Т. 12. №2 2026
https://doi.org/10.33619/2414-2948/123

UDC 616.9-053.2-06:616.24-008.6 https://doi.org/10.33619/2414-2948/123/36

KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING VARICELLA (CHICKENPOX) AMONG MEDICAL STUDENTS IN OSH STATE UNIVERSITY, KYRGYZSTAN

©Mamatkulova N., *ORCID: 0000-0002-2724-2128, SPIN-code: 4674-7377, Ph.D., Osh State University, Osh, Kyrgyzstan, nazgul92med@mail.ru*
©Singh Aryan Kumar, *ORCID: 0009-0009-5389-884X Osh State University, Osh, Kyrgyzstan*
Sahu Sejal *Osh State University, Osh, Kyrgyzstan*
©Mohammad Aqib, *Osh State University, Osh, Kyrgyzstan*
©Mallick Rizwan, *Osh State University, Osh, Kyrgyzstan*
©Zillur Rehman, *Osh State University, Osh, Kyrgyzstan*

ЗНАНИЯ, ОТНОШЕНИЕ И ПРАКТИКА В ОТНОШЕНИИ ВЕТРЯНОЙ ОСПЫ СРЕДИ СТУДЕНТОВ-МЕДИКОВ

©Маматкулова Н. М., *ORCID: 0000-0002-2724-2128, SPIN-код: 4674-7377, канд. мед. наук, Ошский государственный университет, г. Ош, Кыргызстан, nazgul92med@mail.ru*
©Сингх Ариан Кумар*, ORCID: 0009-0009-5389-884X, Ошский государственный университет, г. Ош, Кыргызстан*
©Саху Седжала*, Ошский государственный университет, г. Ош, Кыргызстан*
©Мохаммад Акиб*, Ошский государственный университет, г. Ош, Кыргызстан*
©Маллик Ризван*, Ошский государственный университет, г. Ош, Кыргызстан*
©Зиллур Рехман*, Ошский государственный университет, г. Ош, Кыргызстан*

Abstract. Background: Varicella, or chickenpox, is an extremely contagious viral disease that is contracted through the Varicella-Zoster Virus (VZV). In general, it is a mild infection in childhood, however, varicella carries a huge risk of the severe disease and death in adults, especially in a densely populated place, like a university dormitory. Objective: The present study is to determine the level of knowledge, past history, vaccination, and attitudes about varicella among students of Osh State University in Kyrgyzstan. Methods: A cross-sectional survey among 503 students in the medical field took place using a structured questionnaire. Data were collected on demographics, knowledge of disease transmission and symptoms, vaccination history, and attitudes toward prevention. Results: Most of the respondents were aged 17 to 20 or 21 to 23. Most students pointed out the correct causative agent and symptoms, but a great part was not clear about the transmission (for instance, they thought mosquito bites). Alarmingly, a large number of respondents did not know that adults suffer more from varicella than children do. The immunization coverage was inconsistent; the group consisted of one-dose, two-dose, and non-immunized individuals. Conclusion: A lack of specific clinical knowledge regarding the severity of adult varicella is felt among students. Given the crowded living conditions in hostels and flats, it is strongly recommended to organize a catch-up vaccination campaign and an awareness program.

Аннотация. Ветряная оспа, или ветрянка, — чрезвычайно заразное вирусное заболевание, передаваемое вирусом ветряной оспы (VZV). В целом, в детском возрасте это легкая инфекция, однако ветряная оспа несет огромный риск тяжелого течения заболевания и смерти у взрослых, особенно в густонаселенных местах, таких как университетские общежития. Исследование направлено на определение уровня знаний, истории болезни, вакцинации и отношения к ветряной оспе среди студентов Ошского государственного

Т. 12. №2 2026
https://doi.org/10.33619/2414-2948/123

университета в Кыргызстане. Было проведено поперечное исследование среди 503 студентов медицинского факультета с использованием структурированной анкеты. Были собраны данные о демографических характеристиках, знаниях о передаче заболевания и симптомах, истории вакцинации и отношении к профилактике. Большинство респондентов были в возрасте от 17 до 20 или от 21 до 23 лет, указали на правильный возбудитель и симптомы, но значительная часть не была уверена в способе передачи (например, они думали, что это укусы комаров). Большое количество респондентов не знали, что взрослые болеют ветряной оспой чаще, чем дети. Охват вакцинацией был непоследовательным; группа состояла из лиц, получивших одну дозу, две дозы и невакцинированных. Ощущается недостаток знаний о тяжести ветряной оспы у взрослых. Рекомендуется организовать кампанию по дополнительной вакцинации и информационную программу.

