

ENVIRONMENTAL STRESS AND THE QUALITY OF LIFE CONNECTED WITH COVID-19 AMONG PEOPLE IN POLAND AND THE NETHERLANDS

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Abstract

Objectives: In addition to physical damage, COVID-19 also has a serious impact on the mental health of society. For many people, this involves the necessity of adapting to new conditions, uncertainty about the future and a tremendous mental burden. It was investigated whether there were any differences between the 2 measures (before and during the COVID-19 pandemic) in the levels of perceived stress, anxiety, life satisfaction and experienced emotions. **Material and Methods:** The study, conducted in Poland and the Netherlands, involved 168 people. The metric, the *Positive and Negative Experience Scale*, the *Perceived Stress Scale*, the and the *Satisfaction With Life Scale* were used. The subjects were divided into 3 groups: non-immigrants living in Poland (N = 50), Dutch citizens (N = 56), and Polish immigrants living in the Netherlands (N = 62). **Results:** The level of stress and negative emotions was higher in the groups of Poles living in Poland and Poles living in the Netherlands than in the group of Dutch citizens. Therefore, access to psychological care should be improved during the pandemic, especially for immigrants, due to the increased risk of developing stress-induced mental disorders. **Conclusions:** In the groups of Poles, there was an increase in perceived stress and trait anxiety during the COVID-19 pandemic. The group of Dutch citizens experienced a reduction in the anxiety level during the COVID-19 pandemic. In the group of Polish immigrants, there was an increase in life satisfaction during the COVID-19 pandemic. *Int J Occup Med Environ Health.* 2021;34(2)

Key words:

quality of life, anxiety, stress, emigration, pandemic, experienced emotions

INTRODUCTION

Chronic stress as a consequence of a pandemic

The World Health Organization (WHO) has declared COVID-19 as a public health emergency of international concern [1]. It has further announced that the COVID-19 outbreak could be described as a “pandemic” as the virus continues to spread around the whole world. In addition to physical damage, COVID-19 also has a serious impact on the mental health of society. The world has changed suddenly, and people have realized that their lives will not be the same after the pandemic. For many people, it is as-

sociated with the necessity of adapting to new conditions, uncertainty about the future and a tremendous psychological burden.

Scientists predict that there may be a significant increase in the incidence of mental disorders in the world, and one of the leading factors will be the social isolation forced by the pandemic. The higher incidence will most likely refer to disorders associated, to a large extent, with chronic stress, anxiety and the state of loneliness; therefore, an increased incidence of anxiety disorders as well as mood disorders, especially depression, can be expected. Another

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problem related to the current situation is the more frequent use of alcohol and other psychoactive substances, in order to cope with the pandemic-induced deterioration of mental health. In the long term, this may lead to an increased incidence of addictions, and especially alcohol dependence. A very disturbing phenomenon is also the increased risk of domestic violence during the forced isolation, which in the current circumstances is more difficult to counteract [2].

The impact of the COVID-19 pandemic on mental health has been of immense interest to international health organizations, national health agencies, and psychiatric and other mental health researchers [1]. Recently published studies have reported an increased rate of psychological distress, traumatization, and suicide in relation to COVID-19 [3]. For example, in an online survey in China, 29% of respondents reported moderate to severe anxiety symptoms, while 17% reported depressive symptoms [4]. Research has also found a negative impact of COVID-19 public health interventions on mental health. For example, the strictly implemented measures of social distancing have led to various negative psychological consequences associated with a prolonged quarantine duration, a fear of contracting the infection, disturbed routine, and a lack of adequate supplies and information about the virus [5]. The post-pandemic phase is even more unsettling due to the increasing rates of post-traumatic stress disorder and other mental health sequelae [6].

Emigration as a stressful situation

Stress, including inadequate coping with it, is the cause of many somatic and mental diseases. It is an inseparable companion of human life. Stress and coping (effective and ineffective) are psychological mechanisms of human health. The consequences of coping with stress include positive and negative emotions. It seems obvious that the body, mind and emotions are closely related. Nowadays, in psychology, stress is understood in 3 ways: as

a reaction, a stimulus and a transaction. Stress is defined as the body's complex response to stimuli that disrupt its homeostasis [7].

