ORIGINAL ARTICLE

Scabies in Azerbaijan: Epidemiological Patterns and Challenges from 2000 to 2024

Authors: Saida Valizadeh[1], Khalil Valizada[1]

[1] *Nakhchivan State University*

ABSTRACT

Background: Scabies, caused by Sarcoptes scabiei var. hominis, remains a highly contagious skin condition of global concern. This study examined long-term national surveillance trends in Azerbaijan from 2000 to 2024.

Methods: We conducted a retrospective observational analysis using national surveillance data. Annual incidence rates per 100,000 population were calculated with mid-year population denominators from the State Statistical Committee. Poisson regression was applied to estimate Average Annual Percent Change (APC) with 95% confidence intervals (CI).

Results: Incidence declined from 36.0/100,000 in 2000 to 3.3/100,000 in 2015, but increased thereafter, peaking at 28.8/100,000 in 2024 (2,934 reported cases). Poisson regression estimated an APC of +12% (95% CI: 8–17%).

Conclusions: Scabies is re-emerging as a public health concern in Azerbaijan. Strengthened surveillance, integration into skin health programs, and consideration of mass drug administration in high-prevalence areas are warranted.

Corresponding Author:
Khalil Valizada
(Email: velizadexelil5@gmail.com)

INTRODUCTION

Scabies is a common parasitic skin infestation caused by the mite Sarcoptes scabiei var. hominis. It is transmitted primarily through prolonged skin-to-skin contact and remains a major public health issue globally, particularly in overcrowded, low-resource settings. The Global Burden of Disease (GBD) 2021 update estimated 206.6 million prevalent cases, 622.5 million incident cases, and more than 5 million disability-adjusted life years (DALYs) attributable to scabies.

Despite availability of effective treatments such as permethrin 5% cream and oral ivermectin, reinfection, diagnostic difficulties, and inequitable treatment coverage continue to impede control. Azerbaijan has historically reported fluctuating trends in incidence, but the dynamics over the past two decades have not been systematically analyzed.

Populations living in overcrowded conditions with poor hygiene and limited access to healthcare are especially vulnerable to scabies (1). Globally, it is estimated that over 200 million people are affected at any given time, with frequent outbreaks reported in institutional settings such as schools, prisons, and refugee camps (2). Despite the availability of effective treatments like topical permethrin and oral

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ivermectin, challenges including reinfection, diagnosis, and limited treatment coverage hinder control efforts (3).

Material and Methods

Study design: A retrospective observational time-trend study was conducted using national surveillance data on scabies cases reported between 2000 and 2024.

Data sources: Case counts were obtained from the national health surveillance system. Annual population denominators were extracted from the State Statistical Committee of Azerbaijan (accessed 2024), using mid-year estimates.

Case definition: Notifications followed WHO clinical criteria (intense pruritus, typical lesions, contact history). IACS 2020 consensus criteria could not be fully applied due to absence of routine laboratory confirmation.

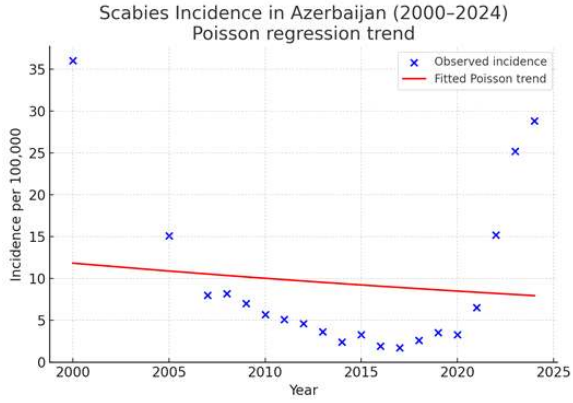
Statistical analysis: Annual incidence per 100,000 population was calculated. Poisson regression was applied to estimate Average Annual Percent Change (APC) with 95% confidence intervals. Trends before and after 2015 were examined. Descriptive tables and figures were prepared.