Keywords: varicella, medical students , adult immunization.

Ключевые слова: ветряная оспа, студенты-медики, иммунизация взрослых.

Varicella, or chickenpox, is the contagious disease caused by the Varicella-Zoster Virus (VZV) (https://www.who.int/). In the past, the disease was considered a harmless childhood experience in temperate areas, but its globalization changed the situation. In tropical and subtropical places, people become immune later in life and so a large number of adults remain non-immune [1].

This is particularly worrying in universities where students from different areas with different rates of infection are living together. The World Health Organization (WHO) states that the secondary case rates of varicella among immune household contacts range from 61% to 100%; thus, the disease is regarded as very contagious [1, 5-7].

The infection is predominantly spread through either airborne droplets or vesicular fluid contact. Deaths among children are very uncommon; nevertheless, the disease burden varies significantly with age. An adult is 25 times more likely to die of varicella than a child, and complications such as varicella pneumonia, encephalitis, and superinfection with bacteria are sources of death [2].

In India, the National Centre for Disease Control and the Indian Academy of Pediatrics suggest a two-dose vaccination regimen for the adolescents and adults who have no proof of immunity [3].

On the contrary, different countries have different vaccine policies. In Kyrgyzstan, routine immunization has been changed, but young adults remain a gap group who may not have received childhood doses or natural infection. The research was done at Osh State University, Kyrgyzstan, which is a meeting point for international medical students. The rising number of students in hostels forms a situation that is conducive to outbreaks. One of the reasons for this study is to uncover the knowledge gaps and the immunity status of the students so that future academic disruptions and health crises can be averted.

To conduct an investigation on students' awareness level, their past infection history as well as the vaccination coverage for varicella at Osh State University.

The study was descriptive cross-sectional in type, aimed at evaluating the awareness and health behaviors regarding chickenpox.

The target group for the study consisted of students who are enrolled at Osh State University in Kyrgyzstan. The research participants were students from different academic years (1st to 5th year) residing in hostels and also private flats.

A structured online questionnaire (Google Forms) was utilized to gather the data. The survey embraced both multiple-choice and Likert-scale questions, covering the following areas: age, gender,

Т. 12. №2 2026
https://doi.org/10.33619/2414-2948/123

year of study, and living situation; causative virus, modes of transmission, incubation period, and symptoms; previous varicella infection, age of infection, and vaccination status (doses received); and willingness to isolate, perception of awareness levels, and desire for vaccination programs.

A total of 503 responses were analyzed. The data were summarized using descriptive statistics (frequencies and percentages). The raw dataset was processed to categorize knowledge levels and vaccination coverage.

Participation in the study was voluntary. To protect the students' privacy, the responses were anonymized. The student respondents' survey resulted in 503 valid responses. The outcomes are presented under three headings: demographics, knowledge, and practices.

The surveyed population was mainly young adults.

Most of the respondents were in the age groups of 21–23 years and 17–20 years, which is typical for university undergraduates.

The participants' living arrangements indicated equal numbers living in hostels (high-density housing) and flats (private apartments). This is a significant distribution because hostels have a greater risk of airborne transmission.

The students participated from the 1st to 5th year, which offered a mix of preclinical and clinical knowledge levels.

