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PSYCHOLOGICAL PROTECTIVE FACTORS AND INDIVIDUAL FUNCTIONING DURING THE COVID-19 PANDEMIC

ABSTRACT

Background: This article summarizes considerations regarding physical and mental health and optimism during the Covid-19 pandemic. The research goal is to answer questions about coping with emotions, optimism, and the general attitude to the situation related to the emergence of an epidemic that threatens the health and life of the population.

Material and methods: The tools used in the study were the CECS questionnaire measuring the expression of emotions in the Polish adaptation of Juczyński and the LOT-R questionnaire of optimism in the Polish adaptation of Poprawa and Juczyński, as well as the original questionnaire on key spheres of functioning in a pandemic.

Results: The analysis of the obtained results indicates the importance of psychological resources, such as optimism and expression of emotions, for functioning during the epidemic. The study was conducted in the first quarter of 2020 on a group of 302 people aged 13 to 56 ($M = 24,4$, $SD = 5,1$). It turns out that knowledge about Covid-19 positively correlates with the level of optimism ($r_s = 0,131$; $p = 0,01$). Greater optimism indicates greater control over a situation, such as quarantine. However, the possessed information about Covid-19 is not related to the expression of emotions – anger ($r_s = -0,004$; $p = 0,471$), depression ($r_s = -0,009$; $p = 0,438$) and anxiety ($r_s = 0,065$; $p = 0,13$).

Conclusions: The key practical implications that make up the preventive dimension of this issue were presented. Important issues during a pandemic are informing about the difficulties and challenges related to a stressful situation, working on improving interpersonal contacts, as well as cooperation with a psychologist, psychiatrist or psychotherapist. In summary, it may be crucial to plan activities aimed at spreading knowledge and controlling emotions in a personal and professional aspect.

STRESZCZENIE

Cel: Niniejszy artykuł podsumowuje rozważania dotyczące zdrowia fizycznego i psychicznego oraz optymizmu podczas trwania pandemii Covid-19. Celem badawczym jest uzyskanie odpowiedzi na pytania dotyczące radzenia sobie z emocjami, optymizmu, a także ogólnego stosunku do sytuacji związanej z pojawieniem się epidemii zagrażającej zdrowiu i życiu populacji.

Materiał i metody: Narzędziami wykorzystanymi w badaniu był kwestionariusz CECS mierzący ekspresję emocji w polskiej adaptacji Juczyńskiego oraz Kwestionariusz optymizmu LOT-R w polskiej adaptacji Poprawy i Juczyńskiego oraz autorski kwestionariusz dotyczący kluczowych sfer funkcjonowania w pandemii.

Wyniki: Analiza uzyskanych wyników wskazuje na znaczenie zasobów psychologicznych, takich jak optymizm i wyrażanie emocji, dla funkcjonowania w czasie epidemii. Badanie przeprowadzono w I kwartale 2020 r. na grupie 302 osób w wieku od 13 do 56 lat ($M=24,4$, $SD=5,1$). Okazuje się, że wiedza o Covid-19 pozytywnie koreluje z poziomem optymizmu ($r_s = 0,131$; $p=0,01$). Większy optymizm wskazuje na większą kontrolę nad sytuacją jak np. kwarantanna. Natomiast posiadane informacje o Covid-19 nie są związane z wyrażaniem emocji – złości ($r_s = -0,004$; $p=0,471$), depresji ($r_s = -0,009$; $p=0,438$) i lęku ($r_s = 0,065$; $p=0,13$).

Wnioski: Przedstawiono kluczowe implikacje praktyczne, które składają się na profilaktyczny wymiar tego zagadnienia. Ważnymi zagadnieniami w okresie trwania

pandemii jest informowanie o trudnościach i wyzwaniach związanych z sytuacją stresującą, praca nad poprawą kontaktów interpersonalnych, a także współpraca z psychologiem, psychiatrą czy psychoterapeutą. Podsumowując kluczowe może być zaplanowanie działań mających na celu szerzenie wiedzy i kontrolowaniu emocji w aspekcie osobistym i zawodowym.

KEYWORD: *physical health, mental health, optimism mental health, pandemic, Covid-19, population*

SŁOWA KLUCZOWE: *zdrowie fizyczne, zdrowie psychiczne, optymizm zdrowie psychiczne, pandemia, Covid-19, populacja*

1. THEORETICAL INTRODUCTION

On the 4th March 2020, the first patient with Covid-19 was diagnosed in Poland^[1]. An important aspect in reducing the spread of the virus is hygiene, quarantine, distance and social responsibility. Inability to leave the house, various types of limitations,[™] burdens, and the lack of social contacts have a negative impact on the functioning of individuals. Among other things, there has been an increase in domestic violence^[11]. Psychological consequences of the global lockdown: including domestic violence can be year of unique experience.

