https://doi.org/ 10.33472/AFJBS.6.10.2024.5399-5421

African Journal of Biological Sciences

Journal homepage: http://www.afjbs.com

Research Paper Open Access

SPECTRUM OF CLINICAL AND FUNCTIONAL IMPAIRMENTS AND LIFE LIMITATIONS IN INDIVIDUALS WITH DISABILITIES DUE TO DISEASES ASSOCIATED WITH HIV INFECTION

Margarita Eduardovna Pakhomova

Doctor of Medical and Social Expertise, Head of Branch Bureau No. 36 of the Federal State Institution "Main Bureau of Medical and Social Expertise in Moscow" of the Ministry of Labor and Social Protection of the Russian Federation, located at 13 Lenin Avenue, Building 1, Moscow, 125040, Russia. Email: margorettetcher@yandex.ru.

ORCID: https://orcid.org/0009-0004-6162-7859.

Natalya Sergeevna Zapariy

Doctor of Medical Sciences, Associate Professor, Head of the Educational and Organizational Department of the Educational and Methodological Center of the Federal State Budgetary Institution "Federal Bureau of Medical and Social Expertise" of the Ministry of Labor and Social Protection of the Russian Federation, located at 3 Ivan Susanin Street, Moscow, 127486, Russia. Email: zapariy_N@fbmse.ru.

ORCID: https://orcid.org/0000-0002-7687-763X.

Evgeny Evgenievich Achkasov

Doctor of Medical Sciences, Professor, Head of the Department of Sports Medicine and Medical Rehabilitation at the N.V. Sklifosovsky Institute of Clinical Medicine of the First Moscow State Medical University named after I.M. Sechenov of the Ministry of Health of the Russian Federation (Sechenov University), Email: 2215.g23@rambler.ru.

ORCID: https://orcid.org/0000-0002-0338-4236.

Igor Nikolaevich Khalyastov

Doctor of Medical Sciences, Head of the Rehabilitation Center "Volgin" of the Pension Fund and Social Insurance of the Russian Federation, Email: inh.62mail.ru. SPIN code: 8443-3284, AuthorID: 561503, ORCID: https://orcid.org/0000-0002-2541-4037.

AUTHOR INFORMATION:

M. E. Pakhomova - ORCID: https://orcid.org/0009-0004-6162-7859

COLORLESS GREEN IDEAS SLEPT FURIOUSLY. Sleeping – ORCID: https://orcid.org/0000-0002-7687-763X

E.E. Achkasov - ORCID: https://orcid.org/0000-0002-0338-4236

I.N. Khalyastov - ORCID: https://orcid.org/0000-0002-2541-4037

Corresponding author: M.E. Pakhomova – margorettecher@yandex.ru

Article History
Volume 6,Issue 10, 2024
Received:29 Apr 2024
Accepted : 28 May 2024
doi: 10.33472/AFJBS.6.10.2024.5399-5421

ABSTRACT

HIV infection stands as one of contemporary society's pressing issues. The effectiveness of rehabilitation measures and the enhancement of the quality of life for patients with HIV infection depend on the degree of clinical and functional impairments and the dynamics of their changes, leading to varying degrees of life limitations.

Research Objective. Based on the study of clinical-functional, laboratory, and expert-rehabilitative characteristics of individuals with disabilities due to HIV infection necessary for conducting medical-social expertise to assess the degree of impaired body functions, the aim is to evaluate the extent of their life limitations.

Materials and Methods. The study was structured in Excel tables, utilizing methods such as documentary analysis and data extraction (286 units). Statistical analysis employed mean and median for quantitative variables. For comparing two independent groups and testing the significance of research indicators, Chi-square statistics and Spearman's rank correlation coefficient were used. A significance level of 0.05 was adopted for testing statistical hypotheses. Data processing and analysis were performed using R software (a platform for statistical data analysis; https://www.r-project.org).

Results: It is noted that among individuals with disabilities due to diseases associated with HIV infection, the most common clinical complaints were general weakness, fatigue, dizziness, headache, limb and joint pain, shortness of breath, weight loss, cough, and numbness. Moderate impairments in blood and immune system functions were observed in 62.7%, severe impairments in 28.4%, and significant impairments in 5.3% of cases. Neuromuscular, skeletal, and movement-related (statodynamic) functions were moderate in 10.9%, severe in 2.3%, and significantly severe in 0.3% of cases. With increasing age of individuals, sensory function impairments, cardiovascular system impairments, endocrine system and metabolism impairments, blood and immune system impairments became more severe. As the disease stage increased, severe impairments in blood and immune system functions also increased. With increasing disease severity and disability, the level of CD4+ lymphocytes and CD8+ lymphocytes increased. There was a moderate positive correlation between the level of CD4+ lymphocytes and impaired blood and immune system functions. The most characteristic limitations were in the ability for self-care, mobility, and first-degree occupational activities. As the disease stage and disability severity increased, the proportion of life limitations increased. There was a direct correlation between respiratory function impairment and total impairments, and limitation of mobility.

Conclusion: Expert-rehabilitative diagnosis of individuals of various age groups with disabilities due to HIV infection, who underwent examination at the Medical and Social Expertise Bureau, contributes to the formulation of an individual and necessary volume of rehabilitation measures. Conducting expert-rehabilitative and medical-social diagnostics of this group of individuals aids in forecasting the scope of examinations, disease progression, and utilization of aspects of medical-sanitary and rehabilitation assistance.

Keywords: disability, diseases associated with HIV infection, age groups, clinical-functional impairments, life limitations of individuals with disabilities.

Introduction

In recent years, HIV infection has taken on pandemic proportions and represents one of the most serious threats to social progress and human development (1,5,6,7,8,9). Disability due to diseases associated with HIV carries significant medical and social importance, primarily due to the predominant impact on individuals of working age and the necessity for comprehensive medical and social rehabilitation (3,4,11). The effectiveness of rehabilitation measures for individuals with this pathology and the enhancement of their

quality of life depend on the alignment of their clinical-functional impairments and the degree of life limitations (2,10).

Research Objective

Based on the spectrum of clinical-functional persistent impairments in the functions of the disabled individual's body, to assess the degree of life limitations in this group of disabled individuals.

Materials and Methods

The study was structured in Excel tables, utilizing methods such as documentary analysis and data extraction (303 units). Statistical analysis employed mean and median for quantitative variables. Chi-square statistics and Spearman's rank correlation coefficient were used for comparing two independent groups. A significance level of 0.05 was adopted for testing statistical hypotheses. Data processing and analysis were performed using R software (a platform for statistical data analysis; [https://www.r-project.org]).

Results

The study found that the majority of individuals with disabilities due to HIV infection (49.2%) were classified with stage IVB disease - 149 individuals, 29.7% with stage IVA, 18.8% with stage IVA disease, and 2.3% with stage III.

Among the clinical manifestations, weakness was most frequently noted (62.1%), followed by fatigue (30.7%), dizziness (25.7%), headache (24.8%), limb pain (12.5%), joint pain (12.2%), shortness of breath (11.6%), weight loss (9.6%), fever (9.2%), cough (8.9%), and numbness (7.6%).