A good number of students correctly identified the Varicella-Zoster Virus as the causative agent, but a worrying minority chose incorrect options such as "Measles virus," "Rubella Virus," or "I don't know." Regarding the method of transmission:

The vast majority of students chose "Airborne droplets" and "Touching fluid from blisters" as the means of transmission. A small group, however, thought that "Mosquito bites" was the way the virus spreads, which indicates a significant lack of knowledge in microbiology. Most students were in agreement and correctly recognized the classic symptoms by mentioning "Fever," "Itchy rash," and "Blisters filled with fluid." Knowledge of the incubation period, which lasts for about 10–21 days, was very inconsistent. Many respondents chose "1–3 days," which could result in premature release from isolation during an outbreak. The question "Is chickenpox usually more severe in adults than in children?" received varied answers. A large number replied with "No" or "Not sure." This highlights a lack of public awareness regarding the increased morbidity (pneumonia, hospitalization) of adult varicella.

Some students reported having chickenpox when they were 5–10 or 11–15 years old.

Answers varied: "Yes, two doses" (Optimal protection), "Yes, one dose" (Partial protection), "No" or "Not sure" (Potential susceptibility).

Almost everyone recognized that a potentially infected student should "Self-isolate and report to the college health unit." A large number of students felt there was limited awareness on campus and expressed strong interest in participating in a vaccination or awareness program organized by the college.

This study's findings reveal a divide within the student community: while there is universal recognition of chickenpox as a disease, the specific medical knowledge necessary for effective prevention and self-care is lacking.

The incorrect belief that chickenpox is transmitted through mosquito bites or has a very short incubation period (1–3 days) is clinically harmful. The World Health Organization (WHO) states that the incubation period is 10–21 days, and the transmission period begins 1–2 days before the rash appears [1].

Failure to understand this timeline can lead to ineffective isolation of exposed contacts. Furthermore, a lack of awareness regarding the greater severity of varicella in adults is another cause for concern. The literature confirms that mortality and complication rates (such as varicella

Т. 12. №2 2026
https://doi.org/10.33619/2414-2948/123

pneumonia) are significantly higher in adults compared to children [2].The vaccination data indicates the distribution of vaccination levels among the students. The guidelines from the Ministry of Health and Family Welfare (MoHFW), India, recommend that children over the age of 13 years and adult persons without proof of immunity should receive two doses of the varicella vaccination, with an interval of 4 to 8 weeks between the doses [3].

The students reporting "one dose" or being "unsure" of their vaccination status can be considered a group who might suffer from breakthrough varicella, which, although milder, is still contagious. University hostels are considered to be among the places with the highest risk of VZV transmission because of their overcrowding. The research pointed out that hostel-dwelling students had the same level of knowledge gaps as flat-dwelling students. Such an outbreak is likely to cause major disruption in the academic calendar. The high rate of students' willingness to take part in awareness programs indicates that institutional intervention would be very well accepted. Self-reported data was the main source of information for this study, and it can be influenced by recall bias, especially in the case of childhood vaccination history and age of past infection. The sample size (N=503) was adequate for a pilot overview but might not be representative of the whole university population. The study concludes that the students of Osh State University have a very basic understanding of chickenpox but, at the same time, there are considerable gaps in their knowledge with respect to the transmission, incubation period, and severity of the disease in adults. The students' immunization status is questionable since a sizable percentage may have received only one dose or no doses at all; thus, there is a possibility of outbreaks occurring in the dormitories housing the students.

Recommendations:

Campus Awareness Campaigns: addressing the myths (such as mosquito transmission) and pointing out the 10–21 day incubation period as a matter of great importance.

Screening and Catch-up Vaccination: The university health unit is to be responsible for checking vaccination records. Those students who cannot show any history of the disease or vaccination should be provided with a two-dose catch-up schedule that is consistent with international best practices.

It is recommended that active surveillance be conducted in hostels during the winter/spring peak season in order to detect and isolate cases at an early stage.

References:

1. World Health Organization. (2014). Varicella and herpes zoster vaccines: WHO position paper, June 2014= Vaccins contre la varicelle et le zona: note de synthèse de l'OMS, juin 2014. *Weekly Epidemiological Record= Relevé épidémiologique hebdomadaire*, *89*(25), 265-287.

2. National Immunization Program (Centers for Disease Control, Prevention), National Immunization Program (Centers for Disease Control, Prevention). Education, & Partnership Branch. (2005). *Epidemiology and prevention of vaccine-preventable diseases*. Department of Health & Human Services, Public Health Service, Centers for Disease Control and Prevention.

