

# Knowledge and Awareness of Herpes Zoster Among Elderly Patients Attending to Primary Health Centers at Kingdom of Saudi Arabia 2023

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## Abstract

**Background:** Herpes zoster (HZ) is a common disease in adults and older subjects solely related to the reactivation of latent varicella zoster virus in ganglia. The incidence of the disease increases with aging and the decline of varicella zoster virus-specific cell-mediated immunity, herpes zoster have a significant impact on the quality of life of subjects during the acute phase. Besides, pain can persist even for a long time becoming chronic. The chronic pain following herpes zoster is called post herpetic neuralgia, and it is a debilitating long-lasting condition, characterized by metamer pain, allodia, and hyperalgesia. Therapeutic options against herpes zoster and post herpetic neuralgia are often suboptimal and the impact of the disease and its complications on daily living activities is significant, especially in older subjects. Population aging is a worldwide phenomenon with significant and manifold impacts on society. In this vulnerable state, the immune response is weakened and a higher susceptibility to infectious diseases is observed, the lifetime risk of developing Herpes zoster.

**Aim of the study:** To described the Knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia 2023.

**Methods:** A cross-sectional study was conducted at elderly patients with history among the herpes zoster attending to primary health centers at kingdom of Saudi Arabia, from December to January 2023, 100 patients were included and data were collected by using a written questionnaire.

**Results:** shows that most of the participants (45.0%) were in the age group(70-79) years, the gender majority of them male was higher compared to female(59.0% and 41.0%) , the marital status most of participants married were(82.0%), patient enrollment sites in health centers the majority of participant are family medicine clinic were (66.0%) while Internal medicine clinic were(19.0%) but the geriatric clinic were(15.0%), educational background the majority of participant secondary school were(56.0%).

**Conclusion:** This study highlights the need for increased awareness and education among elderly patients and the public in Saudi Arabia regarding shingles and its vaccine, the findings suggest a need for targeted educational campaigns to address misconceptions and promote vaccination, particularly among elderly patients.

**Keywords:** Knowledge, awareness, herpes zoster, elderly patients, attending, primary health centers, Saudi Arabia .

## Introduction

The population over 65 years of age has been increasing all over the world, as the average life expectancy has increased. In 2015, there are 900 million people aged 60 and above in the world and this number are expected to reach two billion by 2050 [1]. According to data from the Turkish Statistical Institute, 8.5% of the Turkish population consisted of people aged 65 and above in 2017 [2]. The increase in the elderly population causes geriatric diseases and infections to become increasingly important. Worldwide, 3.5 million people suffer from influenza infection every year and about 250,000–300,000 of the cases results in death [3]. Influenza infection mortality is between 51.3 and 99.4/100,000 in the population over 75 years of age; between 13.3 and 27.8/100,000 in the population aged 65–75; and between 1.0 and 5.1/100,000 in the population under 65 years of age [4]. Population over 65 years of age is more susceptible to infections and complications due to changes in the immune system with advancing age and comorbidities [5]. The World Health Organization [WHO] recommends herpes zoster vaccination for all individuals aged  $\geq 50$  years of age [6].

The prevalence of herpes zoster in Saudi Arabia is unclear; however, its incidence is increasing globally, particularly in the elderly population [7]. Shingles can lead to serious complications, including post-herpetic neuralgia, vision loss, and neurological problems [8]. Herpes zoster vaccine is a safe and effective way to prevent shingles and complications. The vaccine is recommended for individuals aged  $\geq 50$  years, and a two-dose schedule is recommended for optimal protection [9]. In Saudi Arabia, the herpes zoster vaccine is available free of charge for individuals aged 50 years and above.[10]

One out of every three people has shingles throughout their lives [11]. Shingles have a significant effect on the quality of life, particularly in the elderly population, due to severe pain lasting for months and sometimes years that does not respond to strong analgesics [12]. According to the new literature data, there is an increased risk of stroke in patients with a shingles history in the past [12]. Herpes zoster (HZ) vaccine prevents the development of shingles and reduces herpetic neuropathic pain, as well as the risk of stroke [14].