Statistically significant Spearman correlation coefficients were identified between the presence of complaints and disability group. For instance, weight loss was reported by 9 individuals out of 196 (4.6%) in the III disability group and 20 individuals out of 107 (18.7%) in the II-I disability groups (p=0, cor=0.24). Weakness in limbs was reported by 9 individuals (4.6%) in the III disability group and 12 individuals (11.2%) in the I-II disability groups (p=0.053, cor=0.15). Thus, with an increase in disability group, the proportion of complaints about weight loss and weakness in limbs increases.

A direct weak correlation was observed between limb pain and cardiovascular system impairments (r=0.15), and between lower back pain and cardiovascular system impairments (r=0.16). A moderate direct correlation was observed between weight loss and digestive system impairments (r=0.27), and total impairments (r=0.25). Additionally, weak direct correlations were noted between lethargy and sensory hearing impairments (r=0.16), between mobility difficulties and statodynamic functions (r=0.20), between cough and respiratory system impairments (r=0.17), between tremors, seizures, and neuromuscular impairments (r=0.15), between cognitive complaints and language and speech impairments (r=0.18), and between trophic disturbances and cardiovascular system impairments (r=0.17) (see Table 1).

Table 1 - Statistically significant Spearman correlation coefficients between complaints and functional impairments

Clinical signs	Function names

	Mental	Language, speech	Sensory	Sensory hearing	Sensory visual	Neuromuscular, skeletal and movement related	Of cardio-vascular system	Respiratory system	Blood systems, immune system	Urinary system	Skin and related systems	Caused by other external deformities	Total violations
Pain in limbs							0,16						
Pain in the lumbar region							0,16						
Weight loss									0,27	0,16			0,25
Dizziness										0,22			
Lethargy				0,16									
Difficulty moving	0,18					0,20							
Unsteadiness of gait												0,22	
Cough								0,17				0,18	
Urinary dysfunction										0,25			

General weakness						-0,15							
Sweating							-0,15						
Colds									-0,18				
Weakness in the limbs									0,16				0,17
Fainting									-0,15				
Tremors, convulsions						0,15	0,18						
Fatigue						-0,15							
Nosebleeds					0,16								
Sensory impairments				0,26	0,30	0,18							
Cardiovascular disorders								0,26				0,15	
Cognitive impairment		0,18				0,15				0,16			
Trophic disorders							0,17			0,15	0,31		

Psychological function impairments were registered in 3.6% of cases as minor, 0.7% as moderate, and 0.3% as severe. Language and speech function impairments were noted as severe in 0.3% of cases. Sensory function impairments were minor in 13.9%, moderate in 0.7%, and minor in 10.9% (33 individuals) of visual sensory cases. Neuromuscular, skeletal, and movement-related (statodynamic) function impairments were minor in 36.3%, moderate in 10.9%, severe in 2.3%, and significant in 0.3% of cases. Cardiovascular system impairments were minor in 22.1% (67 individuals), moderate in 3% (9 individuals), and severe in 1.3% of cases.

Respiratory system impairments were minor in 15.5% (47 individuals), moderate in 2%, and severe in 0.7%. Digestive system function impairments were registered in 38.9% (115 individuals) as minor, 4.6% as moderate, and 1.3% as severe. Endocrine system and metabolism function impairments were minor in 4.3% and moderate in 0.7%. Blood and immune system function impairments were minor in 3.0%, moderate in 62.7% (190 individuals), severe in 28.4% (86 individuals), and significant in 5.3% (16 individuals) of cases. Total impairments were minor in 3%, moderate in 62.7% (190 individuals), severe in 23.4% (71 individuals), and significant in 10.9% (33 individuals) of cases. No statistically significant correlation between function impairments and gender was found.

Psychological function impairments were recorded as minor in 3.6% of cases, moderate in 0.7%, and severe in 0.3%. Language and speech function impairments were noted as severe in 0.3% of cases. Sensory function impairments were minor in 13.9%, moderate in 0.7%, and minor in 10.9% (33 individuals) of visual sensory cases. Neuromuscular, skeletal, and movement-related (statodynamic) function impairments were minor in 36.3%, moderate in 10.9%, severe in 2.3%, and significant in 0.3% of cases. Cardiovascular system impairments were minor in 22.1% (67 individuals), moderate in 3% (9 individuals), and severe in 1.3% of cases. Respiratory system impairments were minor in 15.5% (47 individuals), moderate in 2%, and severe in 0.7%. Digestive system function impairments were recorded in 38.9% (115 individuals) as minor, 4.6% as moderate, and 1.3% as severe. Endocrine system and metabolism function impairments were minor in 4.3% and moderate in 0.7%. Blood and immune system

function impairments were minor in 3.0%, moderate in 62.7% (190 individuals), severe in 28.4% (86 individuals), and significant in 5.3% (16 individuals) of cases. Total impairments were recorded as minor in 3%, moderate in 62.7% (190 individuals), severe in 23.4% (71 individuals), and significant in 10.9% (33 individuals) of cases. No statistically significant correlation between function impairments and gender was found (see Table 2).

Table 2 - Characteristics of functional impairments in disabled individuals due to HIV-related illnesses by the degree of their severity (absolute number, %).

Dysfunction of the body	Degree of expression									
	No violations		Minor		Moderate		Expressed		Significantly expressed	
	abs. number	%	abs. number	%	abs. number	%	abs. number	%	abs.number	%
Mental	289	95,4	11	3,6	2	0,7	1	0,3	-	-
Language, speech	302	99,7	-	-	-	-	1	0,3	-	-
Sensory	259	85,5	42	13,9	2	0,7	-	-	-	-
Sensory hearing	295	97,4	7	2,3	1	0,3	-	-	-	-
Sensory visual	269	88,8	33	10,9	1	0,3	-	-	-	-
Neuromuscular (static-dynamic)	152	50,2	110	36,3	33	10,9	7	2,3	1	0,3
Of cardio-vascular system	223	73,6	97	22,1	9	3,0	4	1,3	-	-
Respiratory system	248	81,8	47	15,5	6	2,0	2	0,7	-	-
Digestive system	170	56,1	115	38,9	14	4,6	4	1,3	-	-
Endocrine system and metabolism	287	94,7	13	4,3	2	0,7	1	0,3	-	-
Blood and immune systems	2	0,7	9	3,0	190	62,7	86	28,4	16	5,3
Urinary system	290	95,7	6	2,0	3	1,0	4	1,3	-	-
Skin and related systems	292	96,4	9	3,0	1	0,3	1	0,3	-	-
Caused by physical external deformity	301	99,3	-	-	2	0,7	-	-	-	-
Total violations	-	-	9	3,0	190	62,7	71	23,4	33	10,9

Minor psychological function impairments were observed in 78.7% of young adults with disabilities, compared to 27.3% among middle-aged individuals (p=0.934). Minor sensory function impairments were recorded in 59.5% of young adults, in 35.7% of middle-aged individuals, and in 4.76% of individuals older than working age (p=0.052). Minor sensory auditory function impairments were present in 57.1%, 28.6%, and 14.3%, respectively, across age groups (p=0.112), while minor sensory visual impairments were found in 63.6%, 33.3%, and 30%, respectively (p=0.366).

