

Analysis of the Role of Family and Migration Influence in the Spread of Scabies

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Abstract Our conducted research has shown that the family factor plays a key role in the spread of scabies in the Surkhandarya region. It was found that in 54.7% of cases (254 individuals), the disease was contracted from family members. In addition, internal and external migration is also an important factor in the spread of the disease. A high prevalence of the disease among labor migrants has been recorded.

Keywords Scabies, Epidemiology, Clinical forms, Family hearths

1. Introduction

Scabies is a highly contagious infectious disease caused by microscopic mites - *Sarcoptes scabiei var hominis*. The female mite burrows into the epidermis, parasitizes, and lays numerous eggs. Subsequently, the host organism mounts an immune response to this condition, resulting in skin rashes and intense itching [1,2,3]. It was only in 2017 that the WHO classified scabies as one of the neglected tropical diseases. Notably, more than 200-250 million people worldwide are affected by scabies annually [4,5,6].

The spread of the scabies pathogen (mite) among humans has a focal nature and is associated with their lifestyle and behavior. The source of scabies is considered to be an infected person. Within a group of people (in conditions where the pathogen can spread), a single patient with scabies can create a disease focus. Typically, a focus with one patient is referred to as a potential focus, while a focus with two or more patients is called an active (transmissible) focus [7,8].

There is a close relationship between the epidemiological process and the population structure of the pathogen. In this case, mites in their reproductive stage multiply on the patient's skin (elementary population). The interaction between the macroorganism and the pathogen manifests itself in the clinical presentation of the disease.

At the second population level, the etiological factor increases in a group of people (patients). When new individuals are infected, the proportion of mites in their reproductive stage also increases. At the third level, reproduction spreads among the population in villages, districts, cities, and regions.

At this level, the significance of the biological factor in the increase of the disease diminishes, while social and household -communal factors come to the forefront.

Considering that people work in organized collectives and live in families with many members, as well as interact with each other, the foci of scabies can occur within families and communities.

The increase in the duration of the disease in a family focus is directly proportional to the spread of scabies. The disease is initially brought into the family by one of its members; sometimes, it can enter from outside when relatives or acquaintances stay overnight for several days. Young adolescent boys and girls often contract the disease when they share a room with friends or companions.

The aim of the research is to conduct a comparative assessment of familial and non-familial transmission among individuals diagnosed with scabies in Surkhandarya region, and to study the impact of internal and external migration on this transmission.

The research objects included epidemic and outpatient records of 5,050 scabies patients identified during 2010-2024 in the Surkhandarya region, medical histories of 464 patients undergoing inpatient treatment, a list of patients under outpatient and dispensary observation, examination documents of their household contacts, as well as annual reports at the district, regional, and national levels.

The subjects of the study were 464 patients in our research, as well as their household contacts, and pathological materials obtained from skin scrapings for microscopic examination (scabies mites).

2. Research Methods

In the scientific research process, epidemiological, clinical (retrospective epidemiological analysis), bacterioscopic studies,

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and statistical (Pearson's chi-square (χ^2) coefficient, variation analysis, and Fisher's method) research methods were used.

We aimed to study the influence of family clusters, internal and external migration on the spread of scabies. When we examined 464 patients under our observation for the presence of familial clusters, it was determined that 254 (54.7%) patients had contracted the disease from one of their family members (Figure 1).

Mites are active at night and transmission occurs more frequently during nighttime.

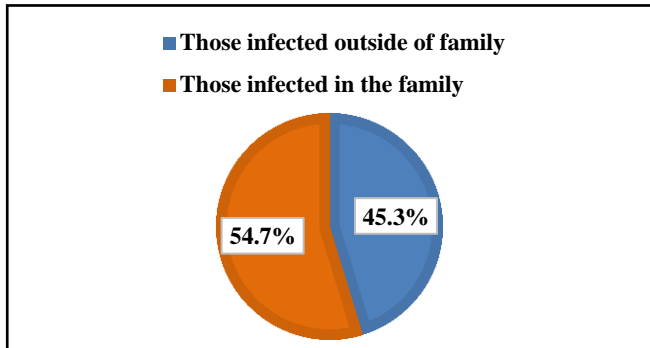


Figure 1. Distribution of family and non-family transmission among 464 patients diagnosed and treated for scabies