Ethical considerations: The study used aggregated de-identified national surveillance data; ethical review was deemed not required. Permission to use and publish anonymized surveillance data was granted by the Ministry of Health.

RESULTS

Between 2000 and 2015, scabies incidence declined substantially from 36.0 to 3.3 per 100,000. Since 2016, however, incidence has risen, reaching 28.8 per 100,000 in 2024 (2,934 reported cases). Poisson regression estimated an APC of +12% (95% CI: 8–17%), confirming a statistically significant upward trend in recent years.

Figure 1. Observed scabies incidence and Poisson regression fitted trend (2000–2024).



DISCUSSION

The data from this study indicate fluctuating trends in the incidence of scabies in Azerbaijan over the past two decades, with a notable resurgence in recent years. This pattern aligns with global observations where scabies prevalence tends to rise in response to socio-economic challenges, population displacement, and disruptions in healthcare services (13). The increase in reported cases since 2020 may be partly attributed to the COVID-19 pandemic's impact on healthcare accessibility and public health programs, which has also been documented in other regions (4).

Our findings highlight the persistent burden of scabies despite available effective treatments such as permethrin and ivermectin. Reinfection and challenges in mass drug administration campaigns often undermine control efforts, especially in densely populated or underserved communities (5). Moreover, the absence of routine laboratory diagnostics in Azerbaijan, as in many low-resource settings, can delay accurate diagnosis and treatment initiation, further contributing to transmission (6).

The marked rise in scabies cases emphasizes the need for comprehensive public health strategies, including improved surveillance, community education, and integration of scabies control into broader skin disease management programs.

Evidence from large-scale interventions suggests that mass drug administration combined with health education significantly reduces scabies prevalence in endemic settings (7).

Limitations of this study include reliance on passive surveillance data, which may underestimate true incidence due to underreporting. Future research should incorporate active case finding and evaluate the effectiveness of intervention strategies in Azerbaijan.

The analysis demonstrates a marked epidemiological shift in Azerbaijan: a steady decline until 2015 followed by resurgence, with highest incidence recorded in 2023–2024. The APC of +12% (95% CI: 8–17%) highlights that this increase is statistically significant, underscoring scabies as a re-emerging public health concern.

Global comparisons reinforce this finding. The GBD 2021 update estimated over 200 million prevalent scabies cases worldwide. Azerbaijan's upward trajectory mirrors patterns in other middle-SDI regions, exacerbated by socio-economic pressures and the COVID-19 pandemic. Reduced access to healthcare and overcrowding likely accelerated transmission.

Despite effective therapies, reinfection and diagnostic challenges persist. WHO and CDC recommend permethrin 5% and two doses of ivermectin 200 µg/kg (contraindications apply). Mass drug administration (MDA) has proven effective in endemic regions but requires careful planning: community prevalence thresholds, contact treatment, pharmacovigilance, and reliable supply chains must be ensured.

Alternative contributors to rising incidence must be acknowledged, including reporting artifacts, surveillance policy changes, and outbreak clusters in institutional settings. Future studies with age-, sex-, and region-stratified data are needed.

CONCLUSION

Scabies incidence in Azerbaijan has shifted from long-term decline to resurgence, peaking in 2023–2024. These findings emphasize the urgent need for robust surveillance, targeted health education, improved access to treatment, and consideration of MDA in high-prevalence communities. Strengthening healthcare worker capacity to diagnose and manage scabies will be critical to reducing transmission.

Limitations

The study is limited by reliance on passive notification data, potential underreporting, lack of laboratory confirmation, and absence of age-, sex-, or region-specific stratification. Possible urban–rural differentials and the inability to separate crusted scabies cases also constrain interpretation.

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Competing Interests

The authors declare no competing interests.

Ethics and Permissions

This study used aggregated de-identified surveillance data. Ethics review was not required.

Data Availability

Data supporting this study are available from the State Statistical Committee of Azerbaijan.

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