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AWARENESS, ATTITUDES, AND ACCEPTANCE OF HERPES ZOSTER VACCINATION AMONG ADULTS IN SAUDI ARABIA: A CROSS-SECTIONAL STUDY

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Abstract: Background: Herpes zoster (HZ), or shingles, is a painful reactivation of the varicella-zoster virus, with increased risk in older adults and immunocompromised individuals. Despite the availability of effective vaccines like the recombinant zoster vaccine (Shingrix®), uptake remains low in many countries, including Saudi Arabia. This study assessed awareness, attitudes, and acceptance of the HZ vaccine among adults in Tabuk, Saudi Arabia.

Methods: A cross-sectional survey was conducted in February 2024 among 446 adults aged ≥18 years using a structured, self-administered questionnaire. The survey assessed demographics, knowledge of HZ and its vaccine, attitudes toward prevention, and willingness to vaccinate. Data were analyzed using SPSS version 25.0, with chi-square tests and ordinal logistic regression to identify predictors of HZ awareness.

Results: Of the 446 participants, 75.6% were aware of HZ, yet only 48.0% knew of the vaccine, and a mere 5.7% had been vaccinated. Knowledge gaps included misconceptions about HZ transmission and vaccine purpose. Occupation in the medical/healthcare field was the strongest predictor of higher HZ knowledge (OR = 4.404, $p < 0.001$). While only 28.8% expressed concern about contracting HZ, 82.5% reported willingness to receive the vaccine if recommended by a healthcare provider. Lack of awareness was the leading barrier to vaccination (94.3%).

Conclusion: Despite moderate awareness of HZ, vaccine knowledge and uptake remain suboptimal among adults in Tabuk. However, high willingness to vaccinate upon provider recommendation highlights an opportunity for targeted educational campaigns and strengthened provider engagement to improve vaccine coverage and reduce the burden of HZ in Saudi Arabia.

Keywords: *Herpes zoster, shingles, vaccine awareness, public health, Saudi Arabia, Shingrix, vaccination uptake, KAP study*.

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Introduction

Herpes zoster (HZ), commonly known as shingles, results from the reactivation of the varicella-zoster virus (VZV), the same virus that causes chickenpox (1) .Following primary VZV infection, the virus establishes latency in sensory ganglia, and reactivation can occur later in life, leading to the characteristic painful rash and potential long-term complications like post herpetic neuralgia (PHN) (2, 3). The incidence of HZ increases with age and is also higher among immunocompromised individuals and those with chronic diseases (4-6). Globally, lifetime risk exceeds 30%, with complications such as PHN affecting 10–30% of patients and imposing significant healthcare costs, including U.S. treatment expenses exceeding $1 billion annually (7). While antiviral therapies can mitigate acute symptoms, vaccination remains the cornerstone of prevention (2, 8).

Effective vaccines, such as the recombinant subunit glycoprotein E vaccine (Shingrix®), have demonstrated >90% efficacy in preventing HZ and PHN and are recommended for adults aged ≥50 years (9-11). Despite its inclusion in Saudi Arabia's immunization program, vaccination rates remain suboptimal, with studies reporting rates as low as 4.5–7.7% (12-14). Barriers include lack of awareness (38.3%) and misconceptions, such as the belief that good health negates the need for vaccination (37.3%) (15). Similar trends are observed globally: in Hong Kong, only 17% of adults consider vaccination (10), while in the UAE, 94% of at-risk individuals remain unvaccinated (16). These findings underscore persistent gaps between vaccine availability and public acceptance.

This study aims to assess the level of awareness, attitudes, and acceptance of the HZ vaccine among adults in Saudi Arabia. Given the limited research on this topic within this specific population, this study will contribute valuable insights to inform public health strategies aimed at increasing vaccine uptake and reducing the burden of HZ in the region.

Methods

Study Design and Participants

This cross-sectional study, conducted in Tabuk City, Saudi Arabia, from February 1st to 29th, 2024, aimed to assess knowledge, attitudes, and practices (KAP) regarding herpes zoster (HZ) and its vaccine among adults aged 18 years and older. The study adhered to the STROBE guidelines for reporting observational research [insert STROBE citation]. Participants were included if they were aged 18 years or older, resided in Tabuk City, were fluent in Arabic, and willing to participate. Both Saudi and non-Saudi nationals were eligible. Individuals with intellectual disabilities or those unable to provide informed consent were excluded.

