International Journal of Advanced Community Medicine

E-ISSN: 2616-3594
P-ISSN: 2616-3586
Impact Factor (RJIF): 5.89
www.comedjournal.com
IJACM 2026; 9(1): 01-08
Received: 02-10-2025
Accepted: 05-11-2025

Abdulrahman A Altalasi
Department of Family Medicine, King Saud Medical City, Riyadh, Saudi Arabia

Dr. Maheen Rahim
Department of Family Medicine, King Saud Medical City, Riyadh, Saudi Arabia

Saleh K Aldakhil
Department of Family Medicine, King Saud Medical City, Riyadh, Saudi Arabia

Sultanah Alghofaili
Department of Family Medicine, King Saud Medical City, Riyadh, Saudi Arabia

Corresponding Author:
Abdulrahman A Altalasi
Department of Family Medicine, King Saud Medical City, Riyadh, Saudi Arabia

The awareness of shingles vaccine and its protective efficacy among health care providers in primary health care centers of Riyadh

Abdulrahman A Altalasi, Maheen Rahim, Saleh K Aldakhil and Sultanah Alghofaili

DOI: https://www.doi.org/10.33545/comed.2026.v9.i1.A.425

Abstract
Introduction: Varicella, a highly contagious childhood infection, is widespread globally. The disease burden related to varicella is substantial, emphasizing the importance of childhood vaccination for prevention.
Objective: The study aims to evaluate healthcare providers' understanding, beliefs, gaps, and attitudes regarding the shingles vaccine. It also identifies areas for potential education or intervention to enhance vaccine acceptance and recommendations.
Methods: A descriptive cross-sectional study was conducted using both electronic and hard copy questionnaires. The study targeted healthcare providers, including physicians and nurses, from primary healthcare centers in Riyadh. Participants were randomly selected, and only those who provided informed consent were included. The study assessed demographic characteristics (age, gender, profession, and experience), knowledge and attitudes toward varicella vaccination, and reasons for non-vaccination. Individuals not practicing in Riyadh, unwilling to provide consent, or unavailable during the study period were excluded. A total of 251 participants were recruited with prior approval from center administrators, and announcements were shared via internal communication channels.
Results: This study evaluated the awareness and perceived efficacy of the shingles (herpes zoster) vaccine among 251 healthcare providers in primary health care centers in Riyadh. Most participants were young physicians with less than five years of experience and held at least a bachelor's degree. A high proportion (90.8%) had heard of the vaccine, and 86.1% knew it is recommended for adults over 50. About 65.7% believed it to be very effective, and 80.5% considered it safe. However, barriers to patient uptake included lack of awareness (76.5%), fear of side effects (72.1%), and misconceptions about vaccine necessity (57.4%). Nearly half (45.8%) demonstrated a high level of knowledge, which was significantly associated with occupation, years of practice, and educational level. Despite positive attitudes, inconsistencies in practice remain. The majority expressed interest in further training, highlighting the need for continued education to improve vaccine advocacy and increase patient vaccination rates.
Conclusion: While the current study indicates a commendable awareness level among healthcare professionals regarding the shingles vaccine, significant barriers still limit the effective dissemination of this knowledge into practice.

Keywords: Varicella, Herpes zoster vaccine, Healthcare providers, Vaccine awareness, Primary health care

Introduction
Varicella, commonly known as chickenpox, is an acute febrile illness primarily affecting children. It presents with characteristic vesicular rashes. While most cases of varicella are self-limiting, severe complications can arise, including bacterial superinfection, pneumonia, and encephalitis even in otherwise healthy individuals [1]. The risk of serious complications is higher in infants, the elderly, and immunocompromised patients, and it can be lethal [2]. In nonimmune pregnant women, varicella poses a significant danger to both the mother and the fetus. Infection during pregnancy may lead to congenital varicella syndrome or neonatal varicella, both associated with high morbidity and mortality [3]. After the primary infection, the varicella virus establishes latency in the dorsal root nerve ganglia and may later reactivate, causing shingles (herpes zoster, HZ) characterized by painful rashes localized to a specific dermatome [1].
Varicella, a highly contagious childhood infection, is prevalent worldwide [4]. The disease burden associated with varicella is significant. A systematic literature review estimated that without vaccination, approximately 5.5 million cases would occur across Europe, primarily

affecting children under 5 years of age [5].

Experience from countries with universal varicella (shingles) vaccination, such as Germany, shows that vaccination reduces varicella morbidity, complications, and hospitalizations while also inducing herd immunity, leading to a decrease in varicella incidence among infants under one year of age [6].

