1**
	pain on injection site	**31**	**31.3**
	tiredness / headache	**25**	**25.3**
	Total	**99**	**100.0**
Covishield	**fever/chills**	**69**	**68.3**
	none of the above	**16**	**15.8**
	pain on injection site	**7**	**6.9**
	tiredness / headache	**9**	**8.9**
	Total	**101**	**100.0**

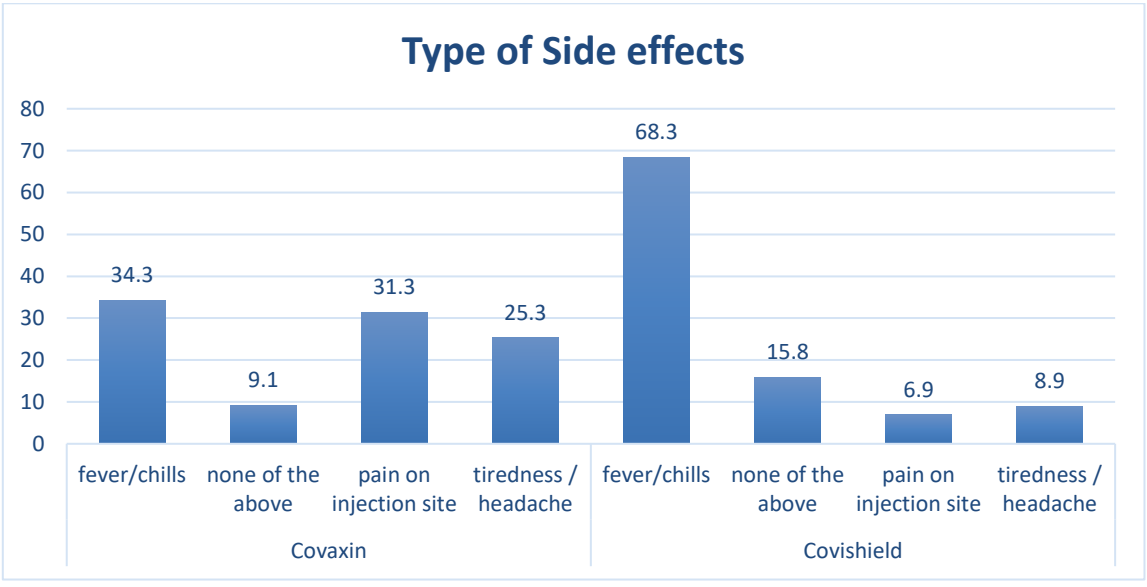


Table 7 and Bargraph 7 depicts that fever/chills was found more in Covishield than Covaxin while pain on injection site and tiredness/headache were more among the patient administered with Covaxin than Covishield.

		Frequency	Percent
Covaxin	**no**	**83**	**83.8**
	yes	**16**	**16.2**
	Total	**99**	**100.0**
Covishield	**no**	**84**	**83.2**
	yes	**17**	**16.8**
	Total	**101**	**100.0**

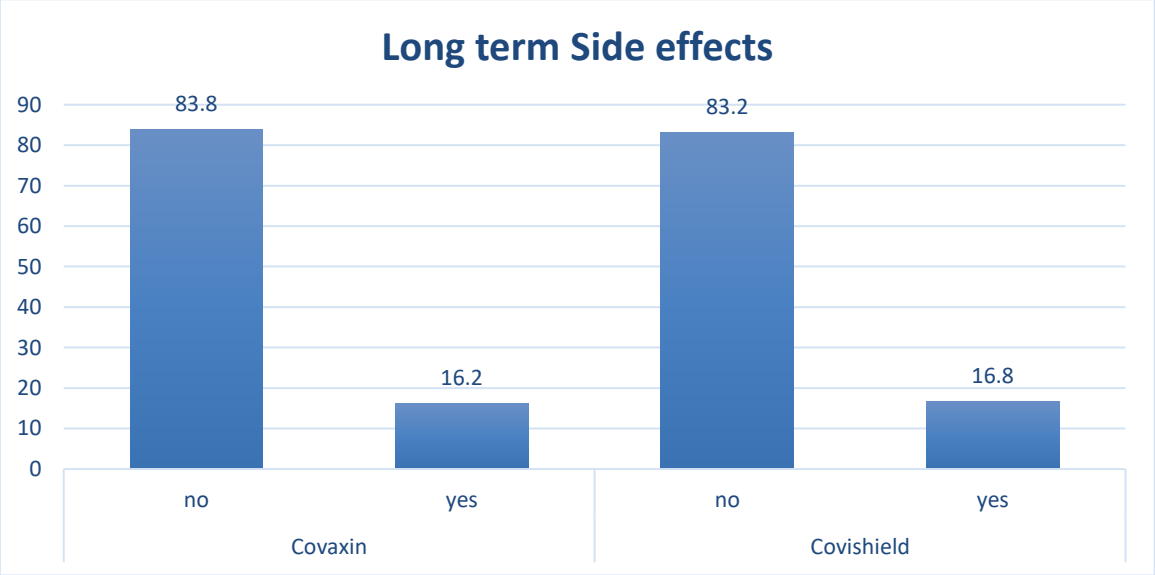


Table 8 and bargraph 8 indicates no long term side effects were found among both vaccines while it was observed among 16% in some of patients with both vaccines.