The migration of Poles abroad has now become a permanent element of the social reality of this country [8]. Each migration decision-making results from an assessment of profits and costs. A theoretical analysis of the migration situation shows that such elements of migration as separation from one's family, uncertainty about the future, expenses incurred, the need to adapt to new conditions, and communication problems will be assessed by immigrants as costs. They are set against the profits obtained from immigration such as better prospects of employment, high earnings, and a higher standard of living. If the alternative to the current standing is assessed as better, then the person will decide to leave. The assessment of the current and possible standing is made not only before leaving but also before returning from emigration [9].

Each trip abroad involves contacts with a different culture, and people from different cultural circles, whether resulting from relocation, working in multicultural teams or immigration, all being inherently associated with an increased level of stress [10]. Immigration may also cause disturbances in the functioning of a person in his/her family roles, mainly parental roles, whereas among the reasons determining immigration are tension and conflicts in one's family, which may act as a potential pushing factor [11]. Psychological theories describing the experience of change show that, basically, any type of change causes an increased level of stress and a strong emotional response. Denial, resistance and experimentation may appear when a place of work, a place of residence, a partner, or other life circumstances change. After moving to a new country, however, not only the above-mentioned elements (i.e., the place of residence, work or people) change, but also nature, climate and issues related to cultural differences (people's behavior, norms, and values characteristic of a given cultural circle). Experiencing apathy, confusion,

anger, or frustration, but also some other intense emotions, including positive ones, is part of a longer adaptation process called acculturation stress.

The literature on the subject states that every emigrant is at risk of experiencing the above-mentioned emotions, which are a consequence of the changes taking place in the person and the environment, and face-to-face contact with individuals with different cultural roots [12].

Being in a new country, coupled with intercultural interactions and with attempts to establish relationships and fulfill everyday needs, however, also means confronting intercultural differences. As shown by the perspective of acculturation stress, experiencing cultural differences is one of the reasons for experiencing difficult emotions during a stay abroad. The difference, unlike similarity, often causes a negative assessment of a person or an event [12]. Each situation which involves going abroad results in several psychological and sociological consequences. The consequences of departure refer not only to the emigrant, but also to his/her family and relatives. Therefore, a closer look should be taken at these 2 very obvious dimensions of emigration. The problem of emigration is not only a political one, but it also applies to psychological problems of individual people and families, i.e., of those who decide to change their place of residence. Such an extreme change requires adaptation. Countries should, of course, create conditions for an efficient adaptation, but personality predispositions to adaptation are of key importance [13].

Quality of life

It is assumed that life satisfaction is of a cognitive nature, because it results from an assessment of the extent to which achievements in various areas of one's life correspond to personal standards, i.e., recognized norms, goals, and requirements. Increasing the level of satisfaction seems to be particularly difficult because either an increase in achievements or a reduction in standards is needed [14].

As shown by the latest report, which was developed in the Netherlands, Polish immigrants are satisfied with and positive about the Netherlands but do not feel at home there. Poles rate the Netherlands highly compared to other major non-Western groups of immigrants. Although Polish immigrants are very satisfied with the Dutch society, not everyone feels at home: 36% feel at home in the Netherlands, 50% sometimes feel so, and about a tenth of the respondents do not feel well in the Netherlands [15].

Based on the onion theory of happiness, the shallowest layer of well-being, in which the realism of one's assessments is found, is the level of partial satisfaction, i.e., satisfaction with particular areas work and life. This year, the scale of partial grades covered 16 different areas and dimensions of life, covering almost the entire area of interest and activity of an average person. These dimensions can be divided into social (satisfaction with the relationship with one's closest family, friends, spouse, and children), material (satisfaction with one's family situation and housing conditions), environmental (satisfaction with one's situation in the country, place of residence and safety in the place of residence), health (satisfaction with one's health, sexual life and leisure activities) and related to self-esteem (satisfaction with one's achievements, future prospects and education) [16].

MATERIAL AND METHODS

The first study was conducted before the pandemic (in January 2020), with a link to the survey being shared on a social network (Facebook) and the respondents were asked to provide an e-mail address for possible contact. Overall, 209 people took part in the first study. Following the outbreak of the pandemic, people from the first study were contacted and asked if they would like to participate in the second study (which used the same survey set). This time, 168 people applied for the study and were included in the analyzes.

