



## KNOWLEDGE, ATTITUDE AND VACCINATION STATUS OF VARICELLA AMONG STUDENTS OF HEALTH SCIENCES UNIVERSITY

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### ABSTRACT

**Introduction:** Varicella although a common benign childhood disease can be lethal particularly in neonates, geriatric people and immunocompromised people due to its rare but severe complications.

Knowledge of this disease and its complications is an integral part of the curriculum for healthcare students. This study was implemented to determine the level of knowledge of varicella and the benefits of vaccination among undergraduate students of different healthcare courses. **Materials and Methods:** The study was conducted in RAK Medical and Health Sciences University (RAKMHSU) with due approval from the research and ethics committee. A Pre designed pre validated 20-point questionnaire was prepared using various related articles obtained from indexed, peer reviewed journals. Convenience sampling was done across the student population at RAKMHSU to assess levels of awareness regarding their knowledge of etiology, pathogenesis, clinical manifestations, prevention and treatment of Chicken Pox. A total 213 students of both gender and different courses were involved the study. **Results:** All students had reasonable knowledge regarding the clinical symptoms and transmissibility of the disease. Medical students had the highest knowledge about the vaccine and its dosage.

**Discussion and Conclusion:** The study concluded that awareness regarding the vaccine and its potential against Varicella was moderate to low among health sciences students and that there is a definite need for strategic measures to promote knowledge on the subject.

**KEYWORDS :** Varicella vaccine; knowledge; healthcare students

### INTRODUCTION:

Varicella, commonly known as chicken pox, is a highly infectious disease caused by varicella zoster virus (VZV). It has known as benign childhood disease, but can be fatal due to its rare but severe complications seen in neonates, geriatric people and immunocompromised people due to its rare but severe complications. (2) The likelihood of complications and mortality is around 20 times higher among adults as compared to children. (3)

The severe complications of chickenpox comprise bacterial infections of the skin and soft tissues, hemorrhagic complications, pneumonia and encephalitis. (3) Perinatal varicella and congenital varicella syndrome which affect newborns whose mothers were infected with varicella during pregnancy may cause fatality rate of around 30% if left untreated. (3)

Infection of the unborn child may lead to congenital varicella syndrome or neonatal varicella, with high morbidity and mortality. (4) Subsequent to the primary infection, the virus stays latent in the dorsal root nerve ganglia, and may reactivate later in life causing shingles (herpes zoster, HZ) with painful rashes localised to one dermatome. (5)

As a highly contagious and common childhood infection all over the world the disease burden of varicella is substantial. (6) It has been estimated in systematic literature review that without vaccination, 5.5 million cases would occur annually across Europe and children below 5 years would majorly be affected. (7)

Varicella takes 14 to 21 days to develop after being exposed to varicella or herpes zoster rash. In adults, mild malaise & fever

occur 1 to 2 days before the appearance of rash. The rash is frequently the first sign of infection in children. In healthy children the disease usually presents with fever, itchy rash and malaise and subsequently subsides in a few days. Recovery generally confers lifelong immunity. Varicella recurrence is rare in healthy individuals, but it is possible in immunocompromised individuals. The duration of transmissibility is approximately between one to two days before the appearance of a rash and four to five days post the infection. When the lesions have crusted, the patient is no longer contagious. Vaccinated people may develop lesions that do not crust. (8,9)

Vaccination is available for prevention of varicella, and the World Health Organization (WHO) recommends introduction of varicella vaccination into the routine childhood immunization program in countries where varicella is an important health burden. (10)

The predominant apprehension about varicella vaccination is that if vaccine uptake level remains below the ideal level, age distribution of the infection may change to the older age group, where the disease clinical symptoms and signs are usually more severe. (10)

Based on above facts, this study was carried out to determine the level of knowledge status of varicella and its vaccination among undergraduate students of different healthcare courses.

### MATERIALS AND METHODS:

The study was conducted in RAK Medical and Health Sciences University (RAKMHSU) with due approval from the

research and ethics committee. A Pre designed pre validated 20-point questionnaire was prepared using various related articles obtained from indexed, peer reviewed journals.

The validation of questionnaire were done by applying the questionnaire to a small group of students around 10 who were not involved in the main study group .After the completion, the Cronbach's alpha was assessed using SPSS 25. All questions with value of less than 0.5 were considered unacceptable. The other questions with value of more than 0.7 was used for the study.

A convenience sampling was done across the student population at RAKMHSU to assess their levels of awareness regarding their knowledge of etiology, pathogenesis, clinical manifestations, prevention and treatment of Chicken Pox. A total 213 students of both gender and different courses were involved the study.

The questionnaire was given during their free time with due consent and it was filled in presence of investigators. The questionnaire was collected after giving sufficient time and data was entered into Microsoft excel sheet for analysis using SPSS 25

**RESULTS:**

The study results showed that a majority of students in all groups agreed that major route of transmission is by direct contact as shown in table 1.

**Table 1: Knowledge of transmission in all subjects in percentages**

Course	Via a carrier	Direct contact	Indirect contact
Medical	8	88	4
Dental	33	67	0
Pharmacy	9	82	9
Nursing	30	60	10

In terms of knowledge of symptoms higher number of students from all groups mentioned fever followed by rash/vesicles as depicted in table 2.

