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## Discrimination and its impact on the quality of life of HIV-infected people in Poland on the example of the city of Białystok: a cross-sectional study

Dyskryminacja oraz jej wpływ na jakość życia osób zakażonych wirusem HIV w Polsce na przykładzie miasta Białegostoku: badanie przekrojowe

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### Abstract

**Introduction and objective:** The aim of the study was to assess discriminatory behaviours towards HIV-infected people in Poland reported by patients treated in the Observation and Infection Clinic with the Subunit for HIV/AIDS Patients of the Medical University of Białystok Clinical Hospital. **Materials and methods:** A total of 147 participants, including 104 men (70.7%) and 43 women (29.3%), took part in the research. The study was conducted between May 2019 and January 2020. The study used a diagnostic survey method with a modified questionnaire “Psychosocial situation of people living with HIV/AIDS in Poland” by Dr Magdalena Ankiersztejn-Bartczak and standardised psychometric tools: the World Health Organization Quality of Life (WHOQOL-BREF), Short Form Health Survey (SF-36), Acceptance of Illness Scale (AIS), Satisfaction with Life Scale (SWLS), General Health Questionnaire (GHQ-28) and Beck Depression Inventory (BDI). **Results:** One in three respondents (32.7%) experienced discrimination. Healthcare professionals were reported to most frequently show discriminatory behaviour against seropositive persons (23.8%). Refusal of medical assistance and unethical treatment by medical staff were mentioned as the most common forms of discrimination (10.9% each). **Conclusions:** The quality of life of HIV-infected persons was moderate and was determined by the experience of stigma/discrimination due to their HIV status. Higher quality of life was presented by those who did not experience stigma/discrimination. HIV-infected respondents often experienced discrimination and stigma due to their clinical diagnosis. Since healthcare workers were the most common source of discrimination, it is important to undertake educational activities in this professional group as part of campaign against discrimination of HIV-positive people.

**Keywords:** acceptance of illness, depression, human immunodeficiency virus, satisfaction with life, quality of life

### Streszczenie

**Wprowadzenie i cel:** Celem pracy była ocena zachowań dyskryminujących wobec osób zakażonych wirusem HIV w Polsce w opinii pacjentów leczonych w Oddziale Obserwacyjno-Zakaźnym z Pododdziałem dla Zakażonych HIV i Chorych na AIDS Uniwersyteckiego Szpitala Klinicznego w Białymstoku. **Materiał i metody:** W badaniu wzięło udział 147 osób, w tym 104 mężczyzn (70,7%) oraz 43 kobiety (29,3%). Badania zostały przeprowadzone w okresie od maja 2019 do stycznia 2020 roku. W badaniu wykorzystano metodę sondażu diagnostycznego z użyciem zmodyfikowanego kwestionariusza ankiety pt. „Psychospołeczna sytuacja osób żyjących z HIV/AIDS w Polsce” autorstwa dr Magdaleny Ankiersztejn-Bartczak oraz standaryzowane skale psychometryczne: Skróconą Wersję Ankiety Oceniającej Jakość Życia (World Health Organization Quality of Life, WHOQOL-BREF), Kwestionariusz Oceny Jakości Życia (Short Form Health Survey, SF-36), Skalę Akceptacji Choroby (Acceptance of Illness Scale, AIS), Skalę Satysfakcji z Życia (Satisfaction with Life Scale, SWLS), Kwestionariusz Ogólnego Stanu Zdrowia (General Health Questionnaire, GHQ-28) oraz Skalę Depresji Becka (Beck Depression Inventory, BDI). **Wyniki:** Z przejawami dyskryminacji spotkał się co trzeci ankietowany (32,7%). Osobami najczęściej dyskryminującymi osoby seropoztywne byli pracownicy ochrony zdrowia (23,8%). Jako najczęstszą formę dyskryminacji pacjenci wymieniali odmowę pomocy lekarskiej, a także nieetyczne traktowanie ze strony personelu medycznego (po 10,9%). **Wnioski:** Jakość

życia osób zakażonych wirusem HIV prezentowała się na średnim poziomie i była determinowana przez doświadczenie stygmatyzacji/dyskryminacji w związku z zakażeniem. Lepszą jakość życia prezentowały osoby bez doświadczenia stygmatyzacji/dyskryminacji. Osoby zakażone wirusem HIV często doświadczały dyskryminacji i stygmatyzacji ze względu na rozpoznanie kliniczne. Najczęściej dyskryminującymi osobami byli pracownicy ochrony zdrowia, dlatego istotne jest podjęcie działań edukacyjnych w tej grupie pracowników, których celem będzie prowadzenie kampanii antydyskryminacyjnej wobec osób seropozytywnych.

