ORIGINAL PAPER

The role of resiliency in coping with stress and stigma in people infected with HIV

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Abstract

Introduction: The purpose of this article was to present the results of own research on the role of resiliency in coping with stress in people living with human immunodeficiency virus (HIV), the perceived level of stress in people at risk of stigma, the aspect of experiencing stress, and existence of a relationship with personal resource of resiliency. This paper also compared the level of perceived stress in seropositive people with a group of people with a diagnosis of psycho-active substance addiction, and with people without addiction and HIV infection.

Material and methods: The research was conducted using a questionnaire based on the perceived stress questionnaire, resilience scale, and HIV/acquired immunodeficiency syndrome (AIDS) stress scale. A total of 151 adults participated in the study, which was conducted at the Social Readjustment Centre. Data on comparison group of HIV-negative persons without a diagnosis of addiction were collected using online forms.

Results: The results obtained showed that people living with HIV and those suffering from psychoactive substance addiction demonstrated lower levels of perceived stress than people without diagnoses. The study also revealed that all dimensions of experiencing stress were negatively correlated with factors of resilience, a trend observed in all three groups of subjects.

Conclusions: The data obtained in the study suggest that resiliency may be of importance in the process of self-regulation of emotions among HIV-positive people.

HIV AIDS Rev 2025; 24, 2: 131-135
DOI: https://doi.org/10.5114/hivar/189496

Key words: HIV, AIDS, personal resources, coping with stress, resiliency.

Introduction

The diagnosis of human immunodeficiency virus (HIV) infection is undoubtedly a very stressful moment, and can be considered a critical event in life. A person experiencing such situation faces challenges in many areas of re-organizing own life. Frequently, a great deal of effort, commitment, and adjustment to this new situation are required. HIV infection can evoke a lot of difficult emotions, and due to a huge number of associated myths and stereotypes, it can change the self-image [1-3]. Seropositive people encounter various challenges, including social stigma, isolation, and fears for the future. These factors predispose them to an increased risk of mental health difficulties [4]. Obtaining a positive HIV test result is a life event associated with strong emotions, which sometimes contribute to the development of trauma [5]. This experience can affect mental imbalance, impeding adaptation to a new situation in life [6].

Coping with stress while facing new challenges, such as adjusting to regular administration of medicines, emerging side effects of therapy, regular attendance of follow-up ap-

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Article history:
Received: 25.03.2024
Revised: 28.05.2024
Accepted: 30.05.2024
Available online: 05.05.2025

pointments, and developing opportunistic infections in the course of HIV/acquired immunodeficiency syndrome (AIDS), can cause different reactions. Subjective resources, which characterize an individual, may be useful for the implementation of effective coping techniques, thereby meeting the challenge of receiving HIV-positive diagnosis and its consequences [7].

Lazarus and Folkman's concept of transactional theory of stress and coping [8] was the theoretical construct, on which the research was based. Stress was defined by the authors as the relationship between an individual's coping capacity and his or her expectations, without incurring destructive costs. Lazarus and Folkman indicated that there is a transaction between the individual and the environment [9]. The theory captures coping as a process aiming at changing situations and regulating emotions; it is a dynamic process that requires the involvement of cognitive processes. When coping with a stressful situation, an individual makes primary and secondary evaluations and performs activities [9, 10]. Perception and subjective evaluation of a situation are crucial in undertaking activities to cope with stress. In turn, the judgement of a situation is related to various factors, including an individual's personal resources [9]. Subjective resources are relatively fixed dispositional characteristics of a person, while resiliency is a subjective resource that has been shown in many studies to be an important factor in the application of effective coping techniques, leading to the reduction of a person's stress.

Resiliency and its relevance to the functioning of HIV-infected people

Resiliency is a subjective resource enabling the abandonment of negative experiences, and subsequently facilitating the adaptation to a new situation [11, 12]. The term 'resiliency' refers to relatively stable characteristics of an individual associated with actively pursuing new solutions in difficult situations [13]. For seropositive people, resiliency may facilitate functioning in everyday life as well as managing the disease. Research has shown that people suffering from chronic diseases and those at risk of stigma (e.g., people with a diagnosis of addiction) who exhibit higher levels of resiliency, have improved mental and physical health outcomes, and also manage the symptoms of their disease better [14]. In a research by Marshall *et al.* [15], associations were observed between higher levels of resiliency in subjects with HIV diagnosis and more diligent adherence to medical recommendations. Whereas a study by Dale *et al.* [16] found that higher scores on a resiliency scale were positively associated with higher adherence to recommendations for antiretroviral therapy (ART) and a higher probability of undetectable viral load. Higher levels of resiliency can improve the quality of life of a person living with HIV; therefore, individuals are able to cope with difficulties better, showing greater flexibility in their activities [17].