Despite the availability of effective vaccines, herpes zoster vaccination rates remain suboptimal in many countries, including Saudi Arabia [15]. Studies have shown that various

factors influence vaccine uptake, including socio demographic factors, such as age, gender, education level, income, and access to healthcare services. [16]

Cultural and religious beliefs may also influence vaccine acceptance. In Saudi Arabia, limited studies have examined the practices related to the herpes zoster vaccine, with one recent study finding that only 4.5% of adults had received the vaccine [17]. Previous studies have focused on specific geographic areas or risk groups [18], highlighting the need for a more comprehensive understanding of the population's knowledge and attitudes towards shingles and its vaccine in Saudi Arabia. Increasing vaccination rates is crucial for reducing the burden of herpes zoster and its complications, particularly in the elderly population.[19]

It is not surprising to find that the association between infectious agents and frailty has been investigated in several studies. In particular, herpes viruses, with their ability to establish lifelong latent infections with possible reactivations [20], have been studied for possible associations with frailty. Such studies have yielded conflicting results, with associations sometimes found between cytomegalovirus (CMV) antibodies and frailty, whereas antibodies against varicella zoster virus (VZV), Epstein–Barr Virus (EBV), and herpes simplex virus 1 and 2 (HSV-1 and HSV-2) were not associated with risks of incident frailty [21]. Considering the relevance of cell-mediated immunity (CMI) in the immune response to these viruses, measurement of antibodies might not be the most appropriate marker for investigating such associations [22]. The drop in CMI that occurs with advancing age correlates with the incidence/onset of herpes zoster (HZ) and, especially in the over 50 s, with both incidence and severity of HZ [23].

## Literature Review

According Wilson et al (2017) that reported to a holistic view of the individual, frailty is “a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, and social), which is caused by the influence of a range of variables and which increases the risk of adverse outcomes” . As previously mentioned the prevalence of frailty increases with age and, according to a recent study, is about 10% in people aged > 65 years, reaching between 25 and 50% in persons aged > 85 years [24].

Data from England from 2004 to 2013 report a yearly average rate of 8.8/100,000 hospital admissions and confirm a high prevalence (71.5%) in individuals  $\geq 60$  years old (incidence of 28.4/100,000). Overall, 82% of cases occur in immune competent people and hospitalizations are more common in women. The yearly average number of days of hospitalization and the related cost stand at 41,780 days and 13 million £, respectively [25].

According to the World Health Organization (WHO), Saudi Arabia a twenty-year audit study of herpes zoster (HZ) in the Asia-Pacific region identified immune senescence and immunosuppression as the principal risk factors for HZ [21].

The total economic impact of herpes zoster and post herpetic neuralgia in immune competent individuals > 50 years of age in Italy amounted to 41.2 million euros, of which at least a third was attributable to indirect costs related to productivity loss [26].

The duration of HZ pain varies considerably, ranging from no pain or pain that lasts for only a few days after rash onset to pain that lasts for years after rash healing [27]. It is

important to note that the frail elderly need careful assessment prior to treatment initiation and those they could be affected to a greater extent than “normal” adults by treatment-related adverse events, both in terms of frequency and in the possible severity of outcomes. More specifically, in the event of renal impairment, which is a frequent occurrence in the frail elderly, dosage has to be adjusted depending on creatinine clearance and adequate hydration needs to be ensured (another common problem in the frail elderly whose thirst reflex is diminished). The risk of neurological adverse events (such as headache, dizziness, confusion, tremor, convulsions, etc.) is also increased and their consequences can be serious, leading, for example, to falls with a high risk of fractures potentially leading to a vicious cycle of worsening frailty [20].

Study reported the vaccination rate in was 18.8%. Notably, this rate is significantly higher than the vaccination rates reported in previous studies among general populations in the Western Region of Saudi Arabia (3.4%) [26], in Qassim region KSA (8.5%) (28), Korea (9%) [23] And the United Arab Emirates (3.3%). One quarter of Saudi diabetic patients were willing to accept the herpes zoster (HZ) vaccine [27]. Furthermore, studies show that healthcare providers play a crucial role in promoting and recommending vaccination to improve vaccination rates [13].