Therefore, today it is worth looking for correlates of good functioning (protective factors) in a pandemic, so as to design aid and preventive measures. The development of children, adolescents or the whole family takes place not only at home, but in broader developmental contexts (Bronfenbrenner, 1979).

The time of the Covid-19 epidemic creates difficulties in the functioning of individual environmental systems (Usher et al., 2020; Sheffler, Joiner, Sachs-Ericsson, 2021).

Some subsystems have even been turned off (e.g. school. Public offices, clubs), which should be extremely important when analyzing the development of an individual. The authors are beginning to notice these difficulties (Cheng et al., 2020; Scheier, Carver, 1987).

The state of social group panic can lead to many negative social behaviors, such as group polarization or crowd psychosis (Aronson, Wilson, Akert, 2010).

The people's emotions are quite natural because they are related to the most important, basic human needs, such as physiological and safety (Maslow, 2019).

In an emergency situation, in the loss of security and stress feeling, people react in different ways, which is related to the psychology of individual differences. However, there are psychological variables that are related to effective coping with stress, they are called psychological resources (Hobfoll, 2002).

One of them is emotional intelligence (Prime, Wade, Browne, 2020). The key seems to be the possibility of coping with difficult emotions and circumstances that a negative influence on the functioning of the unit, which is also related to the fundamental individual differences, seems to be anger, anxiety and so basic emotions highlighted today in a classic tool of emotional control (Por, et al., 2011; Seligman, 2006; White, Martin, Adamsons, 2018). It also seems that the level of optimism is important for attitudes during the pandemic (Kuper-Smith, 2020).

One of the personality traits that can positively affect the functioning of a person regardless of the situation in which he is found is optimism. Seligman's Theory of Optimism (2002, 2006) is one of the best known in the world. The author based it on the theory of attribution and causes of events. The components of optimism he distinguished are constancy, range and personalization. They refer to the search for external and internal constants and variables, specific and global causes of success and failure. Carver and Scheier (2003) created one of the most popular theories of optimism – dispositional optimism. They assumed that it is a permanent personal trait, independent of the life situation. Protective factors such as the level of coping with emotions (anger, depression) and the level of optimism may be crucial during acute stress such as a pandemic outbreak and during chronic stress resulting from a prolonged epidemic (Carver, Scheier, 2003).

Moreover is not surprising that the first studies on coping with stress appear in connection with the global Covid-19 epidemic. Research concerns, for example, PTSD symptoms (Bo et al., 2021).

In addition, there are instructions for the prevention of mental health at the time of the epidemic issued by the World Health Organization^[111].

2. OBJECTIVES OWN RESEARCH

Undoubtedly important from the point of view of this study is to determine the pandemic situation perceived by Polish Society. Significant, to determine the factors that may be related to the situation of the epidemic.

The attention was paid to sociological factors such as: place of residence, age, gender, education and others. One cannot forget about psychological issues related to optimism, expression of emotions and other significant aspects that may be related to the conduct of preventive measures in this area. In first situation, that optimism can be a buffer, in other it can lead to irrational beliefs, which may suggest the lack of a real threat in the multi-faceted dimension (Kuper-Smith, 2020). What is more, the knowledge of Poles about Covid-19 positively correlates with the level of optimism (Hypothesis 1).

The greater the knowledge on a given topic, the lower the level of stereotypical thinking, therefore the greater the knowledge should protect against negative emotions, therefore it was assumed that the greater the knowledge of Poles in case of Covid-19 the lower the level of anger, anxiety and depression (Hypothesis 2). The level of optimism should also be negatively related to the level of fear of Covid-19 (the higher the level of optimism, the lower the anxiety) (Hypothesis 3), and the level of fear of Covid-19 should be associated with a higher level anger, anxiety and depression (Hypothesis 4).

Several follow-up studies are also planned. An important issue in an attempt is to take on this analysis may become gender differences. This may be a crucial importance in the difference of reactions of both women and men in a specific situation, especially a crisis. Thus, different reactions of women and men may be associated with stereotypes (Aronson, Wilson, Akert, 2010). It can also be a significant age. On this particular virus older people are mainly exposed on the risk from other co-morbidities. Then the threat to the health and life of people in late adulthood becomes even more serious (Peterson, Bossio, 1991).