The research problem is the phenomenon of stigmatization of HIV-positive people and its consequences. Due to numerous myths about seropositivity, people who receive HIV diagnosis find it difficult to disclose their current health status to others, seek social support, or even to commence treatment. An additional stress factor is the gloom vision of lack of medicines to cure the disease, the fear of AIDS development as well as the difficulty of treatment-associated side effects (especially in initial stage). All these factors can cause an increase in the perceived stress among HIV-positive people. The search for effective strategies and personal resources, which can contribute to a better adaptation after receiving HIV-positive diagnosis, seems to be an important subject of consideration, given the increasing number of HIV infections in Poland in recent years [18].

The objective of the current study was to verify the hypothesis that HIV-infected individuals who score higher notes on the resiliency scale will experience lower levels of stress in challenging situations, and will adapt better to life-changing difficulties after receiving a seropositivity diagnosis. Additionally, the objective of the research was to verify the hypothesis that people exposed to stigma due to HIV diagnosis or psycho-active substance addiction, experience higher levels of stress compared with people without these diagnoses.

Material and methods

Following approval of the draft study by the Research Ethics Committee of the Institute of Psychology, Polish Academy of Sciences in 2022, the study was conducted.

Qualification of participants to the research was based on their informed and voluntary consent to participate in the research, with a confirmation of their serological status (HIV-positive) or diagnosis of addiction from medical records. Another criterion for participation was the subject's ability to communicate and willingness to cooperate. The study included adults who were patients of infectious disease wards, and those who were members of associations for HIV-infected people. All subjects were informed about the purpose and conduct of the study, duration, and the possibility of leaving the study at any time, with no consequences. In order to obtain data, a questionnaire was used. Respondents completed questionnaires individually on a tablet in the presence of the researcher, and participants were requested to provide basic data to facilitate statistical analyses. Also, they were informed that personal data will be kept confidential and processed under the applicable law only. The results of the study were interpreted collectively only.

The perceived stress questionnaire [19] intended to measure stress experiences was used in this study. This tool examines the overall level of stress as well as its intensity on specific dimensions, such as emotional tension, intrapsychic stress, and external stress. Moreover, the resiliency scale (Ogińska-Bulik, Juczyński) measuring general resilience performance and its five components, including perseverance and determination in action, personal competence to cope and tolerance of negative emotions, openness to new experiences and a sense of humor, tolerance of failures and treating life as a challenge, and optimistic attitude to life and

the ability to mobilize oneself in difficult situations, was employed. In addition, the HIV/AIDS stress scale (Niu, Luo, Chen, Xiao) translated into Polish was applied. This tool is used to measure the level of stress in a person living with HIV, and consists of three dimensions, such as emotional stress, instrumental stress, and social stress.

Subjects and research procedure

In total, the study group included 151 adult individuals, divided into 3 sub-groups. First group: 56 HIV-infected persons, 37 women and 19 men, residing in a care and treatment ward (n = 32) and 23 patients functioning independently outside the ward (n = 23). This sub-group accounted for 37.1% of respondents. Second group: 43 people with a diagnosis of psycho-active substance addiction, residing in an inpatient addiction ward, i.e., 31 women and 12 men (28.5% of respondents). Third group (control): 52 individuals who were not HIV-infected and without a diagnosis of psycho-active substance addiction, i.e., 44 females and 8 males (34.4% of the study cohort). Respondents age ranged from 18 to 74 years, with a mean age of 35 years (SD = 13.02). Men accounted for 23.8% of the study group and women for 76.2%, with majority having a higher education (49.7%), 34.4% secondary education, 9.3% vocational education, and 6.6% primary education. The largest group were employed persons (55%) and pensioners (17.9%), while 56.3% of respondents declared being in a relationship.