Furthermore, a trend of increasing Herpes Zoster incidence has been observed over the last few decades, irrespective of region [27]; incidence data in the C 65 year's age cohort from the USA, Japan, and Australia demonstrated an average annual increase in Herpes Zoster of between 2.35% and 3.74% [28]. The global increase in Herpes Zoster incidence is expected to be exacerbated by the world's ageing population and greater life expectancy, as older individuals increasingly constitute a larger proportion of the total population of nearly every country. An estimated increase of between 83% and 376% by 2030 is expected in the number of annual incident cases of Herpes Zoster .[29]

### **Rationale:**

Varicella-Zoster Virus Reactivation causes Herpes Zosters (HZ) an infectious disease, also known as shingles. The virus stays dormant in the dorsal root ganglia and is characterized by the cluster appearance of herpes along the peripheral nerves on one side of the body . HZ is more common among the elderly and people with immunodeficiency, among which approximately 22% of cases might progress to post-herpetic neuralgia (PHN), among the several avenues of research in this area, one of particular interest is the potential role of age-induced modifications of the immune-endocrine axis in determining frailty nowadays, a preventive approach to the disease is possible; as a matter of fact, a high-antigen content live vaccine is available, this vaccine has a good profile in terms of immunogenicity, efficacy, effectiveness, and safety and its use may prevent both herpes zoster and post herpetic neuralgia. Nevertheless, the evaluation of the issues raised in countries that introduced this immunization show that both elderly patients and patient barriers could have prevented a more robust uptake of herpes zoster vaccination.

### **Aim of the study:**

To described the Knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia 2023.

### **Objectives:**

To described the Knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia 2023 .

### **Methodology:**

#### **Study design:**

This study is descriptive type of cross-sectional study was conducted among 100 elderly patients attending to primary health centers at kingdom of Saudi Arabia

### **Study Area**

The study has been carried out in the city of is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad . This study has been conducted in the primary health sector in Saudi Arabia. During the December to January 2023, and it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in Saudi Arabia population .

### **Study Population**

The study has been conducted regarding knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia 2023.

### **Selection criteria:**

#### **Inclusion criteria**

- Attending to health centers in primary health sector complain about herpes zoster in
- All nationalities
- Age between  $<60$  years to  $\geq 80$  years
- All gender

#### **Exclusion criteria :**

- No specific exclusion criteria.

### **Sample size**

Visitors to health centers in primary health sector complain about herpes zoster in Saudi Arabia, the sample size has been calculated by applying Raosoft sample size calculator based on (The margin of error: 5%, Confidence level: 95%, and the response distribution was considered to be 20%) accordingly the Sample size is (100) in primary health sector after official communication with the primary health sector in Saudi Arabia and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has

been 100. Computer generated simple random sampling technique was used to select the study participants.

### **Sampling technique:**

Systematic random sampling technique is adopted. After that, by using random number generator, then simple random sampling technique has been applied to select from primary health sector. Also, convenience sampling technique will be utilized to select the participants in the study. By using systematic sampling random as dividing the total students by the required sample size; (100 ).

### **Data collection tool**

The self-administered questionnaire is designed based on previous studies to describe the Knowledge and awareness of herpes zoster among elderly patients attending to primary health centers in Saudi Arabia. The questionnaire has been developed in English. The questions were first pre-tested and were revised and finalized after it has been pilot tested. Before completing the survey, participants were required to indicate their consent using a forced response question followed by the survey questionnaires. The survey is estimated to take 10 min to complete .

To collect the information, a set of questions were constructed and developed. All questions were closed-ended, with tick boxes provided for responses; participants answered the questionnaires from the December to January 2023 the period of study in 2023.

The questionnaire consisted of questions that

**First part** General and Socio demographic information. These variables included contact or mobile phone number),(age, gender, Sources of information). Other variables were education level, economic level.

A questionnaire has been developed that had Socio demographic data and questions related to knowledge and awareness of herpes zoster among elderly patients attending to primary health centers. The two senior faculty members checked the questionnaire's validity and comprehension, and it was revised according to their suggestions. A pilot study has been conducted on secondary students to check the questionnaire's understanding and responses further, and its Cronbach's alpha was 0.75. The results of the pilot study were not included in the final analysis.