Figure 2. Clinical presentation of scabies on the skin of a 3-month-old baby

Especially in infants aged 1-2 years, scabies mites are transmitted directly from the mother. In the typical form of scabies, the skin on both hands of the affected mother is primarily affected. Numerous nodules, vesicles, and mite burrows are located between the fingers of her hands. Additionally, rashes appear on the skin of mothers' breasts and genital area. Naturally, scabies is transmitted from such a mother during childcare. Over a period of 7-15 days, numerous small nodules and blisters appear on the baby's skin (Figures 2, 3, 4, 5). The skin of the inflamed areas becomes red, with excessive scaling at the edges. As we all know, infants cannot speak. Therefore, itching, the most important subjective symptom of scabies, remains unknown to the doctor. Young

specialists may confuse it with allergic dermatitis, toxicoderma, atopic dermatitis, and other diseases characterized by similar rashes. Only the correct collection of epidemiological history, careful attention to the characteristics of objective rashes, medical examination of family members, and laboratory tests will contribute to the accuracy of the diagnosis.



Figure 3. Appearance of rashes on the leg skin of an 8-month-old child with scabies



Figure 4. Appearance of rash on palms of newborn with scabies



Figure 5. Appearance of skin rash on abdomen of newborn with scabies

Our studies indicate that 60-70% of infants aged 1-2 years were initially misdiagnosed. Consequently, the epidemiological process became more complex. Subsequently, 3-4 children from a single family would become infected. Thus, our research has revealed that family factors play a significant role in childhood morbidity. Medical histories of patients aged 18-27 (92 individuals) and 28-37 (49 individuals) showed that 28.2% reported experiencing the first symptoms of the disease 7-12 days after sexual intercourse with strangers. Following such incidents, the role of family factors increases further. This implies that men contribute to the morbidity of young children. Indeed, they first contract the disease through secret sexual encounters with other women, then transmit it to their marital sexual partner, who in turn infects their infant child during care. This chain continues to propagate. Without timely medical intervention, all children in the household may fall ill within 1-2 months. Therefore, family factors played a particularly significant role in the morbidity of children aged 3-6 (40), 7-10 (56), and adolescents aged 11-17 (63). Our research indicates that on average, in 54.7% of cases, family factors caused the disease, while in 45.3% of cases, children contracted the disease externally.

Even when there is a patient in the family, if the aforementioned personal hygiene rules are not violated, disease transmission from the patient remains minimal. Indeed, disease transmission through objects (clothes, bedding) is termed indirect transmission. It should be noted that sometimes the pathogen can survive for several more days in the bedding and clothing used by a patient who brought the disease (ticks) from outside. The number of scabies cases is significant in both direct and indirect transmission of the disease. For example, if there are 2-4 patients in one family, direct transmission occurs. If the number of initial patients in the family is 5 or more, conditions are created for indirect transmission of the pathogen. In such a situation, biological factors also play an important role. Indeed, invasiveness is associated with mite tunnels, blisters, and papules on the patient's skin.

In the family, the transmission of the disease from the initial patient can be sequential, in which the disease is transmitted in a chain, first to one person, then to another. In fractional spread, the disease is simultaneously transmitted to 2 or 3 people. Usually, in such foci, a new patient appears every 10-14 days, sometimes occurring over the course of a month. Of course, the emergence of a new patient depends on the interval of invasive household contact, and the overall morbidity is assessed by the age of family members. The younger children in the focus, the faster the morbidity increases. The proportion of sexually transmitted infections in the spread of the disease from outside sources is increasing. In this, of course, the role of adults is significant. Thus, the family focus is considered one of the main sources of the spread of scabies among the population. The transmission of the disease in an organized community (collective) is divided into: invasive-contact and non-contact. Invasive - the transmission of the disease in the contact group is similar to family contact. Examples include infections in orphanages,

dormitories, boarding schools, and general hospitals.