The topics related to various are related to the pandemic and worth exploring due to the implicational dimension of these considerations. The authors decided to study design and implement them during the period attributable to the strictest restrictions that existed in Poland.

3. OWN RESEARCH METHOD

To answer the research studies on emotional control, the CECS questionnaire was used. It is a method developed by Watson and Greer (White et al., 2018) in the Polish adaptation of Juczyński (2008). CECS (*Courtauld Emotional Control Scale*) consists of three subscales, each of which contains seven statements concerning the way of disclosing anger, depression and anxiety in difficult situations. It is designed to test healthy and sick people. The tested group, responds to the statements on the scale 1-4, where 1 means “almost never” and 4 – “almost always”. The questionnaire contains 21 statements that allow you to obtain an overall score (*Emotion Control*). By summing up the results of all three subscales, the emotional control index is determined, which represents the subjective belief of an individual as to the ability to control one’s relationships in a situation of experiencing specific emotions. The Polish version is characterized by high accuracy and reliability (Cronbach’s alpha for the anger control scale was 0,8, for the depression control scale was 0,77, for the anxiety control scale was 0,78, and for the emotion control scale was 0,87).

The LOT-R questionnaire was also used, the authors of which are Michael F. Scheier, Charles S. Carver and Michael W. Bridges. *The Life Orientation Test* (Seligman, 2002) in the Polish adaptation of Poprawa and Juczyński (2001) allows presentation on orientation in life, expressing generalized beliefs about positive or negative expectations (Juczyński, 2001). It consists of 10 items, 6 of which are diagnostic, and the other four serve as buffer items. Originally, its goal was to establish the links between dispositional optimism and personality variables such as self-esteem, anxiety, neuroticism, and coping strategies. The tool is highly valid and has alpha = 0,76 reliability. Stability as measured by test-retest was 0.43 after 6 weeks. The theoretical validity of LOT-R was assessed by analyzing the relationship between optimism and other variables that coexist with: high self-esteem, tendency to experience positive emotions, concentration in stressful situations on the task rather than emotions. LOT-R negatively correlates with the depression control (-0,54) and anger (-0,51) of the CECS *Emotion Control Scale*.

In order to answer the basic research questions regarding the knowledge and feelings of Poles about the pandemic, an original survey was also prepared. The most important, according to respondents is competent aspects related to a crisis situation, which is a pandemic. Two scales were specified in the survey. The first was knowledge of Covid-19, including aspects such as: mastery of how to behave in this particular situation, knowledge of interventions, and compliance with the rules. The scales consisted of questions 1, 4, 8, 14 (*It is important to follow incoming COVID-19 information; It is important to maintain precautionary measures such as limiting interpersonal contacts, remote working, etc.; I try to follow the recommended precautions; I know, where to look for psychological help if I need/in the current situation*)

However, the remaining items of the survey concerned the perceptible fear of the SARS-CoV-2 virus and COVID-19 disease. They are related to the emotions felt during the pandemic (*My mental health has deteriorated in recent weeks; I feel that I am neglecting my contacts with friends; Due to the pandemic situation, I cannot meet people I care about*).

STUDY GROUP

The study was conducted in March and June 2020 in Poland, 302 people aged 13^[IV] to 56 ($M = 24,4$, $SD = 5,1$) were surveyed. 151 women and 151 men participated in the study. 206 urban residents ($n = 68,2\%$) and 96 rural residents ($n = 31,8\%$). The respondents were educated as follows: primary 11 ($n = 3,6\%$), secondary 30 ($n = 9,9\%$), higher 67 ($n = 22,2\%$), bachelor 70 ($n = 23,2\%$), 118 during studies ($n = 39,1\%$) and 6 people during doctoral studies or higher ($n = 2\%$). The respondents assessed their material conditions: very bad 4 ($n = 1,3\%$), bad 14 ($n = 4,6\%$), average 155 ($n = 51,3\%$), good 103 ($n = 34,1\%$) very good 26 ($n = 8,6\%$). They rate family relations as very bad 9 ($n = 3\%$) bad 18 ($n = 6\%$), average 84 ($n = 27,8\%$), good 129 ($n = 42,7\%$), very good 62 ($n = 20,5\%$). The health status was assessed by the participants as: very bad 5 ($n = 1,7\%$), bad 15 ($n = 5\%$), average 76 ($n = 25,2\%$) good 138 ($n = 45,7\%$) very good 68 ($n = 22,5\%$). Mental health as: very bad 15 ($n = 5\%$), bad 24 ($n = 7,9\%$), average 110 ($n = 36,4\%$), good 110 ($n = 36,4\%$), very good 43 ($n = 14,2\%$).