**Słowa kluczowe:** akceptacja choroby, depresja, ludzki wirus niedoboru odporności, satysfakcja z życia, jakość życia

## INTRODUCTION

**H**uman immunodeficiency virus (HIV) is one of the most prevalent global health problems (Khademi et al., 2021; Nobre et al., 2016; Vu et al., 2020). It is estimated that 38 million people are HIV-positive globally (UNAIDS, 2022). In Poland, 30,092 people had been diagnosed with HIV since the introduction of testing in 1985 until 31 December 2022 (Narodowy Instytut Zdrowia Publicznego PZH – Państwowy Instytut Badawczy, 2023). Despite many advances in the treatment of infection and improvements in the quality of life (QoL) of HIV patients, universal access to antiretroviral therapy (ART) in particular, the HIV-infected population continues to suffer from the negative consequences of their health status. Discrimination of this group by healthy people is one of the most important consequences (Feyissa et al., 2019; Stangl et al., 2019). Although, globally, many other studies have investigated the manifestations of stigma and discrimination towards HIV-infected people in different settings, most of these studies have focused on stigma at the individual level, including the study of attitudes and behaviours of HIV-uninfected individuals towards this patient group (Stangl et al., 2019; Tran et al., 2019). In Poland, however, research in this area is scarce and rarely published in international journals. Our study addressed the subjective perception of discriminatory manifestations by HIV-positive persons rather than the assessment of discriminatory behaviour in specific social/professional groups. Therefore, the aim of the study was to assess discriminatory behaviours towards HIV-positive individuals in Poland in the opinion of patients treated in Observation and Infection Clinic with the Subunit for HIV/AIDS Patients at the Medical University of Białystok Clinical Hospital and the impact of these behaviours on the quality of life, satisfaction with life, HIV status acceptance, general health status and depressive symptoms among the respondents.

## MATERIALS AND METHODS

### Study group

The analysis included HIV-infected patients of the Observation and Infection Clinic with the Subunit for HIV/AIDS Patients of the Department of Infectious Diseases and

Hepatology of the Medical University of Białystok Clinical Hospital and the Consultation and Diagnostic Centre at the Medical University of Białystok Clinical Hospital. A total of 147 people, including 104 men (70.7%) and 43 women (29.3%), took part in the study. The mean age of the respondents ( $\bar{x}$ ) was 42.5 years with a standard deviation (SD) of 10.4 years. The youngest among the patients surveyed was 22 years old, while the oldest respondent was 77 years old. Respondents with secondary education (36.1%) were the predominant group. Urban residents, with a predominance of those living in cities with more than 200,000 inhabitants (residents of Białystok), dominated in the study group. Rural respondents accounted for less than 14%. Almost one in two patients were single. Married respondents accounted for almost 30% of the surveyed group. People who were not currently in any relationship (40.1%) predominated in the study group. Non-single patients tended to report an informal relationship. The majority of respondents had children, with the largest group reporting one or two children. However, a large proportion of patients did not have children (48%). Those who were economically active accounted for more than half of the surveyed group (55.8%). The majority of respondents described their financial status as moderate (34.7%) or good (40.8%). The mean duration of infection was almost 12 years ( $11.8 \pm 7.7$ ), with less than 10 years since infection in half of the study group. Detailed data are shown in Tab. 1.

### Study design

The study was conducted between May 2019 and January 2020 in the Observation and Infection Clinic with the Subunit for HIV/AIDS Patients and the Consultation and Diagnostic Centre of the Medical University of Białystok Clinical Hospital. The inclusion criteria were as follows: confirmed HIV infection, a stay in a hospital ward or a visit to the Consultation and Diagnostic Centre, and an informed and voluntary consent to participate in the study. The study was approved by the Management of the Institution and the Head of the Department. Patients' rights, including the right to intimacy and anonymity, were respected. In order to meet all ethical requirements during the implementation of the study, each respondent made a voluntary decision to take part in the study and could also withdraw from the study at any stage. The respondents completed the questionnaire

Sociometric variable		n	%
Sex	Female	43	29.3%
	Male	104	70.7%
Age [years]	<30	14	9.5%
	30–39	50	34.0%
	40–49	51	34.7%
	50–59	22	15.0%
	60–69	8	5.4%
	≥70	2	1.4%
Education	Primary	31	21.1%
	Vocational	37	25.2%
	Secondary	53	36.1%
	Higher	26	17.7%
Place of residence	Rural	20	13.6%
	City up to 50,000	29	19.7%
	City of 50–100,000	39	26.5%
	City of 100–200,000	13	8.8%
	City >200,000	46	31.3%
Marital status	Single	71	48.3%
	Married	42	28.6%
	Divorced	28	19.0%
	Widow/widower	6	4.1%
Type of current relationship	Formal	40	27.2%
	Informal	48	32.7%
	No relationship	59	40.1%
Number of children	One	35	23.8%
	Two	23	15.6%
	Three	7	4.8%
	Four and more	12	8.2%
	No children	70	47.6%
Occupational activity*	Employed	82	55.8%
	Disability pensioner	29	19.7%
	Student	15	10.2%
	Retired	9	6.1%
	Jobseeker	9	6.1%
	Non-jobseeker	8	5.4%
	Person not working for health reasons	8	5.4%
Financial situation	Very bad	1	0.7%
	Bad	25	17.0%
	Neither good nor bad	51	34.7%
	Good	60	40.8%
	Very good	10	6.8%

\* The sum does not have to equal 100% as any number of response options could be indicated.

Tab. 1. Sociodemographic characteristics of respondents

unassisted due to the very personal nature of the questions, mainly contained in the survey; however, they were informed that if any doubts or problems with understanding the questions should arise, they could ask for clarification. Each patient hospitalised or presenting at the Diagnostic and Consultation Centre was asked to complete the questionnaires (in paper form) by themselves. Additionally,

it was explained that the data obtained would only be used for research purposes. Patients completed the questionnaires in the patient room (in-patients), at the Consultation and Diagnostic Centre, or at home and handed them in during the next visit. The study was conducted with the involvement of persons in close contact with the HIV-infected patients, i.e. infectious disease doctors, nurses, and during direct meetings with HIV patients. A total of 198 questionnaires were distributed, of which 159 (80.30%) were returned, including 12 incomplete questionnaires (19.08%), which were discarded during the analysis. A total of 147 questionnaires were included in the analysis – survey response rate of 74.25%.