The assessment the knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia 2023, and also as per each response/answer . Data entry and analysis were carried out using the Statistical Package for the Social Sciences.

### **Data collection technique:**

Researcher has been visits the selected primary health sector after getting the approval from the ministries of health. The researcher has been obtained permission from participants. After the arrival of the participants has been explained the purpose of the study to all participants attending .

**Data entry and analysis:**

The Statistical Package for Social Sciences (SPSS) software version 24.0 has been used for data entry and analysis. Descriptive statistics (e.g., number, percentage) and analytic

**Pilot study**

A pilot study has been conducted in the same sector due to the similarity to the target group using the same questionnaire to test the methodology of the study. As a feedback, the questionnaire has been clear and no defect has been detected in the methodology

**Ethical Approval**

This study was approved from regional research center in Saudi Arabia . Each participant gave a verbal consent prior to recruitment and confidentiality was assured for each situation.

**Budget: Self-funded****Results****Table 1: Distribution of socio-demographic characteristics of participant . (n=100)**

	N	%
<b>Age</b>		
<60-69 y	64	32
70-79 y	90	45
≥80 y	46	23
<b>Gender</b>		
Male	118	59
Female	82	41
<b>Marital status</b>		
Single	36	18
Married	164	82
<b>Patient enrollment sites in health centers</b>		
Internal medicine clinic	38	19
Family medicine clinic	132	66
Geriatric clinic	30	15
<b>Educational background</b>		
Illiterate	42	21
Secondary school	112	56
University	46	23
<b>Income status</b>		
Below minimum wage	64	32
Minimum wage	100	50
Twofold of minimum wage	36	18
<b>Occupation</b>		
Employed	24	12
Unemployed	176	88

Table 1 distribution of socio-demographic characteristics of participant shows that most of the participants (45.0%) were in the age group(70-79) years follow by the age 60-69 were (32.0%) followed by  $\geq 80$  years were (23.0%), regarding the gender majority of them male was higher compared to female(59.0% and 41.0%) , regarding the marital status most of participants married were(82.0%) while single were(18.0%), regarding patient enrollment sites in health centers the majority of participant are family medicine clinic were (66.0%) while Internal medicine clinic were(19.0%) but the geriatric clinic were(15.0%), regarding educational background the majority of participant secondary school were(56.0%) while university were (23.0%) while illiterate were (21.0%) , regarding Income status the majority of participant are minimum wage were(50.0%) while below minimum wage were(32.0%) but twofold of minimum wage were (18.0%), regarding occupation the majority of participant are unemployed were(88.0%) while employed practitioner were(12.0%).

**Table 2: Distribution of general knowledge of participant about herpes zoster among elderly patients .**

	N	%
<b>Examination by family physician in the last year among the herpes zoster.</b>		
Yes	106	53
No	32	16
Don't know	62	31
<b>HZ vaccination</b>		
Recommended	42	21
Not recommended	60	30
Don't know	98	49
<b>Living with</b>		
Alone	32	16
Spouse	50	25
Spouse/children	46	23
Caregiver	72	36
<b>Smoking</b>		
Yes	84	42
No	116	58
<b>Shingles symptoms duration</b>		
Less than 30 days	46	23
1-3 months	90	45
More than 3 months	64	32
<b>Medication therapy used</b>		
Herbal remedies	42	21
Analgesics + Antivirals	52	26
Analgesics + Antivirals + Herbal remedies	38	19
Antivirals	68	34



<b>What do you do first when you get sick by herpes zoster</b>		
I see a physician	24	12
I use the medicine at home	176	88
<b>Source of information about the shingles of fire</b>		
The internet	62	31
The radio	24	12
Doctor	46	23
Friend	68	34

