WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 7, Issue 2, February- 2026

REGIONAL ASPECTS OF THE EPIDEMIOLOGY AND RISK OF MAJOR NON-COMMUNICABLE DISEASES IN THE LOCAL AND MIGRANT POPULATION OF ANDIZHAN

Sapioxunova X. M.
Mamasaliev N. S.
Mamasaliev Z. N.
Usmonov B. U.
Mamasolieva Sh. A.
Andijan State Medical Institute Uzbekistan, Andijan

ABSTRACT

Major chronic non-communicable diseases (cardiovascular diseases, tumors, chronic respiratory diseases) have been among the most widespread diseases in the world for the past few years, and they remain the leading object of science and practice as the main cause of the therapeutic continuum among the population. Therefore, in the current era, preventive and prophylactic medicine, both theoretically and practically, and primarily in relation to major non-communicable diseases, has become an urgent issue and a necessity. According to the World Health Organization, "the annual mortality rate from them is 71%, and economic losses are about 1 trillion per year..."

In the world, special attention is paid to epidemiological scientific research aimed at identifying the regional characteristics of the occurrence of major non-communicable diseases and creating and improving measures for the prevention of their various forms. In particular, the introduction of methods for early detection and prediction of the risk of developing major non-communicable diseases based on "...epidemiological markers" - risk factors, in populations with different characteristics is identified as one of the important tasks. At the same time, scientific research is also actively underway, including in Uzbekistan, to accurately and objectively assess the epidemiological and clinical processes in non-communicable diseases, to improve predictive algorithms - models, taking into account the territorial course of diseases and the "accumulation of risk factors". However, despite the great achievements of medical science, there is no generally accepted methodology for the prevention of major non-communicable diseases.

Western medicine believes that the outcome of prevention (population health) is 50% related to living conditions and lifestyle, 20% to environmental conditions, 20% to genetic factors, and 10% to the healthcare system. Eastern medicine believes that

the outcome of prevention is 70% related to thinking, 20% to lifestyle, and 10% to nutrition.

Keywords: Major noncommunicable diseases, epidemiological studies, risk factors, overweight, coronary heart disease, hypertension, myocardial infarction, metabolic syndrome, diabetes mellitus.

Introduction

In the current era of the "third renaissance", the issue of developing modern approaches to improving the control system over major noncommunicable diseases (NCDs), the development of its theoretical and scientific foundations remains an international priority. Even though the trend of NCDs has not only stabilized, but has become increasingly relevant and is predicted to take on a pandemic character in the near future.

The use of artificial intelligence (AI) in medical practice, in particular in NCDs, is already a fact, its new and promising direction in health care, as a "unique tool" that shows great potential in the prevention, diagnosis and therapy of NCDs, has been proven in recent years in research [11; 14; 13; 17; 10; 6; 16; 5; 7].

According to the results of a survey of doctors, the integration of AI into medical practice "helps the doctor as an additional tool" (28%), "fundamentally changes medicine" (5%), "fundamentally changes medicine, but the role of doctors will remain central" (67%) [3].

According to WHO, metabolic syndrome and obesity are responsible for up to 44% of CVD and 23% of CVD [15]. According to V.S. Krysanova and P.A. Kelekshaev (2020), approximately 4.72 million deaths (on average per year) are associated with metabolic syndrome and obesity [1].

A meta-analysis for Russia from 1980 to 2016 (333 causes of death and 84 risk factors were included in the analysis) confirmed that 48.5% of deaths in Russia in 2016 were caused by metabolic risk factors [9]. Metabolic syndrome is a risk factor for cardiovascular diseases, cancer, CVD, and neurological disorders [8].

Obesity also attracts attention by increasing financial costs: in some countries, 8% of the health system budget is spent on obesity-related diseases. Patients with obesity are twice as likely to receive medication compared to patients without obesity.

70% of the costs of NCDs, 23% of the costs of HCC, and 9% of the costs of cancer are associated with the presence of obesity [12]. The increase in costs associated with obesity and obesity (up to 31.8% in healthcare costs and 68.1% in costs associated

with reduced productivity) has also been noted in other studies and reviews [18; 2; 3; 4].

The negative epidemiological situation with non-communicable diseases, according to the presented data, has worsened and become more serious due to the lack of adequate management and control systems. In this regard, it is important to change and improve the preventive system for controlling the risk of NCDs, based on epidemiological results and conclusions and with priorities at the regional/territorial population level, and this area is receiving attention as a relevant scientific topic worldwide.

The general conclusion can be summarized as follows: the development of a customer-centric system for digital prevention is a relatively new concept, although this approach is gaining momentum worldwide.