**Table 2: Awareness of symptoms in study subjects in percentages**

Course	Fever	Tiredness	Loss of appetite	Muscle pains	Rash/ vesicles
Medical	73	0	40	0	44
Dental	60	20	0	0	30
Pharmacy	60	20	10	0	60
Nursing	30	21	14	0	30

As shown in table 3, the major clinical manifestation seen in chicken pox according to the students was skin manifestations followed by scars, lung and CNS infections. Only students from medical and pharmacy programs agreed that birth abnormalities could be a clinical manifestation in chickenpox.

**Table 3: Knowledge of other clinical manifestations in study subjects**

Course	Skin infection	Lung infections	Infections in CNS	Birth abnormalities	Scars on skin
Medical	58	16	31	14	37
Dental	53	27	20	0	0
Pharmacy	73	55	30	18	68
Nursing	30	8	0	0	30

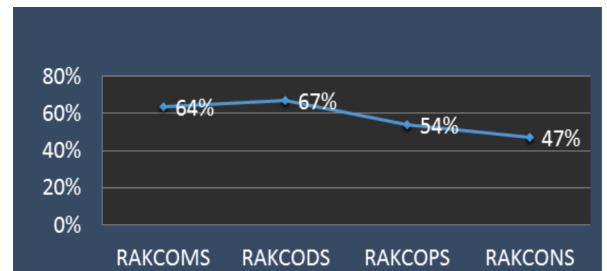
Majority of the students opted that vaccinations were necessary for both children and adults. Regarding the number of doses needed, we had mixed responses, but the important finding was that majority of the students in dental (53%), pharmacy (69%) and nursing (30%) had no idea of

doses when compared to the medical students (22%). Assessing the knowledge of the protection period showed that 53% medical students agreed it provides protection for 10-20 years whereas majority in the other programs had no idea as shown in table 4.

**Table 4: Vaccination knowledge among the participants.**

		Medical	Dental	Pharmacy	Nursing
Age groups	Children only	38	27	36	40
	Children and adults	52	53	54	53
	Adults Only	10	7	20	7
	No idea	0	13	0	0
Doses	One	38	27	20	45
	Two	40	20	11	25
	No Idea	22	53	69	30
Protecti on status	10-20 years	53	7	25	36
	Lifetime	23	47	12	27
	No Idea	24	47	63	43

The figure 1 shows the vaccination effectiveness in prevention of chickenpox. The medical and dental said it would provide above 60% protection in comparison to pharmacy and nursing students.



**Figure 1: Percentage of students view about vaccination as an effective preventive measure.**

**DISCUSSION:**

This study highlighted the need for health education among health sciences students. The medical student's knowledge was better than the other courses in various aspects. This is in accordance with a study by Hesham et al which showed that mean score of knowledge was significantly higher among students of medical fields. This is due to their educational content of their courses and their interest and involvement in prevention of infectious diseases during their clinical attachments. (11)

In our study majority of students across all groups agreed that vaccination was an important measure to prevent infection. This was because the disease is highly contagious and it was better to prevent than treat it. This was in accordance with studies done in US which showed that a high proportion of the population is influenced by their doctors recommendation. A second survey done in Canada on senior medical students demonstrated that the decision of vaccination was influenced by complications of chickenpox. (12, 13)

There were also students in the group who had no idea about vaccination. The reasons for this was not studied in our study but one reason may be the perception of this disease as a mild infection and not knowing the benefits of vaccination. Being in health sciences profession it is important to educate students which will have a positive impact when they serve the community. The studies have shown that public attitudes and practices regarding the prevention of chickenpox disease

may be influenced by medical students knowledge regarding the spectrum of varicella disease and availability of effective preventive strategies through immunization. (14)

Regarding the students' knowledge about immunity protection, it was a mixed response among groups as few agreed that the infection conferred 10 to 20 years of protection while others were of the opinion that a lifetime of immunity was guaranteed. Studies have shown that having chicken pox more than once is possible but it is uncommon and more commonly one bout of infection confers lifetime immunity. (15) In our study Medical (37), pharmacy (68) and nursing (30) opined that skin scarring is one of the clinical manifestation apart from skin infections. This was in accordance with Hesham et al. study (16), in which most of the respondents knew about scars on the skin and skin bacterial infection as complications of varicella. 45.6% of medical and 27.9% of nursing students knew that encephalitis is a severe complication of chickenpox. In our study only Medical, Dental and Pharmacy students agreed on CNS infections.

The study also concluded that majority of students had good knowledge of symptoms, with fever being at the top followed by rash/vesicles and loss of appetite.

### CONCLUSION:

The level of knowledge about varicella among the respondents was average with better knowledge among medical students when compared to others.

This study highlights the fact that although chicken pox is an important clinical health issue, awareness regarding the vaccine against Varicella is low among health sciences students and that there is a definite need for strategic measures to promote knowledge levels on the subject among healthcare students in universities. This would propagate and increase the knowledge among the future health care workers and population of U.A.E.

**Limitations:** Study was limited to students of one University.

**Conflict of interest:** NIL

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