Table 2 distribution of general knowledge of participant about herpes zoster among elderly patients shows regarding examination by family physician in the last year among the herpes zoster the most of the participants answer Yes (53.0%) were follow by the Don't know were (31.0%) followed No were (16.0%), regarding the herpes zoster vaccination most of participants answer Don't know were (49.0%) while Not recommended were (30.0%) but recommended were (21.0%), regarding living with the majority of participant caregiver were (36.0%) while spouse were (25.0%) but Spouse/children were (23.0%) but alone were (16.0%), regarding smoking the majority of participant answer No were (58.0%) while the answer Yes were (42.0%), regarding shingles symptoms duration the majority of participant answer 1-3 months were (45.0%) while the answer more than 3 months were (32.0%) but less than 30 days were (23.0%), regarding medication therapy used the majority of participant antivirals were (34.0%) while Analgesics + Antivirals were (26.0%) but analgesics + antivirals + Herbal remedies were (19.0%) while herbal remedies were (21.0%), regarding do you do first when you get sick by herpes zoster the majority of participant I use the medicine at home were (88.0%) while I see a physician were (12.0%), regarding source of information about the shingles of fire the majority of participant from the friend were (34.0%) while the internet were (31.0%) but the doctor were (23.0%) while the radio were (12.0%) .

**Table 3: Distribution of knowledge of participant about elderly herpes zoster patients**

<b>Knowledge of herpes zoster</b>	<b>N</b>	<b>%</b>
<b>Etiology of the herpes zoster</b>		
Viral	42	21
Bacteria	84	42
I don't know	74	37
<b>Immunity against herpes zoster decreases with elderly age</b>		
Yes	74	37
No	80	40
I don't know	46	23
<b>infected with chickenpox makes a person more susceptible to getting shingles (herpes zoster) later in life</b>		
Yes	104	52
No	62	31
I don't know	34	17

<b>Individuals with a weakened immune system are at a higher risk of developing shingles (herpes zoster).</b>		
Yes	84	42
No	30	15
I don't know	86	43
<b>In your opinion, who is more susceptible to getting shingles</b>		
Less than 40 years	38	19
41-49 years	48	24
50 years and more	114	57
<b>What do you know about signs and symptoms of shingles</b>		
Chronic back pain	38	19
Painless skin rash	52	26
Heart disease	60	30
Painful skin rash	50	25
<b>Is there a vaccine for herpes zoster?</b>		
Yes	124	62
No	54	27
I don't know	22	11
<b>Can herpes zoster transmit through direct contact</b>		
Yes	144	72
No	24	12
I don't know	32	16
<b>Can a person get herpes zoster more than once?</b>		
Yes	112	56
No	36	18
I don't know	52	26
<b>Is taking antiviral medications such as acyclovir an effective treatment for herpes zoster</b>		
Yes	144	72
No	30	15
I don't know	26	13
<b>What are the complications of herpes zoster</b>		
Hearing loss	106	53
UTI	24	12
Meningitis	96	48
Chronic pain	58	29
Visual impairment	86	43

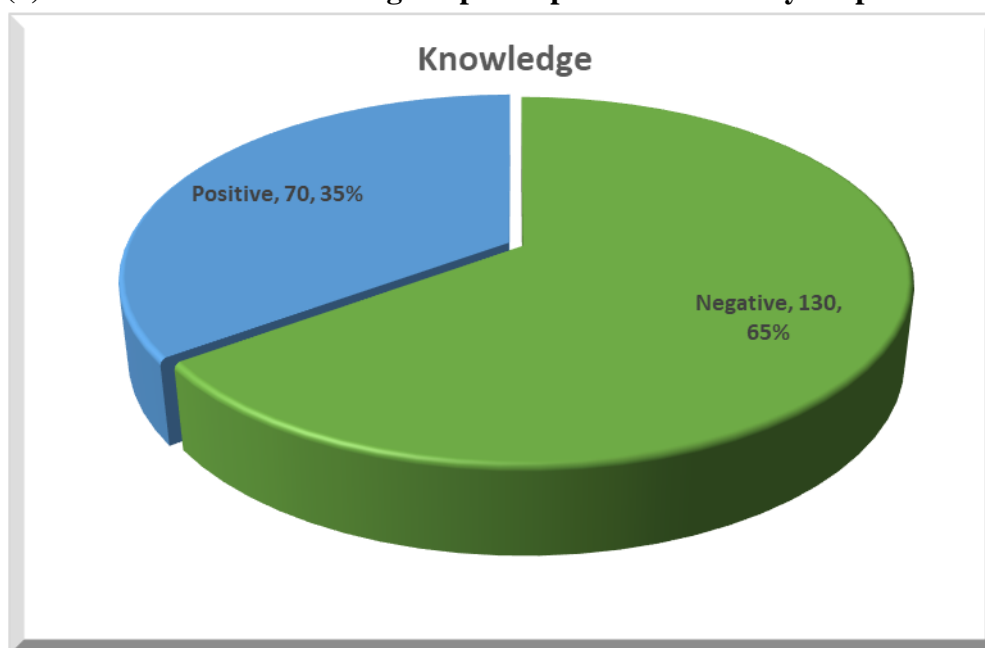
Table 3 distribution of knowledge of participant about herpes zoster patients shows regarding the etiology of the herpes zoster most of the participants answer bacteria were (42.0%) follow by I don't know were (37.0%) while viral were (21.0%), regarding the immunity against herpes zoster decreases with elderly age most of participants answer No