## Measures

The study used the method of a diagnostic survey with the use of a modified questionnaire “Psychosocial situation of people living with HIV/AIDS in Poland” by Dr Magdalena Ankiersztejn-Bartczak, President of the Social Education Foundation in Warsaw. Written consent of the author was obtained for the use of the questionnaire. Additionally, the following standardised psychometric tools were used in the study: the World Health Organization Quality of Life (WHOQOL-BREF), Short Form Health Survey (SF-36), Acceptance of Illness Scale (AIS), Satisfaction with Life Scale (SWLS), General Health Questionnaire (GHQ-28) and Beck Depression Inventory (BDI).

### Modified questionnaire of the survey “Psychosocial situation of people living with HIV/AIDS in Poland” (Ankiersztejn-Bartczak, 2013)

The survey questionnaire consisted of 59 questions. All questions required a specific choice of one or more answers. Some questions were additionally open-ended, giving the respondent the opportunity to address the question more broadly or to voice his/her own view/suggestion. The questions were structured in a way that was clear and comprehensible for the patient, and referred to a retrospective analysis of the situation since receiving the diagnosis and an assessment of various aspects of life, including those relating to the last twelve months only. The questions in the questionnaire were grouped into four thematic categories:

1. socio-demographic characteristics, including age, education, place of residence, income, housing conditions;
2. diagnosis and confirmation of HIV infection;
3. the impact of the diagnosis on life;
4. public reactions to information about infection.

### The World Health Organization Quality of Life (WHOQOL-BREF)

The WHOQOL-BREF questionnaire contains 26 questions and is used to measure quality of life in four domains: psychological health, physical health, environment and social relationships (Division of Mental Health and Prevention of Substance Abuse, World Health Organization, 1998).

The psychological domain includes positive and negative feelings, physical appearance, religion and spirituality, self-esteem, faith, sense of concentration, thinking, memory and learning. The physical domain includes rest and sleep, discomfort and pain, mobility, daily activities, dependence on medication and treatment, and ability to undertake work (Division of Mental Health and Prevention of Substance Abuse, World Health Organization, 1998). In the environmental domain, respondents assessed their financial resources, sense of security, freedom, access to and quality of health care, relationships with the immediate environment, housing conditions, opportunities for rest and recreation, opportunities for acquiring new information and skills, and transport. The social domain includes interpersonal relationships, satisfaction with sexual life, and social support (Division of Mental Health and Prevention of Substance Abuse, World Health Organization, 1998). Additionally, the WHOQOL-BREF contains two questions that are analysed separately. Question 1 asks about an individual's overall perception of quality of life, and question 2 asks about an individual's overall perception of their health (Division of Mental Health and Prevention of Substance Abuse, World Health Organization, 1998). Responses are scored on a 5-point scale (low score of 1 to high score of 5), with a reverse interpretation in three questions, i.e. 5 is the lowest value and 1 is the highest value. A maximum score of 20 can be obtained in each of the domains indicated above. The higher the score, the better the patients' quality of life. Cronbach's alpha coefficient values for each of the six domains range from 0.71 (for the social domain) to 0.86 (for the environmental domain). The overall Cronbach's alpha coefficient for the scale is 0.84 (Division of Mental Health and Prevention of Substance Abuse, World Health Organization, 1998).

### Short Form Health Survey (SF-36)

The SF-36 was created in 1988 and is one of the most widely used generic tools for measuring health-related quality of life. It is designed for subjective assessment of health status. Due to its high diagnostic sensitivity, it can be used even in the early stages of disease (Brazier et al., 1992). The tool consists of 36 questions in 11 categories to distinguish eight aspects of quality of life, such as:

- physical function – range of typical physical daily activities (10 items);
- role limitations due to physical problems – the effect of physical health on daily activities (4 items);
- bodily pain – severity of physical pain and its impact on daily activities (2 items);
- general health perceptions – i.e. the patient's self-reported overall health in relation to their expectations and perception of health (5 items);
- vitality – level of vital energy and fatigue (4 items);
- social functioning – impact of health on social functioning (2 items);
- role limitations due to emotional problems – impact of emotional problems on daily functioning (3 items);

- perceived mental health – quantitatively classified as nervousness, irritability, depression, happiness (5 items) (Brazier et al., 1992).

Additionally, health status is assessed in comparison with the health status one year before. The type of answers to individual questions varies from dichotomous (yes/no) to 3-, 5- and 6-point Likert scales. Respondents' answers are normalised so that the resulting QoL measures range from 0 to 100, with 0 always indicating the worst QoL and a score of 100 indicating the best QoL. Cronbach's alpha coefficient values range from 0.73 (social functioning) to 0.96 (role limitations due to physical health, role limitations due to emotional problems and vitality) (Brazier et al., 1992).