Minor neuromuscular, skeletal, and movement-related (statodynamic) function impairments were noted in 60.9% of young adults, in 33.6% of middle-aged individuals, and in 5.45% of individuals older than working age (p=0.218). Moderate impairments were observed in 72.7%, 18.2%, and 9.09%, respectively, across age groups, while severe impairments were found in 71.4% of young adults and in 28.6% of middle-aged individuals.

Minor cardiovascular system function impairments were present in 59.7% of young adults, in 31.3% of middle-aged individuals, and in 8.96% of individuals older than working age (p=0.004, r=0.14), while moderate impairments were found in 66.7%, 22.2%, and 11.1%, respectively, across age groups. Severe impairments were observed in 50% and 25% of young adults and middle-aged individuals, respectively.

Respiratory system function impairments were noted in 66% of young adults and in 34% of middle-aged individuals, with moderate impairments present in 66.7% and 16.7%, respectively, based on age parameters (p=0.913).

Impairments of the digestive system functions were insignificantly noted in 71.4% of young adults with disabilities, in 26.1% of middle-aged individuals, and in 2.6% of individuals older than working age (p=0.784).

Insignificant impairments of the endocrine system and metabolism functions were observed in 53.8% of young adults, in 30.8% of middle-aged individuals, and in 15.4% of individuals older than working age (r=0.14, p=0.007), while moderate and severe impairments were present in 100% of middle-aged individuals.

Unspecified impairments of the blood and immune system functions were found in 55.6%, 33.3%, and 11.1% among individuals in respective age groups, moderate impairments in 70% of young adults, in 27.4% of middle-aged individuals, and in 2.6% of individuals older than working age, severe impairments in 69.8%, 24.4%, and 2.6% respectively across age groups, and significantly severe impairments in 68.8%, 25%, and 6.25% (p=0.951). Significant total impairments were observed in 66.7%, 30.3%, and 3.03%, severe in 70.4%, 22.5%, and 7.04%, moderate in 70%, 27.4%, and 2.63% respectively across age groups.

With increasing age, sensory function impairments, cardiovascular system impairments, endocrine system and metabolism impairments, blood and immune system impairments increased (see Table 3).

Table 3 - Characteristics of impaired bodily functions in disabled individuals due to HIV infection considering age groups (absolute number, %).

Dysfunction of the body	Degree of violation	Age group						Ptrend
		18-44 years old		45-54 l. - g 45-59 l. - m		55 years > f 60 years > m		
		abs. number	%	abs. number	%	abs. number	%	
Mental	Norm	200	69,2	77	26,6	12	4,15	0,938
	Minor	8	72,7	3	27,3	-	-	
	Moderate	2	100	-	-	-	-	
	Expressed	-	-	1	100	-	-	

Language and speech	Norm	210	69,5	80	26,5	12	3,97	0,237
	Expressed	-	-	1	100	-	-	
Sensory	Norm	185	71,4	64	24,7	10	3,86	0,052
	Minor	25	59,5	15	35,7	2	4,76	
	Moderate	-	-	2	100	-	-	
Sensory hearing	Norm	206	69,8	78	26,4	11	3,73	0,112
	Minor	4	57,1	2	28,6	1	14,3	
	Moderate	-	-	1	100	-	-	
Sensory visual	Norm	189	70,3	69	25,7	11	4,09	0,366
	Minor	21	63,6	11	33,3	1	3,03	
	Moderate	-	-	1	100	-	-	
Neuromuscular, skeletal and movement related	Norm	113	74,3	36	23,7	3	1,97	0,218
	Minor	67	60,9	37	33,6	6	5,45	
	Moderate	24	72,7	6	18,2	3	9,09	
	Expressed	5	71,4	2	28,6	-	-	
	Significantly expressed	1	100	-	-	-	-	
Of cardio-vascular system	Norm	162	72,6	57	25,6	4	1,79	0,004
	Minor	40	59,7	21	31,3	6	8,96	
	Moderate	6	66,7	2	22,2	1	11,1	
	Expressed	2	50	1	25	1	25	
Respiratory system	Norm	173	69,8	64	25,8	11	4,44	0,913
	Minor	31	66	16	34	-	-	
	Moderate	4	66,7	1	16,7	1	16,7	
	Expressed	2	100	-	-	-	-	
Digestive system	Norm	115	67,6	48	28,2	7	4,12	0,784
	Minor	82	71,3	30	26,1	3	2,61	
	Moderate	10	71,4	3	21,4	1	7,14	
Endocrine system and metabolism	Norm	203	70,7	74	25,8	10	3,49	0,007

	Minor	7	53,8	4	30,8	2	15,4	
	Moderate	-	-	2	100	-	-	
	Expressed	-	-	1	100	-	-	
Blood and immune systems	Norm	1	50	1	50	-	-	0,951
	Minor	5	55,6	3	33,3	1	11,1	
	Moderate	133	70	52	27,4	5	2,63	
	Expressed	60	69,8	21	24,4	5	5,81	
	Significantly expressed	11	68,8	4	25	1	6,25	
Urinary system	Norm	200	69	78	26,9	12-	4,14	0,407
	Minor	5	83,3	1	16,7	-	-	
	Moderate	1	33,3	2	66,7	-	-	
	Expressed	4	100	-	-	-	-	
Skin and related systems	Norm	200	68,5	80	27,4	12	4,11	0,132
	Minor	8	88,9	1	11,1	-	-	
	Moderate	1	100	-	-	-	-	
	Expressed	1	100	-	-	-	-	
Disorders caused by physical external deformity	Norm	208	69,1	81	26,9	12	3,99	0,375
	Moderate	2	100	-	-	-	-	
Total violations	Minor	5	55,6	3	33,3	1	11,1	0,926
	Moderate	133	70	52	27,4	5	2,63	
	Expressed	50	70,4	16	22,5	5	7,04	
	Significantly expressed	22	66,7	10	30,3	1	3,03	

Table 4 - Characteristics of the severity of impaired bodily functions in disabled individuals due to HIV-related diseases depending on the stage of the illness (absolute number, %).