3. Bhattacharyya, A., & Shahabuddin, S. M. (2024). Adult vaccination in India: A rapid review of current status & implementation challenges. *The Indian Journal of Medical Research*, *160*(3-4), 279. https://doi.org/10.25259/IJMR_1521_2024

4. Gershon, A. A., Breuer, J., Cohen, J. I., Cohrs, R. J., Gershon, M. D., Gilden, D., ... & Yamanishi, K. (2015). Varicella zoster virus infection. *Nature reviews Disease primers*, *1*(1), 1-18. https://doi.org/10.1038/nrdp.2015.16

5. Seward, J. F., Marin, M., & Vázquez, M. (2008). Varicella vaccine effectiveness in the US vaccination program: a review. *The Journal of infectious diseases*, *197*(Supplement_2), S82-S89. https://doi.org/10.1086/522145

6. Song, P., Seok, J. M., Kim, S., Choi, J., Bae, J. Y., Yu, S. N., ... & Park, H. (2024). Viral Etiology of Aseptic Meningitis and Clinical Prediction of Herpes Simplex Virus Type 2 Meningitis. *Journal of Personalized Medicine*, *14*(9), 998.

7. Plotkin, S. A. (2005). Vaccines: past, present and future. *Nature medicine*, *11*(Suppl 4), S5-S11.

Список литературы:

1. World Health Organization et al. Varicella and herpes zoster vaccines: WHO position paper, June 2014= Vaccins contre la varicelle et le zona: note de synthèse de l'OMS, juin 2014 //Weekly Epidemiological Record= Relevé épidémiologique hebdomadaire. 2014. V. 89. №25. P. 265-287.

2. National Immunization Program (Centers for Disease Control et al. Epidemiology and prevention of vaccine-preventable diseases. Department of Health & Human Services, Public Health Service, Centers for Disease Control and Prevention, 2005.

3. Bhattacharyya A., Shahabuddin S. M. Adult vaccination in India: A rapid review of current status & implementation challenges // The Indian Journal of Medical Research. 2024. V. 160. №3-4. P. 279. https://doi.org/10.25259/IJMR_1521_2024

4. Gershon A. A., Breuer J., Cohen J. I., Cohrs R. J., Gershon M. D., Gilden D., Yamanishi K. Varicella zoster virus infection // Nature reviews Disease primers. 2015. V. 1. №1. P. 1-18. https://doi.org/10.1038/nrdp.2015.16

5. Seward J. F., Marin M., Vázquez M. Varicella vaccine effectiveness in the US vaccination program: a review // The Journal of infectious diseases. 2008. V. 197. №Supplement_2. P. S82-S89. https://doi.org/10.1086/522145

6. Song P., Seok J. M., Kim S., Choi J., Bae J. Y., Yu S. N., Park H.Viral Etiology of Aseptic Meningitis and Clinical Prediction of Herpes Simplex Virus Type 2 Meningitis // Journal of Personalized Medicine. 2024. V. 14. №9. P. 998.

7. Plotkin S. A. Vaccines: past, present and future // Nature medicine. 2005. V. 11. №Suppl 4. P. S5-S11.

Поступила в редакцию
04.01.2026 г.

Принята к публикации
11.01.2026 г.

Ссылка для цитирования:

Mamatkulova N., Singh Aryan Kumar, Sahu Sejal, Mohammad Aqib, Mallick Rizwan, Zillur Rehman. Knowledge, Attitudes and Practices Regarding Varicella (Chickenpox) Among Medical Students in Osh State University, Kyrgyzstan // Бюллетень науки и практики. 2026. Т. 12. №2. С. 341-345. https://doi.org/10.33619/2414-2948/123/36

Cite as (APA):

Mamatkulova, N., Singh Aryan, Kumar, Sahu, Sejal, Mohammad, Aqib, Mallick, Rizwan, & Zillur, Rehman (2026). Knowledge, Attitudes and Practices Regarding Varicella (Chickenpox) Among Medical Students in Osh State University, Kyrgyzstan. *Bulletin of Science and Practice, 12*(2), 341-345. https://doi.org/10.33619/2414-2948/123/36