On the question of health in recent times (already in epidemic) respondents indicate that in recent times deteriorated 147 ($n = 48,7\%$), has not changed

101 ($n = 33,4\%$) or 54 hard to say ($n = 17,9\%$). It is a statistically significant change ($\text{Chi}^2=42,96$; $p<0,001$). Recently, in 175 people (57,9%) the mental health deteriorated significantly, in 85 respondents there was no change ($n = 28,1\%$), and 42 ($n = 13,9\%$) it is difficult to assess. It is also a statistically significant difference ($\text{Chi}^2=91,52$; $p<0,001$).

The surveyed of 243 people ($n = 80,5\%$) follow information about Covid on an ongoing basis, and 59 ($n = 19,5\%$) do not follow the information. Thus, significantly more people are looking for information about Covid – 19 ($\text{Chi}^2=112,106$; $p<0,001$). The vast majority also have knowledge about the places of support service in connection with Covid-19. As many as 237 respondents answered: yes ($n = 78,5\%$); only 27 people ($n = 8,9\%$), and hard to say – 38 people ($n = 12,6\%$). This difference is statistically significant ($\text{Chi}^2=277,56$; $p<0,001$). A statistically significant majority of respondents noticed the direct impact of the pandemic on everyday functioning: answer – yes 200 ($n = 66,2\%$), answer – no 29 ($n = 9,6\%$), maybe 50 ($n = 16,6\%$), I don't know 23 ($n = 7,6\%$) ($\text{Chi}^2=279,06$; $p<0,001$).

ANALYSIS OF OWN RESEARCH RESULTS

Knowledge about Covid-19 positively correlates with the level of optimism ($r_s=0,131$; $p=0,01$). The higher optimism, indicate more control over the situation like quarantine. The result allows for a positive verification of hypothesis 1.

Knowledge about Covid-19 is not related to the expression of emotions – anger ($r_s = - 0,004$; $p=0,471$), depression ($r_s = - 0,009$; $p=0,438$) and anxiety ($r_s=0,065$; $p=0,13$). The second hypothesis was rejected.

Tab. 1. Relationship of knowledge about Covid-19 with the level of individual variables.

	r_s	P
Optimism	0,131	0,01
Anger	- 0,004	0,471
Depression	- 0,009	0,438
Anxiety	0,065	0,13

Pandemic anxiety negatively correlates with optimism ($r_s = -0,148; p=0,005$), and positively with anger ($r_s=0,165; p=0,002$), depression ($r_s=0,089; p=0,06$) and anxiety ($r_s=0,092; p=0,05$). The third and fourth hypotheses have been positively verified.

Tab. 2. *The relationship between the fear of Covid-19 and the level of individual variables.*

	r_s	P
Optimism	- 0,148	0,005
Anger	0,165	0,002
Depression	0,089	0,06
Anxiety	0,092	0,05

Additional statistical analyzes were also performed. Women are more knowledgeable about the pandemic issue, compared to the Men about the virus causing the disease ($t=3,7; p<0,001$). Comparison of gender shows that women's level of optimism is different than men's, anger, depression and anxiety and the level of fear Covid – 19 ($p>0,05$).

Age negatively correlates with depression ($r_s = -0,125; p=0,02$) and at the level of the statistical tendency there is a positive relationship between age and the fear of Covid-19 ($r_s = 0,087; p=0,078$). Than people are older, the greater is the anxiety associated with the pandemic situation. The state of physical and mental health positively correlates with optimism ($r_s = 0,259; p<0,001$) and negatively with fear of Covid-19 ($r_s = -0,260; p<0,001$).

The respondents living in the countryside have a higher level of optimism (Mann Whitney Test $Z=-2,746; p=0,006$). On the other hand, people living in the city experienced a higher level of fear of Covid-19 than those living in the countryside (Mann Whitney Test $Z=-2,109; p=0,035$). The current state of physical health related to the pandemic situation is related to the fear of Covid 19 ($H=34,06; p<0,001$) and the level of optimism ($H=22,02; p<0,001$). People without subjective changes in their physical health have a higher level of optimism and a lower level of Covid-19 fear. There were no significant differences in the knowledge of Covid-19, anger, depression and anxiety ($p>0,05$). The current state of mental health is related to the level of optimism ($H=34,13;$

$p < 0,001$), anger ($H=10,28$; $p=0,006$), depression ($H=10,89$; $p=0,004$) anxiety ($H=11,91$; $p=0,003$) knowledge of Covid-19 ($H=10,17$; $p=0,006$) and fear of Covid-19 ($H=39,66$; $p < 0,001$).