In 2013-2014, the United Kingdom (UK) was the first European country to implement a shingles vaccination program, primarily targeting adults aged 70 or 79 years (catch-up cohort). In the second year of the program (2014-2015), individuals aged 78 years on September 1, 2014, were also included in the catch-up campaign. The introduction of the shingles vaccine resulted in approximately 17,000 fewer shingles episodes among 5.5 million eligible individuals in England during the first three years of the program [7].

A cross-sectional study assessed knowledge and awareness of herpes zoster and its vaccine in individuals aged ≥ 50 years in Saudi Arabia. The study shows that among 402 participants, 57.2% were aware of the shingles vaccine, but only 7.7% had received it. However, 53.2% expressed willingness to be vaccinated. Multivariable analysis revealed that Individuals aged 56-60 were 1.8 times more likely to accept the vaccine than those aged 50-55 years ($p = 0.03$), men were 1.9 times more likely to accept the vaccine than women ($p = 0.01$), participants with primary education were 16.1 times more likely to accept the vaccine than those with higher education ($p = 0.01$) [8].

Another cross-sectional survey of 153 physicians working in primary healthcare (PHC) daily clinics in Makkah revealed that most participants (88.2%) were aware of the shingles vaccine. Additionally, 64.7% believed the vaccine was necessary even if the patient had a history of chickenpox. Knowledge about administering the vaccine to adults over 50 years old was high (82.4%). However, barriers to vaccination included perceived low risk of shingles (33%) and concerns about side effects (27.5%) [9].

Despite the scientific evidence demonstrating the overall benefits of immunization, vaccine hesitancy -defined by the WHO Strategic Advisory Group of Experts (SAGE) Working Group as 'delay in acceptance or refusal of vaccines despite availability of vaccination services'- poses challenges worldwide [10]. Some use the term 'vaccine hesitant' more broadly, encompassing both individuals who outright refuse vaccination and those who accept vaccines but still harbor concerns about them [11].

Based on a recent international study using WHO/UNICEF data, vaccine hesitancy can be attributed to three main factors: (1) concerns about the risk-benefit balance, (2) lack of knowledge and awareness regarding vaccination and its importance, and (3) considerations related to religion, culture, gender, and socioeconomic factors [11]. Reports from various European countries indicate that parental refusal of childhood vaccines often stems from worries about vaccine safety and effectiveness. Additionally, some parents remain unconvinced that certain infections warrant vaccination [4, 12, 13]. Interestingly, vaccine hesitancy tends to be more prevalent among well-educated parents [14].

Vaccine hesitancy doesn't only affect parents; it also extends to pediatric healthcare providers. Studies have highlighted that healthcare provider vaccine hesitancy can be an overlooked barrier to childhood immunization [15, 16]. For instance, in a Netherlands study, only 21% of medical doctors and nurses working in regional public health services and child health clinics expressed a positive attitude toward universal childhood varicella vaccination [13]. Given that healthcare providers are the most trusted source of information for parents, their confidence in vaccination plays a crucial role in preventing childhood infections. Parents who receive sufficient information on vaccination from healthcare providers tend to have more positive attitudes toward immunization [4].

Given that the shingles vaccine is relatively new, our understanding of its knowledge, attitudes, and practices in the Middle East region remains limited. To address this gap, our study aims to assess healthcare providers' knowledge, beliefs, gaps, and attitudes related to the shingles vaccine. By identifying areas where education or intervention may be needed, we hope to improve vaccine acceptance and recommendations through targeted awareness campaigns.

Objectives:

- **Assess Awareness:** Determine healthcare providers' knowledge level regarding the shingles vaccine.
- **Evaluate Efficacy Beliefs:** Understand providers' perceptions of the vaccine's effectiveness.
- **Identify Knowledge Gaps:** Pinpoint misconceptions or areas of insufficient knowledge.
- **Explore Attitudes:** Investigate providers' recommendations and attitudes toward administering the shingles vaccine.

Methodology

- Our descriptive cross-sectional study will utilize both electronic and hard copy questionnaires.
- We engaged healthcare providers, including physicians and nurses, from primary healthcare centers in Riyadh.
- Participants were randomly selected, and only those providing informed consent were included.
- The study assessed demographic background (such as age, gender, profession, and experience), knowledge, attitudes toward varicella vaccination, and reasons for non-vaccination. Those not practicing in Riyadh, unwilling to provide consent, or unavailable during the study period were excluded.
- We recruited 251 participants (sample size calculated using CI 99.99%) through primary healthcare centers in Riyadh city, with prior permission from administrators, and announcements shared via internal communications.
- Data was collected electronically and on-site by research staff.
- The collected data securely stored on a protected server, with personal identifiers removed and the data anonymized before analysis.
- Descriptive statistics, chi-square tests, and logistic regression analyses will summarize the data and explore associations.