The purpose of the study is to improve the screening and control system for major non-communicable diseases in the rural population of Andijan in a special epidemiological study.

Material and Methods

Object of research a representative sample of 2,446 rural residents was taken from the Pakhtaabad district of Andijan region.

Subject of the study general clinical-laboratory, biochemical and screening methods for venous blood and serum of the population, as well as instrumental methods for the epidemiology of AKI.

Research methods. The study used epidemiological, general clinical, laboratory, biochemical, instrumental, and statistical research methods.

Results

In rural areas of Andijan, the epidemiology and risk characteristics of the main noncommunicable diseases in the local (Uzbeks) and immigrant (other nationalities) population aged 18–89 years were specifically studied and analyzed in a simultaneous epidemiological study (numerical analysis of the results is shown in Table 1 and Figure 1). It follows that the prevalence of NCDs in the immigrant and local population aged 18–89 years is confirmed at 24.5% and 22.0% [X2 = 0.295; P>0.05; RR= 1.113; 95% CI = 0.760–1.629].

WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 7, Issue 2, February- 2026

Table 1 Epidemiology and risk profile of major noncommunicable diseases in rural populations among migrant and indigenous populations

№	Main non-communicable diseases studied		Villagers (n=565)							
			Came (n=102)		Local (n=463)		χ^2	P	RR	95%CI
			abc	%	abc	%				
1	Cardiovascular diseases		25	24,5	102	22,0	0,295	>0,05	1,113	0,760-1,629
			39	38,2	174	37,6	0,015	>0,05	1,017	0,774-1,337
2	Respiratory diseases		19	18,6	97	21,0	0,276	>0,05	0,889	0,571-1,384
			14	13,7	76	16,4	0,451	>0,05	0,836	0,493-1,418
3	Chronic kidney diseases		0	0,0	1	0,2	-	-	-	-
			5	4,9	10	2,2	2,432	>0,05	2,270	0,793-6,498
4	Diabetes		1	1,0	6	1,3	0,068	>0,05	0,757	0,092-6,216
			18	17,6	106	22,9	1,343	>0,05	0,771	0,491-1,210
5	Tumor diseases		12	11,8	53	11,4	0,008	>0,05	1,028	0,570-1,852

AG also varied significantly and was observed in the local population with detection frequencies of 38.2% and 37.6%; the risk of developing HIV infection was confirmed at the population level, ranging from 31% to 19% [X2 = 0.295; P>0.05; RR = 1.113; 95% CI = 0.760 – 1.629].

The risk of respiratory tract infections is estimated to be between 23% and 26% in the immigrant and local populations. The prevalence of OSOC is determined by the frequency of 18.6% and 21.0% [X2 = 0.276; P>0.05; RR= 0.889; 95% CI = 0.571 – 1.384]. The frequency of registration of CKD is determined by the frequency of 13.7% and 16.4% in the immigrant and local populations [X2 = 0.451; P>0.05; RR= 0.836; 95% CI = 0.493 – 1.418].

The frequency of detection of glomerulonephritis is 0.0% and 0.2%, and the frequency of confirmation of pyelonephritis is 4.9% and 2.2%, respectively; the risk of developing BSC is confirmed at 3.5% [X2 = 2.432; P>0.05; RR = 2.270; 95% CI = 0.092 – 6.216].

WEB OF SCIENTIST: INTERNATIONAL SCIENTIFIC RESEARCH JOURNAL
ISSN: 2776-0979, Volume 7, Issue 2, February- 2026

