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# Association Between The Level Of Knowledge Of Herpes Zoster And Visiting To Health Centers In Makah Al-Mukarramah 2023

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## Abstract

***Background:***
*Herpes zoster (HZ) is a viral infection that occurs due to the reactivation of the varicella-zoster virus (VZV). Reactivation of the latent virus causes a painful dermatomal rash that is typical in HZ, which is frequently accompanied b[1]y post-herpetic neuralgia (PHN). Although HZ negatively impacts individuals' quality of life, vaccination has been shown to reduce the incidence of HZ and PHN and reduce the severity of the disease in the event of a breakthrough. Nonetheless, several studies have shown a low level of knowledge and poor practices regarding HZ and its vaccine. However, only two studies on this issue have been conducted in the Middle East. This study aimed to assess the level of knowledge, attitudes, and practices toward HZvaccinations among the Saudi population aged 50 years and older. Herpes zoster (HZ) infection can significantly impair the quality of life of the affected individuals, and its treatment imposes a considerable cost burden on the health-care system and on society at large. However, there is little information on the perception of this disease and the acceptability of vaccines in Saudi Arabia.* ***Aim of the study****: To assessment association between the level of knowledge of herpes zoster and visiting to health centers in Makah Al-Mukarramah 2023.* ***Methods:*** *A cross-sectional study was conducted at patients with history among the herpes zoster visiting the primary health sector in Makah City, from April to July 2023, 100 patients were included and data were collected by using a written questionnaire also online questionnaire and telephone interviews, was developed based on a literature review, to assessed the Level of knowledge of herpes zoster.* ***Results:*** *most of the participants (30.0%) were in the age group(60-69) the majority of them male were (62.0%), marital status most of participants married were(78.0%), patient enrollment sites in health centers the majority of participant are family medicine clinic were(72.0%).* ***Conclusion:*** *The results suggest that educational campaigns on Herpes zoster infection and its vaccine targeting at-risk groups are required to raise awareness and increase the public's knowledge. Additionally, healthcare*

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*personnel's recommendation of the HZ vaccine to the target population should be encouraged, as it is an important factor in vaccine acceptability*

***Keywords:*** *Association, level, knowledge, herpes zoster, health centers, Makah .*

**Introduction**

Varicella-zoster virus (VZV) is an alpha herpes virus that is responsible for chickenpox and typically occurs during childhood.(1) It is distinguished by a maculopapular, vesicular rash that develops into dried crusts during a three to seven-day period. Herpes zoster (HZ) is a viral infection that occurs due to the reactivation of VZV (2). Reactivation of the latent virus causes a painful dermatomal rash that is typical in Herpes Zoster, which is frequently accompanied by post-herpetic neuralgia (PHN) (2,3). Exposure to Herpes Zoster occurs either through vaccination during childhood or exposure to those with active viremia. (4,5) Most adults are VZV seropositive, putting them at risk for Herpes Zoster (6). The risk of developing Herpes Zoster increases with age, with a sharp increase after 50 years of age (7). Preventive medicine is considered the most successful strategy for safeguarding health in older populations, and immunization against the most common infectious illnesses is the preferred strategy (8)

The incidence, severity, and complications of Herpes Zoster increase with age, and ＞50% of all patients in whom Herpes Zoster develops are older than 50 to 60 years. Complications associated with Herpes Zoster occur in almost half of all elderly patients (9). The most common of these complications is post herpetic neuralgia (PHN), which is defined as pain in Herpes Zoster lesions that lasts longer than 3 months (10). There is no universally accepted treatment for PHN, and the available treatments are accompanied by considerable adverse effects. Elderly patients with PHN often need to make multiple visits to medical offices for prescription analgesics in attempts to resolve the pain (11). An effective vaccine against HZ has been developed and can reduce the incidence and severity of both HZ and PHN by 51% and 67%, respectively. Furthermore, the vaccine reduces the burden of illness due to Herpes Zoster by 61% (defined in a double-blind, placebo-controlled trial, the shingles prevention study, by using a composite measure of incidence, severity, and duration of pain) (12). In addition, vaccine protection may persist for at least 7∼10 years, as observed in the long-term persistence sub study (13). By evaluating the burden of Herpes Zoster and its utilization of healthcare resources, primary care providers can make informed decisions on the necessity of targeted Herpes Zoster vaccination and identify any gaps in current management practices. (14)

The Gulf Cooperation Council (GCC) is a political and economic alliance of six Middle Eastern countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE), which was established in 1981.(15) The total population of the GCC countries, as of 2022, is 58,862,475(16). Numerous GCC countries have introduced VZV vaccination into their national immunization programs over the last decade , such that over 50% of the Middle Eastern population now reside in countries offering universal Varicella Zoster Virus vaccination (17). However, vaccination against Herpes Zoster is not currently included in the vaccination programs of any of the GCC countries, though it has recently been recommended in Saudi Arabia prior to official authorization (18).