Dysfunction of the human body	Degree of expression	Stages of the disease							
		3		4A		4B		4B	
		abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%
Mental	Norm	7	2,42	54	18,7	85	29,4	143	49,5
	Minor	-	-	3	27,3	4	36,4	4	36,4
	Moderate	-	-	-	-	-	-	2	100
	Expressed	-	-	-	-	1	100	-	-

Language, speech	Norm	7	2,32	57	18,9	89	29,5	149	49,3
	Expressed	-	-	-	-	1	100	-	-
Sensory	Norm	7	2,7	45	17,4	73	28,2	134	51,7
	Minor	-	-	12	28,6	16	38,1	-	-
	Moderate	-	-	-	-	1	50	1	50
Sensory hearing	Norm	7	2,37	55	18,6	86	29,2	147	49,8
	Minor	-	-	2	28,6	3	42,9	2	28,6
	Moderate	-	-	-	-	1	100	-	-
Sensory visual	Norm	7	2,6	-	-	77	28,6	135	50,2
	Minor	-	-	7	21,2	13	39,4	-	-
	Moderate	-	-	-	-	-	-	1	100
Neuromuscular, skeletal and movement-related (static-dynamic) functions	Norm	3	1,97	28	18,4	48	31,6	73	48
	Minor	4	3,64	26	23,6	29	26,4	-	-
	Moderate	-	-	3	9,09	12	36,4	-	-
	Expressed	-	-	-	-	1	14,3	6	85,7
	Significantly expressed	-	-	-	-	-	-	1	100
Of cardio-vascular system	Norm	5	2,24	41	18,4	-	-	117	52,5
	Minor	1	1,49	13	19,4	23	34,3	-	-
	Moderate	1	11,1	3	33,3	4	44,4	1	11,1
	Expressed	-	-	-	-	3	75	1	25
Respiratory system	Norm	6	2,42	53	21,4	-	-	119	48
	Minor	1	2,13	4	8,51	18	38,3	-	-
	Moderate	-	-	-	-	2	33,3	4	66,7
	Expressed	-	-	-	-	-	-	2	100
Digestive system	Norm	7	4,12	22	12,9	41	27,1	95	55,9
	Minor	-	-	32	27,8	39	33,9	-	-
	Moderate	-	-	3	21,4	3	21,4	8	57,1
	Expressed	-	-	-	-	2	50	2	50
Endocrine system and metabolism	Norm	7	2,44	54	18,8	86	30	-	-
	Minor	-	-	3	23,1	3	23,1	8	57,1
	Moderate	-	-	-	-	1	50	1	50
	Expressed	-	-	-	-	-	-	1	100
Blood and immune	Norm	-	-	-	-	1	50	1	50

systems	Minor	5	55,6	4	44,4	-	-	-	-
	Moderate	2	1,05	52	27,4	53	27,9	-	-
	Expressed	-	-	1	1,16	35	40,7	-	-
	Significantly expressed	-	-	-	-	1	6,25	-	-
Urinary system	Norm	6	2,07	54	18,6	89	30,7	141	48,6
	Minor	1	16,7	2	33,3	1	16,7	2	33,3
	Moderate	-	-	1	33,3	-	-	2	66,7
	Expressed	-	-	-	-	-	-	4	100
Skin and related systems	Norm	7	2,4	55	18,8	86	29,5	144	49,3
	Minor	-	-	2	22,2	3	33,3	4	44,4
	Moderate	-	-	-	-	1	100	-	-
	Expressed	-	-	-	-	-	-	1	100
Caused by physical external deformity	Norm	7	2,33	57	18,9	89	29,6	148	49,2
	Moderate	-	-	-	-	-	50	1	50
Total violations	Minor	5	55,6	4	44,4	-	-	-	-
	Moderate	2	1,05	52	27,4	53	27,9	-	-
	Expressed	-	-	1	1,41	29	40,8	-	-
	Significantly expressed	-	-	-	-	8	24,2	-	-

Minor impairments of psychological functions were noted in 27.3% at stage 4A, 36.4% at stage 4B, and in 36.4% of cases at stage 4C. Impairment of sensory functions in disabled individuals was observed at stages 4A and 4B in 28.6% and 38.1% of cases, respectively. Minor auditory sensory impairments were noted at stage 4A in 28.6% and at stage 4B in 42.9%, while at stage 4C, it was observed in 28.6% of cases. Visual sensory impairments were found in 21.2% of individuals at stage 4A and in 39.4% at stage 4B. Minor impairments of neuromuscular, skeletal, and movement-related (statodynamic) functions were noted at stage III (3.64%), in 23.6% at stage 4A, and in 26.4% at stage 4B. Moderate impairments were observed at stages 4A and 4B (9.09% and 36.4%, respectively), with severe impairments at stage 4B in 14.3% of cases, the highest proportion being 85.7% at stage 4C.

Minor impairments of the cardiovascular system functions were noted at stage III in 1.49% of cases, in 19.4% at stage 4A, and in 34.3% at stage 4B. Moderate impairments were observed at stages III and 4C in 11.1% of cases, at stage 4A in 33.3%, and at stages 4B in 44.4%. Severe impairments were observed in 75% at stage 4B and in 25% at stage 4C.

Minor impairments of the respiratory system functions were noted at stages 3, 4A, and 4B, moderate impairments in 33.3% at stage 4C, and in 66.7% at stage 4D (r=0.09).

Minor impairments of the digestive system functions were noted at stages 4A and 4B in 27.8% and 33.9%, respectively, moderate impairments in 21.4% at stages 4A and 4B, and in 57.1% at stage 4C, with severe impairments in 50% of cases at stages 4B and 4C.

Minor impairments of the endocrine system and metabolism were observed in 27.1% of cases at stages 4A and 4B, and in 57.1% of cases at stage 4C, with moderate and severe impairments occurring at stages 4B and 4C.

Minor impairments of the blood and immune system functions were noted at stages 3 and 4A, moderate impairments in 27.4% at stages 4A and 4B, severe impairments in 40.7% of cases at stage 4B, and significantly severe impairments in 6.25% at stage 4B (r=0.35).

Minor cumulative impairments were observed at stages 3 and 4A (55.6% and 44.4%, respectively), moderate impairments at stages 4A and 4B (27.4-27.9%), severe impairments in 40.9%, and significantly severe impairments in 24.2% at stage 4B (r=0.35).

In the group with stages <=4A, the number of disabled individuals with minor respiratory system function impairments was 5 out of 4 (78%), while in the group with stage 4B and higher, it was 50 out of 239 (20.9%) (p=0.0026). In the group with stage III, the number of disabled individuals with moderate and higher impairments of the blood and immune system functions was 2 out of 7 (28.6%), while in the group with stage 4A and higher, it was 290 out of 296 (98%) (p<0.001). Similarly, in the group with stage III, the number of disabled individuals with cumulative impairments of moderate and higher severity was 2 out of 7 (28.6%), while in the group with stage 4A and higher, it was 290 out of 296 (98%) (p<0.001) (see Table 4).

The CD4+ lymphocyte count in disabled individuals due to HIV infection >350 cells/μl was observed in 2.11% at stage III, in 30.5% (29 individuals) at stage 4B, and in 46.3% (44 individuals) at stage 4C, indicating that with increasing disease severity, the proportion of CD4+ lymphocytes increases. The CD4+ count within the range of 200-350 cells/μl also showed an increasing trend from 5.13% at stage III to 41.0% at stage 4C, and a similar trend was observed at the 100-200 cells/μl level, from 21.7% to 48.3% at stage 4C. The CD4+ count at stage 4A was 10.2%, at stage 4B was 26.5%, and at stage 4C was 63.9%. Thus, a decrease in the CD4+ lymphocyte count was observed at stages 4A and 4B, while an increase was observed at stage 4C (p=0.033) (see Table 5).

Table 5 - Dynamics of CD4+ lymphocyte levels in disabled individuals due to HIV infection depending on the stage of the disease (absolute number, %).

Level of CD4+ lymphocytes	Stages of the disease								Ptrend
	III		IVA		IVБ		IVB		
	abs. numeric		abs. numeric		abs. numeric		abs. numeric		
>350 cells/μl	2	2,11	-	-	29	30,5	44	46,3	0,033
200-350 cells/μl	4	5,13	19	24,4	23	29,5	32	41,0	
100-200 cells/μl	-	-	13	21,7	18	30,0	29	48,3	
<100 cells/μl	-	-	5	10,2	13	26,5	31	63,3	

Table 6 - Characteristics of CD8+ lymphocyte levels in the blood of disabled individuals due to HIV infection depending on the stage of the disease (absolute number, %).

Level of CD8+ lymphocytes	Stages of the disease								Ptrend
	III		IVA		IVБ		IVB		
	abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%	
< 40	1	2,33	6	14,0	13	30,2	23	53,5	0,793
40-50	3	5,56	11	20,4	14	25,9	26	48,1	

50-60	-	-	11	20,8	13	24,5	29	54,7	
60-70	-	-	9	18,4	21	42,9	19	38,8	
> 70	1	3,45	5	17,2	8	27,6	15	51,7	

The level of CD8+ lymphocytes <40% was observed in 2.3% at stage III of the disease, 14% at stage IVA, 30.2% at stage IVB, and the highest proportion of this level was recorded at stage IVC, showing an increasing trend with disease progression. The level within the range of 40-50% was observed in 5.56% at stage III, 20.4% at stage IVA, 25.9% at stage IVB, and 48.1% at stage IVC, showing a similar trend to the level <40%. The level 50-60% was observed in 20.8% at stage IVA, in 13 individuals (24.5%) at stage IVB, and in 54.7% (29 individuals) at stage IVC. The level of CD8+ lymphocytes within the range of 60-70% was observed in 18.4% at stage IVA, 42.9% at stage IVB, and 38.8% at stage IVC. The level >70% was recorded in 3.45% at stage III, 17.2% at stage IVA, 27.6% at stage IVB, and 51.7% at stage IVC (p=0.793) (see Table 6).

Table 7 - Correlation between complaints and levels of CD4+ and CD8+ lymphocytes in disabled individuals with HIV infection.

Complaint	Laboratory indicators	Indicator level	Total (abs.)	With this symptom	Specific Gravity (%)	p	r
Pain in the hypochondrium	SD 8	<50%	97	2	2,1	0,04	0,15
		>50%	131	13	9,9		
Tremors, convulsions	SD 8	<60%	150	7	4,7	0,025	
		>60%	78	11	14,1		
Weight loss	SD 4	>100	233	15	6,4	0,001	0,22
		<100	49	11	22,4		
Temperature	SD 4	>100	233	15	6,4	0,015	
		<100	49	11	22,4		

Pain in the hypochondrium was noted in 2 out of 97 (2.1%) individuals with CD8+ level <50%, compared to 13 individuals out of 131 (9.9%) with CD8+ level >50% (p=0.04, cor=-0.15). Tremors and seizures were observed in 7 individuals out of 150 (4.7%) with CD8+ level <60%, compared to 11 individuals out of 78 (14.1%) with CD8+ level >60%. Weight loss was observed in 15 individuals out of 233 (6.4%) with CD4+ level >=100, compared to 11 individuals out of 49 (22.4%) with a level <100 (p=0.001, cor=0.22). Fever was noted in 15 individuals out of 233 (6.4%) with CD4+ level >100, compared to 11 individuals out of 49 (22.4%) with CD4+ level <100 (p=0.015) (see Table 7).

As shown in Table 8, the proportion of CD4+ lymphocyte levels tended to decrease from >350 cells/µl (83.2%) to <100 cells/µl (28.6%) in the III disability group, increase from 10.5% to >350 cells/µl and 44.9% to <100 cells/µl in the II disability group, and from 1.28% at 200-350 cells/µl to 26.5% at <100 cells/µl in the I disability group (p<0.001).

The CD8+ lymphocyte level <40% was observed in 67.4% of cases, 40-50% in 74.1%, 50-60% in 69.8%, 60-70% in 55.1%, and >70% in 44.8% in the III disability group, indicating an increase in the proportion of higher levels, similar to the I disability group (p=0.016).

Table 8 - Frequency characteristics of the association between levels of CD4+ and CD8+ lymphocytes and the severity of disability. (absolute number, %).

Lymphocytes	Level	Disability group										
		Not installed		III		II		I		Inv. since childhood		Ptrend
		abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%	
CD4+	>350kl/µl	3	3,16	79	83,2	10	10,5	-	-	3	3,2	<0,031
	200-300 cells/µl	5	6,41	57	73,1	15	19,2	1	1,28	-	-	
	100-200 cells/µl	-	-	31	51,7	29	48,3	-	-	-	-	
	<100 cells/µl	-	-	14	28,6	22	44,9	13	26,5	-	-	
SD8+	<40%	-	-	29	67,4	11	25,6	1	2,33	2	4,7	0,016
	40-50%	4	7,41	40	74,1	8	14,8	1	1,85	1	1,9	
	50-60%	-	-	37	69,8	12	22,6	4	7,55			
	60-70%	-	-	97	55,1	20	40,8	2	4,08			
	>70%	-	-	13	44,8	11	37,9	5	17,2			

Table 9 - Characteristics of impaired bodily functions in disabled individuals due to HIV infection, taking into account the levels of CD4+ lymphocytes (absolute number, %).

Dysfunction of the human body	Degree of expression	Level of CD4+ lymphocytes							
		>350		200-350		100-200		<100	
		abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%
Mental	No violations	-	-	75	27,9	57	21,2	47	17,5
	Minor	5	50	2	20	1	10	2	20
	Moderate	-	-	1	50	1	50	-	-
	Expressed	-	-	-	-	1	100	-	-
Language, speech	No violations	95	33,8	78	27,8	59	21	49	17,4
	Expressed	-	-	-	-	1	100	-	-
Sensory	No violations	-	-	65	27,3	-	-	43	18,1
	Minor	14	33,3	12	28,6	-	-	6	14,3
	Moderate	1	50	1	50	-	-	-	-
Sensory hearing	No violations	91	33,2	76	27,7	58	21,2	49	17,9
	Minor	3	42,9	2	28,6	2	28,6	-	-
	Moderate	1	100	-	-	-	-	-	-
Sensory visual	No violations	85	34,3	67	27	53	21,4	43	17,3
	Minor	-	-	-	-	7	21,2	6	18,2
	Moderate	-	-	1	100	-	-	-	-
Neuromuscular, skeletal and movement-related (static-dynamic) functions	No violations	43	30,7	41	29,3	32	22,9	24	17,1
	Minor	42	40,4	-	-	-	-	-	-
	Moderate	-	-	7	12,6	5	16,1	-	23
	Expressed	-	-	-	-	3	50	3	50
	Significantly expressed	-	-	-	-	-	-	1	100
Of cardio-vascular system	No violations	62	30,1	55	26,7	51	24,8	38	18,4
	Minor	28	43,8	-	-	8	12,5	8	12,5
	Moderate	5	55,6	3	33,3	-	-	1	11,1
	Expressed	-	-	-	-	1	33,3	2	66,7
Respiratory system	No violations	79	34,2	65	28,1	47	20,3	-	-