Results

Statistical analysis

The analysis revealed that the following variables adopted a distribution consistent with normal distribution: the KPS total score, cognitive optimism, and social stress. The remaining variables adopted a distribution deviated from the normal distribution; however, all analyzed variables had skewness values within the < –1 – 1 > range, indicating that deviation was not significant (Table 1).

Pearson's correlation (r) analysis was conducted to determine the relationship between perceived stress and resiliency. The analysis proved that all stress dimensions and the overall stress score were negatively correlated with the dimensions of resiliency. These correlations ranged from moderate to strong. The results indicated that with higher levels of stress, emotional tension, external stress, intra-psychic stress, lower overall levels of resiliency, lower persistence and self-determination, lower openness to new experiences and sense of humor, lower personal coping competence and tolerance of negative emotions, lower tolerance of failures and less optimistic attitude towards life, and ability to mobilize in difficult situations, were reported (Table 2).

Table 1. Descriptive statistics with normal distribution

	Mean	Median	SD	Sk.	Kurt.	Min.	Max.	D	*p*-value
Level of stress (KPS)									
KPS overall result	78.10	80.00	17.24	–0.23	–0.61	41.00	114.00	0.07	0.084
Emotional tension	22.19	23.00	6.58	–0.08	–0.83	7.00	35.00	0.08	0.009
External stress	19.72	20.00	6.54	0.00	–0.89	7.00	32.00	0.07	0.037
Intra-psychic stress	19.95	20.00	6.61	–0.02	–0.90	7.00	34.00	0.08	0.016
Resiliency (SPP)									
Overall level of resiliency	62.86	65.00	16.50	–0.37	–0.39	25.00	100.00	0.09	0.002
Perseverance and determination in action	12.71	13.00	4.00	–0.48	–0.26	2.00	20.00	0.11	< 0.001
Openness to new experiences and sense of humor	14.26	15.00	3.44	–0.87	0.63	3.00	20.00	0.15	< 0.001
Personal competences for coping and tolerance of negative emotions	11.93	13.00	3.96	–0.36	–0.49	1.00	20.00	0.11	< 0.001
Tolerance for failure and treating life as a challenge	13.13	13.00	3.67	–0.41	–0.17	3.00	20.00	0.09	0.003
Optimistic attitude to life and the ability to mobilize in difficult situations	10.83	11.00	4.14	–0.17	–0.73	2.00	20.00	0.09	0.005
HIV/AIDS stress scale									
Emotional stress	9.32	9.00	5.55	0.11	–1.28	1.00	20.00	0.94	0.006
Instrumental stress	7.73	7.50	4.57	0.15	–1.07	0.00	16.00	0.96	0.040
Social stress	9.73	9.00	5.62	0.05	–1.03	0.00	20.00	0.96	0.070

For the purpose of comparing the HIV-positive group with the groups of people with diagnosis of substance addiction and those without these diagnoses in terms of stress severity, one-factor analysis of variance was performed. The analysis revealed significant differences between the groups in terms of general stress score and emotional tension. Post-hoc analysis with Tuckey's HDS test showed that healthy people demonstrated higher levels of general stress than people suffering from HIV ($p = 0.025$). Also, healthy people reported higher levels of emotional distress than those with addiction ($p = 0.012$) and those with HIV ($p = 0.030$). In this regard, the differences between addicted persons and HIV-positives were not significant ($p = 0.868$). In terms of other stress dimensions, no differences between the groups were observed (Table 3).

Pearson's correlation (r) analysis was performed to determine the associations between the overall stress severity and instrumental stress, social stress, and emotional stress. The analysis showed positive relations of all dimensions of the HIV/AIDS stress scale with all factors of the perceived stress questionnaire. The correlations ranged from moderate to strong. With higher levels of emotional, instrumental, and social stress, there was higher overall stress, higher emotional tension, and higher external and intra-psychic stress (Table 4).