		Frequency	Percent
Covaxin	**chest pain / joint pain**	**6**	**6.1**
	difficulty in breathing	**10**	**10.1**
	none of the above	**83**	**83.8**
	Total	**99**	**100.0**
Covishield	**chest pain / joint pain**	**7**	**6.9**
	difficulty in breathing	**10**	**9.9**
	none of the above	**84**	**83.2**
	Total	**101**	**100.0**

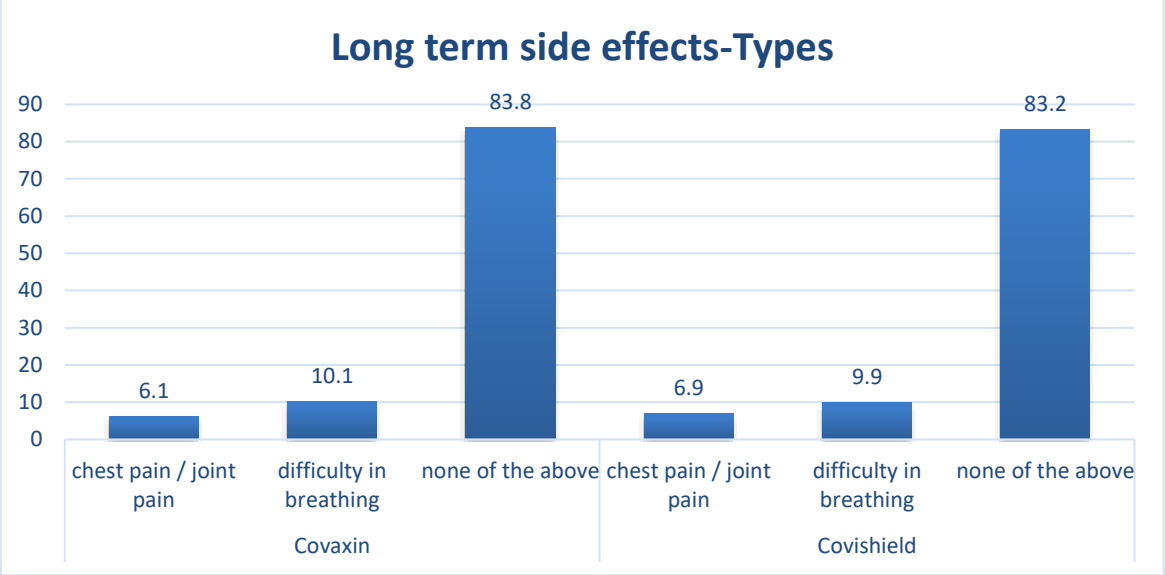


Table 9 and Bargraph 9 depicts that the patients experienced no long term side effects but some felt difficulty in breathing and chest pain/joint pain.

		Frequency	Percent
Covaxin	**no**	**16**	**16.2**
	yes	**83**	**83.8**
	Total	**99**	**100.0**
Covishield	**no**	**28**	**27.7**
	yes	**73**	**72.3**
	Total	**101**	**100.0**

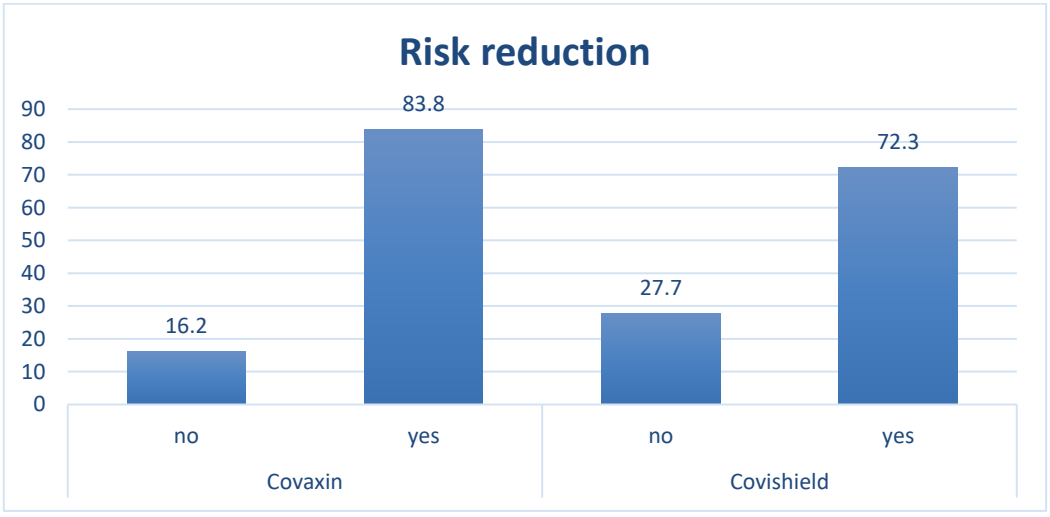


Table 10 and bargraph 10 depicts that both vaccines reduce risks from COVID-19 with covaxin vaccinated more than covishield.

		Frequency	Percent
Covaxin	**no**	**96**	**97.0**
	yes	**3**	**3.0**
	Total	**99**	**100.0**
Covishield	**no**	**75**	**74.3**
	yes	**26**	**25.7**
	Total	**101**	**100.0**