The study was conducted in Poland and the Netherlands, in April 27–May 24, 2020, among citizens of the above coun-

tries, as well as among immigrants residing in the Netherlands. All respondents were adults. The presented study was conducted through direct contact with the respondents (providing a link to the survey) and via the Internet. The survey set was shared on a social network (Facebook). Taking into account the purpose and nature of the research, the respondents were divided into 3 groups according to their place of residence and the country of origin, i.e., Polish immigrants staying in the Netherlands, Dutch citizens, and Polish citizens. The online survey contained information on the purpose of the survey, anonymity and voluntary participation in it. The study was conducted using the questionnaire method. The participants' task was to fill in a survey set consisting of: a record (sex, age, the marital status, the place of residence, education, the professional situation, the duration of immigration, the place of residence, the language level, the reason for immigration, and a possible return to the country), instructions for filling in all tools, as well as 4 questionnaires which are described below.

The Positive and Negative Experience Scale

The *Positive and Negative Experience Scale* (SPIND) is a tool that can be used to calculate the overall affective balance, and it includes subscales of positive and negative feelings. In the *Positive Feelings Subscale* (SPIND-P), the values of 1–5 for 6 items are summed up as follows: positive, good, pleasant, happy, joyful, and satisfied. In the *Negative Feelings Subscale* (SPIND-N), the values of 1–5 for 6 items are summed up as follows: negative, bad, unpleasant, sad, scared, and angry. In the *Affective Balance Subscale* (SPIND-B), the SPIND-P score is subtracted from the SPIND-N score. A respondent with a result of 24 states that he/she rarely or never experiences negative feelings, and very often or always positive feelings [17].

The Perceived Stress Scale

The *Perceived Stress Scale* (PSS-10) is a tool designed to study stress as a perceived reaction, i.e., stress as a state,

without identifying its specific sources. The respondents' statements do not concern specific events, but their assessment as sources of stress. The tool consists of 10 items, by means of which the respondents describe, using a 5-point scale, how often in the previous month they experienced stress due to assessing their life as unpredictable, uncontrollable and overburdening. The phrases are general, they do not refer to specific events, they are intended to take into account chronic stress caused by life circumstances and expectations about the future, as well as specific stressors. The questions relate to assessing the intensity of stress arising from one's life situation over the last month, but they relate to the effectiveness of coping. Responses are rated on a 5-point scale, from "never" to "very often." The tool obtained satisfactory psychometric parameters [8].

The State-Trait Anxiety Inventory

Self-Evaluation Questionnaire

The authors of the Polish version of the *State-Trait Anxiety Inventory Self-Evaluation Questionnaire* (STAI) are Spielberger, Tysarczyk and Wrześniewski. This tool is designed to study anxiety understood as "a relatively constant personality trait" [18]. The questionnaire consists of 2 scales with 20 items: the X-1 scale is used to test state anxiety, and the X-2 scale is used to test trait anxiety. The answers are marked with numbers of 1–4, which the respondent marks according to his/her feelings.

The Satisfaction with Life Scale

The *Satisfaction with Life Scale* (SWLS) examines satisfaction with one's own life, achievements, and the conditions in which a person lives. Based on the SWLS, an overall life satisfaction index can be obtained. This scale consists of 5 statements that relate to the cognitive assessment of life as a whole. The first 4 statements concern the assessment of the present, while the fifth one relates, to a greater extent, to assessing the past and includes a summary of life so far. The overall result is the sum of the answers provided [19].

Purpose of the research

The main objective of the research was to investigate whether there were any significant differences between the 2 measures (before and during the COVID-19 pandemic) of the level of perceived stress, the sense of anxiety, life satisfaction, and experienced emotions. Moreover, it was examined whether the analyzed groups (Polish and Dutch citizens, as well as Polish immigrants living in the Netherlands) would differ in terms of the analyzed variables.

Therefore, the following research problems were formulated:

- P1. Are there any differences between the situations before and during the COVID-19 pandemic in terms of the level of perceived stress?
- P2. Are there any differences between the situations before and during the COVID-19 pandemic in terms of the sense of anxiety?
- P3. Are there any differences between the situations before and during the COVID-19 pandemic in terms of life satisfaction?
- P4. Are there any differences between the situations before and during the COVID-19 pandemic in terms of emotions experienced?
- P5. Do Polish and Dutch citizens, as well as Polish immigrants staying in the Netherlands, differ in terms of the analyzed variables?

Characteristics of the respondents

Overall, 168 people (131 women and 37 men) aged 18–78 participated in the study. The mean age of the respondents was 44.67 years, and its standard deviation 12.54 years. The vast majority of the respondents were married (N = 71, 42.26%), almost one-third of them were in an informal partnership (N = 51, 30.36%), and the remaining were unmarried (N = 46, 27.38%). Detailed characteristics of the respondents are presented in Table 1.