Table 2. Pearson's correlation between perceived stress and resiliency

	KPS general result	Emotional tension	External stress	Intra-mental stress
Overall level of resiliency				
r-value	–0.59	–0.60	–0.42	–0.64
p-value	< 0.001	< 0.001	< 0.001	< 0.001
Perseverance and determination in action				
r-value	–0.41	–0.47	–0.30	–0.50
p-value	< 0.001	< 0.001	< 0.001	< 0.001
Openness to new experiences and sense of humor				
r-value	–0.46	–0.42	–0.34	–0.47
p-value	< 0.001	< 0.001	< 0.001	< 0.001
Personal competences for coping and tolerance of negative emotions				
r-value	–0.53	–0.54	–0.36	–0.59
p-value	< 0.001	< 0.001	< 0.001	< 0.001
Tolerance for failure and treating life as a challenge				
r-value	–0.56	–0.56	–0.40	–0.60
p-value	< 0.001	< 0.001	< 0.001	< 0.001
Optimistic attitude to life and the ability to mobilize in difficult situations				
r-value	–0.57	–0.58	–0.38	–0.60
p-value	< 0.001	< 0.001	< 0.001	< 0.001

Discussion

The study showed that all dimensions of stress were negatively correlated with factors of resiliency in all study subjects. Nadolska and Sęk [13] have emphasized that resiliency is not only a set of characteristics of a person, but is also an interaction between an individual and environment. That is, people who face a difficult situation are able to cope effec-

Table 4. Relations between HIV/AIDS stress scale and perceived stress questionnaire

Level of stress	Emotional stress	Dimensions of HIV/AIDS stress scale Instrumental stress	Social stress
KPS overall result			
r-value	0.48	0.36	0.35
p-value	< 0.001	0.006	0.008
Emotional tension			
r-value	0.45	0.36	0.36
p-value	0.001	0.007	0.007
External stress			
r-value	0.44	0.36	0.29
p-value	0.001	0.006	0.029
Intra-psychic stress			
r-value	0.50	0.35	0.41
p-value	< 0.001	0.008	0.002

Table 3. Comparison of levels of perceived stress in seropositive people, those with substance addiction diagnosis, and HIV-negative individuals without a diagnosis of addiction

	People with HIV ($n = 56$)		Addicted people ($n = 43$)		Comparison group ($n = 52$)		F	p-value	η^2
	M	SD	M	SD	M	SD			
KPS overall result	74.34	17.33	77.12	16.89	82.96	16.59	3.59	0.030	0.05
KPS general result – lie scale	60.39	18.24	59.33	16.61	65.50	17.35	1.78	0.172	0.02
Emotional tension	21.29	6.40	20.63	6.32	24.46	6.49	5.10	0.007	0.06
External stress	19.46	6.76	19.07	6.61	20.54	6.28	0.66	0.518	0.01
Intra-psychic stress	19.61	6.98	19.63	6.33	20.58	6.51	0.36	0.700	0.00

tively, without straining their resources. These individuals can benefit from difficult situations and learning to use other ways of overcoming difficulties, leading to personal development and acquisition of new resources. Ogińska-Bulik and Juczynski [20] reported that resiliency is the key role in adapting to trauma; people with higher levels of resiliency demonstrate more vital energy, and are more resilient and open to new experiences, which facilitate their coping with difficulties.

In our study, the comparison of the HIV-infected group with the group of individuals with experience of substance dependence, and uninfected and non-addicted people in terms of perceived stress, revealed that people in the group not struggling with infection and addiction demonstrated higher levels of emotional tension compared with HIV-infected patients ($p = 0.030$) and those addicted ($p = 0.012$). This result was found inconsistent with the research hypothesis that people exposed to stigmatization processes may experience higher levels of stress. It should be taken into account that these study groups were largely selected from those receiving therapeutic, psychological, and educational support (people staying at the addiction ward and the care and treatment ward), which may influence greater variation in coping methods used, including the use of social support.

Conclusions

For the purpose of expanding our knowledge of whether the therapeutic process and psycho-education provided to HIV-positive patients and those diagnosed with addiction translate into lower levels of perceived stress, it is worth conducting further research considering these variables. Another hypothesis to explain this phenomenon could be that groups exposed to social stigma are more often experiencing stressful situations and expanding their range of coping strategies. However, this phenomenon needs to be investigated further in larger cohorts and more diverse groups of people.

The study revealed that resiliency is an important personal resource that is significant in the process of coping with stress. For future studies, it may be valuable to investigate level of resiliency in psycho-therapeutic processes and psychological support in patients struggling with the experience of stress.

Disclosures

1. Institutional review board statement: This study was approved by the Research Ethics Committee of the Institute of Psychology, Polish Academy of Sciences (decision of approval issued on December 29, 2021).
2. Assistance with the article: None.
3. Financial support and sponsorship: None.
4. Conflicts of interest: None.

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