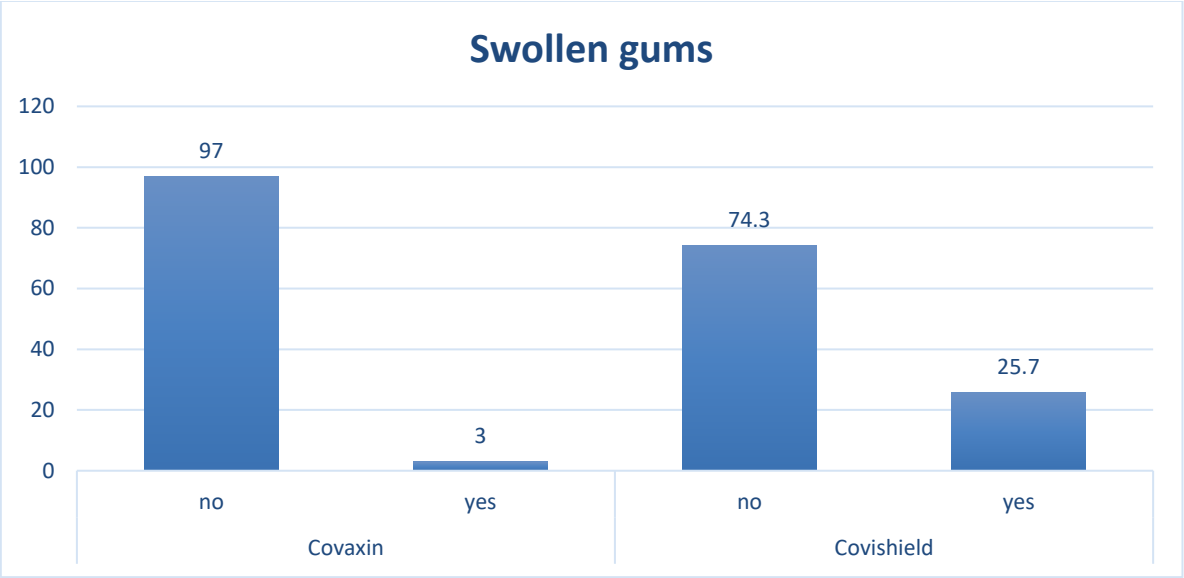


Table 11 and bargraph 11 shows that there was no swollen gums observed after the vaccines while some felt swollen gums in case of covishield.

		Frequency	Percent
Covaxin	**no**	**86**	**86.9**
	yes	**13**	**13.1**
	Total	**99**	**100.0**
Covishield	**no**	**73**	**72.3**
	yes	**28**	**27.7**
	Total	**101**	**100.0**

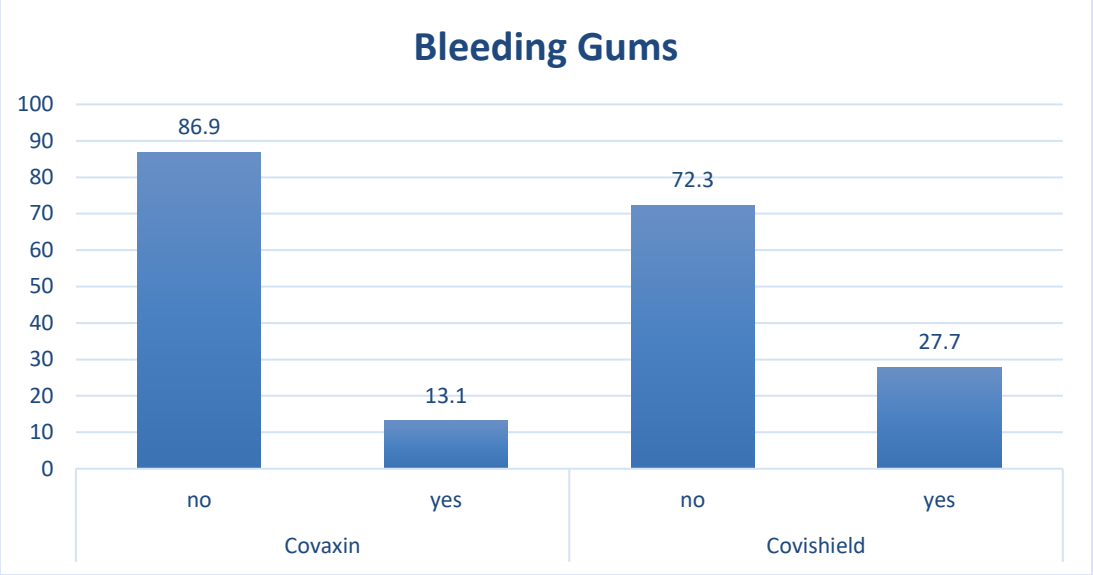


Table 12 and Bargraph 12 shows that there was no bleeding from gums (gingiva) observed after the vaccines while some shows bleeding gums in case of covishield.

		Frequency	Percent
Covaxin	**no**	**79**	**79.8**
	yes	**20**	**20.2**
	Total	**99**	**100.0**
Covishield	**no**	**82**	**81.2**
	yes	**19**	**18.8**
	Total	**101**	**100.0**

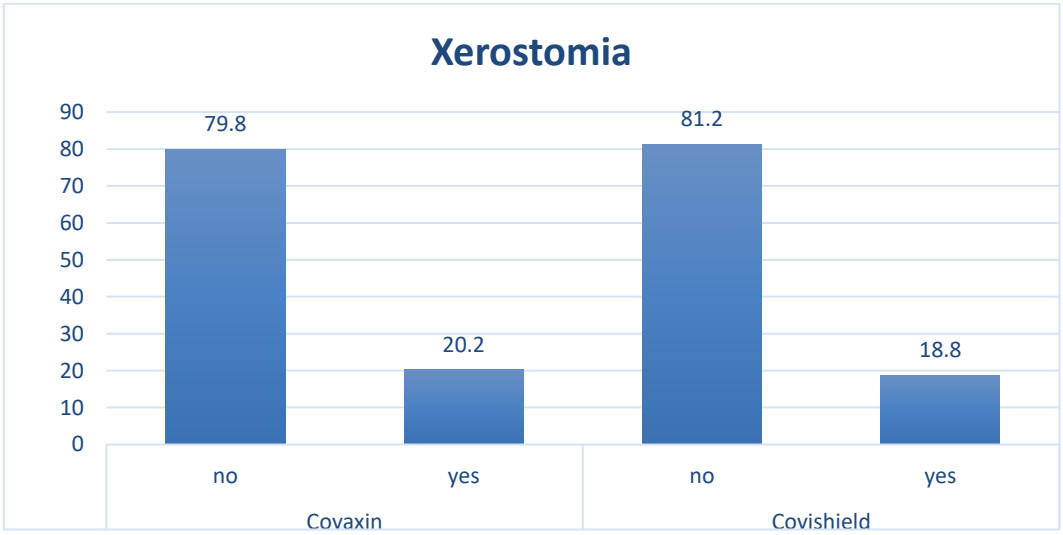


Table 13 and bargraph 13 shows that in case of covaxin there was xerostomia observed after vaccination.