Table 1. Characteristics of the research group (N = 168) in the study on differences between the 2 measures (before and during the COVID-19 pandemic) in the levels of perceived stress, anxiety, life satisfaction and experienced emotions, conducted in Poland and the Netherlands, April 27–May 24, 2020

Variable	Participants (N = 168) [n]
Education	
higher	92
secondary vocational/general	25
post-secondary	35
vocational	11
primary	5
City of residence	
> 500 000 residents	43
200 000–500 000 residents	36
50 000–200 000 residents	39
<50 000 residents	50
Time on emigration	
born in the Netherlands	31
≥30 years old	3
≥20 years old	25
10–19	26
4–9	36
≤3 years	4
<1 year	1
not an immigrant, living in Poland	42
Country	
the Netherlands	118
Poland	50
Mastering the Dutch language	
fluently	58
well	23
communicatively	29
not speaking Dutch	58
Return to Poland	
yes	23
maybe someday, not now	34
no	43
living in Poland	38
not applicable	30

Polish immigrants indicated the following reasons for emigration: earnings, family, study, work, relationships, friends/acquaintances, as well as curiosity about the world. Moreover, when asked what they missed in the foreign country, they indicated: family, friends, Polish cuisine, a sense of freedom, and a full linguistic or cultural understanding.

The subjects were divided into 3 groups:

- non-immigrants living in Poland: 50 people, including 37 women and 13 men, aged 18–63 years ($M \pm SD$ 41.66 \pm 11.5);
- non-immigrants living in the Netherlands: 56 people, including 39 women and 17 men, aged 22–78 ($M \pm SD$ 52.23 \pm 13.39);
- Polish immigrants living in the Netherlands: 62 people, including 55 women and 7 men, aged 18–65 ($M \pm SD$ 40.27 \pm 9.45).

RESULTS

After investigating the normality of the distribution, which turned out to be different from normal, the Wilcoxon test was used to examine the differences between the situations before and during the COVID-19 pandemic in terms of the level of perceived stress. The division into the studied groups (country of origin, immigration) was also taken into account. The results are presented in Table 2.

Referring to the data obtained, it was found that in the group of Poles living in Poland, there was a significant difference in the 2 measures of perceived stress ($p < 0.01$). Among these respondents, the intensity of experienced stress increased during the COVID-19 pandemic.

Based on the results of the studies of the above-mentioned groups, it is possible to notice the difference in the level of perceived stress that manifested itself before and during the pandemic. Polish immigrants living in the Netherlands before the pandemic experienced lower stress than Poles living in Poland, i.e., 26.92 and 30.56, respectively, while

for Dutch citizens it was 23.43. During the pandemic, differences in the level of stress in individual groups can be noticed. In the group of Polish immigrants living in the Netherlands, the level of perceived stress was 30.50, for Poles living in Poland – 30.70, and for Dutch citizens – 24.07. The quoted values relate to the level of perceived stress.

In the next step, the differences between the situations before and during the COVID-19 pandemic in terms of the level of sensitivity were identified. For this purpose, the Wilcoxon test was used. The division into the studied groups (country of origin, emigration) was also taken into account. The results are presented in Table 2.

It was shown that there was a significant difference in the 2 measures of the intensity of state anxiety in the group of Dutch citizens ($p < 0.05$). Among these respondents, the intensity of state anxiety decreased during the COVID-19 pandemic. In the above table, the results of tests carried out in the same groups as those included in Table 2 are presented.

The severity of a fear of the pandemic in the group of Polish immigrants living in the Netherlands was 47.84, in the group of Poles living in Poland – 42.58, and in the group of Dutch citizens – 39.00. The respondents were also examined in terms of the severity of anxiety during the pandemic, the values reaching 47.31 for Polish immigrants living in the Netherlands, 46.86 for Poles living in Poland, and 36.39 for Dutch citizens.

The analysis shows that, in the group of Poles living in Poland, there was a significant difference in the 2 measures of the severity of trait anxiety (significance: $p < 0.05$). Among these respondents, the intensity of trait anxiety increased during the COVID-19 pandemic.