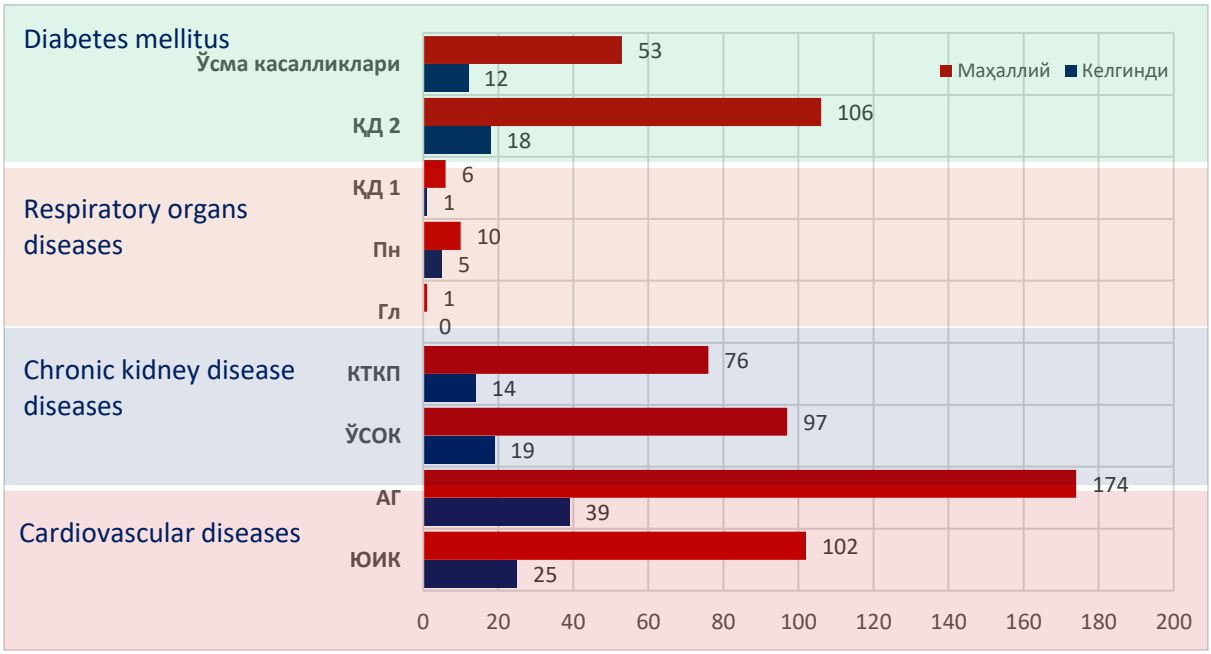

Figure 1. Epidemiology and risk profile of major noncommunicable diseases (NCDs) in rural populations, representing the characteristics of migrant and indigenous populations

The risk of developing CD in the rural population of Russian-speaking and Uzbek ethnic groups in Andijan is confirmed to be between 18% and 23%.
QD1 – type in the immigrant and local population – with a detection rate of 1.0% and 1.3% [X2 = 0.068; P>0.05; RR= 0.757; 95% CI = 0.092 – 6.216].
Type QD2 is recorded with a corresponding frequency of confirmation of 17.6% and 22.9% [X2 = 1.343; P>0.05; RR = 0.771; 95% CI = 0.491 – 1.210].
It is noteworthy that tumor diseases are observed in both groups of the population, in rural areas, with prevalence rates of 11.8% and 11.4%, respectively, and in general, the issues of pre-nosological diagnosis and prevention of AYUK are becoming increasingly urgent [X2 = 0.008; P>0.05; RR = 1.028; 95% CI = 0.570 – 1.852].

Conclusion

In the rural population aged 18–89 years, multiple risk factors are identified with the following prevalence rates: 2 risk factors – 22.9%, 3–4 risk factors – 46.4%, 5–6 risk factors – 17.0% and 7–9 risk factors – 2.2%. Multiple non-communicable diseases (polypathy) are characterized by 9 different components in the general population, men and women: “NCD + NCD” – 3.7%, 1.6% and 2.1%; “NCD + QD2” – 4.6%, 1.6% and 2.7%; “NCD + BSK” – 0.7%, 0.0% and 0.7%; “NCD + AG” – 3.5%, 1.4% and 2.1%; "YUIK + QD2" - 2.2%, 1.2% and 1.0%; "YUIK + OSOK" - 1.4%, 0.7% and 0.7%; "YUQK

+ NAK + QD2" - 1.0%, 0.6% and 0.4%; "YUQK + NAK + BSK" - 0.1%, 0.0% and 0.1%; "YUQK + NAK + QD2 + BSK" - 0.0%, 0.0% and 0.0%; "YUIK + AG + OSOK + QD2" - 0.2%, 0.1% and 0.1% [X2 = 2.418; P>0.05; RR= 5.019; 95% CI = 0.522 – 48.187].