		Frequency	Percent
Covaxin	**no**	**83**	**83.8**
	yes	**16**	**16.2**

	Total	**99**	**100.0**
Covishield	**no**	**92**	**91.1**
	yes	**9**	**8.9**
	Total	**101**	**100.0**

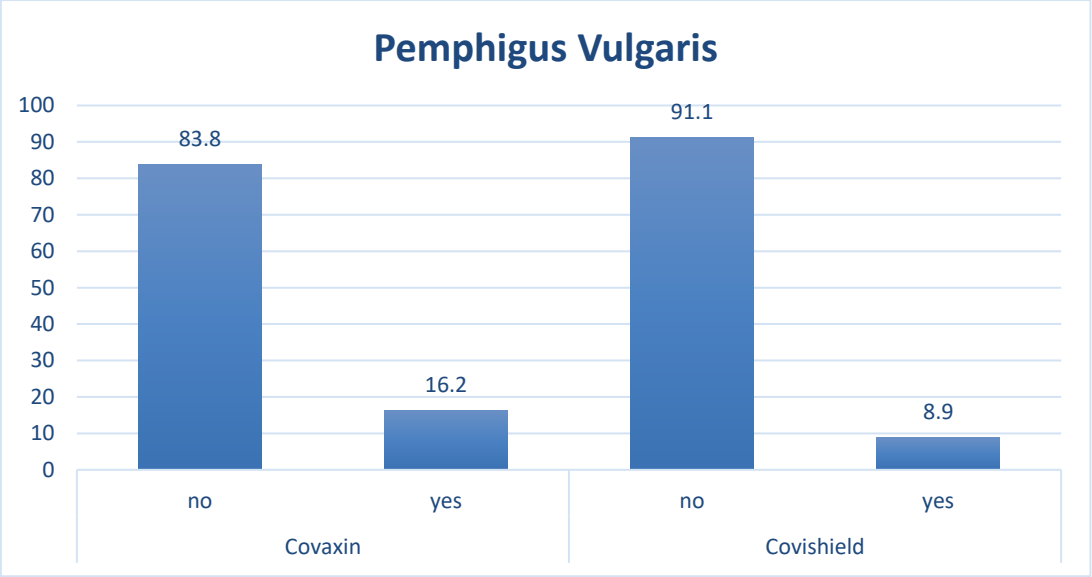


Table 14 and bargraph 14 shows that there was no blister were found among both vaccines. While in cases of covaxin there is some blisters found as compared to Covishield.

		Frequency	**Percent**
Covaxin	**no**	**63**	**63.6**
	yes	**36**	**36.4**
	Total	**99**	**100.0**
Covishield	**no**	**38**	**37.6**
	yes	**63**	**62.4**
	Total	**101**	**100.0**

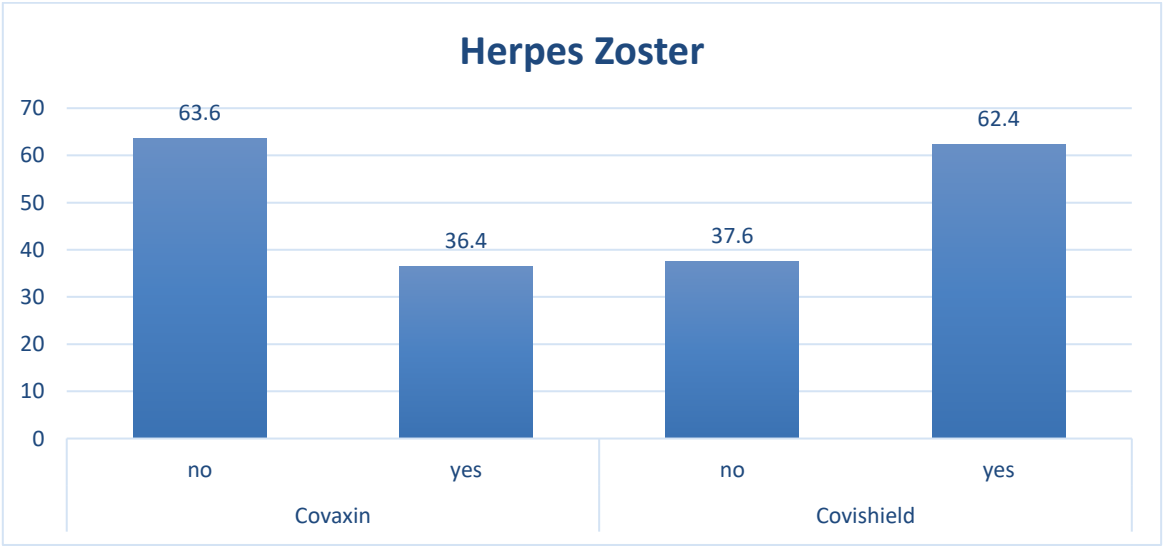


Table 15 and Bargraph 15 shows that Covishield shows tingling/burning sensation/ rash or blisters, fluid filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drops (Oral Herpes Zoster) than the patients administered with Covaxin.

Table 16-With which vaccine dose the patient were vaccinated? * Are there swollen gums observed after the vaccination?