The research shows that the severity of a fear of the pandemic in the group of Polish immigrants living in the Netherlands was 49.63, among Poles living in Poland – 42.68, and among Dutch citizens – 38.18. The respondents were also surveyed during the pandemic and the severity of

Table 2. Differences between the measures of the intensity of variables, taking into account the division into the following groups: immigrants living in the Netherlands (N = 62), Poles living in Poland (N = 50), and Dutch citizens (N = 56), in the study conducted in Poland and the Netherlands, April 27–May 24, 2020

Variable	M±SD	Z	p
Perceived stress			
immigrants in the Netherlands			
before the pandemic	30.56±8.01	0.15	0.88
during the pandemic	30.50±9.38		
Poles living in Poland			
before the pandemic	26.92±5.24	3.15	0.00**
during the pandemic	30.70±7.02		
Dutch citizens			
before the pandemic	23.43±6.51	0.80	0.43
during the pandemic	24.07±6.46		
State anxiety			
immigrants in the Netherlands			
before the pandemic	47.84±15.14	0.04	0.97
during the pandemic	47.31±15.71		
Poles living in Poland			
before the pandemic	42.58±10.14	1.38	0.17
during the pandemic	46.86±12.95		
Dutch citizens			
before the pandemic	39.00±9.97	-2.42	0.02*
during the pandemic	36.39±10.84		
Trait anxiety			
immigrants in the Netherlands			
before the pandemic	49.63±15.07	1.02	0.31
during the pandemic	48.21±13.82		
Poles living in Poland			
before the pandemic	42.68±10.34	2.35	0.02*
during the pandemic	46.04±10.40		
Dutch citizens			
before the pandemic	38.18±9.66	1.83	0.07
during the pandemic	36.80±10.02		
Life satisfaction			
immigrants in the Netherlands			
before the pandemic	19.35±8.06	2.00	0.04*
during the pandemic	20.19±8.14		

Table 2. Differences between the measures of the intensity of variables, taking into account the division into the following groups: immigrants living in the Netherlands (N = 62), Poles living in Poland (N = 50), and Dutch citizens (N = 56), in the study conducted in Poland and the Netherlands, April 27–May 24, 2020 – cont.

Variable	M±SD	Z	p
Life satisfaction – cont.			
Poles living in Poland			
before the pandemic	22.72±4.83	-2.00	0.04*
during the pandemic	21.64±5.23		
Dutch citizens			
before the pandemic	24.75±4.64	0.89	0.37
during the pandemic	24.88±5.30		
Positive feelings			
immigrants in the Netherlands			
before the pandemic	19.35±7.11	1.04	0.30
during the pandemic	18.81±6.66		
Poles living in Poland			
before the pandemic	21.62±4.69	3.72	0.00***
during the pandemic	18.64±5.54		
Dutch citizens			
before the pandemic	22.79±4.37	0.48	0.63
during the pandemic	23.09±4.04		
Negative feelings			
immigrants in the Netherlands			
before the pandemic	17.13±6.49	0.78	0.43
during the pandemic	16.65±6.55		
Poles living in Poland			
before the pandemic	15.48±4.41	0.65	0.52
during the pandemic	16.34±5.90		
Dutch citizens			
before the pandemic	13.77±4.59	1.82	0.07
during the pandemic	12.96±5.33		

*** p < 0.001; ** p < 0.01; * p < 0.05.

Bolded are significant results (p < 0.05).

anxiety among Polish immigrants living in the Netherlands was 48.21, among Poles living in Poland – 46.04, and among Dutch citizens – 36.80.

In the next stage, differences between the situations before and during the COVID-19 pandemic in terms of the level of life satisfaction were analyzed. For this purpose, the Wilcoxon test was used. The division into the studied

groups (by country of origin, emigration) was also taken into account. The results are presented in Table 2.

In the group of Polish immigrants living in the Netherlands, there was a significant difference in the 2 measures of the intensity of life satisfaction (significance: p < 0.05). In this group, the intensity of the sense of the quality of life increased during the COVID-19 pandemic.

Moreover, in the case of Poles living in Poland, there was a significant difference in the 2 measures of life satisfaction (significance: $p < 0.05$). In this group, however, the intensity of life satisfaction decreased during the COVID-19 pandemic.

As regards the above-mentioned groups, the research shows that the pre-pandemic life satisfaction among Polish immigrants living in the Netherlands was 19.35, among Poles living in Poland – 22.72, while among Dutch citizens – 24.75. During the pandemic, life satisfaction among Polish immigrants living in the Netherlands was 20.19, in the group of Poles living in Poland – 21.64, and in the group of Dutch citizens – 24.88.