**Literature Review**

study showed by Al Kaabi et al whites were more than twice as likely as AAs to report having had Herpes Zoster and more than 4 times more likely of having seen someone else with HZ.(19) Schmidt et al (2017) reported an even larger difference in HZ prevalence between the 2 races (16.1% white, 4.5% AA). The reasons for these reported differences in the disease prevalence by race remain unclear but likely are multifactorial, including potential biologic

differences, the recognition and reporting of the disease, and the frequency and intensity of medical interactions.(20). People with diabetes have a 20% higher risk of developing Herpes Zoster, which can lead to deterioration of glycemic control and increased consumption of healthcare resources. Although the literature has demonstrated the efficacy of Herpes Zoster vaccination in reducing incidence rates (21),

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 (22).

Study by Mbinta, et al (2022) reported that only 6.7% of diabetic patients were diagnosed with herpes zoster. Additionally, 23.7% of them knew someone who had been diagnosed with herpes zoster, whether diabetic or non-diabetic. (23) This rate is lower than the rates in previous studies in Korea, where 14.7% of respondents had a history of herpes zoster (24) and 26.1% among COPD patients in the USA(25).

The lack of studies identified in this review relating to Herpes Zoster incidence and prevalence reflects the lack of evidence found in the Middle East by a recent meta-regression study examining trends in global Herpes Zoster infection [26]. This may be because Herpes Zoster is regarded as a low health priority in these countries. Global incidence rates of Herpes Zoster have been reported to range from 3 to 5 cases per 1000 person-years, and 5.23–10.9 cases per 1000 person-years in individuals C 50 years of age (12).

Study reported by Barqawi, et al (2022) 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%) (27), in Qassim region KSA (8.5%) (28), Korea (9%) (28) and the United Arab Emirates (3.3%).One quarter of Saudi diabetic patients were willing to accept the herpes zoster (HZ) vaccine (29). Furthermore, studies show that healthcare providers play a crucial role in promoting and recommending vaccination to improve vaccination rates (30).

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 years 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 .

**Rationale:**

In 2008, the Advisory Committee on Immunization Practices recommended that all people older than age 60 receive the zoster vaccination. The vaccine is recommended without serologic testing and regardless of race or medical history of varicella virus infection or Herpes Zoster. When vaccinated, the risk of having Herpes Zoster, the burden of disease, and the incidence of post herpetic neuralgia decrease by 51%, 61%, and 66%, respectively, over 3 years. In 2011, the US Food and Drug Administration approved Herpes Zoster vaccination for immune competent people older than age 50. However, despite the recommendation of the Advisory Committee on Immunization practices the rate of zoster vaccination is low, even though less than half of the patients were not heave knowledge and not aware of herpes zoster (HZ) , also the vaccination rate for herpes zoster was low. This study highlights the need for healthcare providers to play an active role in promoting and recommending herpes zoster vaccination, as well as providing health education in simple language through various media to increase community awareness about herpes zoster and its vaccine. By increasing awareness and vaccination rates, the burden of herpes zoster on this vulnerable population can be reduced .

**Aim of the study:**
To assessment association between the level of knowledge of herpes zoster and visiting to health centers in Makah Al-Mukarramah 2023.

**Objectives**:
To assessment association between the level of knowledge of herpes zoster and visiting to health centers in Makah Al-Mukarramah 2023.

**Methodology:**

**Study design**:
This study is descriptive type of cross-sectional study was conducted among 400 candidates this study included visitors to health centers, in primary health sector in Makah- Al Mukarramah.

**Study Area**
The study has been carried out in the city of Makah Al-Mokarramah Makah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 3 million. This study has been conducted in Makah in the primary health sector in Makah. Saudi Arabia. During the April to July 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 the Makah population

**Study Population**
The study has been conducted regarding visitors to health centers, in April to July 2023 in primary health sector in Makah Al Mukarramah.