### Acceptance of Illness Scale (AIS)

The AIS questions address specific difficulties and limitations arising from one's health status. The AIS can be used to measure acceptance of any illness. It contains eight statements describing negative health consequences in the form of limitations due to the illness, lack of self-sufficiency, the sense of being dependent on others and reduced self-esteem (Juczyński, 2001). In each statement, the respondents identify their current health status on a 5-point Likert scale, where: 1 – strongly agree, 2 – agree, 3 – not sure, 4 – disagree, 5 – strongly disagree. Strongly agree indicates poor adaptation to the disease, while disagree indicates disease acceptance (Juczyński, 2001). The overall score ranges from 8 to 40. The degree of acceptance is defined by three score ranges. A score of 8 to 18 indicates a lack of illness acceptance, 19 to 29 represents an average level of acceptance, and 30 to 40 defines a high level of acceptance of the health situation. The reliability of the Polish version of the AIS is similar to that of the original version, with a Cronbach's alpha coefficient of 0.82 (Juczyński, 2001).

### Satisfaction with Life Scale (SWLS)

The SWLS consists of 5 statements, which are rated by the respondent on a 7-point scale by selecting one of the possible answers (Diener et al., 1985). The respondent assesses to what extent each of the statements applies to his or her life to date, where: 1 – strongly disagree, 2 – disagree, 3 – slightly disagree, 4 – neither agree nor disagree, 5 – slightly agree, 6 – agree and 7 – strongly agree. The answers are scored and the total score represents the overall degree of satisfaction with life. The scores range from 5 to 35, and the higher the score, the greater the sense of satisfaction with life. Sten scale is used for interpretation, where scores between 1 and 4 stens (a score of 5–17) represent low values, 5–6 stens (a score of 18–23) represent average values, and 7–10 stens (a score of 24–35) represent high values. A score of 20 represents a neutral point on the scale and means that the respondent is neither satisfied nor dissatisfied to any degree. A score of 5–9 indicates extreme dissatisfaction with life, while a score of more than 30 indicates high satisfaction with life. The Cronbach's alpha coefficient is 0.87 (Diener et al., 1985).

Persons showing discriminatory behaviour	<i>n</i>	%*
Healthcare professionals	35	23.8%
Acquaintances	10	6.8%
Husband/wife	9	6.1%
Friends	6	4.1%
Colleagues	5	3.4%
Prison staff	5	3.4%
Employer	4	2.7%
Parents	3	2.0%
Siblings	2	1.4%
Relatives	1	0.7%
None of the above	99	67.3%

\* The sum does not have to equal as any number of response options could have been indicated.

Tab. 2. Persons showing discrimination against HIV-positive respondents

### General Health Questionnaire (GHQ-28)

The General Health Questionnaire was created by D. Goldberg as a screening tool to identify individuals at risk of non-psychotic mental disorders, as well as assess their severity (Goldberg and Hillier, 1979). The GHQ-28 questionnaire has four 7-item subscales: somatic symptoms, items 1–7 (GHQ-28-A); anxiety/insomnia, items 8–14 (GHQ-28-B); social impairment, items 15–21 (GHQ-28-C); and depressive symptoms, items 22–28 (GHQ-28-D). The questionnaire is one of the so-called self-report tools, in which the respondent answers the questions independently by choosing one of the given options (i.e. better than usual; same as usual; worse than usual; much worse than usual). Each item is scored from 0 to 3. The maximum score is 84. The higher the total score, the higher the risk of a non-psychotic mental disorder, with the threshold for suspicion at 23/24 (Goldberg and Hillier, 1979). The Cronbach's alpha coefficient for the scale oscillates between 0.9 and 0.95 (Failde et al., 2000).

### Beck Depression Inventory (BDI)

The BDI was developed by Aaron Beck in 1961. It is a self-report tool for assessing the severity of depressive symptoms. It is widely used not only in psychiatric disorders, but also in internal medicine, oncology, urology, gynaecology or neurology to assess patients' mood (Beck et al., 1961). The BDI is used as a screening diagnostic tool to measure the severity of depressive symptoms, monitor its dynamics, as well as assess the efficacy of pharmacotherapy and psychotherapy. The scale consists of 21 sets of statements scored from 0 to 3 (severity). For each item, the respondent chooses one answer that, in his or her opinion, best describes his or her situation in a given time period. The total summed score can range from 0 to 63, with higher values indicating greater severity of depression. Scores are also classified into 4 ranges. Depending on the score obtained, the severity of depression can be determined: 0–11 – no depression; 12–26 – mild depression; 27–49 – moderate depression; 50–63 – severe depression. The Cronbach's alpha coefficient is 0.86 (Beck et al., 1961).

### Procedure and ethical considerations

The study was carried out following the recommendations and was reviewed and approved by the Bioethics Committee of the Medical University in Białystok (statute no. R-I-002/237/2019). All subjects gave written informed consent in accordance with the Declaration of Helsinki.

### Statistical analysis

Descriptive statistics and statistical inference, with the choice of methods determined by the type and distribution of the characteristics analysed, were used for statistical analysis.

The descriptive section presents the numerical and percentage distribution of nominal characteristics, while for measurable characteristics (mainly psychometric measures) selected descriptive statistics were determined: arithmetic mean ( $\bar{x}$ ), median (middle value) (*Me*), maximum value (max.) and minimum value (min.), standard deviation (*SD*) and lower and upper quartile ( $c_{25}$  and  $c_{75}$ ).