No one denies the significant role of internal and external migration in the spread of infectious diseases among the population. Currently, internal and external migration is increasing in all countries. It is no secret that thousands of our sons and daughters, men and women, are labor migrants from Uzbekistan to neighboring countries (Kazakhstan, Russian Federation), and even to European and Asian countries (Turkey, Germany, Greece, Poland, Bulgaria, Egypt, South Korea, United Arab Emirates).

In our study of 225 adults aged 18-58 (106 men, 119 women), 33.4% (75 people: 40 women, 35 men) had worked as labor migrants in foreign countries for a certain period (from 3-4 months to several years). Of the 40 women we observed, 8 (20%) reported that the initial symptoms of the disease appeared in Turkey, and 5 (12.5%) in Russia. Of the 35 men, 15 (42.9%) experienced nighttime skin itching while working in the Republic of Kazakhstan. They attempted to treat themselves.

It should be noted that some of the patients under our observation had worked as labor migrants in the city of Termez and district centers, having come from the mountainous areas of the region (Boysun, Sherabad, Shurchi districts) for work and income. When analyzing medical histories and outpatient records, 119 patients (52.9%) stated that according to official records, they were not employed anywhere, but worked as day laborers or monthly contract workers depending on availability. However, they could not pinpoint exactly when and where they had contracted the disease.

3. Results

Scabies primarily spreads through family clusters (54.7% of cases). Infants aged 1-2 years often contract it directly from their mothers, and in many cases, the condition is misdiagnosed.

Cases of sexual transmission were observed, particularly among young men (28.2% of cases).

A high prevalence of the disease was found among labor migrants (33.4% of cases).

Informal labor activities and hired workers are also significant factors in the spread of the disease.

4. Conclusions

Thus, the role of family factors, as well as internal and external migration, in the spread of scabies in certain areas is convincingly high. Indeed, it is necessary to take this information into account when developing treatment and preventive measures against scabies.

Based on these observations and considerations, we offer the following recommendations:

- It is necessary to regulate the registration of cases and the monitoring of their contacts;
- Continuously publish manuals and methodological guidelines that fully cover the epidemiology, treatment,

and current advanced prevention of the disease;

- Implement preventive chemotherapy and the widespread use of medicinal substances in practice;
- Systematically organize training to improve the qualifications of all staff involved in or wishing to engage in laboratory diagnosis of scabies mites;
- Continuously carry out pre-planned sanitary-educational and preventive activities among the population.

Raise awareness about scabies prevention and increase the level of public medical knowledge in this area through television, radio, newspapers, and specialized social media platforms.

REFERENCES

- [1] Aleksikova A.S. Analysis of nurse's activities in the prevention of scabies // *Step into the future*. - 2023. - P. 172-175.
- [2] Gayevskaya M.Yu., Denisenko O.I. Scabies in adults: features of modern course // *The 5th International scientific and practical conference "Fundamental and applied research in the modern world"* (December 16-18, 2020) BoScience Publisher, Boston, USA. 2020. 822 p. - 2020. - P. 280.
- [3] Efanova E.N. et al. A case of widespread scabies in an infant // *Research of Young Scientists*. - 2019. - P. 28-31.
- [4] Sokolova T.V. et al. Norwegian scabies: realities of our time // *Clinical Dermatology and Venereology*. - 2020. - Vol. 19. - No. 1. - P. 64-74.
- [5] Sokolova T.V. et al. Scabies: the dark side of official statistics // *Medical Bulletin of the Ministry of Internal Affairs*. - 2020. - No. 4. - P. 68-76.
- [6] Umarova D.A., Eshniyazov M.M. Scabies (acrodermatitis): causes, clinical signs, modern diagnosis and treatment // *Academic Research in Modern Science*. - 2022. - Vol. 1. - No. 14. - p. 39-47.
- [7] Ustobaeva T.T., Malyarchuk A.P., Zoirov P.T., Abdieva D.Kh. The role of family foci in the epidemiology of scabies. *Russian Journal of Skin and Venereal Diseases*. No. 1, 2014. p. 47-52.
- [8] Eshboyev E.Kh., Togayev A.T. On the Epidemiology of Scabies. *Dermatovenerology and Aesthetic Medicine*. No. 3 / 2022 (55) 128 p.