**Selection criteria**:

**Inclusion criteria**
- Visitors to health centers in primary health sector complain about herpes zoster in Makah Al Mukarramah.
- All nationalities

**Exclusion criteria** :
- No specific exclusion criteria.

**Sample size**
Visitors to health centers in primary health sector complain about herpes zoster in Makah around, 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 (400) in primary health sector after official communication with the primary health sector in the Makah and adding 10 more to decrease margin of error. After adding 5% oversampling, the minimum calculated sample has been 400. 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; (400 ).

**Data collection tool**
The self-administered questionnaire is designed based on previous studies to assessment the level of knowledge of herpes zoster among visitors to health centers in Makah. 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 April to July 2023 the period of study in 2023.
The questionnaire consisted of questions that

**First part** General and Socio demographic information. These variables included contact data (email 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. 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 to assessment the level of knowledge of herpes zoster among visitors to health centers as per each topic/question, 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 Makkah. Each participant gave a verbal consent prior to recruitment and confidentiality was assured for each situation.

**Budget: Self-fundedResults**

**Table 1: Distribution of socio-demographic characteristics of participant . (n-400)**

| | N | % |
|---|---|---|
| **Age** | | |
| <50 y | 92 | 23 |
| 50-59 y | 116 | 29 |
| 60-69 y | 120 | 30 |
| ≥70 y | 72 | 18 |
| **Gender** | | |
| Male | 248 | 62 |
| Female | 152 | 38 |
| **Marital status** | | |
| Single | 88 | 22 |
| Married | 312 | 78 |
| **Patient enrollment sites in health centers** | | |
| Internal medicine clinic | 60 | 15 |
| Family medicine clinic | 288 | 72 |
| Geriatric clinic | 52 | 13 |
| **Income status** | | |
| Less than 10000RS | 148 | 37 |
| 10000-20000 RS | 196 | 49 |
| More than 20000 RS | 56 | 14 |
| **Occupation** | | |
| Employed | 84 | 21 |
| Unemployed | 316 | 79 |

Table 1 shows that most of the participants (30.0%) were in the age group(60-69) years follow by the age 50-59 were (29.0%) followed by < 50 years were (23.0%), the majority of them male was higher compared to female(62.0% and 38.0%) , regarding the marital status most of participants married were(78.0%) while single were(22.0%), regarding patient enrollment sites in health centers the majority of participant are family medicine clinic were(72.0%) while Internal medicine clinic were(15.0%), regarding Income status the majority of participant are between 10000 to 20000 were(49.0%) while less than 10000 were(37.0%) but more than 20000 were (14.0%), regarding occupation the majority of participant are unemployed were(79.0%) while employed practitioner were(21.0%).

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

| | N | % |
|---|---|---|
| **History of chickenpox** | | |
| Yes | 260 | 65 |
| No | 44 | 11 |
| Don't know | 96 | 24 |
| **Chickenpox vaccination status** | | |
| Yes | 72 | 18 |
| No | 104 | 26 |
| Don't know | 224 | 56 |
| **Shingles symptoms duration** | | |
| Less than 30 days | 84 | 21 |
| 1-3 months | 236 | 59 |
| More than 3 months | 80 | 20 |
| **Medication therapy used** | | |
| Herbal remedies | 76 | 19 |
| Analgesics + Antivirals | 84 | 21 |
| Analgesics + Antivirals + Herbal remedies | 88 | 22 |
| Antivirals | 152 | 38 |
| **History of concomitant pregnancy or lactation (female)** | | |
| No pregnancy or lactation | 60 | 15 |
| Pregnancy only | 88 | 22 |
| Lactation only | 252 | 63 |
| **Source of information about the shingles of fire** | | |
| The internet | 108 | 27 |
| The radio | 220 | 55 |
| Doctor | 44 | 11 |
| Friend | 28 | 7 |

Table 2 shows regarding the history of chickenpox that most of the participants answer Yes (65.0%) were follow by the Don't know were (24.0%) followed No were (11.0%), regarding the chickenpox vaccination status most of participants answer Don't know were(56.0%) while No were(26.0%) but Yes were (18.0%), regarding Shingles symptoms duration the majority of participant are 1-3 months were (59.0%) while Less than 30 days were (21.0%) but more than 3 months were (21.0%), regarding medication therapy used the majority of participant

antivirals were(38.0%) while analgesics + antivirals + herbal remedies were (22.0%) but analgesics + antivirals were (21.0%) while herbal remedies were (19.0%) regarding history of concomitant pregnancy or lactation (female) the majority of participant from the radio were(55.0%) while the internet were(27.0%)

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

| **Knowledge of herpes zoster** | **N** | % |
|---|---|---|
| **Etiology of the herpes zoster** | | |
| Viral | 128 | 32 |
| Bacteria | 220 | 55 |
| I don't know | 52 | 13 |
| **Immunity against herpes zoster decreases with advancing age** | | |
| Yes | 232 | 58 |
| No | 136 | 34 |
| I don't know | 32 | 8 |
| **infected with chickenpox makes a person more susceptible to getting shingles (herpes zoster) later in life** | | |
| Yes | 264 | 66 |
| No | 100 | 25 |
| I don't know | 36 | 9 |
| **Individuals with a weakened immune system are at a higher risk of developing shingles (herpes zoster).** | | |
| Yes | 232 | 58 |
| No | 132 | 33 |
| I don't know | 36 | 9 |
| **In your opinion, who is more susceptible to getting shingles** | | |
| Less than 40 years | 68 | 17 |
| 41-49 years | 80 | 20 |
| 50 years and more | 252 | 63 |
| **What do you know about signs and symptoms of shingles** | | |
| Chronic back pain | 48 | 12 |
| Painless skin rash | 88 | 22 |
| Heart disease | 112 | 28 |
| Painful skin rash | 152 | 38 |
| **Is there a vaccine for herpes zoster?** | | |
| Yes | 236 | 59 |
| No | 128 | 32 |
| I don't know | 36 | 9 |
| **Can herpes zoster transmit through direct contact** | | |
| Yes | 256 | 64 |
| No | 124 | 31 |
| I don't know | 20 | 5 |
| **Can a person get herpes zoster more than once?** | | |
| Yes | 216 | 54 |
| No | 84 | 21 |
| I don't know | 100 | 25 |

| | | |
|---|---|---|
| **Is taking antiviral medications such as acyclovir an effective treatment for herpes zoster** | | |
| Yes | 252 | 63 |
| No | 108 | 27 |
| I don't know | 40 | 10 |
| **What are the complications of herpes zoster** | | |
| Hearing loss | 220 | 55 |
| UTI | 8 | 2 |
| Meningitis | 228 | 57 |
| Chronic pain | 132 | 33 |
| Visual impairment | 180 | 45 |

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 (55.0%) were follow by viral were (32.0%) while Don't know were (13.0%), regarding the immunity against herpes zoster decreases with advancing age most of participants answer Yes were (58.0%) followed by No were (34.0%) while Don't know were(8.0%), 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 (66.0%) while No were(25.0%) but I don't know were (9.0%), regarding individuals with a weakened immune system are at a higher risk of developing shingles (herpes zoster) the majority of participant answer Yes were (58.0%) while No were (33.0%) but Don't know were (9.0%), regarding in your opinion, who is more susceptible to getting shingles the majority of participant 50 years and more were(63.0%) while 41-49 years were (20.0%) but Less than 40 years were (17.0%), regarding what do you know about signs and symptoms of shingles the majority of participant Painful skin rash were(38.0%) while heart disease were(28.0%) but Painless skin rash were (22.0%) while chronic back pain were (12.0%), regarding there a vaccine for herpes zoster the majority of participant answer Yes were(59.0%) while No were(32.0%), but I don't know were (9.0%), regarding can herpes zoster transmit through direct contact the majority of participant answer Yes were(64.0%) while No were(31.0%) but I don't know were (5.0%), regarding the can a person get herpes zoster more than once the majority of participant answer Yes were (54.0%) followed by I don't know were (25.0%) while No were (21.0%), regarding is taking antiviral medications such as acyclovir an effective treatment for herpes zoster majority of participant answer Yes were (63.0%) while No were (27.0%) but the I don't know were (10.0%) regarding the what are the complications of herpes zoster majority of participant answer meningitis were (57.0%) followed by hearing loss were (55.0%) while Visual impairment were (45.0%) but Chronic pain were (33.0%) .

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

| | **Knowledge** | | **Score** | |
|---|---|---|---|---|
| | **N** | **%** | **Range** | **Mean±SD** |
| **Weak** | 192 | 48 | 3-10. | 7.113±1.725 |
| **Average** | 140 | 35 | | |
| **High** | 68 | 17 | | |
| **Total** | 400 | 100 | | |
| **$X^2$** | 58.16 | | | |

| | |
|---|---|
| **P-value** | <0.001* |

This table 4 distribution of knowledge of participant about herpes zoster patients score shows the majority of participant (48.0%) have weak of the knowledge about herpes zoster followed by (35.0%) of participant average while high were (17.0%) while Range(3-10) and Mean ±SD(7.113±1.725), $X^2$ 58.16 and a significant relation P=0.001

**Figure (1): Distribution of knowledge of participant about herpes zoster patients score .**

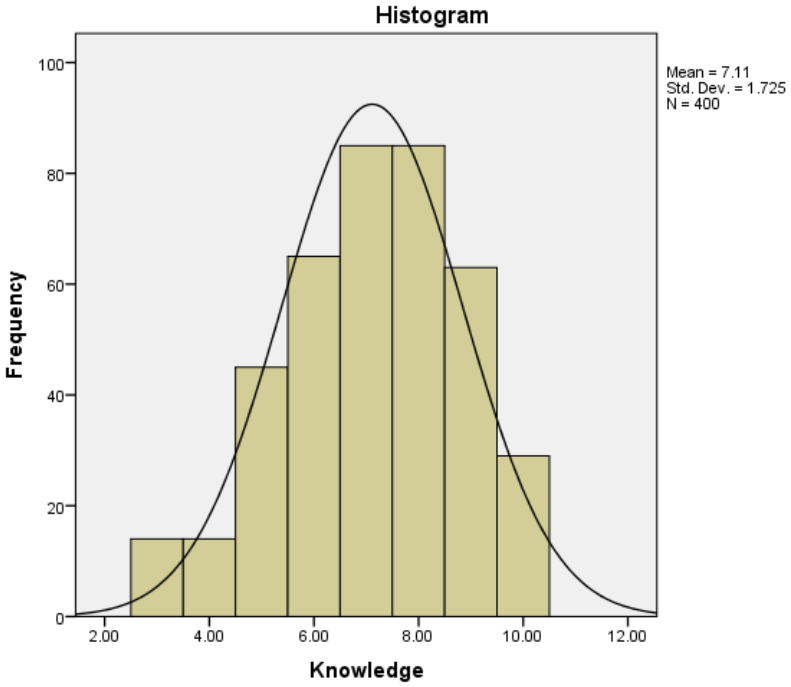


**Figure (2): Distribution of knowledge of participant about herpes zoster patients**

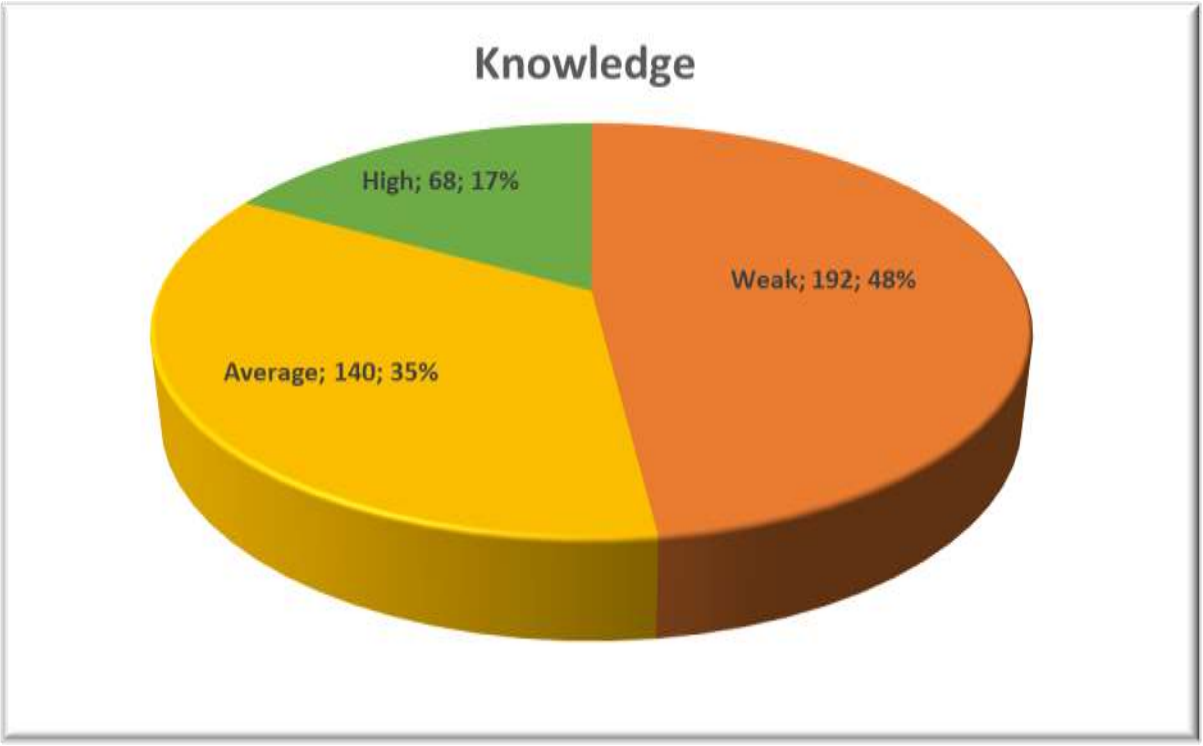


**Table 5 Distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patients**

| Demographic data | | N | Knowledge | | | F or T | ANOVA or T-test | |
|---|---|---|---|---|---|---|---|---|
| | | | Mean | ± | SD | | Test value | P-value |
| **Age** | **<50 y** | 92 | 8.587 | ± | 0.787 | F | 117.631 | <0.001* |
| | **50-59 y** | 116 | 7.888 | ± | 1.155 | | | |
| | **60-69 y** | 120 | 5.658 | ± | 1.693 | | | |
| | **≥70 y** | 72 | 6.403 | ± | 1.044 | | | |
| **Gender** | **Male** | 248 | 7.141 | ± | 1.788 | T | 0.423 | 0.672 |
| | **Female** | 152 | 7.066 | ± | 1.622 | | | |
| **Marital status** | **Single** | 87 | 7.816 | ± | 0.922 | T | 4.397 | <0.001* |
| | **Married** | 313 | 6.917 | ± | 1.843 | | | |
| **Patient enrollment sites in health centers** | **Internal medicine clinic** | 60 | 5.133 | ± | 1.780 | F | 82.131 | <0.001* |
| | **Family medicine clinic** | 288 | 7.267 | ± | 1.331 | | | |
| | **Geriatric clinic** | 52 | 8.538 | ± | 1.686 | | | |
| **Income status** | **Less than 10000RS** | 148 | 7.635 | ± | 1.544 | F | 76.805 | <0.001* |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **10000-20000 RS** | 196 | 6.255 | ± | 1.561 | | | |
| | **More than 20000 RS** | 56 | 8.732 | ± | 0.751 | | | |
| **Occupation** | **Employed** | 84 | 8.821 | ± | 0.894 | T | 11.868 | <0.001* |
| | **Unemployed** | 316 | 6.658 | ± | 1.605 | | | |

Table (5) Distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patients show regarding age increase in age <50 years (Mean± SD 8.587 ±0.787) followed by 50-59 (Mean± SD 7.888±1.155) heave a significant relation were P-value=0.001, F test were (117.631) , regarding the gender status is no significant relation the heave were P-value=0.672, T test were (0.423) increase in male were respectively (Mean± SD 7.141±1.788) followed by female were (7.066±1.622), regarding the Marital status is a significant relation the heave were P-value=0.077, T test were (4.397) increase in single followed by married were respectively (Mean± SD 7.816±0.922 and 6.917 ± 1.843), regarding the patient enrollment sites in health centers a significant relation heave were P-value=0.000, F test were (82.131) increase in geriatric clinic and family medicine clinic were respectively (Mean± SD 8.538±1.686 and 7.267±1.331), regarding the Income status a significant relation heave were P-value=0.001, F test were (76.805) increase in More than 20000 RS followed by less than 10000 RS were respectively (Mean± SD 8.732±0.751and 7.635±1.544)

**Discussion**

This study investigated the level of knowledge of herpes zoster among visitors to health centers during a sampling of patients at different primary care clinics and found that the level of knowledge rate overall was weak. 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 visitors to 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. (31)