DISCUSSION OF THE RESULTS OF RESEARCH

The results of the conducted research indicates the need for preventive measures and the need to advertise behaviors related to maintaining mental health during an epidemic. It is especially needed for example by publications issued by international organizations dealing with aspects related to mental health. These include items such as newsletters or guides promoted by the World Health Organization.^[v]

Additionally, some psychological resources are essential for the proper functioning of the individual as well as social. These include aspects such as emotional intelligence or empathy for others. Both key variables for this study – the level of knowledge about Covid-19 and the level of fear of Covid-19 correlate with the level of optimism. The greater optimism, correlates with the greater the knowledge and composure associated with a crisis situation, and the lower the level of anxiety. Research and theories that indicate the importance of optimism in normal reality, pointing to a correlation with well-being, professional career, social functioning or health (Carver, Scheier, 2014; Carver, Scheier, Segerstrom, 2010). These elements also apply in a pandemic situation. This is a key conclusion, not only for the pandemic situation, but also for the future of crisis intervention activities. Actions aimed at strengthening life optimism and general mental resilience should be obligatory initiatives for children and adolescents. This fact is marked in the description of research on mental resilience or in the postulates concerning educational leadership (Bush, Bell, Middlewood, 2019; Masten, 2018).

Moreover, everyday education of children and youth should be one of the main preventive recommendations not only of international organizations, but also of activities in every school, workplace or in the immediate environment.

Importantly, the Covid-19 pandemic is a big challenge for families (Cheng et al., 2020). Strengthening different age groups is also important from a systemic perspective, the functioning of adults, parents and grandparents family relations quality, implementation of tasks and development

of children. Adopting the correct attitudes brings particular importance in lockdown, when the possibilities of active and creative leisure are limited. Moreover, the level of optimism or dealing with emotions can be extremely important. Building child's resources should also help reduce negative emotions. In this study, the fear of Covid-19 negatively correlates with optimism and positively correlates with the emotions of anger, anxiety and depression.

It turns out that the lack of adequate individual resources, proven possibilities of counteracting the negative aspects of everyday functioning may have a negative reflection in the experience of a crisis situation by people of all ages. What is more, women have greater knowledge about Covid-19, which may indicate a social role (Aronson, Wilson, Akert, 2010). This should not come as a surprise in the context of developmental and family psychology, where women, mothers – evolutionarily care for the family system (Williams, Williams, 2012), so it seems quite natural to be more interested in current affairs, health, safety, i.e. taking care of basic needs of families, children from Maslow's hierarchy (Maslow, 2019).

This interest is greater in the city. Older people are characterized by a lower level of expression of depressive emotions but they have a greater fear of Covid-19, which is natural because the epidemic mainly affects the elderly, while people are more afraid of phenomena and situations that are closer to them cognitively, emotionally and socially (Aronson, Wilson, Akert, 2010). Therefore, more than always, people should take care of the elderly, not only physically, help with the current needs, but also in terms of mental health. In this depressive time, it should be reminded that the elderly people has higher suicidological risk (Scheier, Carver, 1987).

Another group that should be cared more are people who suffer from various types of health ailments, both physical and mental. It seems obvious from the perspective of the features related to the occurrence of a situation that meets the crisis criteria. People who may require support in this difficult time in many respects are people staying in health facilities, hospices, etc. In addition to physical fear, the study shows differences between groups regarding each of the main variables analyzed: optimism, anger, anxiety, depression, and knowledge about Covid-19, or the fear of Covid-19.

This article describes aspects related to quantitative research. The series of articles on this study will also be expanded to include qualitative results, the analysis of which provides specific data, e.g. on crisis prevention. It found that in-depth qualitative interviews could reveal even greater difficulties.

CONCLUSIONS

Presented research results allows to conclude and interpret the relationships between emotional control, optimism and other factors, which in an epidemic situation has a large impact on social functioning, including health care and aid units (Ansumana et al., 2017; McMahan, 2016). Moreover, unexpressed emotions, especially anger, may be associated with deterioration of health and may also contribute to the development of certain diseases (Witter, 2017). It has also been found that holding back anger, as opposed to expressing it, is positively correlated with an increase in heart rate and blood pressure reactivity, coronary artery disease and hypertension (Baumeister, