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A descriptive study to assess the knowledge regarding Herpes zoster among people from selected areas of Pune city

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ABSTRACT

Background: Herpes zoster (shingles) is caused by the reactivation of the Varicella-zoster virus, which remains dormant after a chickenpox infection. The primary cause of the increased incidence of Herpes zoster with age is the decline in cell-mediated immunity (immunosenescence). While individuals with immunosuppressive conditions are at higher risk, adults over 50 are particularly vulnerable. A Korean study found the incidence of Herpes zoster to be 2.0 per 1,000 person-years among those with children, and 21.8 per 1,000 person-years for those aged 70-79. The peak incidence occurs between the ages of 60-69, with a slight decrease in those over 80. This study aims to assess knowledge about Herpes zoster among individuals in selected areas of Pune city. Methods: A quantitative, non-experimental descriptive survey design was employed in this study. Data were gathered from 400 participants through a demographic and clinical profile questionnaire. The non-probability convenient sampling method was used to select participants. Descriptive statistics were applied to analyze the collected data. Results: The findings revealed that the majority of participants (64.25%) possessed an average level of knowledge regarding Herpes zoster. A notable proportion (31.5%) exhibited poor knowledge, with a mean score of 15.6 and a standard deviation of 4.87. Only 4.25% of participants demonstrated an exceptional understanding of the subject. Conclusion: while awareness of Herpes zoster is widespread, significant gaps in knowledge persist, particularly among a large portion of the population.

KEYWORDS: Herpes zoster, shingles, knowledge assessment, Varicella-zoster virus, descriptive study, Pune.

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INTRODUCTION

Herpes zoster (shingles) is caused by the reactivation of the Varicella-zoster virus, which remains dormant after an initial chickenpox infection. It primarily affects older adults and individuals with weakened immune systems. The Recombinant Zoster Vaccine (RZV) is highly effective, offering over 90% protection against the disease and its complications.

Antiviral treatments such as acyclovir, valacyclovir, and famciclovir can reduce the severity and duration of the illness when administered within 72 hours of symptom onset. Common complications include postherpetic neuralgia (PHN), herpes zoster ophthalmicus (HZO), Ramsay Hunt syndrome, and secondary bacterial infections like cellulitis.

Early diagnosis, prompt antiviral therapy, and pain management are crucial for reducing complications. The RZV vaccine is recommended for adults over 50 and those with immunosuppression, providing the most effective protection. Preventative measures, such as maintaining a strong immune system through exercise, a balanced diet, and stress management, can help reduce the risk of reactivation.

Despite the availability of the vaccine, existing literature highlights low vaccine uptake, limited awareness among the public and healthcare professionals, and the absence of Herpes zoster vaccination from India's national immunization programs. Additionally, little is known about the attitudes, knowledge, and practices surrounding Herpes zoster in Pune's diverse communities, where health literacy varies significantly. This lack of awareness impedes the design of effective, targeted educational interventions for early detection and prevention.

Although awareness campaigns have been initiated, there is no clear evidence of their impact on increasing public knowledge or improving vaccination rates in Pune. This study aims to address these gaps by assessing the current level of knowledge about Herpes zoster among Pune locals and identifying barriers to awareness and vaccination. The insights from this study will be crucial in developing focused public health strategies to reduce the disease burden in this rapidly growing metropolitan area.

MATERIALS AND METHODS

Research Design

A descriptive research approach was used to evaluate adults' knowledge of Herpes zoster. This method is effective for gathering information about current conditions and identifying patterns between variables.

Research Variables
The research variable in this study is knowledge about Herpes zoster, measured through a structured questionnaire assessing participants' understanding, awareness, and misconceptions about the disease.

Research Setting
The study was conducted in selected areas of Pune, India, which offer a diverse demographic. The healthcare system follows the Indian public health model, making it an ideal setting for studying public knowledge on Herpes zoster.

Population
Target population: Adults aged 25-60 years residing in selected areas of Pune.
Accessible population: Adults available at the time of data collection.

Sample Size Determination
Using the formula for sample size calculation, the required sample size was 400. This size was chosen to ensure statistical significance in the findings.

Sampling Technique
Non-probability purposive sampling was used, selecting areas of Pune with varied socio-economic and healthcare profiles to capture a broad spectrum of knowledge and health beliefs.

Tool & Technique of Data Collection
A self-administered questionnaire with two sections: Demographic Data and Knowledge Assessment. Thirty multiple-choice questions were used to evaluate Herpes zoster knowledge.

Validity and Reliability
Content validity was assessed by a panel of experts, with a validity score of 0.93. The reliability of the tool was confirmed with a Pearson correlation coefficient of 0.811, indicating high reliability.

Pilot Study
A pilot study with 40 participants confirmed the tool's effectiveness. Minor modifications were made based on feedback to improve clarity.

Procedure for Final Data Collection
Pre-Data Collection Preparation included finalizing locations, printing tools, and briefing data collectors. Participants were approached, informed consent was obtained, and the questionnaire was administered. Data were securely stored, cleaned, and analyzed.

Data Analysis Plan
Descriptive statistics (frequency, mean, standard deviation) summarized demographic characteristics and knowledge levels. Inferential statistics, including the chi-square test, identified relationships between knowledge scores and demographic factors.

RESULT

SECTION I: DESCRIPTION OF SELECTED DEMOGRAPHIC VARIABLES OF STUDY VARIABLES
The majority of participants in the study are young adults aged 25-33 years, making up 41.75% of the sample, followed by those aged 43-51 years at 25.75%. This indicates a youthful and middle-aged demographic predominating the sample. In terms of gender, the distribution is nearly equal, with 51% females and 49% males, ensuring a balanced representation. A significant portion of the participants has completed secondary education, comprising 25% of the sample, while 17.75% reported no formal education, highlighting a diverse educational background. Occupation-wise, laborers make up the largest group, at 33.75%, followed by private sector employees at 32%.

SECTION II: FINDING RELATED TO KNOWLEDGE HERPES ZOSTER AMONG PEOPLE FROM SELECTED AREAS OF PUNE CITY.

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Table: 1 Finding related to knowledge about Herpes zoster among people from selected areas of Pune city.
N=400

LEVEL OF KNOWLEDGE	f	%	Mean	SD
POOR (1 - 12)	126	31.5	15.6	4.87
AVERAGE (13-25)	257	64.25		
EXCELLENT (26-30)	17	4.25		

The data indicates the distribution of knowledge levels among the participants, classified into three categories: Poor, Average, and Excellent. A significant proportion of participants (64.25%) fall under the Average category, suggesting that the majority possess a moderate level of knowledge. The Poor category, which includes those with scores ranging from 1 to 12, accounts for 31.5% of the participants. Considering that the mean score was 15.6 and the standard deviation was 4.87, this suggests a significant proportion of people with comparatively poor knowledge levels. However, just 4.25% of participants received an Excellent score (26–30), indicating a small percentage of highly knowledgeable participants. Overall, the data reveals that while the majority of participants demonstrate average knowledge, there is a substantial minority with poor knowledge, and only a few excel in their understanding.

SECTION III: FINDINGS RELATED TO THE ITEM ANALYSIS OF KNOWLEDGE QUESTIONNAIRE.

The analysis revealed a moderate level of awareness about Herpes zoster among participants. While 60.5% recognized the disease and 56.75% were aware of its cause, only 49.5% correctly identified its viral origin, highlighting a significant gap in understanding. Basic facts about the disease were poorly understood, with just 48.75% providing accurate information on key statements, and 50.25% identifying high-risk groups. Knowledge of the rash's duration (53%) and transmission was also limited, with fewer than half (46.75%) recognizing its contagious nature, and 52.25% understanding its mode of spread. Awareness of the relationship between chickenpox and shingles was low (48.5%), and only 49.5% knew about caregiving precautions.

In terms of immunity, 53.5% understood the role of immunity to chickenpox, while 45.75% recognized the need to avoid contact with non-immune individuals. Clinical knowledge was weak, with only 39.25% knowing the commonly affected dermatomes. Pain management knowledge was limited (47%), although 58.5% understood the need for urgent care if the rash affects sensitive areas. Awareness of complications such as vision problems (57.5%) and postherpetic neuralgia (48.5%) was moderate, and 59% recognized the pain associated with the condition.

In lifestyle considerations, 45.5% understood dietary precautions, while 65.5% knew how to care for skin during infection. Regarding treatment, only 46.5% knew how Herpes zoster is treated, though 53.75% recognized the importance of early antiviral therapy. Knowledge about acute herpetic neuralgia duration (56%) and recurrence risk (55.75%) was moderate. Prevention awareness was limited, with 52.75% knowing about vaccination, but fewer understood its main benefits (48.25%) or eligibility (49.5%).