Statistical consideration

- Data collection by the researchers themselves and reviewed by the supervisors
- There will be multi stage cluster sampling, we will use this as we are dealing with large geographical spread. We will randomly select 30 primary health care centers from Riyadh city health clusters (simple random sampling). Each center if we expect 10 Health care providers are present we will do convenient sampling thus we take 50% staff from each center. Putting above in the sample calculator and using CI 99.99% calculated sample size is 251.
- Computer software using SPSS version 22

- Statistical tests Study data will be summarized using descriptive statistics. Independent sample t-test will be used to compare mean difference of adherence to medication and Chi-square test will be used to measure differences in proportions.
- Categorical data will be presented as frequencies and percentages, while Chi-square tests will be used for comparisons between groups.
- Continuous data will be reported as mean ± SD and median (IQR) after testing for normality using the Shapiro-Wilkes test.
- Where continuous data are normally distributed, the Student's T-test and ANOVA test will be used for comparisons between groups; where data are not-normally distributed, the Mann-Whitney and Kruskal-Wallis tests will be used.
- P value <0.05 considered statistically significant.

Ethical considerations:

- Ethical approval from the Institutional Review Board (IRB)
- Written consent will be obtained from subjects before being included in the study.
- Privacy and confidentiality of all the information will be assured. Data will be treated anonymously without any clue about patient identification.

Results

This table (1) summarizes the sociodemographic profile of 251 participants. Most of them were between 25 and 34 years old (62.5%) and slightly more females (51.4%) than males took part in the study. Most of the group (73.3%) are physicians and 56.6% reported 0-5 years of experience which points to a young and early-career group. More than three-quarters of participants (79.3%) hold a bachelor's degree, proving they are well educated. According to the data, the majority of participants are young, active in their careers and have a wide range of medical training**.**

Table 1: Sociodemographic characteristics of participants (n=251)

Parameter		No.	Percent (%)
Age group	25-34	157	62.5
	35-44	65	25.9
	45-54	25	10.0
	55+	4	1.6
Gender	Female	129	51.4
	Male	122	48.6
Occupation	Nurse	61	24.3
	Pharmacist	6	2.4
	Physician	184	73.3
Years of Practice	0-5 years	142	56.6
	11-15 years	33	13.1
	16+ years	26	10.4
	6-10 years	50	19.9
Educational level	Bachelor's	199	79.3
	Board certificate	5	2.0
	Diploma	7	2.8
	Doctorate	11	4.4
	Fellowship	1	.4
	Master's	25	10.0
	SBFM	3	1.2