REFERENCES

1. Крысанова В.С., Келехсаев П.А. Социально – экономические аспекты проблемы избыточной массы тела и ожиреня. Лечебное дело. 2020;3:100 - 106. doi: 10.24412/2071 - 5315 - 2020 - 12264.
2. Ожирение. Клиническиерекомендации. 2020.URL: https://cr.minzdrav.gov.ru/recomend/28 2 (дата обращения: 28.03.2025).
3. Омельяновский В.В. Авсентьева М.В., Деркач Е.В., Свешникова Н.Д. Методические проблемы анализа стоимости болезни. Медицинские технологии. Оценки и выбор. 2011; 1:42 - 50. Оценка распространенности и эффективности коррекции факторов риска сердечно-сосудистых заболеваний среди врачей и их знания современных клинических рекомендаций. Результаты проекта «Здоровье и образование врача». Рациональная фармакотерапия в кардиологии. 2011 ;7(2): 137-144. doi: 10.20996/1819-6446- 2011-7-2-137-144.
4. Стрижелецкий В.В, Гомон Ю.М., Спичакова Е.А и др. Лекарственная терапия ожирения в Российской Федерации: фармакоэпидемиологическое исследование. Фармакоэкономика. Современная фармакоэкономика и фармакоэпидемиология. 2022; 15(3):320 - 331. doi: 10. 17749/2070 - 4909/farmakoekonomika. 2022.149.
5. Alshahrani NS, Hartley A, Howard J, Hajhosseiny R, Khawaja S, Selig- man H et al/ Randomized Trial of Remote Assessment of Patients After an Acute Coronary Syndrome. Journal of the American College of Cardiology. 2024;83(23):2250-9. DOI: 10.1016/j jacc.2024.03.398.
6. Ayers JW, Poliak A, Dredze M, Leas EC, Zhu Z, Kelley JB et al. Com paring Physician and Artificial Intelligence Chatbot Responses to Patient Questions Posted to a Public Social Media Forum. JAMA Internal Medicine.2023; 183(6):589—96.DOI:10.1001/jamain-temmed.2023.1838. Bettcher D. Monitoring and surveillance of chronic non- communicable diseases: progress and capacity in high-burden countries. The Lancet. 2010;376(9755): 1861 - 1868.doi: http.V/dx.doi.org/l 0.1016/SO 140-6736Г10)61853- 1
7. Boehmer JP, Cremer S, Abo-Auda WS, Stokes DR, Hadi A, Mc Cann PJ et al. Impact of a Novel Wearable Sensor on Heart Failure Rehospitalization:An Open-

Label Concurrent-Control Clinical Trial. JACC:Heart Failure.2024; 12(12):2011-22.DOI:10.1016/j.jchf.2024.07.022.

8. Cai Y, Yu F, Kumar M, et al. Health Recommender Systems Development, Usage, and Evaluation from 2010 to 2022: A Scoping Review. International Journal of Environmental Research and Public Health. 2022; 19(22): 15115. https://doi.org/lo.3390/ijerph 192215115 12.
9. GBD 2016 Russia Collaborators. The burden of disease in Russia from 1980 to 2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2018;392(10153): 1 138 - 1146.
10. Hu J-R, Power JR, Zannad F, Lam CSP. Artificial intelligence and digital tools for. design and execution of cardiovascular clinical trials. European Heart Journal. 2024;ehae794. [Epub ahead of print]. DOI: 10.1093/eurheartj/ehae794.
11. Morley J, Murphy L, Mishra A, Joshi I, Karpathakis K. Governing Data and Artificial IntelligenceforHealth Care:Developingan International Understanding.JMIR Formative Research. 2022;6(l):e31623. DOI: 10.2196/31623.
12. Organization for Economic Co - operation and Development (OECD). The heavy burden of obesity: the economics of prevention. OECD Health Policy Studies. OECD publishing, Paris, 2019. doi: 10. 1787/67450d67 - en.
13. Sutton RT, Pincock D, Baumgart DC, Sadowski DC, Fedorak RN, Kroeker KI. An overview of clinical decision support systems: benefits, risks, and strategies for success. NPJ Digital Medicine. 2020;3(1):17. DOI: 10.103 8/s41746-020-0221-y.
14. Vandenbroucke F, Michel M, Ackerman N, Briganti G. L'adoption de l'lntelligence Artificielle dans les hopitaux en Belgique. Barometer. 2022 26p. Av. at:https://www.msdconnect.be/fr/wp-content/up-loads/sites/15/2022/05/FR_BarometreIA_ Belgique.pdf.
15. World Health Organization Media Centre. Obesity and overweight. Fact sheet no Geneva: World Health Organization, 2021.
16. Wrzeciono A, Cieslik B, Kiper P, Szczepanska-Gieracha J, Gajda R. Exploratory analysis of the effectiveness of virtual reality in cardiovascu-lar rehabilitation. Scientific Reports. 2024; 14(1):281. DOI:10.1038/s41598-023-50788-9.
17. Xu M, Xu J, Yang X. Asthma and risk of cardiovascular disease or allcause mortality: a meta-analysis. Annals of Saudi Medicine. 2017;37(2):99-105. https://doi.om/10.5144/0256-4947.2011.99.
18. Yusefzadeh H., Rashidi A., Rahimi B. Economic burden of obesity: A systematic review. Social Health and Behavior. 2019;2(1):7 - 12, doi: 10.4103/ShB.ShB_37_l 8.