SECTION IV: IV FINDING RELATED TO ASSOCIATION BETWEEN KNOWLEDGE REGARDING HERPES ZOSTER.

Table No. 3 Association between knowledge regarding Herpes zoster
N=400

Demographic Variables	Excellent	Average	Poor	DF	Chi Table value	Chi calculated	P value	Remark
1.Age								
a.25-33 years	10	114	43	6	12.592	16.738	0.01	Association
b.34-42 years	1	65	30					
c.43-51 years	3	65	35					
d.52 - 60 years	3	13	18					
2.Gender								
a. Male	8	131	57	4	9.488	1.139	0.888	No Association
b. Female	9	126	69					
c. Transgender	0	0	0					
3.Education								
a. No formal Education	4	42	25	10	18.307	8.562	0.574	No Association
b. Primary	1	52	22					
c. Secondary	3	67	30					
d. Higher secondary	5	63	26					
e. Under graduation	1	18	11					
f. Post-graduation and above	3	15	12					
4.Occupation								
a. Private sector	6	79	43	6	12.592	5.617	0.467	No Association
b. Public sector	0	43	20					

c. Labourer	10	84	41					
d. House maker	1	51	22					

The study examined the relationship between demographic variables (age, gender, education, and occupation) and knowledge about Herpes zoster among 400 participants using chi-square tests. The analysis revealed a significant association between age and knowledge levels, with younger adults (25-33 years) displaying better knowledge compared to older age groups, particularly those aged 52-60 years, who exhibited lower knowledge. This suggests that targeted educational efforts are needed for older populations. However, no significant associations were found between gender, education, or occupation and knowledge of Herpes zoster. The chi-square test for gender ($p = 0.888$), education ($p = 0.574$), and occupation ($p = 0.467$) indicated that these factors did not significantly affect participants' awareness or understanding of the disease. Overall, the findings emphasize the importance of age in influencing knowledge, while other demographic factors such as gender, education, and occupation did not show a notable impact.

DISCUSSION

Our study aimed to assess the level of knowledge regarding Herpes zoster (HZ) among individuals in selected areas of Pune City. The findings revealed moderate awareness of the disease, with 64.25% of participants demonstrating average knowledge and 31.5% having poor knowledge. However, there were significant gaps in participants' understanding of essential facts about the disease. While the majority (78.9%) of individuals in a similar study by Nasser Al et al. (2024) in Saudi Arabia had heard of HZ, only a small percentage demonstrated comprehensive knowledge about its cause and transmission, a trend reflected in our study as well.

In our findings, nearly half of the participants (49.5%) could not correctly identify the viral origin of Herpes zoster, indicating a lack of understanding of its infectious nature. Further, only 48.75% of participants were able to answer basic true/false statements about the disease, and awareness of specific aspects such as the duration of the rash (53%) and transmission (46.75%) remained limited. Knowledge about complications like postherpetic neuralgia (48.5%) and the relationship between chickenpox and shingles (48.5%) was also lacking.

These results suggest that while there is basic recognition of Herpes zoster, significant educational efforts are required to bridge the knowledge gap and foster a deeper understanding of its transmission, symptoms, and prevention. This highlights the need for targeted awareness campaigns that go beyond name recognition and focus on providing comprehensive, actionable knowledge to the public.

IMPLICATION

Nursing Practice:

The study reveals significant knowledge gaps about Herpes zoster (HZ), highlighting the need for nurses to educate patients on symptoms, prevention, and vaccination. Outreach activities for high-risk groups should be prioritized to address these gaps.

Nursing Education:

Nursing curricula should be updated to include comprehensive HZ education, focusing on both clinical management and public health awareness. Experiential learning through community outreach should be emphasized.

Nursing Administration:

Nurse administrators should implement policies that prioritize public education on HZ, allocate resources for health promotion, and provide in-service training to improve nurses' ability to educate patients effectively.

Nursing Research:

Future research should evaluate educational interventions for improving HZ knowledge, assess vaccine acceptance, and explore healthcare providers' attitudes toward HZ education to inform evidence-based nursing practices.

CONCLUSION

In conclusion, the study indicates that most participants possess average knowledge about Herpes zoster, with a notable portion having poor knowledge. Age was found to be a significant factor influencing knowledge, with younger adults showing better awareness than older individuals do. However, gender, education, and occupation did not significantly affect knowledge levels. These results suggest the importance of focused educational interventions, particularly for older age groups, to enhance awareness of Herpes zoster.

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