Data Collection

A convenience sampling approach was employed for participant recruitment. An online survey link, created using Google Forms, was distributed to Tabuk City residents via social media platforms and email. Of the 600 individuals invited to participate, 446 completed the survey, yielding a response rate of 74.3%. We mitigated bias by conducting anonymous surveys, encouraging participants to give honest responses, and ensured participant privacy by collecting no personally identifiable information after obtaining electronic informed consent.

Survey Development

A structured 30-item questionnaire was adapted from Al-Khalidi et al (15). and modified for the current study to include: Demographics (8 items: age, gender, occupation, nationality, education, history of chronic diseases, specific chronic diseases, and History of chickenpox). HZ Knowledge (17 items: risk factors, symptoms, complications). Attitudes Toward HZ Vaccine (5 items: perceived benefits, concerns, willingness to vaccinate). The English questionnaire was translated into Arabic by a certified linguist. A pilot study with 20 participants confirmed clarity and face validity, with revisions made based on feedback. Internal consistency of the knowledge scale (Cronbach's alpha = 0.72) was also confirmed.

Sample Size calculation

A target sample size of 446 was determined based on Raosoft® (http://www.raosoft.com/samplesiz e.html) calculations (confidence level: 95%, margin of error: 5%, response distribution: 50%).

Statistical Methods

Data were entered, coded, cleaned, and analyzed using IBM Statistical Package for the Social Sciences (SPSS) for Windows, Version 25.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics (frequencies, percentages) characterized demographics and KAP scales. Associations: Chi-square tests evaluated links between demographics (age, gender, education) and outcomes (HZ awareness, vaccine acceptance). Predictors: Ordinal logistic regression identified predictors of HZ awareness (categorized as unsatisfactory (<20%), low (≥20% and <40%), moderate (≥40% and <60%), intermediate (≥60% and <80%), and high (≥80%). Significance: Two-tailed tests with $p<0.05$.

Ethical Considerations

Ethical approval was obtained from Tabuk University (No. UT-354-202-2024). Participants provided informed consent electronically. Data were anonymized and stored securely, with access restricted to the research team.

Results

Demographics and Baseline Characteristics

This cross-sectional study included 446 participants, comprising 389 (87.2%) Female and 57 (12.8%) Male. The majority of participants (61.4%, n=274) were aged 18–30 years, followed by 25.8% (n=115) aged 31–40 years, 11.7% (n=52) aged 41–50 years, and a small proportion (1.1%, n=5) over 50 years of age. Most participants (97.8%, n=436) were Saudi nationals. Educational attainment was high, with 78.5% (n=350) having completed college. The most prevalent occupation was medical/healthcare (17.3%, n=77). A substantial portion of the sample (41.3%, n=184) reported a history of chronic diseases, with hypertension (12.1%, n=54), diabetes mellitus (15.0%, n=67), and respiratory diseases (14.6%, n=65) being most frequently reported. A history of chickenpox was reported by 19.1% (n=85) of participants. Participants with a history of chickenpox demonstrated significantly higher awareness of herpes zoster (HZ) compared to those without (84.7% vs. 73.4%, χ^2 test, p = 0.029). Table 1 summarizes participants' demographics.

Table 1 Basic characteristics of the participants (n=446)

Basic characteristics		**Awareness of HZ**		**Awareness of HZ vaccine**		**Intention to be vaccinated**	
	N(%)*	**N(%)***	**P-value****	**N(%)***	**P-value****	**N(%)***	**P-value****
Sex							
Male	57 (12.8%)	41(72.0%)	0.495	22(38.5%)	0.148	41 (72.0%)	0.196
Female	389 (87.2%)	296(76.0%)		190(64.0%)		317(81.5%)	
Age							
18-30	274 (61.4%)	185(67.5%)	**0.00**	114(41.6%)	**0.002**	219 (80%)	0.2
31 - 40	115 (25.8%)	102(88.7%)		60 (52%)		91 (79%)	
41 - 50	52 (11.7%)	45 (86.5%)		36 (69.0%)		43 (82.7%)	
More than 50	5 (1.1%)	5 (100%)		2 (40.0%)		5 (100%)	
Nationality							
saudi	436 (97.8%)	329(75.5%)	0.741	210(48.0%)	0.078	350(80.0%)	0.854
not saudi	10 (2.2%)	8 (80.0%)		2 (20.0%)		8 (80.0%)	