	Minor	12	27,9	12	27,9	12	27,9	7	16,3
	Moderate	4	66,7	1	16,7	1	16,7	-	-
	Expressed	-	-	-	-	-	-	2	100
Digestive system	No violations	-	-	-	-	23	14,7	33	21,2
	Minor	-	-	34	31,2	24	31,2	-	-
	Moderate	5	38,5	3	23,1	2	15,4	3	23,1
	Expressed	-	-	1	25	1	25	2	50
Endocrine system and metabolism	No violations	-	-	73	27,2	59	22	46	17,2
	Minor	4	33,3	4	33,3	1	8,33	3	25
	Moderate	1	50	1	50	-	-	-	-
Blood and immune systems	No violations	-	-	-	-	1	100	-	-
	Minor	3	37,5	5	62,5	-	-	-	-
	Moderate	82	44,8	57	31,1	-	-	-	-
	Expressed	-	-	15	19,7	29	38,8	-	-
	Significantly expressed	-	-	1	7,14	-	-	-	-
Urinary system	No violations	92	33,9	76	28	58	21,4	45	16,6
	Minor	2	22,2	2	22,2	2	22,2	3	33,3
	Moderate	1	100	-	-	-	-	-	-
	Expressed	-	-	-	-	-	-	1	100
Skin and related systems	No violations	92	33,9	76	28	58	21,4	45	16,6
	Minor	2	22,2	2	22,2	2	22,2	3	33,3
	Moderate	1	100	-	-	-	-	-	-
	Expressed	-	-	-	-	-	-	1	100
Caused by physical external deformity	No violations	94	33,6	78	27,9	59	21,1	49	17,5
	Moderate	1	50	-	-	1	50	-	-
Total violations	Minor	3	37,5	5	62,5	-	-	-	-
	Moderate	82	44,8	57	31,1	-	-	-	-
	Expressed	8	12,7	14	22,2	25	39,7	-	-
	Significantly expressed	2	7,14	2	7,14	5	17,9	-	-

The relative proportion of disruptions in mental functions decreases insignificantly with decreasing levels of CD4+ lymphocytes, while moderate and severe disruptions were noted at CD4+ levels of 100-200 cells/μl. Disruptions in sensory functions were insignificant at CD4+ levels >350 and 200-350 (33.3% and 28.6% respectively), moderate at 50% at the specified CD4+ levels, and visual sensory disruptions were insignificant at levels below 100-200 cells/μl, with rates of 21.2% and 18.2%.

Disruptions in neuromuscular, skeletal, and movement-related (statodynamic) functions were noted insignificantly in 42 individuals (40.4%) at CD4+ levels >350, moderate disruptions were observed at levels below 350, severe disruptions at levels below 100-200, and significantly severe disruptions at CD4+ levels <100 cells/μl. Disruptions in cardiovascular system functions were insignificant in 43.8% at CD4+ levels >350 cells/μl and in 12.5% at levels below 200 cells/μl, moderate disruptions were noted in 55.6% at levels >350 and in 33.3% at levels 200-350 cells/μl. Severe disruptions were observed in 66.7% at CD4+ levels below 100 cells/μl.

Disruptions in respiratory system functions were insignificant at CD4+ levels of 100 cells/μl and above, at 16.3% at levels below 100 cells/μl, and moderate at 66.7% at levels above 350 cells/μl. Disruption in blood and immune system functions were insignificant at levels above 350 cells/μl – 37.5%, and at 62.5% at levels 200-350 cells/μl, moderate in 82 individuals (44.8%) at levels above 350 cells/μl and in 31.1% (57 individuals) at levels 200-350 cells/μl, severe in 19.7% at levels 200-350 cells/μl and in 31.2% (29 individuals) at levels 100-200 cells/μl, and significantly severe at levels 200-350 cells/μl.

Total disruptions were insignificant in 37.5% at CD4+ levels ≥350 cells/μl and in 62.5% at levels 200–350 cells/μl, moderate in 44.8% (82 individuals) at levels >350 cells/μl and in 31.1% at levels 200–350 cells/μl, severe – their proportion increased with decreasing levels from 12.7% (>350 cells/μl) to 39.7% (100–200 cells/μl), significantly severe at 7.14% at levels above 200–350 cells/μl and at 17.9% at CD4+ levels within 100–200 cells/μl (Table 9).

A positive correlation is observed between CD4+ lymphocyte levels and disruptions in blood and immune system functions (r=0.47) and total disruptions (r=0.49).

Table 10 - Characteristics of impaired functions by the degree of their severity in disabled individuals considering the level of CD8+ lymphocytes (absolute number, %).

Dysfunction of the human body	Degree of expression	Level of CD8+ lymphocytes									
		<40%		40-50%		50-60%		60-70%		>70%	
		abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%
Mental	No violations	41	18,9	53	24,4	-	-	45	20,7	28	12,9
	Minor	2	25	1	12,5	2	25	2	25	1	12,5
	Moderate	-	-	-	-	1	50	1	50	-	-
	Expressed	-	-	-	-	-	-	1	100	-	-
Language, speech	No violations	43	18,9	54	23,8	53	23,3	48	21,1	29	12,8
	Expressed	-	-	-	-	-	-	1	100	-	-
Sensory	No violations	34	17,6	47	24,4	47	24,4	41	21,2	24	12,4
	Minor	8	24,2	7	21,2	6	18,2	8	24,2	4	12,1
	Moderate	1	50	-	-	-	-	-	-	1	50
Sensory hearing	No violations	-	-	53	23,9	52	23,4	49	22,1	28	12,6