Then, the differences between the situations before and during the COVID-19 pandemic in terms of the level of experienced emotions were determined. For this purpose, the Wilcoxon test was used. The division into the studied groups (by country of origin, emigration) was also taken into account. The results are presented in Table 2.

In the group of Poles living in Poland, there was a significant difference in the 2 measures of the intensity of positive feelings (significance: $p < 0.001$). Among these respondents, the intensity of positive emotions decreased during the COVID-19 pandemic.

Based on the results of the analysis, the intensity of positive feelings before the pandemic in the group of Polish immigrants living in the Netherlands was 19.35, among Poles living in Poland – 21.62, and among Dutch citizens – 22.79. During the pandemic, the values were as follows: 18.81 for Polish immigrants living in the Netherlands, 18.64 for Poles living in Poland, and 23.09 for Dutch citizens.

In all groups, there were no significant differences in the 2 measures of the intensity of negative feelings (significance: $p > 0.05$).

Based on the results of the analysis, the severity of negative feelings before the pandemic in the group of Polish immigrants living in the Netherlands was 17.13, among Poles living in Poland – 15.48, and among Dutch citi-

Table 3. The Kruskal-Wallis ANOVA – measurements of variables before and during the pandemic, in the study conducted in Poland and the Netherlands, April 27–May 24, 2020

Variable	H	p
Before the pandemic (measurement 1)		
positive feelings	6.32	0.04*
negative feelings	9.72	0.01*
perceived stress	26.78	0.00***
quality of life	17.04	0.00***
state anxiety	11.88	0.00**
trait anxiety	20.57	0.00***
During the pandemic (measurement 2)		
positive feelings	24.43	0.00***
negative feelings	11.77	0.00**
perceived stress	25.11	0.00***
quality of life	14.37	0.00***
state anxiety	21.05	0.00***
trait anxiety	27.57	0.00***

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.
H – 2, N = 168.

zens – 13.77. During the pandemic, the result in the group of Poles living in Poland was 16.34, compared to 12.96 among Dutch citizens.

In addition, in the last stage of the research, it was investigated whether Polish and Dutch citizens, as well as Polish immigrants living in the Netherlands, differed in terms of the analyzed variables. To this end, the Kruskal-Wallis test was performed, with the analyzes concerning both measures: before and during the COVID-19 pandemic. The results are presented in Table 3.

For all variables, there was a significant main effect for belonging to the study group. This means that the country of residence and emigration are important for the intensity of life satisfaction, anxiety, perceived stress, as well as experienced negative and positive feelings (before the pandemic). Before the pandemic, non-immigrant Dutch citizens had the highest levels of positive feelings and life satisfaction. On the other hand, Polish immigrants living

in the Netherlands were characterized by the highest intensity of perceived stress, fear and negative feelings.

For all variables, a significant main effect was noted for belonging to the study group. Therefore, the country of residence and emigration are of significant importance for the intensity of life satisfaction, anxiety, perceived stress, as well as experienced negative and positive feelings (during the pandemic). It was found that, during the pandemic, non-immigrant Dutch citizens had the highest levels of positive feeling and life satisfaction; Poles living in Poland experienced the highest levels of stress, and Polish immigrants living in the Netherlands were characterized by the highest intensity of fear and negative feelings.

DISCUSSION

In the first step, the differences between the situations before and during the COVID-19 pandemic in terms of the level of perceived stress were examined. It turned out that, in the group of Poles living in Poland, the intensity of experienced stress increased during the pandemic.

The world has changed suddenly, and people have realized that their lives will not be the same after the pandemic. For many, it is associated with the necessity to adapt to new conditions, uncertainty about the future and a tremendous psychological burden. Scientists predict that there may be a significant increase in the incidence of mental disorders in the world, and one of the leading factors will be the social isolation forced by pandemic. The higher incidence will most likely refer to disorders associated, to a large extent, with chronic stress, anxiety and the feeling of loneliness [2].

In the next stage, the differences between the situations before and during the COVID-19 pandemic in terms of the level of anxiety were identified. It was shown that in the group of non-immigrant Dutch citizens, the intensity of state anxiety decreased during the pandemic while in the group of Poles living in Poland, the intensity of trait anxiety increased during the ongoing pandemic.