When psychometric measures were compared between groups, i.e. when the independent factor was nominal, descriptive statistics were determined in the compared groups and the significance of the differences between them was assessed using the Mann–Whitney test for 2 groups.

The results of all the above-mentioned statistical tests were interpreted using the probability (*p*) value, assuming a statistically significant relationship at  $p < 0.05$ .

### RESULTS

Respondents were asked about discrimination in a wide time range, i.e. from the beginning of HIV infection. It was found that one in three respondents (32.7%) had experienced this type of behaviour, while the remaining respondents (67.3%) had not. Healthcare workers were most frequently reported to show discriminatory behaviour against seropositive persons (23.8%), whereas patients' friends and family much less frequently. Respondents also experienced

Forms of discrimination	n	%*
Refusal of medical care	16	10.9%
Unethical treatment by medical staff	16	10.9%
Refusal of dental care	13	8.8%
Decline in social status	10	6.8%
Spreading information about the infection	9	6.1%
Incompetent medical care	9	6.1%
Being left by a partner	8	5.4%
Family estrangement	4	2.7%
Refusal of hospital admission	4	2.7%
Refusal of treatment	4	2.7%
Withdrawal of access rights to children	1	0.7%
Refusal of rehabilitation	1	0.7%
None of the above	99	67.3%
* The sum does not have to equal as any number of response options could be indicated.		

Tab. 3. Forms of discrimination reported by respondents

discrimination in their workplaces, both from coworkers and employers (Tab. 2).

Patients reported refusal of medical assistance (10.9%), as well as unethical treatment by medical personnel (10.9%) as the most common forms of discrimination. It was reported by 6.1% of respondents that they received incompetent medical care due to HIV infection. Break-up of marriage/partnership was also considered by respondents as a sign of discrimination and affected 5.4% of study participants. Nevertheless, it should be emphasised that 67% of respondents did not experience any form of HIV-related discrimination (Tab. 3).

Respondents pointed to fear of HIV infection as the main reason for discrimination (12.9%). Society's ignorance about routes of HIV transmission was indicated as a reason for discrimination by 11.6% of respondents. Up to 80.3% of respondents could not identify the reason for discrimination (Tab. 4). The vast majority of HIV-positive individuals had not been refused medical or dental treatment by healthcare professionals in the last 12 months preceding the research (Tab. 5). One in 10 respondents had knowledge on disclosing their HIV status by medical personnel (10.9%). More than half of respondents had doubts in this regard (55.1%), whereas 33.3% of the respondents did not have any doubts about maintaining professional confidentiality by medical staff. One person (0.7%) did not answer this question.

The level of acceptance of infection was rather high in the study population. The median AIS score was 31. The mean satisfaction with life score in the study group was about 18, which is closer to the lower limit of possible values and thus indicates rather low satisfaction with life in the study group. Quality of life assessed with the SF-36 varied, depending on the aspect in question. Physical functioning was rated high (median even at 95 points), while vitality was at a very

Reasons for discrimination	n	%*
Fear of infection	19	12.9%
Lack of knowledge on the routes of transmission	17	11.6%
Shame about being in the company of an HIV-infected person	6	4.1%
Religious or moral convictions	4	2.7%
Not sure	4	2.7%
Negating lifestyle and behaviour	3	2.0%
Appearance of an HIV-infected person	2	1.4%
None of the above	118	80.3%
* The sum does not have to equal as any number of response options could be indicated.		

Tab. 4. Reasons for discrimination against HIV-positive persons

low level. The mean for the physical health domain in the WHOQOL-BREF questionnaire was 14.5, while the psychological health domain score was lower at 12.5. Comparing the mean values with the median, it can be seen that all GHQ-28 measures had a very asymmetric distribution, with the means much higher than the median, which was 0 for the two measures that were more related to the psychological aspects, meaning that the majority of respondents did not show any negative symptoms in these domains. Both the mean BDI score and the categorisation of results based on this score indicated that depressive symptoms did not pose a significant problem in the study group. Detailed data are presented in Tab. 6.

Discrimination had a negative impact on the quality of life of respondents. Those exposed to discrimination showed lower QoL in SF-36, especially in the vitality and social functioning domains. Their QoL in the physical domain was also significantly lower. After analysing the above relationship using the WHOQOL-BREF questionnaire, it was found that the differences in QoL were not statistically significant. The GHQ-28 measure showed that respondents who experienced discrimination had slightly higher levels of depressive symptoms. No statistically significant differences were evident in the other categories. Satisfaction with life of those exposed to discrimination was slightly lower, with the difference compared to others on the verge of statistical significance (slightly above 0.05). The other measures (AIS, BDI) showed no statistically significant differences (Tab. 7).