were (40.0%) followed by Yes were (37.0%) while I don't know were (23.0%), regarding the infected with chickenpox makes a person more susceptible to getting shingles (herpes zoster) later in life the most of participant answer Yes were (52.0%) while No were (31.0%) but I don't know were (17.0%), regarding individuals with a weakened immune system are at a higher risk of developing shingles (herpes zoster) the majority of participant answer don't know were (43.0%) while Yes were (42.0%) but No were (15.0%), regarding in your opinion, who is more susceptible to getting shingles the majority of participant 50 years and more were (57.0%) while 41-49 years were (24.0%) but Less than 40 years were (19.0%), regarding what do you know about signs and symptoms of shingles the majority of participant heart disease were (30.0%) while Painless skin rash disease were (26.0%) but Painless skin rash were (25.0%) while chronic back pain were (19.0%), regarding there a vaccine for herpes zoster the majority of participant answer Yes were (62.0%) while No were (27.0%), but I don't know were (11.0%), regarding can herpes zoster transmit through direct contact the majority of participant answer Yes were (72.0%) while No were (12.0%) but I don't know were (16.0%), regarding the can a person get herpes zoster more than once the majority of participant answer Yes were (56.0%) followed by I don't know were (26.0%) while No were (18.0%), regarding is taking antiviral medications such as acyclovir an effective treatment for herpes zoster majority of participant answer Yes were (72.0%) while No were (15.0%) but the I don't know were (13.0%), regarding the what are the complications of herpes zoster majority of participant answer hearing loss were (53.0%) while answer meningitis were (48.0%) followed by Visual impairment were (43.0%) but Chronic pain were (29.0%) but the UTI were (12.0%) .

**Table 4: Distribution of knowledge of participant about elderly herpes zoster patients score**

	Knowledge	
	N	%
<b>Negative</b>	130	65
<b>Positive</b>	70	35
<b>Total</b>	200	100
<b>X<sup>2</sup></b>	17.405	
<b>P-value</b>	<0.001*	

This table 4 distribution of knowledge of participant about elderly herpes zoster patients score shows the majority of participant have negative knowledge were (65.0%) while have positive of the knowledge about herpes zoster were (35.0%) while total were (100.0%) while a significant relation  $P=0.001$   $X^2$  17.405 .

**Figure (1): Distribution of knowledge of participant about elderly herpes zoster patients****Table 5 Distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patients**

		Knowledge				Total		Chi-square	
		Negative (n=130)		Positive (n=70)					
		N	%	N	%	N	%	X <sup>2</sup>	P-value
Age	<60-69 y	13	10.00%	51	72.86%	64	32.00%	82.973	<0.001*
	70-79 y	79	60.77%	11	15.71%	90	45.00%		
	≥80 y	38	29.23%	8	11.43%	46	23.00%		
Gender	Male	51	39.23%	67	95.71%	118	59.00%	60.009	<0.001*
	Female	79	60.77%	3	4.29%	82	41.00%		
Marital status	Single	24	18.46%	12	17.14%	36	18.00%	0.054	0.817
	Married	106	81.54%	58	82.86%	164	82.00%		
Patient enrollment sites in health centers	Internal medicine clinic	22	16.92%	16	22.86%	38	19.00%	7.515	0.023*
	Family medicine clinic	82	63.08%	50	71.43%	132	66.00%		
	Geriatric clinic	26	20.00%	4	5.71%	30	15.00%		
Educational background	Illiterate	40	30.77%	2	2.86%	42	21.00%	93.940	<0.001*
	Secondary school	87	66.92%	25	35.71%	112	56.00%		