	Minor	2	40	1	20	1	20	-	-	1	20
	Moderate	1	100	-	-	-	-	-	-	-	-
Sensory visual	No violations	38	19,1	48	24,1	48	24,1	41	20,6	24	12,1
	Minor	5	17,9	6	21,4	5	17,9	8	28,6	4	14,3
	Moderate	-	-	-	-	-	-	-	-	1	100
Neuromuscular, skeletal and movement-related (static-dynamic) functions	No violations	25	21,6	27	23,3	28	24,1	25	21,6	11	9,48
	Minor	14	17,3	19	23,5	19	23,5	16	19,8	13	16
	Moderate	3	11,5	7	26,9	6	23,1	6	23,1	4	15,4
	Expressed	1	25	-	-	-	-	2	50	1	25
	Significantly expressed	-	-	1	100	-	-	-	-	-	-
Of cardio-vascular system	No violations	32	16,6	37	22,7	38	23,3	34	20,9	22	13,5
	Minor	-	-	16	28,1	12	21,1	14	24,6	5	8,77
	Moderate	1	14,3	1	14,3	2	28,6	1	14,3	2	28,6
	Expressed	-	-	-	-	1	100	-	-	-	-
Respiratory system	No violations	37	19,8	46	24,6	45	24,1	34	18,2	25	13,4
	Minor	4	11,1	7	19,4	7	19,4	14	38,9	4	11,1
	Moderate	2	50	1	11,1	-	-	1	25	-	-
	Expressed	-	-	-	-	1	100	-	-	-	-
Digestive system	No violations	27	21,4	34	27	29	23	18	14,3	18	14,3
	Minor	13	14,6	19	21,3	-	-	29	32,6	8	8,99
	Moderate	2	22,2	1	11,1	4	44,4	-	-	2	22,2
	Expressed	1	25	-	-	-	-	2	50	1	25
Endocrine system and metabolism	No violations	-	-	51	23,7	51	23,7	47	21,9	26	12,1
	Minor	3	27,3	2	18,2	2	18,2	1	9,09	3	27,3
	Moderate	-	-	1	50	-	-	1	50	-	-
Blood and immune systems	Minor	-	-	4	100	-	-	-	-	-	-
	Moderate	31	20,8	41	27,5	37	24,8	27	18,1	13	8,72
	Expressed	11	17,7	8	12,9	12	19,4	-	-	11	17,7
	Significantly expressed	1	7,69	1	7,69	4	30,8	2	15,4	5	38,5

Urinary system	No violations	41	18,7	51	23,3	51	23,3	47	21,5	29	13,2
	Minor	1	25	1	25	1	25	1	25	-	-
	Moderate	-	-	1	50	-	-	1	50	-	-
	Expressed	1	33,3	1	33,3	1	33,3	-	-	-	-
Skin and related systems	No violations	42	19,1	-	-	53	24,1	48	21,8	27	12,3
	Minor	1	16,7	2	33,3	-	-	1	16,7	2	33,3
	Moderate	-	-	1	100	-	-	-	-	-	-
	Expressed	-	-	1	100	-	-	-	-	-	-
Caused by physical external deformity	No violations	42	18,6	54	23,9	53	23,5	48	21,2	29	12,6
	Moderate	1	50	-	-	-	-	1	50	-	-
Total violations	Minor	-	-	4	100	-	-	-	-	-	-
	Moderate	31	20,8	41	27,5	37	24,8	27	18,1	13	8,72
	Expressed	8	16,7	5	10,4	11	22,9	16	33,3	8	16,7
	Significantly expressed	4	14,8	4	14,8	5	18,5	6	22,2	8	29,6

Table 10 presents a characterization of impaired functions in disabled individuals based on the degree of their severity depending on the level of CD8+ lymphocytes in the blood of the disabled. It is evident that minor disruptions in mental functions are observed at CD8+ levels <40%, 50-70% in 25% of cases, and in 12.5% at levels 40-50% and >70%, while moderate disruptions occur in the range of 50-70%. Sensory impairments are minor in 24.2% at CD8+ levels <40%, in 21.2% at 40-50%, and in 24.2% at 60-70%, and in 12.1% at >70%, with auditory sensory impairment noted in 40% at CD8+ levels <40% and in 20% of cases at levels 40% and above. Minor disruptions in neuromuscular, skeletal, and movement-related (statodynamic) functions are noted at CD8+ levels <40% in 17.3%, at 40-60% in 23.5% of individuals, at 19.8% at 60-70%, and at 16% at >70%, while moderate disruptions in the range from 40 to 70% are observed in 26.9-23.1%, and severe disruptions are noted in 50% at 60-70% levels.

Minor disruptions in cardiovascular system functions are observed in 28.1% at 40–50% levels, in 21.1% at 50–60%, in 24.6% at 60–70%, and in 8.7% at ≥70% levels, while moderate disruptions are noted at 40–50% and 60–70% levels in 14.3%, and in 28.6% at 50–60% and >70% levels. Moderate disruptions in respiratory system functions are observed in 50% of cases at CD8+ levels <40%, in 25% of cases at 40–50% and 60–70% levels, and severe disruptions at 50–60% levels.

Moderate disruptions in blood and immune system functions are observed in 20.8% of individuals at levels <40%, in 27.5% at 40–50%, in 24.8% at 50–60%, and in 18.1% at 60–70%, while severe disruptions are noted in 17.7% at <40%, in 12.9% at 40–50%, in 24.8% at 50–60%, in 18.1% at 60–70%, and in 8.7% at >70% levels, with significantly severe disruptions at ≤40 to 50%, at 30.1% at 50–60%, and at 38.5% at ≥70% levels. Total disruptions tend to decrease, with their proportion ranging from 27.5% in moderate disruptions to 8.72% in severe disruptions, and from 10.4% in severe to 33.3% in significantly severe disruptions. There is also an increase in their proportion from 14.8% to 29.6% with increasing CD8+ lymphocyte levels. From Table 46, it can be inferred that

there is a direct correlation between CD8+ lymphocyte levels and disruptions in the blood and immune system functions (r=0.25) and total disruptions (r=0.2%).

Table 11 - Characteristics of life limitations in disabled individuals due to HIV-related diseases considering the degree of their severity (absolute number, %).

Ability limitations	Degree of expression							
	norm		first		second		third	
	abs. numeric	%	abs. numeric	%	abs. numeric	%	abs. numeric	%
To self-service	236	77,9	50	16,5	17	5,6	-	-
To move	289	95,4	7	2,3	4	1,3	3	1,0
To work	275	90,8	17	5,6	10	3,3	1	0,3

It has been established that among disabled individuals due to HIV infection, 16.5% experienced first-degree limitations in self-care, while 5.6% experienced second-degree limitations. Regarding mobility, 2.3% experienced first-degree limitations, 1.3% experienced second-degree limitations, and 1.0% experienced third-degree limitations. In terms of occupational activities, 5.6% experienced first-degree limitations, 3.3% experienced second-degree limitations, and 0.3% experienced third-degree limitations (Table 11).

Table 12 - Characteristics of life limitations in disabled individuals due to HIV, considering the stage of the disease (absolute number, %).

Disabilities	Degrees of expression	Stages of the disease								P trend
		3		4A		4B		4B		
		abs. h.	%	abs. h.	%	abs. h.	%	abs. h.	%	
To self-service	Norm	7	2,97	45	19,1	64	27,1	-	-	0,663
	First	-	-	11	22,4	18	36,7	-	-	
	Second	-	-	1	5,88	7	41,2	9	52,9	
To move	Norm	6	2,1	56	19,4	84	29,2	142	49,3	0,411
	First	1	14,3	1	14,3	2	28,6	3	42,9	
	Second	-	-	-	-	3	75	1	25	
	Third	-	-	-	-	-	-	3	100	
To work	Norm	7	2,55	52	18,9	81	29,5	135	49,1	0,332
	First	-	-	5	29,4	5	29,4	7	41,2	
	Second	-	-	-	-	2	22,2	7	77,8	
	Third	-	-	-	-	1	100	-	-	

Table 12 presents a characterization of disability limitations among HIV-infected individuals, considering the disease stage. Limitations in self-care ability of the first degree were observed in 22.4% of individuals at stage 4A, in 36.7% (18 individuals) at stage 4B, and the second degree in 5.88% at stage 4A, in 41.2% at stage 4B, and in 52.9% at stage 4C (p=0.663).