Refused medical/dental care	n	%
Never	119	81.0%
Once	8	5.4%
Several times	13	8.8%
Often	6	4.1%
No answer	1	0.7%

Tab. 5. Cases of refused medical/dental care by healthcare professionals

Psychometric measures		$\bar{x}$	<i>Me</i>	<i>SD</i>	$c_{25}$	$c_{75}$	Min.	Max.
AIS		28.2	31	9.5	20	36	8	40
SWLS		17.9	20	8.2	11	23	5	35
SF-36	Physical function	79.3	95.0	27.3	65.0	100.0	0.0	100.0
	Role limitations due to physical health problems	59.9	75.0	43.4	0.0	100.0	0.0	100.0
	Pain	65.5	77.5	30.5	37.5	90.0	0.0	100.0
	General health	46.9	50.0	20.4	37.5	62.5	0.0	87.5
	Physical area	69.8	78.6	26.0	51.7	90.6	0.0	98.6
	Role limitations due to emotional problems	70.3	100.0	42.9	33.3	100.0	0.0	100.0
	Vitality	42.8	43.8	14.3	31.3	50.0	6.3	75.0
	Social functions	74.2	75.0	25.3	50.0	100.0	12.5	100.0
	Wellbeing	54.6	55.6	21.1	42.2	68.9	0.0	100.0
	Mental domain	56.9	60.6	18.3	43.3	70.0	8.1	88.3
Total quality of life		63.3	69.9	20.7	50.6	78.9	5.6	91.4
WHOQOL-BREF	Somatic domain	14.5	14.9	3.1	12.6	16.6	5.7	20.0
	Psychological domain	12.5	12.7	3.3	10.0	15.3	4.7	18.0
	Social domain	12.7	13.3	4.0	9.3	16.0	4.0	20.0
	Environment	14.3	15.0	2.5	13.5	16.0	5.5	19.0
GHQ-28	Somatic symptoms	2.0	1	2.3	0	4	0	7
	Anxiety, insomnia	1.9	1	2.4	0	4	0	7
	Social disfunction	1.3	0	2.1	0	2	0	7
	Depressive symptoms	0.9	0	1.7	0	1	0	7
	Total	6.1	2	7.3	0	10	0	27
BDI		11.3	7	12.6	1	17	0	58

**AIS** – Acceptance of Illness Scale; **BDI** – Beck Depression Inventory; **GHQ-28** – General Health Questionnaire; **SF-36** – Short Form Health Survey; **SWLS** – Satisfaction with Life Scale; **WHOQOL-BREF** – World Health Organization Quality of Life;  $\bar{x}$  – arithmetic mean; *Me* – median; *SD* – standard deviation;  $c_{25}$  – lower quartile;  $c_{75}$  – upper quartile; **min.** – minimum; **max.** – maximum.

Tab. 6. Descriptive statistics of the scales used in the study

## DISCUSSION

HIV-positive persons are still highly likely to experience discrimination and stigma. Although the infection itself, its treatment and risk factors are well known, this phenomenon is prevalent all over the world. The level of health education is still very low in some regions of the world (e.g. Sub-Saharan Africa, which continues to have the highest prevalence of HIV), which can further exacerbate discrimination against those affected. However, this seems incomprehensible in countries with high economic status and good or very good level of education. The available studies point to the lack of knowledge about HIV, fear of infection, and negative social and moral perceptions of HIV as factors that contribute to stigma and discrimination towards HIV-infected people (Dang et al., 2017). Our research also confirmed that one in three respondents had experienced discrimination. The society's ignorance about the routes of HIV transmission (11.6%), resulting in fear of contracting the virus, was considered by the respondents to be one of the reasons for discrimination. According to respondents, it is the fear of infection that is the main reason for discrimination against HIV patients (12.9%). Interestingly, discriminatory behaviours were most often shown by healthcare workers (23.8%), much less by friends (6.8%) and family

(husband/wife – 6.1%). It should be emphasised that the above data did not refer to the care provided by the medical staff of the ward where the self-reported survey was conducted. The vast majority of respondents (95.9%) expressed satisfaction with the care received, both during outpatient visits and hospital stay. Ankiersztejn-Bartczak (2013) also demonstrated such a relationship, with 90% of respondents expressing great satisfaction with medical care provided by infectious disease specialists, and with a general feeling of being discriminated against by medical staff of other specialties (Ankiersztejn-Bartczak, 2013). Additionally, our respondents confirmed that information about HIV infection met with negative reactions from friends, coworkers, employers, parents, siblings, relatives and prison services. Our research showed that medical professionals were most likely to discriminate against respondents. Refusal of medical assistance (10.9%) and unethical treatment by medical staff (10.9%) were the most common forms of discrimination. Refusal of dental care was reported by 8.8% of respondents. Incompetent medical care (6.1%), denial of hospital admission (2.7%) and surgery (2.7%) were less common. Dang et al. (2017) have shown that medical staff are at the forefront of discrimination and stigmatisation of infected patients. A study conducted by Kamińska-Otok (2020) in 105 HIV-infected persons showed that 13%