	<b>University</b>	3	2.31%	43	61.43%	46	23.00%		
<b>Income status</b>	<b>Below minimum wage</b>	47	36.15%	17	24.29%	64	32.00%	56.572	<0.001*
	<b>Minimum wage</b>	79	60.77%	21	30.00%	100	50.00%		
	<b>Twofold of minimum wage</b>	4	3.08%	32	45.71%	36	18.00%		
<b>Occupation</b>	<b>Employed</b>	3	2.31%	21	30.00%	24	12.00%	33.042	<0.001*
	<b>Unemployed</b>	127	97.69%	49	70.00%	176	88.00%		

Table (5) distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patients show regarding age increase negative in while in positive knowledge increase in age <60-69 years were (72.86%) followed by age 70-79 years were (15.71%) in total number(70) while have a significant relation were P-value=0.001 and  $X^2$  82.973, regarding gender increase negative in female were (60.77%) followed by male were (39.0%) while in positive knowledge increase in male were (95.71%) followed by female were (4.29%) while have a significant relation were P-value=0.001 and  $X^2$  60.009, regarding marital status increase negative in married were (81.54%) followed by single were (18.46%) while in positive knowledge increase in married were (82.86%) followed by single were (17.14%) while have no significant relation were P-value=0.817 and  $X^2$  0.054, regarding Patient enrollment sites in health centers the most of participant increase negative in family medicine clinic were (63.08%) followed by geriatric clinic were (20.0%) but internal medicine clinic were (16.92%), while in positive knowledge increase in family medicine clinic were (71.43%) followed by internal medicine clinic were (17.14%) while have a significant relation were P-value=0.023 and  $X^2$  7.515, regarding educational background the most of participant increase negative in secondary school were (66.92%) in total were (56.0%) followed by illiterate were (30.77%) but University were (2.31%) in total (21.0%) while in positive knowledge increase in University were (61.43%) followed by in secondary school were (35.71%) while have a significant relation were P-value=0.001 and  $X^2$  93.940, regarding income status the most of participant increase negative in minimum wage were (60.77%) in total (50.0%) followed by below minimum wage were (36.15%) in total (32.0%) but twofold of minimum wage were (3.08%) in total (18.0%), while in positive knowledge increase in twofold of minimum wage were (45.71%) followed by minimum wage were (30.0%) but below minimum wage were (24.0%), while have a significant relation were P-value=0.001 and  $X^2$  56.272, regarding Occupation the most of participant increase negative in Unemployed were (97.69%) in total (88.0%) followed by employed were (2.31%) in total (12.0%) while in positive knowledge increase in Unemployed were (70.0%) in total (88.0%) followed by employed were (30.0%) in total (12.0%) while have a significant relation were P-value=0.001 and  $X^2$  33.042.

## Discussion

This study to described Knowledge and awareness of herpes zoster among elderly patients attending to primary health centers at kingdom of Saudi Arabia, the main findings of the present study are that (1) the vaccination rate for vaccines is low in the elderly population, (2) not recommendation by vaccination and low rates, and (3) examination by family physician in the last year among the herpes zoster, are higher and found that the level of knowledge rate overall was weak. [25]

In our study found that distribution of socio-demographic characteristics of participant shows that most of the participants (45.0%) were in the age group(70-79) years, the gender majority of them male was higher compared to female(59.0% and 41.0%) , the marital status most of participants married were(82.0%), patient enrollment sites in health centers the majority of participant are family medicine clinic were (66.0%) while Internal medicine clinic were(19.0%) but the geriatric clinic were(15.0%), educational background the majority of participant secondary school were(56.0%) . (See table 1).