			Are there swollen gums observed after the vaccination?		Total	P value
			no	yes		
With which vaccine dose the patient were vaccinated?	Covaxin	Count	96	3	99	0.0001 *
		% within With which vaccine dose the patient were vaccinated?	97.0%	3.0%	100.0 %	
	Covishield	Count	75	26	101	
		% within With which vaccine dose the patient were vaccinated?	74.3%	25.7%	100.0 %	
Total		Count	171	29	200	
		% within With which vaccine dose the patient were vaccinated?	85.5%	14.5%	100.0 %	

P<0.05 is statistically significant

Inference: Chi square test was used to find out the significant association between Type of Vaccination and presence of swollen gums and reported significant association (P<0.05) where Covishield reported 26% of swollen gum cases compared to 3% in Covaxin.

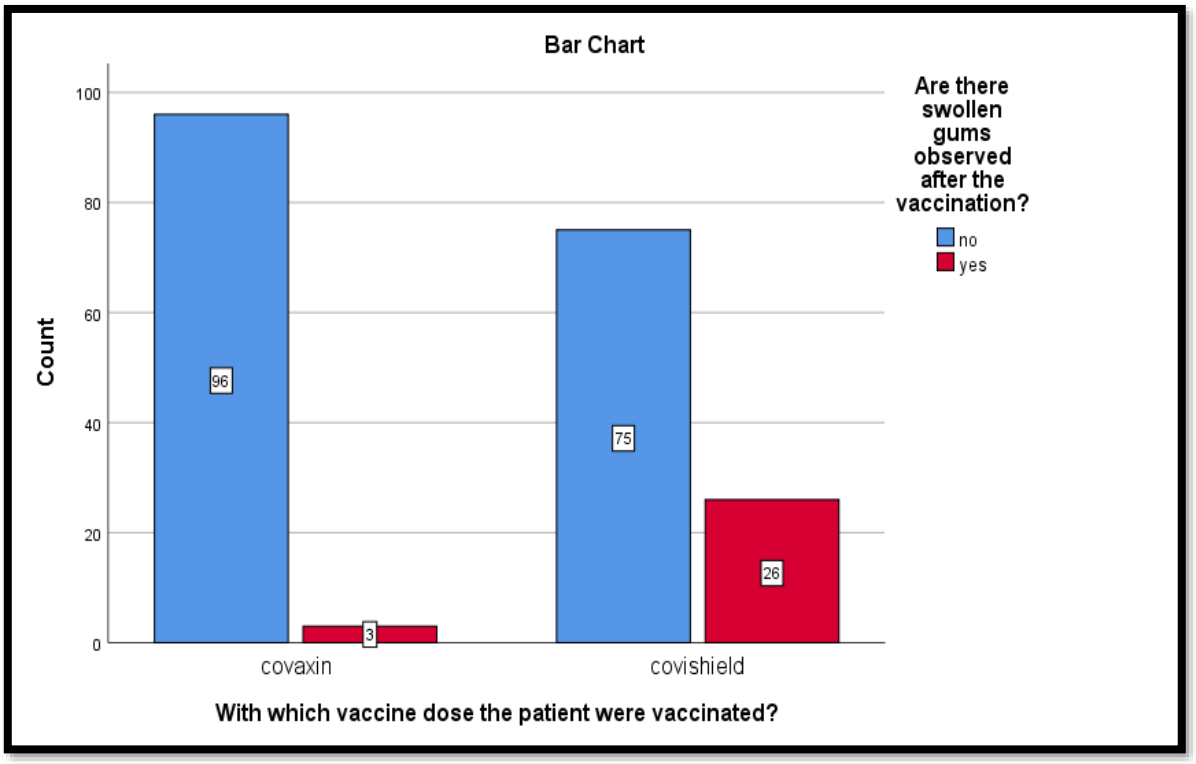


Table 17-With which vaccine dose the patient were vaccinated? * Is bleeding observed from gums (gingiva) observed?

			Is bleeding observed from gums (gingiva) observed?		Total	P value
			no	yes		
With which vaccine dose the patient were vaccinated?	Covaxin	Count	86	13	99	0.01*
		% within With which vaccine dose the patient were vaccinated?	86.9%	13.1%	100.0%	
	Covishield	Count	73	28	101	
		% within With which vaccine dose the patient were vaccinated?	72.3%	27.7%	100.0%	
Total		Count	159	41	200	
		% within With which vaccine dose the patient were vaccinated?	79.5%	20.5%	100.0%	

P<0.05 is statistically significant

Inference: Chi square test was used to find out the significant association between Type of Vaccination and presence of bleeding gums and reported significant association (P<0.05) where Covishield reported 28% of bleeding gum cases compared to 13% in Covaxin.