This result appears very interesting as it shows some cultural differences between 2 European countries. In addition, the direction of the differences between the groups and the opposite intensity of anxiety in both groups may result from the government's approach to citizens during the pandemic and crisis management in these countries. The increased level of anxiety among Poles living in Poland may result from more rigid restrictions (e.g., wearing masks, introducing various bans, or high fines for non-compliance with the rules). On the other hand, the Dutch government has taken an approach that is more supportive for citizens, based on positive reinforcement (e.g., the police praising citizens for keeping a distance of 1.5 m, and fewer bans).

Moreover, the sense of anxiety may be related to the efficiency and effectiveness of healthcare. Due to the outbreak of the pandemic, all planned visits to specialists in Poland were suspended, likely resulting in longer waiting times (e.g., some citizens have already waited for visits for over a year). Oppositely, Dutch healthcare is much better organized and it functions efficiently even in this difficult time. Some confirmation of this hypothesis could be the value of the Human Development Index, or the Early Human Capability Index, which are higher in the Netherlands than in Poland. Taking into account the data from 2018, the Netherlands was ranked second while Poland only 32nd [19].

Another analysis concerned the differences between the situation before and during the COVID-19 pandemic in terms of the level of life satisfaction. In the group of Polish immigrants living in the Netherlands, the intensity of the sense of the quality of life increased during the pandemic. However, in the case of Poles living in Poland, the level of life satisfaction decreased.

Then, the differences between the situations before and during the COVID-19 pandemic in terms of the level of experienced emotions were determined. In the group of Poles living in Poland, the intensity of positive emotions decreased during the pandemic.

The above surprising results can also be argued by the functioning of healthcare, as well as the attitude of the authorities towards citizens. These results show how different the mentality in both countries is.

Additionally, in the last stage, it was investigated whether Polish and Dutch citizens, as well as Polish immigrants living in the Netherlands, differed in terms of the analyzed variables. It turns out that 3 months earlier (before the pandemic), non-immigrant Dutch citizens had the highest levels of positive feelings and life satisfaction. On the other hand, Polish immigrants living in the Netherlands were characterized by the highest intensity of perceived stress, fear and negative feelings. It was also found that during the pandemic, it was Dutch citizens who had the highest levels of positive feelings and satisfaction with life while Poles living in Poland experienced the highest levels of stress.

The levels of stress and negative emotions are higher in groups of Poles living in Poland and in the Netherlands than in the group of Dutch citizens. Therefore, access to psychological care should be improved during the pandemic, especially for immigrants, due to the increased risk of developing stress-induced mental disorders.

The analysis shows that Dutch respondents were 10 years older than both groups of Poles (Poles living in Poland and in the Netherlands). The age difference may have affected the obtained results, because age is significantly related to the analyzed variables. Previous research has shown that age is systematically related to the level of life satisfaction, with older participants being more satisfied with their lives than their younger counterparts [20]. Therefore, it is worth emphasizing that the age differences between the respondents may have exerted an impact on the obtained results, and this fact should be taken into account in similar future studies.

Furthermore, attention should be paid to the fact that the weakness of this study is the sampling method which is important when it comes to the probable selection bias. Another weakness of this study is its size; the research group was small and there were also some differences in

the number of women and men in each group, with women being predominant. These aspects may have had a significant influence on the obtained results and should be taken into account in future studies.

CONCLUSIONS

Before the outbreak of the pandemic, it was Dutch citizens who had the highest levels of positive feelings and life satisfaction. On the other hand, Polish immigrants living in the Netherlands were characterized by the highest intensity of perceived stress, fear and negative feelings.

In the group of Polish living immigrants in the Netherlands, there was a significant difference in the 2 measures of life satisfaction, and its intensity increased during the COVID-19 pandemic. In the case of Poles living in Poland, there was a significant difference in the 2 measures of life satisfaction and positive feelings, and their intensity decreased during the COVID-19 pandemic. This group also exhibited a significant difference in the 2 measures of perceived stress and trait anxiety, and their intensity increased during the COVID-19 pandemic.

There was a significant difference in the 2 measures of state anxiety in the group of non-immigrant Dutch citizens, and its intensity decreased during the COVID-19 pandemic.

During the pandemic, it has been Dutch citizens who exhibit the highest levels of positive feeling and satisfaction with life. Poles living in Poland currently experience the highest levels of stress, while Polish immigrants living in the Netherlands are characterized by the highest intensity of fear and negative feelings.

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