Regarding the distribution of general knowledge of participant about herpes zoster among elderly patients , furthermore, we found a racial disparity in the percentage of patients knowledge that persisted in analyses, we postulate that the lower herpes zoster knowledge rate among elderly patients attending to primary health centers is partially the result of the lower self-reported prevalence of herpes zoster and the lower rate of witnessing friends/family with herpes zoster—all of which may influence perceived risk and therefore interest in herpes zoster. Similar study showed whites were more than twice as likely as report having had herpes zoster and more than 4 times more likely of having seen someone else with herpes zoster. [30]

In our study shows regarding examination by family physician in the last year among the herpes zoster the most of the participants answer Yes (53.0%), the herpes zoster vaccination most of participants answer Don't know were (49.0%), regarding living with the majority of participant caregiver were (36.0%), regarding smoking the majority of participant answer No were(58.0%), source of information about the shingles of fire the majority of participant from the friend were(34.0%) while the internet were(31.0%) but the doctor were (23.0%) while the radio were (12.0%). (See table 2)

Regarding the distribution of knowledge of participant about elderly herpes zoster patients in the present study, only small number of participants were knowledge of herpes zoster of the signs and symptoms . This is lower than the rates of awareness in previous studies in Hong Kong (85.7%) [23] and the United Arab Emirates (58.7%) [31]. In a study of 12,235 participants who were admitted to internal medicine outpatient clinics in Aegean Region, 4.5% of the participants had received influenza vaccination and 1% had received pneumococcal vaccination. In this study, influenza and pneumococcal vaccination rates in patients aged 65 years and above were found to be 5.9% and 2.2%, respectively [17]. In Japan, the pneumococcal vaccination rate in people aged 65 years and above has been shown to reach 40.6% from 20.9% 2 years after the vaccine enters the national vaccination program [18] , shows regarding the etiology of the herpes zoster most of the participants answer bacteria were (42.0%), the infected with chickenpox makes a person more susceptible to getting shingles (herpes zoster) later in life the most of participant answer Yes were (52.0%),

regarding in your opinion, who is more susceptible to getting shingles the majority of participant 50 years and more were (57.0%), regarding there a vaccine for herpes zoster the majority of participant answer Yes were (62.0%), regarding the can a person get herpes zoster more than once the majority of participant answer Yes were (56.0%), regarding the what are the complications of herpes zoster majority of participant answer hearing loss were (53.0%) while answer meningitis were (48.0%). (See table 3 and Figure 1 )

Regarding the distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patients show regarding age increase negative in while in positive knowledge increase in age <60-69 years were (72.86%) followed by age 70-79 years were (15.71%) in total number (70) while have a significant relation were  $P\text{-value}=0.001$  and  $X^2$  82.973, regarding gender increase negative in female were (60.77%), regarding marital status increase negative in married were (81.54%) while have no significant relation were  $P\text{-value}=0.817$  and  $X^2$  0.054, regarding Patient enrollment sites in health centers the most of participant have a significant relation were  $P\text{-value}=0.023$  and  $X^2$  7.515, regarding educational background have a significant relation were  $P\text{-value}=0.001$  and  $X^2$  93.940, regarding income status the have a significant relation were  $P\text{-value}=0.001$  and  $X^2$  56.272, regarding Occupation the most of participant increase negative in Unemployed were (97.69%) while have a significant relation were  $P\text{-value}=0.001$  and  $X^2$  33.042 (See table 5) It is also hypothesized that physiological stressors and hormonal changes among females may also have an effect on herpes zoster prevalence [22].

## Conclusion

This study aimed to describe the knowledge and awareness of herpes zoster among elderly patients to understand how much people in Saudi Arabia know about shingles (herpes zoster) and the vaccine to prevent it. Shingles is a viral infection caused by the same virus that causes chickenpox. After having chickenpox, the virus can stay in the body and reactivate later in life, causing shingles, among elderly patients aged more than 50 years and above to gather information. Many people had heard about shingles, but their knowledge about it was limited. herpes zoster is a very common disease associated with severe complications and a negative impact on quality of life. Early diagnosis is sometimes missed and therapeutic approach is often suboptimal. Besides, complications can occur, post herpetic neuralgia being the most common and debilitating one. As the rate of frail and elderly people is progressively increasing, a growing impact of herpes zoster and its complication can be estimated. For all these reasons, prevention is essential, the need for more awareness and education to elderly patients. The low vaccine uptake is concerning because shingles can lead to serious health problems, to increase vaccine acceptance, we suggest implementing awareness campaigns

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