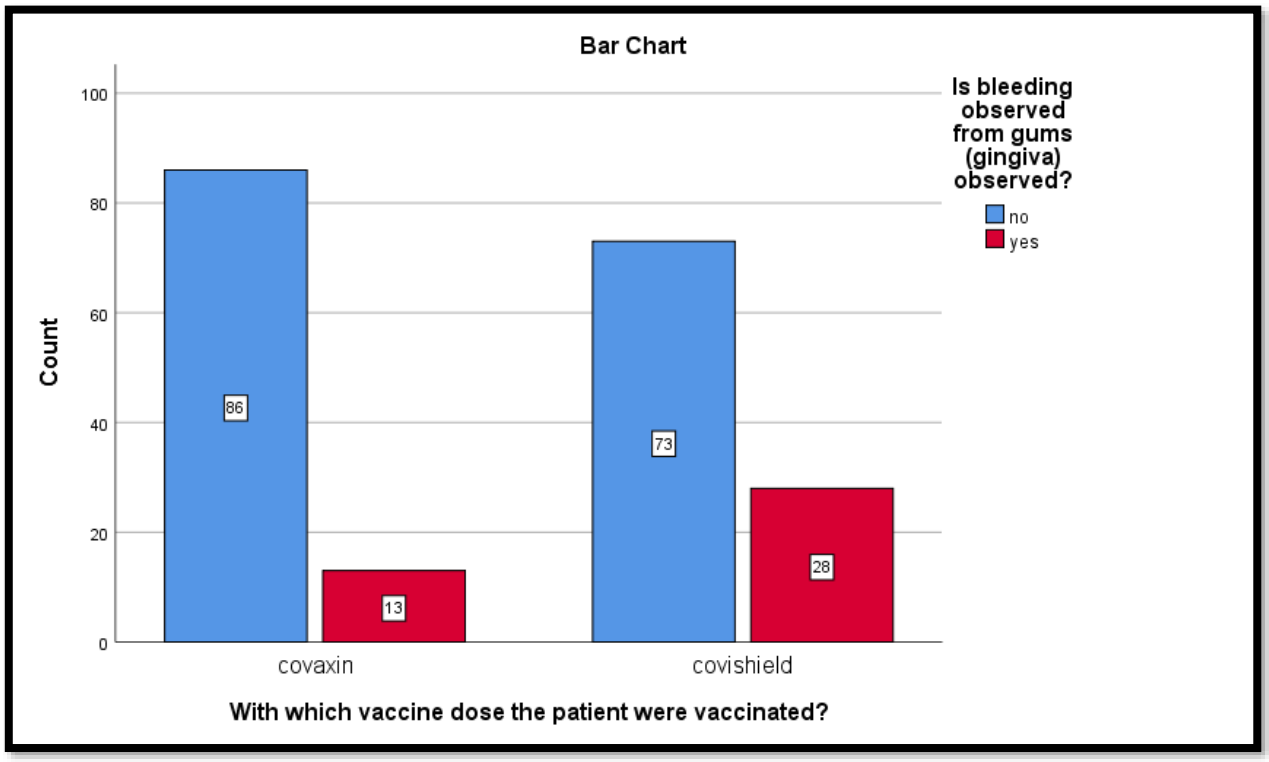


Table 18-With which vaccine dose the patient were vaccinated? * Is there dry mouth (xerostomia) observed?

			Is there dry mouth (xerostomia) observed?		Total	
			no	yes		
With which vaccine dose the patient were vaccinated?	Covaxin	Count	79	20	99	0.80
		% within With which vaccine dose the patient were vaccinated?	79.8%	20.2%	100.0 %	
	Covishield	Count	82	19	101	
		% within With which vaccine dose the patient were vaccinated?	81.2%	18.8%	100.0 %	
Total		Count	161	39	200	

	% within With which vaccine dose the patient were vaccinated?	80.5%	19.5%	100.0 %	

P<0.05 is statistically significant

Inference: Chi square test was used to find out the significant association between Type of Vaccination and presence of xerostomia and reported no significant association (P>0.05).

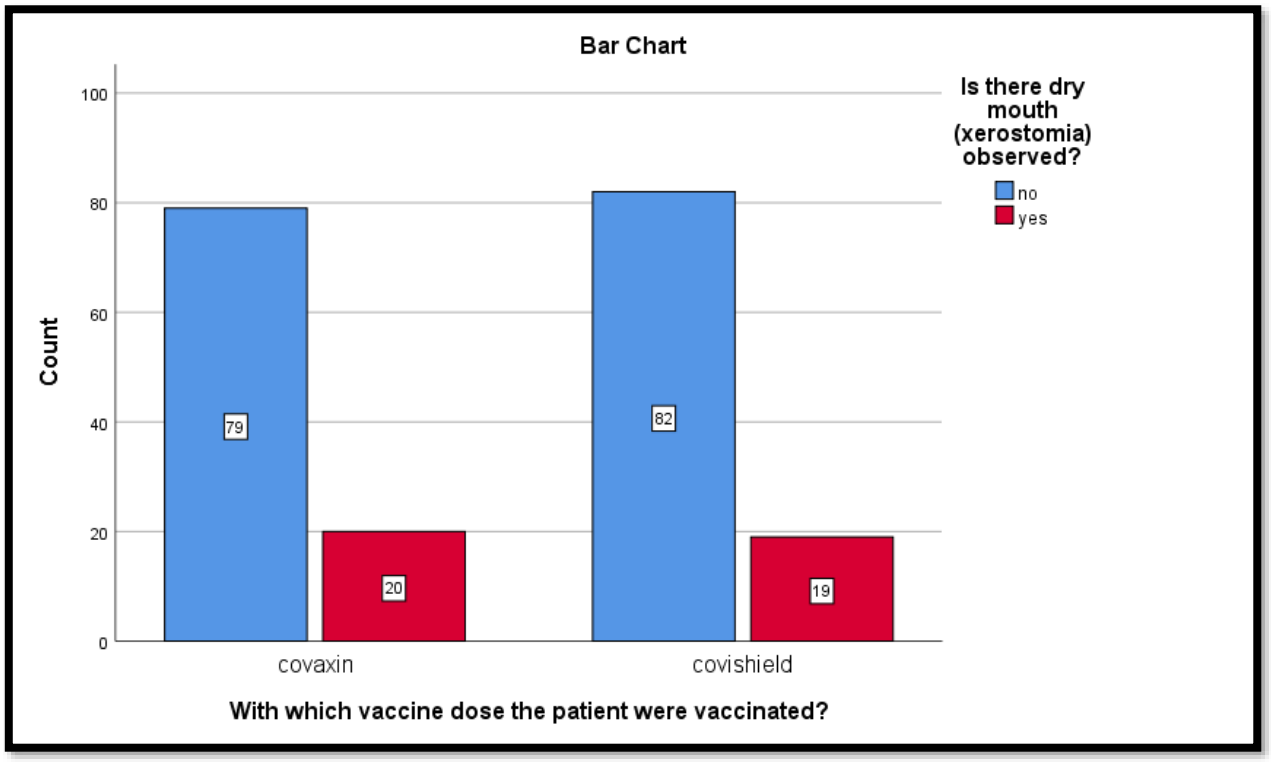


Table 19- With which vaccine dose the patient were vaccinated? * Is any blistering or multiple ulceration (Pemphigus Vulgaris) painfull non healing and erosive lesions affecting oral mucosa and upper part of body skin observed?