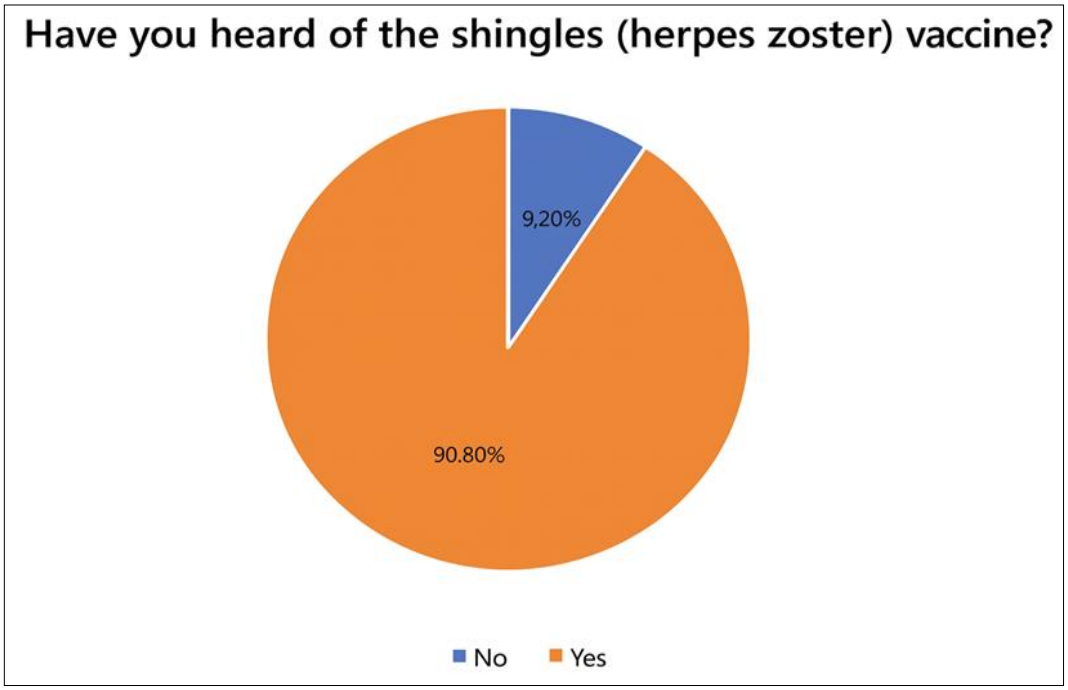

Fig 1: Illustrates if participants have heard of shingles vaccine (n=251)

From the pie chart, it appears that nearly all (90.8%) of the people surveyed are aware of the shingles (herpes zoster) vaccine. In comparison, a small number of people (9.2%) have never heard of it, showing where strengthening public health messages on vaccines could help.

Shingles awareness is strong and positive among primary healthcare providers in Riyadh, as 90.8% are familiar with the vaccine and 86.1% believe it should be given to adults over 50. Most people think it works well (about three quarters feel it is very effective) and that it is safe (around eight in ten think so) and a high proportion (almost four out of five) trust recommending it. Yet, difficulties like patients not being fully aware (76.5%) and worrying about possible side effects (40.6%) remain, as well as misbeliefs about needing the vaccine. Most individuals surveyed (73.7%) showed interest in receiving additional training which could help strengthen vaccine advocacy. On the whole, these results show that people are well informed, but still, further education could help boost vaccination rates.

Table 2: Parameters related to knowledge and awareness of shingles vaccine and its protective efficacy among health care providers in primary health care centers of Riyadh (n=251).

Parameter		No.	Percent (%)
Have you heard of the shingles (herpes zoster) vaccine?	No	23	9.2
	Yes	228	90.8
Are you aware that the shingles vaccine is recommended for adults over 50 years old?	No	35	13.9
	Yes	216	86.1
Do you know if the shingles vaccine can prevent complications associated with herpes zoster (shingles)?	No	31	12.4
	Yes	220	87.6
Do you know the shingles vaccine can be given to people who have had chickenpox in the past?	No	61	24.3
	Yes	190	75.7
How would you rate your knowledge about the shingles vaccine?	Moderately knowledgeable	111	44.2
	Not knowledgeable	24	9.6
	Slightly knowledgeable	36	14.3
	Very knowledgeable	80	31.9
How effective do you believe the shingles vaccine is in preventing shingles?	Moderately effective	59	23.5
	Not effective	17	6.8
	Slightly effective	10	4.0
	Very effective	165	65.7
Do you believe it is important to recommend the shingles vaccine to patients over 50 years old?	Agree	49	19.5
	Disagree	2	.8
	Neutral	19	7.6
	Strongly agree	174	69.3
	Strongly disagree	7	2.8
Do you believe the shingles vaccine is safe for patients?	No	11	4.4
	Unsure	38	15.1
	Yes	202	80.5
What concerns, if any, do you have about the shingles vaccine?	Cost	6	2.4
	Lack of effectiveness	36	14.3
	None	107	42.6
	Side effects	102	40.6
Do you feel confident recommending the shingles vaccine to your patients?	No	23	9.2
	Unsure	22	8.8
	Yes	206	82.1
What do you believe are the main barriers preventing patients from getting the shingles vaccine? (Select all that apply)?*	Concerns about side effects	181	72.1
	Lack of awareness	192	76.5
	Vaccine availability	49	19.5
	Cost	12	4.8
What is the most common reason you hear from patients for not wanting the shingles vaccine?	Belief that they don't need it	144	57.4
	Cost	2	.8
	Fear of side effects	105	41.8
In your opinion, what would help improve shingles vaccine uptake among patients?	Better access to the vaccine	11	4.4
	Increasing awareness campaigns	97	38.6
	More patient education	137	54.6
	Reducing cost	6	2.4
Do you routinely check if patients over 50 are eligible for the shingles vaccine?	No	84	33.5
	Yes	167	66.5
How often do you recommend the shingles vaccine to eligible patients?	Always	83	33.1
	Never	27	10.8
	Often	69	27.5
	Rarely	20	8.0
	Sometimes	52	20.7
Would you like additional training or educational resources on the shingles vaccine?	No	66	26.3
	Yes	185	73.7

Most respondents say they would recommend the shingles vaccine to patients, but a significant number are unsure and another group admits they feel unsure about it. It therefore indicates that it is important to provide extra training on specific guidelines about shingles vaccination to clinicians.

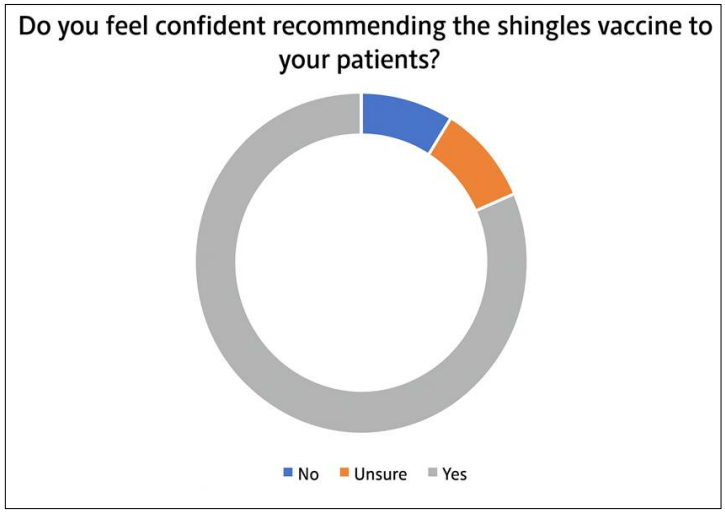

Fig 2: Illustrates if participants feel confident recommending the shingles vaccine to your patients. (n=251)

Among healthcare providers at primary care centers in Riyadh, 45.8% are knowledgeable and aware of the shingles vaccine, 21.9% know relatively less and 32.3% have a moderate amount of knowledge about it. All in all, roughly half have a thorough grasp which is necessary for helping advocate for vaccines and explaining them to patients.

Table 3: Shows cumulative score of knowledge and awareness of shingles vaccine and its protective efficacy among health care providers in primary health care centers of Riyadh (n=251).

	Frequency	Percent
High level	115	45.8
Low level	55	21.9
Moderate level	81	32.3
Total	251	100.0

The data presented in the table (4) reveals participants' cumulative knowledge and awareness score of shingles vaccine was significantly related to occupation with tendency of physicians to be high level rather than nurses and pharmacists, years of practice with tendency of more than 16 years practitioners to be high level and educational level as doctorate ones tend to have high knowledge about the vaccine. While it showed statistically insignificant relation with age group, gender.

Table 4: Relation between sociodemographic characteristics of the participants and their cumulative knowledge and awareness score of shingles vaccine. (n=251)

Parameters		GAD score			Total (N=251)	P value*
		High	Low	Moderate		
Age group	25-34	68	39	50	157	0.149
		59.1%	70.9%	61.7%	62.5%	
	35-44	27	12	26	65	
		23.5%	21.8%	32.1%	25.9%	
	45-54	17	4	4	25	
		14.8%	7.3%	4.9%	10.0%	
	55+	3	0	1	4	
		2.6%	0.0%	1.2%	1.6%	
Gender	Female	51	32	46	129	0.120
		44.3%	58.2%	56.8%	51.4%	
	Male	64	23	35	122	
		55.7%	41.8%	43.2%	48.6%	
Occupation	Nurse	9	28	24	61	0.000
		7.8%	50.9%	29.6%	24.3%	
	Pharmacist	1	5	0	6	
		0.9%	9.1%	0.0%	2.4%	
	Physician	105	22	57	184	
		91.3%	40.0%	70.4%	73.3%	
Years of practice	0-5 years	60	37	45	142	0.031
		52.2%	67.3%	55.6%	56.6%	
	11-15 years	11	6	16	33	
		9.6%	10.9%	19.8%	13.1%	
	16+ years	19	3	4	26	
		16.5%	5.5%	4.9%	10.4%	
	6-10 years	25	9	16	50	
		21.7%	16.4%	19.8%	19.9%	
Educational level	Bachelor's	83	51	65	199	0.005

		72.2%	92.7%	80.2%	79.3%	
	Board certificate	3	0	2	5	
		2.6%	0.0%	2.5%	2.0%	
	Diploma	0	3	4	7	
		0.0%	5.5%	4.9%	2.8%	
	Doctorate	10	0	1	11	
		8.7%	0.0%	1.2%	4.4%	
	Fellowship	1	0	0	1	
		0.9%	0.0%	0.0%	0.4%	
	Master's	15	1	9	25	
		13.0%	1.8%	11.1%	10.0%	
	SBFM	3	0	0	3	
		2.6%	0.0%	0.0%	1.2%	

*P value was considered significant if ≤ 0.05.