Psychometric measures		Exposure to discrimination						p
		Yes (n = 48)			No (n = 99)			
		$\bar{x}$	Me	SD	$\bar{x}$	Me	SD	
SF-36	Physical function	70.9	80.0	32.4	83.3	95.0	23.7	0.0614
	Role limitations due to physical health problems	49.0	50.0	48.1	65.2	75.0	40.1	0.0767
	Pain	57.3	57.5	34.7	69.5	80.0	27.5	0.0802
	General health	46.4	50.0	22.9	47.1	50.0	19.2	0.8936
	Role limitations due to emotional problems	68.8	100.0	45.8	71.0	100.0	41.7	0.9622
	Vitality	39.1	37.5	13.5	44.6	50.0	14.4	0.0097*
	Social functions	66.1	62.5	27.2	78.2	87.5	23.5	0.0158*
	Wellbeing	51.6	52.2	25.3	56.1	55.6	18.8	0.3637
	Physical area	61.8	66.0	30.2	73.7	82.5	22.9	0.0438*
Mental domain	53.3	54.9	21.8	58.6	61.7	16.1	0.1946	
Total quality of life	57.6	61.0	24.5	66.1	72.5	18.0	0.0597	
WHOQOL-BREF	Somatic domain	13.7	14.6	3.7	14.8	15.4	2.7	0.0948
	Psychological domain	12.3	12.7	4.0	12.7	12.7	2.9	0.9426
	Social domain	12.3	12.0	4.1	12.9	13.3	3.9	0.3973
	Environment	13.8	15.0	3.0	14.6	15.0	2.2	0.1651
GHQ-28	Somatic symptoms	2.5	1.5	2.7	1.7	1	2.1	0.2078
	Anxiety, insomnia	2.5	1.5	2.8	1.6	0	2.1	0.1122
	Social dysfunctions	1.7	0.5	2.3	1.1	0	2.0	0.0739
	Depressive symptoms	1.5	1	2.1	0.6	0	1.4	0.0075*
	Total	8.2	5.5	8.8	5.0	2	6.3	0.1141
SWLS		16.1	16.5	8.6	18.8	21	7.8	0.0726
AIS		27.0	29.5	10.3	28.7	32	9.1	0.3814
BDI		13.8	9.5	14.9	10.1	7	11.1	0.1876

\* Statistically significant value.  
**AIS** – Acceptance of Illness Scale; **BDI** – Beck Depression Inventory; **GHQ-28** – General Health Questionnaire; **SF-36** – Short Form Health Survey; **SWLS** – Satisfaction with Life Scale; **WHOQOL-BREF** – World Health Organization Quality of Life;  $\bar{x}$  – arithmetic mean; **Me** – median; **SD** – standard deviation; **p** – probability value.

Tab. 7. Effect of discrimination on QoL by SF-36, WHOQOL-BREF, GHQ-28, AIS, SWLS and BDI

of patients experienced discrimination in their interactions with healthcare professionals. The vast majority of these were people who had been denied dental care. Rogala et al. (2015) showed that, on average, between 20% and 30% of respondents had experienced discrimination from healthcare workers, and it was this group that discriminated against patients most frequently. Unethical treatment, incompetent medical care, refusal to provide care and disclosure of information about the patient's infectious status were most often reported. Our research also confirmed that one in ten respondents had knowledge about disclosing information about a patient's serological status by medical staff. Based on the SIEĆ PLUS research report on the stigmatisation of HIV-infected individuals in Poland, contained in the People Living with HIV Stigma Index (2023), it can be concluded that Polish society is characterised by a low level of tolerance towards HIV-positive people. The phenomenon of discrimination is particularly pronounced in the social sphere. The report shows that respondents experienced social exclusion, gossip about their HIV status, verbal harassment (insults, threats) and physical assaults in the last 12 months preceding the survey. Unfortunately, Poland is no exception on the world map in terms of discriminatory

and stigmatising behaviour. The above report shows that this phenomenon extends to all countries throughout the world (Global Network of People Living with HIV, 2023). Social stigma and discrimination reduce the quality of life of HIV-infected people. The implications of discrimination are seen in many aspects of life (Kamińska-Otok, 2020). Our study showed that people who were exposed to discrimination presented with statistically significantly lower QoL, as assessed with the SF-36 scale, which was particularly evident in the domains of vitality ( $p = 0.0097$ ) and social functioning ( $p = 0.0158$ ). Their QoL in the physical domain was also significantly lower ( $p = 0.0438$ ). The analysis of the GHQ-28 measure showed that respondents who experienced discrimination had higher levels of depressive symptoms ( $p = 0.0075$ ). Life satisfaction, as measured with the SWLS, was found to be slightly lower than in those who had not been discriminated against. Studies by other authors have also demonstrated that the quality of life of HIV-infected patients is largely determined by the experience of discrimination and stigma. In their study involving a group of 200 HIV-positive Iranians, Ebrahimi Kalan et al. (2019) showed that the experience of discrimination was statistically significantly correlated with each QoL domain,



as measured with WHOQOL-HIV-BREF, and significantly reduced QoL. Rueda et al. (2016) conducted a meta-analysis of 64 studies assessing the correlations between HIV stigma and overall perceived health. One of the authors' key findings was that the experience of HIV stigma was associated with higher levels of depression and lower social support. The authors of the study suggested that this link may reflect the intersection between different forms of stigma for HIV patients, such as homophobia, racism and gender discrimination. One study by Wohl et al. (2013), which attempted to determine the impact of the stigmatisation of HIV-positive men who have sex with men (MSM) on their mental health and the relationship between psychological crisis, sexual stigma and depression, found that respondents who experienced cross-stigmatisation (due to sexual orientation and HIV status) reported increased levels of anxiety and depressive symptoms. Respondents were also more likely to engage in risky behaviours with showed worse engagement in prevention programmes (Wohl et al., 2013). Also, mental health crisis, depression, racism and discrimination were significantly correlated among HIV-positive African, Caribbean and Black women in Canada, highlighting the importance of assessing the intersection of different types of stigma in relation to HIV-positive individuals (Logie et al., 2013). Charles et al. (2012) assessed the impact of stigma on the QoL of 400 HIV-positive people in India. The study found that 27% of people living with HIV experienced severe forms of stigma. Poor QoL was evident in the physical, psychological, social and environmental domains. HIV-infected individuals who experienced severe stigma (personalised, self-image stigma, social exclusion) had a significantly higher risk of severe depression ( $p < 0.001$ ) (Charles et al., 2012). A study in 120 HIV-infected individuals in Beijing, China (Rao et al., 2012) (mean age 36 years, men accounting for 82% of the study population), found that the main variables of stigma, quality of life and depressive symptoms were associated with several sociodemographic variables. Respondents who reported greater experience of stigma were older, had lower education and lower income. Those unemployed were primarily at risk of depression, which also translated into a higher prevalence of social stigma. Respondents who reported higher mean levels of social support were in a permanent relationship. Social support was significantly associated with lower severity of stigma and depressive symptoms and higher QoL (Rao et al., 2012). Our research did not show strong correlations between discrimination and reduced QoL of respondents, but higher intensity of depressive symptoms ( $p = 0.0075$ ) as measured with GHQ-28 was noted. The level of life satisfaction by SWLS in people who experienced discrimination compared to the non-discriminated group was on the verge of statistical significance.