			Is any blistering or multiple ulceration (Pemphigus Vulgaris)painfull non healing and erosive lesions affecting oral mucosa and upper part of body skin observed?		Total	P value
			no	yes		
With which vaccine dose the patient	Covaxin	Count	83	16	99	
		% within With which vaccine dose	83.8%	16.2%	100.0 %	

were vaccinated?		the patient were vaccinated?				
	Covishield	Count	92	9	101	
		% within With which vaccine dose the patient were vaccinated?	91.1%	8.9%	100.0 %	0.12
Total		Count	175	25	200	
		% within With which vaccine dose the patient were vaccinated?	87.5%	12.5%	100.0 %	

P<0.05 is statistically significant

Inference: Chi square test was used to find out the significant association between Type of Vaccination and presence of Pemphigus Vulgaris and reported No significant association (P>0.05)

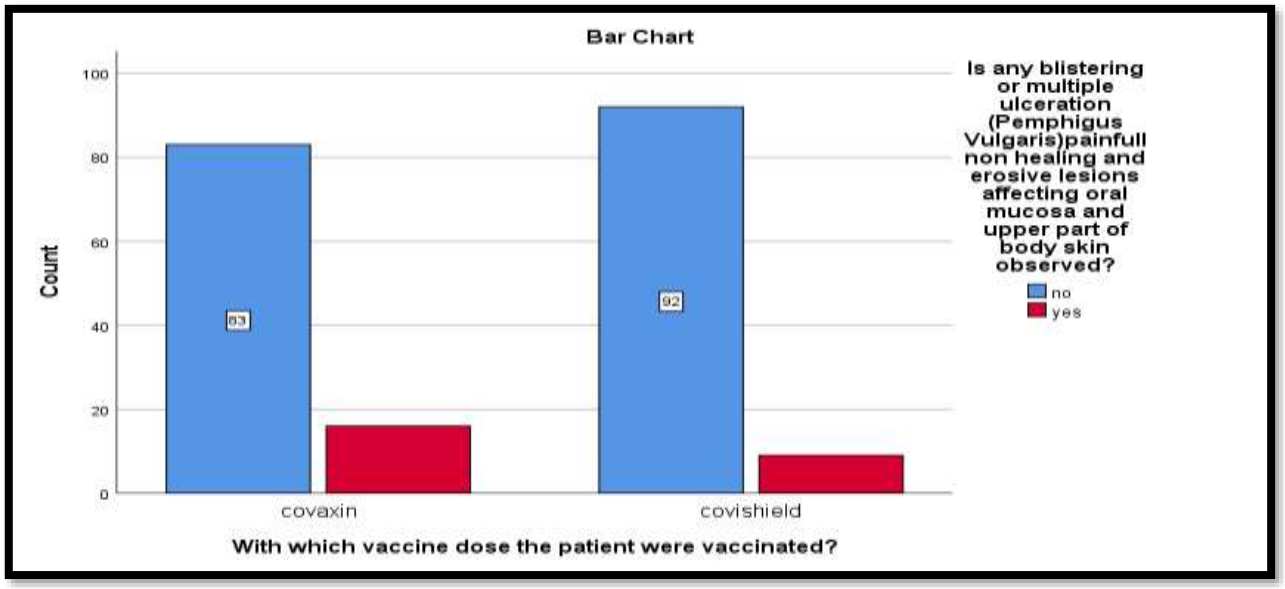


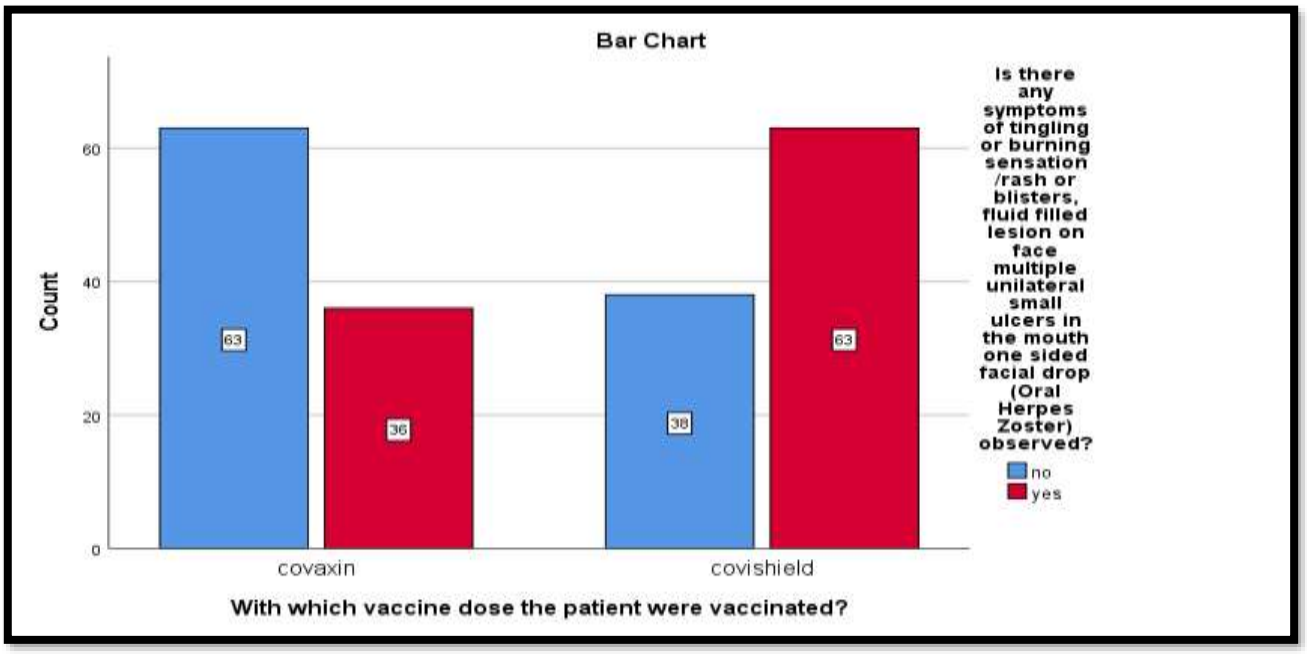
Table 21-With which vaccine dose the patient were vaccinated? * Is there any symptoms of tingling or burning sensation /rash or blisters, fluid filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drop (Oral Herpes Zoster) observed?