Limitations in mobility of the first degree were noted in 14.3% at stages 3 and 4A, in 28.5% at stage 4B, and in 42.9% at stage 4C, while the second degree was observed at stage 4B (75%) and in 25% at stage 4C (p=0.411).

Limitations in occupational activity of the first degree were present in 29.4% at stages 4A and 4B, and in 41.2% at stage 4C, while the second degree was observed in 22.2% at stage 4B and in 77.8% at stage

4C (p=0.332). A weak positive correlation was noted between respiratory function impairments and limitations in mobility (r=0.19), as well as between total impairments and limitations in mobility (r=0.12).

Table 13 presents a characterization of disability limitations among HIV-infected individuals depending on the severity of disability. Limitations in self-care ability of the first degree were observed in 43 individuals (23%) in the III disability group, in 4.6% in the II group, and in 12.5% in the I disability group, while the second degree was observed in 15 individuals (17.2%) in the II group and in 6.25% in the I disability group (p=0.16). Limitations in mobility of the first degree were noted in 3.7% in the III disability group, the second degree (3.45%) in the II disability group, and the third degree in 18.8% in the I group (p=0.002). Limitations in occupational activity of the first degree were observed in 9.09% in the III disability group, the second degree in 10.3% in the II group, and the third degree in 6.25% in the I group (p=0.08).

Table 13 - Characteristics of life limitations in disabled individuals due to HIV considering the severity of disability (absolute number, %).

Disabilities	Degrees of expression	Disability group								P trend
		III		II		I		Disability since childhood		
		abs. h.	%	abs. h.	%	abs. h.	%	abs. h.	%	
To self-service	Norm	143	76,5	68	78,2	13	81,2	3	100	0,16
	First	43	23	4	4,6	2	12,5	-	-	
	Second	1	0,53	15	17,2	1	6,25	-	-	
To move	Norm	179	95,7	84	96,6	13	81,2	3	100	0,002
	First	7	3,74	-	-	-	-	-	-	
	Second	1	0,53	3	3,45	-	-	-	-	
	Third	-	-	-	-	3	18,8	-	-	
To work	Norm	170	90,9	78	89,7	15	93,8	3	100	0,08
	First	17	9,09	-	-	-	-	-	-	
	Second	-	-	9	10,3	-	-	-	-	
	Third	-	-	-	-	1	6,25	-	-	

The study of clinical-functional, laboratory, and expert-rehabilitation characteristics of disability due to HIV-related diseases revealed a predominance of young male individuals with higher education and belonging to the III disability group (61.7%). Clinically, the most common complaints included general weakness, fatigue, dizziness, headache, limb and joint pain, dyspnea, weight loss, cough, and numbness. Moderate impairments in the functions of the blood and immune system were noted in 62.7%, severe in 28.4%, and significantly severe in 5.3% of cases. Neuromuscular, skeletal, and movement-related (statodynamic) functions were moderate in 10.9%, severe in 2.3%, and significantly severe in 0.3%. Psychiatric function disorders were moderate in 0.7% and severe in 0.3%, while cardiovascular function disorders were moderate in 3.0% and severe in 1.3%. Respiratory system disorders were moderate in 2.0% and severe in 0.7%. Overall impairments were moderate in 62.7%, severe in 23.4%, and significantly severe in 10.9% of cases. With increasing age, individuals exhibited more severe impairments in sensory functions, cardiovascular system, endocrine system and metabolism, and blood and immune system functions. With advancing disease stage, severe impairments in blood and immune system functions increased. As disease

severity and disability worsened, the levels of CD4+ lymphocytes and CD8+ lymphocytes increased. There was a direct moderate correlation between the level of CD4+ lymphocytes and impaired functions of the blood and immune system. The most characteristic limitations were in self-care ability, mobility, and occupational activity of the first degree. As disease stage and disability severity increased, the proportion of limitations in activities of daily living also increased. There was a direct correlation between impaired respiratory function and overall impairments, as well as limitation in mobility.

Author contributions: conceptualization of the article – Zapariy N.S.; statistical data analysis – Pakhomova M.E.; writing and editing of the article text – Pakhomova M.E., Zapariy N.S., Khalyastov I.N.; selection and review of publications on the research topic – Zapariy N.S.; article text verification and editing – Zapariy N.S., Achkasov E.E., Khalyastov I.N.

The authors declare no conflicts of interest.

REFERENCES

1. Andreev R.N., Katello A.F., Omies O.V. [et al.]. Characteristics of Morbidity and Epidemiological Surveillance of HIV Infection in Large Industrial Cities. Proceedings of the International Scientific and Practical Conference on Current Issues of HIV Infection and Maternal and Child Health, St. Petersburg, 2021, pp. 134-135.
2. Zapariy S.P., Fedorova I.V., Levkin V.G. (et al.). Dynamics of the Needs of Disabled Individuals in Medical and Social Rehabilitation Modalities and the Efficacy of Implementing Individual Rehabilitation and Habilitation Programs. Moscow, 2018-2020. Resort Medicine, 2022, No. 1, pp. 84-93.
3. Zaporovanny, Yu.B. Medical and Social Expertise and Rehabilitation of Patients with HIV Infection. Candidate of Medical Sciences Thesis, RNPC Medical Expertise and Rehabilitation, Minsk, 2016, 21 p.
4. Kozlov S.I. Analysis of Overall Disability Rates Among the Adult Population of the Russian Federation for the Period 2010-2019. Medical and Social Problems of Disability, 2020, No. 4, pp. 8-13.
5. Kondratieva S.E. Modern Epidemiological Characteristics of HIV Infection in the Penitentiary System of a Region with High HIV Prevalence. Candidate of Medical Sciences Dissertation, Tyumen, 2020, 226 p.
6. Ladnaya N.N., Pokrovsky V.V., Sokolova E.V., Chekryzhova D.G. Prevalence of HIV Infection Among Injection Drug Users in the Siberian Federal District. Epidemiology and Infectious Diseases, 2021, Vol. 11, No. 4, pp. 7-13.
7. Nechaeva O.B., Podymova A.S. The Impact of HIV Infection on the Demographic Situation in Russia. Medical Alliance, 2018, No. 1, pp. 6-16.
8. Pirogova, I.A. Prevalence of HIV Infection in Russia. Bulletin of the Council of Young Scientists and Specialists of the Chelyabinsk Region, 2022, Vol. 2, No. 4(19), pp. 45-49.
9. Pokrovsky V.V. HIV Infection and AIDS. Moscow: GEOTAR-Media, 2020, 696 p. (National Guide)
10. Ponomarenko, G.N., Kovlen V.D. Physical and Rehabilitation Medicine. Moscow: Nauka, 2020, 248 p.
11. Stepanova E.V., Leonova O.N., Buzunova S.A. Analysis of the Established Disability Group in Patients with HIV Infection. Epidemiology and Infectious Diseases, 2022, Vol. 12, No. 1, pp. 46-52.