Social support can play an important role in reducing any negative effects of discrimination against HIV-positive people. It can help cope with the disease, provide a sense of belonging and understanding and reduce stress associated

with negative responses from the society. In contrast, the lack of support from society or loved ones can lead to emotional isolation and loneliness, which can have a negative impact on the psychological and somatic status and attitude to the diagnostic and therapeutic process of HIV-infected individuals, fundamentally reducing their quality of life. Social support encompasses many different aspects, such as emotional, practical and financial. Emotional support may for example involve providing comfort, understanding and the sense of belonging, while practical support may be understood as help with daily activities such as shopping, household chores, or transport to medical facilities. There are also organisations, support groups and online communities where HIV-positive people can meet, talk, and receive information about treatment and care. Vu et al. (2020) demonstrated that the strength of the correlations between social support and stigma and coping with HIV infection is one of the most important elements in determining the quality of life of infected people. The relationship between social support and the quality of life in HIV patients was investigated by a team of researchers from Ethiopia. In their meta-analysis of 10 cross-sectional studies involving a total of 3,257 participants, Mengistu et al. (2022) showed that those who received strong social support were four times more likely to report higher levels of QoL. A Chinese study conducted by Xu et al. (2017) in 281 patients on ART found that 90.4% of patients received family support at the start of treatment, 91.8% at six months, 95.55% at 12 months and 94.3% at 24 months. The percentage of patients who did not experience discrimination from their families was 87.2% before starting ART, 90.4% at 6 months, 90.0% at 12 months and 94.5% at 24 months of treatment. The patients' overall quality of life score was positively correlated with receiving family support, not feeling discriminated against by their families or themselves. As a result, no or minimal discrimination was found to translate into a better quality of life for HIV-infected individuals (Xu et al., 2017).

In order to summarise the available studies confirming the impact of social support on the quality of life of HIV-positive people, Ghiasvand et al. (2020) performed a meta-analysis of 19 studies. The pooled results showed that social support had a positive impact on the quality of life of patients with HIV/AIDS, while social stigma had a significantly negative impact on this quality. The cited study allowed to conclude that family and other close or even further relatives can play a key role in improving the quality of life of an HIV-infected person. Sharing information about one's HIV status provide relief and emotional support, as well as help with treatment and healthcare decisions. It can also help reduce the stress of concealing one's condition and improve the quality of life of the infected person. If this is not possible, self-stigmatisation of HIV-positive individuals, as well as social and emotional isolation can occur. Additionally, research has shown that stigma and lack of social support can negatively shape the attitude of society as a whole towards HIV testing, as well as have a negative impact on

adherence of those already infected and informing loved ones, sexual partners or medical professionals about their infection. This relatively often becomes a reason for suicidal thoughts and attempts. It can also result in reluctance to either initiate or continue treatment. A wide range of sequelae that occur can ultimately lead to deterioration of the infected person's health and progression of the infection. However, sharing such information can also lead to negative consequences such as stigma, discrimination and social isolation, especially in societies where strong prejudices against HIV-infected people still prevail. An infected person may also fear the loss of a job or other forms of discrimination, which may influence their decision not to disclose their health status. Such behaviours can reduce the quality of life of HIV-positive individuals and, consequently, lead to even more stigma (Steward et al., 2013).

## CONCLUSIONS

The quality of life in HIV-infected patients treated at the Observation and Infection Clinic with the Subunit for HIV/AIDS Patients at the Medical University of Białystok Clinical Hospital was moderate. The quality of life of HIV-infected persons was determined by the experience of stigma/discrimination due to the infection. Higher quality of life was presented by those without experience of stigma/discrimination. HIV-positive people have often experienced discrimination and stigma due to their clinical diagnosis. Since healthcare workers were the most common source of discrimination, it is important to undertake educational activities in this professional group as part of a campaign against discrimination of HIV-positive people.

### Conflict of interest

*The authors do not report any financial or personal connections with other persons or organizations that could negatively affect the content of this publication and claim authorship rights to this publication.*

### Author contributions

*Original concept of study: MMB, MC. Collection, recording and/or compilation of data: MMB, AB. Analysis and interpretation of data: MMB, MC, AB. Writing of manuscript: MMB, MC. Critical review of manuscript: MC, MK, IPS. Final approval of manuscript: MMB, MC, AB, MK, IPS.*

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