	Is there any symptoms of tingling or burning sensation /rash or blisters, fluid filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drop (Oral	Total	

			Herpes Zoster) observed?			
			no	yes		
With which vaccine dose the patient were vaccinated?	Covaxin	Count	63	36	99	0.0001*
		% within With which vaccine dose the patient were vaccinated?	63.6%	36.4%	100.0 %	
	Covishield	Count	38	63	101	
		% within With which vaccine dose the patient were vaccinated?	37.6%	62.4%	100.0 %	
Total		Count	101	99	200	
		% within With which vaccine dose the patient were vaccinated?	50.5%	49.5%	100.0 %	

P<0.05 is statistically significant

Inference: Chi square test was used to find out the significant association between Type of Vaccination and presence of Herpes Zoster and reported significant association (P<0.05)



Inference: Chi square test was used to find out the significant association between gender and the responses of various questions and no significant association was reported (P>0.05) where Covishield reported 63% of herpes zoster cases compared to 34% in Covaxin.

DISCUSSION

The 2019 coronavirus (COVID-19) is a global pandemic caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). According to the World Health Organization, the disease has a mortality rate of only 2.1%. The virus that causes the disease, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), not only affects the lungs, but can also cause the nervous system to stop working and other significant diseases in the body.

The impact of COVID-19 on oral health is often overlooked in the literature, but it is important to consider the implications. Bleeding gums are an early sign of gingivitis, which is associated with infection and inflammation. Systemic diseases have also been identified as risk factors for systemic diseases such as diabetes and heart disease in some of the studies it was found that there was association between Covid 19 and Periodontitis in some studies direct link is observed between both diseases **Marouf N et al in 2021** studied about Periodontitis was associated with higher risk of ICU admission, Elevation of blood biomarkers associated with the need for respiratory support and mortality and disease outcome in COVID-19 patients.[7] Similar studies by **Cai Wenji et al in 2021** studied that infection and absorption of bacteria found in patients with periodontitis may coincide with infection or impair the immune response to COVID 19. [4] **Sari A et al in 2023** studied about the relationship between infectious diseases and the spread of COVID-19 and the emphasis that protecting health will be important in reducing the severity of COVID-19 should be investigated.[1]

Covid vaccine was discovered as lifesaving drug it has been reported to prevent deadly virus like COVID 19. Although The development of an effective vaccine against COVID-19 has been a challenging task for vaccine makers worldwide. India has already rolled out two vaccines- Covishield (ChAdOx1, Oxford-Astra Zeneca vaccine) (January 2021) advanced in the UK and Serum Institute of India (SII) is makes second one Covaxin (March 2021) which is developed by Bharat Biotech Pharma company, India Although studies are there regarding COVID 19 vaccination in a similar study earlier patients were reluctant for vaccination **Kaur A et al in 2021** studied that acceptance and attitudes towards the COVID-19 vaccine are far from ideal, with many factors contributing to reluctance to get vaccinated.[8] Conjuring studies by **Alduwayghiri E M et al in 2021** studied the attitudes and fears about vaccines are the main reasons for COVID 19 vaccine rejection and refusal.[9] But as we proceed further there are various similar studies **(Espinoza D A K E et al in 2021)** stated a strong link between periodontitis and the risk of complications and death from COVID-19 cannot be supported or denied.[10] Another study **Sharun K et al in** in 2020, social-public relations, beliefs about COVID-19 vaccines/vaccines, acceptance of COVID-19 vaccines, related issues that may prevent vaccination, and factors that may lead to vaccination against COVID-19 were evaluated. [3] Although our study is one of a kind but it has one concurrent study that depicts that **AlHazmi B et al in 2024** about correlation between periodontal disease symptoms and vaccination against COVID 19. But the benefits of the vaccine outweigh its side effects.[5] Similar results were shown in our study in which it was found that there was no side effects of covid vaccine on periodontium if bleeding from gums , xerostomia in certain cases and ulceration persists that is temporary further there was no swollen gums observed after the vaccines while some felt swollen gums in case of covishield . On the other hand there Covishield shows tingling/burning sensation/ rash or blisters, fluid

filled lesion on face multiple unilateral small ulcers in the mouth one sided facial drops (Oral Herpes Zoster) than the patients administered with Covaxin. But still benefits of Covid vaccine outweigh side effects and there was no direct correlation between vaccination and periodontal health.

CONCLUSION

In summary, this analysis sheds light on the vaccination experiences of patients receiving Covaxin and Covishield. Covaxin was more commonly given, especially to males, while Covishield was favored for booster doses. Overall, patients seemed well-informed about the benefits and potential side effects of both vaccines, although there were some differences in reported reactions.

Covaxin users reported more issues like injection site pain and dry mouth, while Covishield users experienced more general side effects, such as fever and oral discomfort. Fortunately, both vaccines effectively reduced the risk of COVID-19, with most recipients not reporting any long-term side effects.

These findings emphasize the importance of ongoing education about vaccination options and their potential effects. By understanding patient experiences better, we can improve public health strategies and help build confidence in other various vaccinations.

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