In our study shows that most of the participants (30.0%) were in the age group(60-69) years follow by the age 50-59 were (29.0%) followed by < 50 years were (23.0%), the majority of them male was higher compared to female(62.0% and 38.0%) , regarding the marital status most of participants married were(78.0%) while single were(22.0%), regarding patient enrollment sites in health centers the majority of participant are family medicine clinic were(72.0%) while Internal medicine clinic were(15.0%), regarding Income status the majority of participant are between 10000 to 20000 were(49.0%) while less than 10000 were(37.0%) but more than 20000 were (14.0%), regarding occupation the majority of participant are unemployed were(79.0%) while employed practitioner were(21.0%). (See table 1)

We showed that herpes zoster infections predominantly occurred among males more than female . Our result is consistent with a previous systematic literature review of herpes zoster incidence worldwide conducted by (12). in 2021. It estimated that male preponderance is more common than female (12). The finding is in similar to from nearby countries that showed a male to female ratio of 4:1, 2.5:1, and 3:2 in Qatar, Nepal, and Iran, respectively (28).The reason behind gender differences in the incidence of herpes zoster infection remains unknown; a review in this regard attributed this to gender bias at the time of diagnosis as females usually

seek medical attention more frequently than males (19). It is also hypothesized that physiological stressors and hormonal changes among females may also have an effect on herpes zoster prevalence (22). in our study shows history of chickenpox that most of the participants answer Yes (65.0%), regarding the chickenpox vaccination status most of participants answer Don't know were (56.0%), regarding Shingles symptoms duration the majority of participant are 1-3 months were (59.0%) , regarding medication therapy used the majority of participant antivirals were(38.0%) while analgesics + antivirals + herbal remedies, regarding history of concomitant pregnancy or lactation ( female) the majority of participant from the radio were(55.0%) (See table 3)

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%) (30).

Regarding risk factors of herpes zoster, our study found that only Small number of participants were aware of the decreased immunity against herpes zoster with advancing age, knew about the increased susceptibility for those previously infected with chickenpox, and knew about the higher risk for individuals with weakened immune systems. These findings are consistent with previous studies. In Saudi Arabia, the most identifiable risk factors for herpes zoster were found to be immunodeficiency (63.2%), age (36.3%), and chronic diseases (36.3%) (28). The Hong Kong study reported that the majority of responders (84.7%) identified immune compromised state as a risk factor for herpes zoster , while in the United Arab Emirates, participants identified immunodeficiency (35.5%), chronic illnesses (18%), advanced age (32.7%), and stress (41.9%) as predisposing and risk factors for herpes zoster (30).Overall, the results highlight the need for increased public education and awareness of the risk factors for herpes zoster. Effective public health policies and interventions should be developed to improve the uptake of herpes zoster vaccine and reduce herpes zoster burden in different populations and regions. in our study show distribution of knowledge of participant about herpes zoster patients score shows the majority of participant (48.0%) have weak of the knowledge about herpes zoster followed by (35.0%) of participant average while high were (17.0%) while Range(3-10) and Mean ±SD(7.113±1.725), X2 58.16 and a significant relation P=0.001.(See table 2,4)

Regarding the distribution of the relationship of the Socio-demographic characteristics and knowledge of participant about herpes zoster patient .(See table 5). It is possible that the knowledge of herpes zoster rate in our study population is higher than in the general community because the subjects already were being exposed to health care professionals by coming to a primary care clinic. In the general community, there may be some people who do not have a primary care provider or access to health care and therefore are less likely to have received the knowledge of herpes zoster. Clinicians' clinical practice patterns or knowledge of the current knowledge of herpes zoster recommendations were not assessed in this study. This limits our ability to suggest that low knowledge of herpes zoster rates may have resulted from providers not having care delivery systems or provider education that facilitate knowledge in response to published guidelines. Future studies would need to incorporate ways to both inform and encourage practitioners to prescribe the for their appropriate patients .

## Conclusion

Knowledge of herpes zoster is a quite common contagious condition affecting a wide range of residents of Saudi Arabia, especially the geriatric group. Health institutions in Saudi Arabia need to address the concerns regarding the burden of this condition, its catastrophic complications, and its preventive tools. Available knowledge of provide a great effectiveness in reducing both the incidence of herpes zoster and its complications. Widening the vaccine access and incorporating the vaccines in the immunization protocols in Saudi Arabia is important to improve population immunity against of herpes zoster infection. Herpes zoster is a common condition, and nearly 20% to 25% of Herpes zoster patients experience 1 or more

complications, including other non-pain complications. Any type of complication more than triples the cost of Herpes zoster-related care. The medical care cost of treating incident Herpes zoster cases in the Saudi Arabia .

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