Educational level							
secondary school or below	9 (2%)	7 (77.7%)		5 (55.5%)		8 (88.8%)	
High school	87 (19.5%)	52 (59.7%)	**0.001**	36 (41.3%)	0.407	69 (79.3%)	0.231
collage	350 (78.5%)	278(79.4%)		171(49.0%)		281(80.2%)	
occupation							
Medical and health care	77 (17.3%)	65 (84.4%)		57 (74.0%)		65 (84.4%)	
Business	65 (14.6%)	39 (60.0%)		28 (43.0%)		48 (73.8%)	
Governmental	46 (10.3%)	37 (80.4%)		22 (47.8%)		37 (80.4%)	
Engineering and IT	26 (5.8%)	17 (65.3%)	**0.024**	9 (34.6%)	**0.00**	20 (76.9%)	0.282
Education sector	88 (19.7%)	70 (79.5%)		48 (54.5%)		78 (88.6%)	
Arts and communication	17 (3.8%)	13 (76.4%)		8 (47.0%)		13 (76.4%)	
Others	127 (28.5%)	96 (75.6%)		40 (31.5%)		97 (76.3%)	
History of chronic diseases							
No	262 (58.7%)	204(77.8%)	0.167	125(47.7%)	0.882	208(79.3%)	0.866
Yes	184 (41.3%)	132(71.7%)		86 (46.7%)		149 (81%)	
Chronic disease							
Hypercholesterolemia	29 (6.5%)	25 (86.2%)	0.168	19 (65.5%)	**0.045**	25 (86.2%)	0.686
Hypertension	54 (12.1%)	39 (72.2%)	0.543	29 (53.7%)	0.333	47 (87.0%)	0.355
Diabetes mellitus	67 (15.0%)	48 (71.6%)	0.418	36 (53.7%)	0.27	58 (86.5%)	0.32
Respiratory diseases	65 (14.6%)	40 (61.5%)	**0.004**	31 (47.7%)	0.978	51 (78.4%)	0.559
Coronary artery disease	10 (2.2%)	8 (80.0%)	0.741	7 (70.0%)	0.15	8 (80.0%)	0.854
Depression	35 (7.8%)	20 (57.1%)	**0.008**	12 (34.2%)	0.102	26 (74.2%)	0.497
Hypothyroidism	31 (7.0%)	25 (80.6%)	0.495	18 (58.0)	0.224	23 (74.2%)	0.601
Arthritic diseases	22 (4.9%)	18 (81.8%)	0.484	18 (81.8%)	**0.001**	18 (81.8%)	0.731
Others	20 (4.5%)	14 (70.0%)	0.554	7 (35.0%)	0.251	16 (80.0%)	0.723
History of chickenpox							
No	361 (80.9%)	265(73.4%)	**0.029**	166(46.0%)	0.177	287(79.5%)	0.469
Yes	85 (19.1%)	72 (84.7%)		46 (54.1%)		71 (83.5%)	
*** Valid percent was used if there were any missing data.**							
**** Chi squared test**							

Knowledge of Herpes Zoster

Overall awareness of HZ was moderate, with 337 participants (75.6%) reporting prior knowledge of the disease. However, several knowledge gaps were identified. Only a minority of participants (27.3%, n=92) correctly recognized the link between chickenpox and HZ. While 35.6% (n=120) correctly identified immunocompromised individuals as being at higher risk of HZ, a similar proportion (31.2%, n=105) incorrectly believed HZ could be transmitted through direct contact with an infected person. Although common symptoms such as rash, blisters, and neuropathic pain were widely recognized (94.0%, n=317), nearly half (47.5%, n=160) incorrectly associated fever with HZ, and almost one quarter (23.4%, n=79) mistakenly identified cough as a symptom.

Ordinal Logistic Regression Analysis of HZ Awareness Score

An ordinal logistic regression analysis was conducted to identify predictors of HZ awareness level (categorized as low/unsatisfactory, moderate/intermediate, or high). The model was statistically significant ($\chi^2(15) = 40.8$, $p < .001$), indicating that the included predictors significantly explained the variability in HZ awareness scores. Occupation in the medical/healthcare field was confirmed as the strongest predictor of higher HZ knowledge (OR = 4.404, $p < 0.001$). Other demographic factors, including gender, age, and education level, were not significantly associated with HZ awareness scores. age, or nationality. (Tables 2 and 3).

Table 2 Descriptive analysis of knowledge of HZ

Knowledge of Herpes Zoster	**N(%)***
If I get chickenpox, I am at more risk of getting herps zoster	
False/ I don't know	245 (72.7%)
TRUE	92 (27.3%)

I could get herps zoster if I come into contact with somebody who has it	
False/ I don't know	232 (68.8%)
TRUE	105 (31.2%)
There is no cure for herps	
False/ I don't know	304 (90.2%)
TRUE	33 (9.8%)
Immunocompromised individuals are at higher risk of HZ	
False/ I don't know	217 (64.4%)
TRUE	120 (35.6%)
Children are at higher risk of HZ	
False/ I don't know	320 (95.0%)
TRUE	17 (5.0%)
do you know any signs, symptoms and complications of Herps zoster	
Rash, blisters, neuropathic pain	317 (94.0%)
fever	160 (47.5%)
cough	79 (23.4%)
sore throat	18 (5.3%)
Blindness	10 (3.0%)
***Valid percent was used if there were any missing data.**	
Respondents who had never heard of HZ were excluded (n=109)	

Table 3 Ordinal Logistic Regression Results for HZ awareness

						95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Z**	**p**	**Odds ratio**	**Lower**	**Upper**
"Gender":							
female – male	0.08804	0.350	0.25155	0.801	1.092	0.551	2.18
"Age group":							
>50 – 18-30	0.78004	0.764	1.02094	0.307	2.182	0.459	9.82
31-40 – 18-30	-0.08750	0.240	-0.36413	0.716	0.916	0.571	1.47
41-50 – 18-30	0.30100	0.346	0.86931	0.385	1.351	0.682	2.66
"occupation":							
Education sector – others	-0.46486	0.313	-1.48607	0.137	0.628	0.339	1.16
Medical and health care – others	1.48254	0.328	4.52052	< .001	4.404	2.328	8.43
Business – others	0.19369	0.368	0.52655	0.599	1.214	0.588	2.49
Arts and communication – others	-0.00271	0.564	-0.00480	0.996	0.997	0.319	2.99
Engineering and IT – others	0.41752	0.505	0.82603	0.409	1.518	0.558	4.09
Governmental – others	0.35861	0.392	0.91489	0.360	1.431	0.663	3.09
"nationality":							
Non-saudi – saudi	-0.27880	0.674	-0.41355	0.679	0.757	0.191	2.82
"Educational level":							
university – Preparatory or low	1.18789	0.794	1.49561	0.135	3.280	0.728	17.91
secondary – Preparatory or low	1.39420	0.815	1.71172	0.087	4.032	0.863	22.83

						95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Z**	**p**	**Odds ratio**	**Lower**	**Upper**
"History of chronic diseases":							
Yes – No	0.24017	0.212	1.13031	0.258	1.271	0.839	1.93
"History of chicken pox":							
Yes – No	0.29377	0.261	1.12510	0.261	1.341	0.803	2.24

Knowledge of Herpes Zoster Vaccination

Awareness of the HZ vaccine was low, with 212 participants (48.0%) reporting prior knowledge, and only 12 (5.7%) reporting having received the vaccine. Several misconceptions regarding the HZ vaccine were observed. A substantial number of participants (42.5%, n=90) incorrectly believed that the vaccine is a treatment for active HZ infection. While 75 participants (35.4%) correctly identified adults >50 years old as the target demographic for vaccination, 59 (27.8%) believed there was no age limit for vaccination. The vast majority (86.3%, n=183) correctly disagreed that the vaccine is unnecessary after childhood chickenpox infection. There was no statistically significant difference in HZ vaccine awareness between participants with and without chronic diseases (46.7% vs. 47.7%, χ^2 test, p = 0.882). (Table 4).

Table 4 Knowledge of HZ vaccine

Knowledge of HZ vaccine	**N(%)***
Herps zoster vaccine can reduce the incidence of disease by more than 50%.	
False/ I don't know	59 (27.8%)
TRUE	153 (72.2%)
Herps zoster vaccine can treat active Herps zoster	
False/ I don't know	122 (57.5%)
TRUE	90 (42.5%)
Herps zoster vaccine is not needed if the person already had chickenpox as a child	
False/ I don't know	183 (86.3%)
TRUE	29 (13.7%)
Herps zoster vaccine is no longer needed if the person already had Herps zoster	
False/ I don't know	169 (79.7%)
TRUE	43 (20.3%)
The Herps zoster vaccine should be given to	
less than 1year	4 (1.9%)
1-18	17 (8.0%)
18-50	57 (26.9%)
> 50	75 (35.4%)
No age limit	59 (27.8%)
Have you ever been vaccinated against herpes zoster?	
No	200 (94.3%)
yes	12 (5.7%)
***Valid percent was used if there were any missing data.**	
Respondents who had never heard of HZ vaccination were excluded (n=234)	

Attitudes and Practices toward HZ and Vaccination

Attitudes towards HZ prevention were generally positive. Most participants (82.5%, n=278) indicated willingness to receive the HZ vaccine if recommended by a healthcare provider. Although a significant majority (79.5%, n=268) acknowledged that HZ significantly impacts health, only 28.8% (n=97) expressed concern about personally contracting the disease. A considerable proportion expressed interest in learning more about HZ (74.5%, n=251) and its prevention (86.1%, n=290). Reported barriers to vaccination included a lack of awareness (94.3% of unvaccinated participants, n=200) and misconceptions regarding vaccine utility. Notably, the reported rate of HZ vaccination (5.7%) was markedly lower than vaccination rates for other diseases. (Table 5).

Table 5 Participants' attitudes toward HZ and its vaccine

Participants' attitudes toward HZ and its vaccine.	**N(%)***
I am worried about getting Herps zoster.	
Highly disagree/ Disagree	114 (33.8%)
Neutral	126 (37.4%)
Highly agree/ Agree	97 (28.8%)
I am interested in knowing more about this disease.	
Highly disagree/ Disagree	24 (7.1%)
Neutral	62 (18.4%)
Highly agree/ Agree	251 (74.5%)
I am interested in knowing about how to prevent it	
Highly disagree/ Disagree	13 (3.9%)
Neutral	34 (10.1%)
Highly agree/ Agree	290 (86.1%)
Herps zoster has a significant effect on health	
Highly disagree/ Disagree	14 (4.2%)
Neutral	55 (16.3%)
Highly agree/ Agree	268 (79.5%)
I would get the Herps zoster vaccine if the doctor recommended it	
Highly disagree/ Disagree	21 (6.2%)
Neutral	38 (11.3%)
Highly agree/ Agree	278 (82.5%)
***Valid percent was used if there were any missing data.**	
Respondents who had never heard of HZ were excluded (n=109)	

Discussion

This study assessed knowledge, attitudes, and practices (KAP) regarding herpes zoster (HZ) and its vaccine among a predominantly adult, educated Saudi Arabian population, revealing moderate disease awareness but significant gaps in vaccine knowledge and uptake. Comparing our results with similar studies from the UAE (15) , Hong Kong (10) , and the US (17, 18) offers valuable insights into regional and demographic variations in HZ-related knowledge and behavior.

In this study, 75.6% of participants reported awareness of HZ. This was higher than the awareness observed in the UAE cohort (64.3%) but lower than that in the Hong Kong sample (96.1%), suggesting regional differences in public health awareness. However, all populations demonstrated critical knowledge gaps regarding HZ etiology, transmission, and risk factors. Only 27.3% of our participants recognized the link between chickenpox and HZ. This was comparable to the UAE's 21.7% but considerably lower than the 29.6% reported in the Hong Kong study. Misconceptions about HZ transmission (31.2% incorrectly believed HZ is contagious) and symptoms (47.5% associated fever with HZ) were prevalent. Notably, the UAE cohort exhibited poorer recognition of HZ symptoms (e.g., only 16.5% identified neuropathic pain, compared to 94.0% in our study), likely due to differences in sample demographics, with our sample being younger and more educated. Both our study and the UAE study identified healthcare professionals as the most knowledgeable group, underscoring occupational exposure as a potential predictor of HZ awareness.

Targeted public health campaigns are crucial to improve basic HZ knowledge, emphasizing the viral link to chickenpox, clarifying transmission routes, and correcting symptom misconceptions. These campaigns should be tailored to each region's specific knowledge gaps, considering cultural and linguistic factors.

HZ vaccine awareness was alarmingly low across all cohorts, with 48.0% in our study, 14.8% in the UAE, and 37.8% in the Hong Kong study. Misconceptions about the vaccine's purpose were prevalent. In our study, 42.5% of participants believed the vaccine treats active HZ, while in the UAE, 80.3% were unaware of its recommendation for adults aged 50 and older. These findings are consistent with global trends of low HZ vaccine awareness, as demonstrated in a South Korean study where only 49% of participants knew about the vaccine (16) , and a US study highlighting cost and misinformation as key barriers.

Public health initiatives should prioritize raising HZ vaccine awareness, clarifying its preventive nature, debunking myths about its use in active infections, and specifying the recommended age groups for vaccination. Using multiple channels, including social media and primary care settings, could maximize reach and impact.

Our study and UAE identified occupation in healthcare as the strongest predictor of HZ knowledge (OR = 4.404, $p < 0.001$ in our study; $\beta = 0.262$, $p < 0.001$ in the UAE). The Hong Kong study, interestingly, found a positive correlation between HZ knowledge and education level ($p = 0.026$). However, our study found no significant association between chronic diseases and vaccine awareness, contrasting the UAE's finding that participants with chronic conditions were twice as likely to know about the vaccine. This discrepancy may be attributable to differences in healthcare engagement patterns, with the older UAE cohort potentially having more frequent interactions with healthcare providers and more opportunities for discussions about preventive measures, including vaccination.

Notably, both our Saudi Arabian cohort and the UAE participants expressed a high willingness to receive the HZ vaccine if recommended by a healthcare provider (82.5% in our study vs. 83.6% in the UAE). This mirrors global evidence that provider endorsement is pivotal in vaccine uptake, as seen in U.S. studies (17, 18).

Strengthening healthcare provider engagement is crucial. Training programs should equip providers with effective communication strategies to discuss HZ and its vaccine with patients, including addressing concerns and emphasizing the benefits of vaccination.

Lack of awareness was the primary barrier to HZ vaccination in our study (94.3%), the UAE (71.2%), and Hong Kong, where 47.1% attributed non-vaccination to unawareness of vaccine availability. While cost was a relatively minor concern in the UAE (23.9%), our study did not assess financial barriers. Cost was a more significant barrier in Hong Kong (28.4%), where good self-perceived health (20.3%) also contributed to lower vaccination rates (10) . These findings suggest regional variations in healthcare access and priorities. Furthermore, misconceptions about vaccine utility, such as the preference for medication over vaccination observed in the UAE (45.7%), underscore the importance of educational campaigns that clearly communicate the benefits and address concerns regarding HZ vaccination.

Tailored interventions addressing region-specific barriers are needed. While cost-related strategies may be relevant in certain settings, broader campaigns emphasizing vaccine effectiveness and dispelling misconceptions about vaccine utility should be prioritized.

The stark contrast in vaccine awareness between our younger cohort (48.0%) and the older UAE group (14.8%) underscores the need for age-tailored interventions. Integrating HZ vaccine discussions into routine geriatric care, as suggested by the UAE findings, could benefit older adults. For younger populations, leveraging educational institutions, workplace programs, and online platforms can increase awareness before they reach higher-risk ages. US studies have demonstrated the utility of community-based surveys in identifying opportunities for targeted education (17, 18) . Furthermore, the positive association between education level and HZ knowledge observed in the Hong Kong study suggests that educational interventions may be particularly effective for younger demographics. Broader nationwide campaigns incorporating media outreach and provider training, similar to successful initiatives in South Korea, could also play a crucial role in bridging knowledge gaps across all age groups.

Develop age-specific strategies. For older adults, integrate HZ vaccination into routine geriatric care. For younger demographics, leverage educational institutions, workplace wellness programs, and online platforms to establish early awareness.

Strengths and Limitations: Our study provides valuable data from a relatively younger, more educated cohort in Saudi Arabia, a population with limited previous research on HZ. The large sample size strengthens our statistical power, while the use of validated scales enhances methodological rigor. However, the cross-sectional design precludes causal inferences, and the convenience sampling approach limits the generalizability of our findings to the broader Saudi population. Recall bias, particularly for self-reported chickenpox history, might have influenced responses. Future research using stratified sampling, longitudinal designs, and cost-effectiveness analyses could address these limitations and provide a more comprehensive understanding of HZ and its vaccination in this region.

Conclusion

Although HZ vaccine awareness and uptake are currently suboptimal in the Saudi Arabian population we studied, the willingness to vaccinate upon provider recommendation is encouraging. To capitalize on this positive attitude, targeted educational interventions, enhanced provider engagement, and comprehensive national campaigns tailored to specific age groups and addressing regional barriers are essential for improving vaccine literacy and promoting HZ vaccination.

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