Discussion

The purpose of the current research was to determine the knowledge of shingles vaccination and its preventive ability among medical professionals in Riyadh. As healthcare professionals are involved in the overall determination of patient attitudes towards vaccinations, the knowledge, perceptions, and communication of the healthcare professionals towards the shingles vaccine are of prime importance. The results of this research indicate a significant level of awareness of the health professionals, most of whom have heard about the vaccine against shingles and have a favorable attitude towards its effectiveness. Nevertheless, there were ongoing knowledge gaps and obstacles to patient recommendation practices that were consistent, meaning that future educational interventions would be useful.

The overall awareness of the shingles vaccine among healthcare providers in our study is similar to the results of the study by Lu *et al*. [17], according to which only 41 percent of providers strongly recommended the shingles vaccine, which is significantly lower than that of influenza and pneumococcal vaccines, which was more than 90 percent. Such a discrepancy highlights the possible obstacle in the promotion of shingles vaccination, as it shows that healthcare providers might be informed about the vaccine, yet the rate of their recommendation does not reflect the perceived effectiveness. This may further be exacerbated by the absence of vigorous marketing advocated in the literature, where patient ignorance of the shingles vaccine can be a proxy of provider reluctance to recommend it proactively [17]. On top of that, a study by Williams *et al*. [18] on coverage of adult vaccinations shows that recognition of the need of the vaccine is overall low among adults, implying that by increasing provider confidence in recommending vaccinations, one can directly influence the uptake of vaccinations in their patients.

Although a high level of awareness has been noted (90.8%) in our research, our findings indicate that the gap between knowledge and practice exists because only 33.1% of participants said that they always recommend the vaccine. This discrepancy coincides with the findings of prior research studies like that of Almutairi *et al*. [19] and Taskou *et al*. [20], which have reported that healthcare practitioners tend to have a hard time suggesting immunization even though they advise patients on the significance of immunization. The evidence indicates that the perceptions of healthcare providers on the effectiveness and safety of vaccines may have a considerable impact on their recommendations [20], and better training may alleviate this disparity. Remarkably, we also found that physicians reported to have better knowledge of shingles vaccine than their nursing colleagues, which is comparable to findings of a study where educators cited greater tendency in medical providers to support some vaccines depending on their self-reported knowledge levels [21].

Furthermore, the issue with vaccine safety, as it was shown in our study by the number of respondents (72.1), is a reflection of other studies. As an example, Adeyanju *et al*. [22] pointed to the role of misinformation about the safety of vaccines among healthcare professionals in the context of vaccine hesitancy and its effects on patient recommendations. These fears are replicated elsewhere where the attitude towards immunization has been shown to be an expression of anxieties about the side effects of vaccines a vital fact to bear in mind during future training programmes that relate to the education on vaccines.

According to our data, 76.5 percent of providers also mention the absence of patient awareness as an obstacle to raising the rate of vaccination. This observation is especially in line with the study by Reiter *et al*. [23], which revealed that provider-initiated communication can have a significant influence on vaccination choices of patients. Their study determined that there was a close connection between provider recommendations and vaccine uptake and the importance of healthcare professionalism in not only vaccinating, but also educating patients about the significance of vaccines [24].

Demographics, most notably occupation and years of experience, seemed to play a role in affecting the level of awareness throughout our cohort. This observation supports the meta-analysis of Fan *et al*. [25], who recommended that experience, professional designation, and educational level tend to shape knowledge and vaccination practice in healthcare professionals. In particular, more experienced practitioners and advanced degree holders tend to report higher levels of confidence regarding their recommendations, a fact that can be used to shape specific educational initiatives that are aimed at increasing the level of knowledge of all providers, not only those who are working in direct contact with patients [26].

Although the findings of the study indicate a high self-reported efficacy of the shingles vaccine in the prevention of complications and in creating confidence in recommendations (65.7% and 82.1% respectively), the positive inclination is contrasted with the significant obstacles reported by the participants. The mentioned obstacles, especially when it comes to dealing with the misconceptions of patients regarding the shingles vaccine, seem to align with the results of the study by Akın who discovered that patients are more likely to accept vaccines when they are told about their efficacy and safety [27]. Therefore, our findings indicate that better communication approaches are highly required to empower clinical professionals by providing more straightforward messages about the advantages and safety measures of the shingles vaccine.

However, in spite of the overall positive mood toward the vaccine, the research also indicates fundamental shortcomings in our methodology. The answers were completely self-reported, which could affect the accuracy of knowledge evaluation, which is recognized by the existing research presenting evidence of inaccuracy in measuring self-rated and actual knowledge in healthcare environments [28]. Moreover, our cross-sectional study limits the possibility to prove causality since the results of the study are a single point in time, without longitudinal follow-up to evaluate the change in awareness or practice after the intervention.

Conclusion

Although the present study demonstrates that awareness of the shingles vaccine among the healthcare professionals is quite satisfactory, there are still considerable obstacles that restrict the successful transfer of this knowledge into practice. The gaps in the preventative recommendations and the safety concerns with the vaccines observed point to the need to implement specific educational measures to ensure that healthcare providers can mix the knowledge and effective communication techniques to maximize the vaccination rates. The future research should be dedicated to longitudinal studies to observe the changes in awareness and practice after interventions and the way of overcoming vaccine hesitancy in the healthcare community itself.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Clinical features of varicella-zoster virus infection. Viruses. 2018 Nov;10(11):609. Available from: https://www.mdpi.com/1999-4915/10/11/609. Accessed July 22, 2024.
2. Mészner Z, Wysocki J, Richter D, *et al*. Burden of varicella in Central and Eastern Europe: findings from a systematic literature review. Expert Review of Vaccines. 2019;18:281-293. doi:10.1080/14760584.2019.1573145.
3. Helmuth IG, Poulsen A, Suppli CH, Mølbak K. Varicella in Europe: a review of the epidemiology and experience with vaccination. Vaccine. 2015;33:2406-2413. doi:10.1016/j.vaccine.2015.03.055.
4. Knowledge, attitudes, and behaviors of parents towards varicella and its vaccination. BMC Infectious Diseases. 2017. Available from: https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-017-2247-6. Accessed July 22, 2024.
5. Estimation of the burden of varicella in Europe before the introduction of universal childhood immunization. BMC Infectious Diseases. 2017. Available from: https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-017-2445-2. Accessed July 22, 2024.
6. European Centre for Disease Prevention and Control. Public health guidance on varicella vaccination in the European Union. Stockholm: ECDC; 2015. Available from: https://www.ecdc.europa.eu/en/publications-data/public-health-guidance-varicella-vaccination-european-union. Accessed July 22, 2024.
7. Evaluation of the effect of the herpes zoster vaccination programme 3 years after its introduction in England: a population-based study. Lancet Public Health. 2017. Available from: https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(17)30234-7/fulltext. Accessed July 28, 2024.
8. AlMuammar S, Albogmi A, Alzahrani M, Alsharef F, Aljohani R, Aljilani T. Herpes zoster vaccine awareness and acceptance among adults in Saudi Arabia: a survey-based cross-sectional study. Tropical Diseases, Travel Medicine and Vaccines. 2023;9:17. doi:10.1186/s40794-023-00202-z.
9. Turkistani SA, Althobaiti FJ, Alzahrani SH. Knowledge, attitude and practice among Makkah physicians towards herpes zoster vaccination, Saudi Arabia, 2023. Cureus. 2023;15:e49393. doi:10.7759/cureus.49393.
10. World Health Organization. Report of the SAGE Working Group on Vaccine Hesitancy. Available from: https://thecompassforsbc.org/sbcc-tools/report-sage-working-group-vaccine-hesitancy. Accessed July 22, 2024.
11. Dudley MZ, Privor-Dumm L, Dubé È, MacDonald NE. Words matter: vaccine hesitancy, vaccine demand, vaccine confidence, herd immunity and mandatory vaccination. Vaccine. 2020;38:709-711. doi:10.1016/j.vaccine.2019.11.056.
12. Paterson P, Chantler T, Larson HJ. Reasons for non-vaccination: parental vaccine hesitancy and the childhood influenza vaccination school pilot programme in England. Vaccine. 2018;36:5397-5401. doi:10.1016/j.vaccine.2017.08.016.
13. Negative attitude and low intention to vaccinate universally against varicella among public health professionals and parents in the Netherlands: two internet surveys. BMC Infectious Diseases. 2016. Available from: https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-016-1442-1. Accessed July 22, 2024.
14. Bocquier A, Fressard L, Cortaredona S, *et al*. Social differentiation of vaccine hesitancy among French parents and the mediating role of trust and commitment to health: a nationwide cross-sectional study. Vaccine. 2018;36:7666-7673. doi:10.1016/j.vaccine.2018.10.085.
15. Suryadevara M, Handel A, Bonville CA, Cibula DA, Domachowske JB. Pediatric provider vaccine hesitancy: an under-recognized obstacle to immunizing children. Vaccine. 2015;33:6629-6634. doi:10.1016/j.vaccine.2015.10.096.
16. Karafillakis E, Dinca I, Apfel F, *et al*. Vaccine hesitancy among healthcare workers in Europe: a qualitative study. Vaccine. 2016;34:5013-5020. doi:10.1016/j.vaccine.2016.08.029.
17. Lu PJ, O'Halloran A, Williams WW, Harpaz R. National and state-specific shingles vaccination among adults aged ≥60 years. American Journal of Preventive Medicine. 2017;52(3):362-372. doi:10.1016/j.amepre.2016.08.031.
18. Williams WW, Lu PJ, O'Halloran A, Kim DK, Grohskopf L, Pilishvili T, *et al*. Surveillance of vaccination coverage among adult populations—United States, 2014. MMWR Surveillance Summaries. 2016;65(1):1-36. doi:10.15585/mmwr.ss6501a1.
19. Almutairi L, Almusawi MA, Albalawi AM, Hassan M, Alotaibi A, Almutairi TM, *et al*. Knowledge, attitudes, and practices regarding influenza vaccination among healthcare workers in Saudi Arabia: a cross-sectional study. Journal of Preventive Medicine and Public

Health. 2024;57(6):586-594. doi:10.3961/jpmph.24.283.
20. Taskou C, Sarantaki A, Beloukas A, Georgakopoulou V, Daskalakis G, Papalexis P, *et al*. Knowledge and attitudes of healthcare professionals regarding perinatal influenza vaccination during the COVID-19 pandemic. Vaccines. 2023;11(1):168. doi:10.3390/vaccines11010168.
21. Alahmari R, Alamri O, Altashlan A, Alsheikh A, Aljaloud M. Practices, attitudes, and knowledge regarding recombinant zoster vaccine among family medicine residents in Riyadh, Saudi Arabia. Cureus. 2024;16:e66301. doi:10.7759/cureus.66301.
22. Adeyanju G, Engel E, Koch L, Ranzinger T, Shahid I, Head M, *et al*. Determinants of influenza vaccine hesitancy among pregnant women in Europe: a systematic review. European Journal of Medical Research. 2021;26:116. doi:10.1186/s40001-021-00584-w.
23. Reiter PL, Katz ML, Paskett ED. Correlates of HPV vaccination among adolescent females from Appalachia and reasons why their parents do not intend to vaccinate. Vaccine. 2013;31(31):3121-3125. doi:10.1016/j.vaccine.2013.04.068.
24. Landis K, Bednarczyk R, Gaydos L. Correlates of HPV vaccine initiation and provider recommendation among male adolescents, 2014 NIS-Teen. Vaccine. 2018;36(24):3498-3504. doi:10.1016/j.vaccine.2018.04.075.
25. Fan J, Xu S, Liu Y, Ma X, Cao J, Fan C, *et al*. Influenza vaccination rates among healthcare workers: a systematic review and meta-analysis investigating influencing factors. Frontiers in Public Health. 2023;11:1295464. doi:10.3389/fpubh.2023.1295464.
26. Ayduran N, Aktaş B, Kılıçkap S, Bayraktar-Ekincioglu A. Vaccination attitudes and practices of physicians and nurses in adult oncology settings. Journal of Research in Pharmacy. 2024;28(3):612-620. doi:10.29228/jrp.722.
27. Akın S. Vaccination attitudes among patients with cancer receiving chemotherapy. International Journal of Hematology and Oncology. 2016;26(3):167-172. doi:10.4999/uhod.161317.
28. Lin C, Mullen J, Smith D, Kotarba M, Kaplan S, Tu P. Healthcare providers' vaccine perceptions, hesitancy, and recommendation to patients: a systematic review. Vaccines. 2021;9(7):713. doi:10.3390/vaccines9070713.

How to Cite This Article
Altalasi AA, Rahim M, Aldakhil SK, Alghofaili S. The awareness of shingles vaccine and its protective efficacy among health care providers in primary health care centers of Riyadh. International Journal of Advanced Community Medicine 2026; 9(1): 01-08.

Creative Commons (CC) License
This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.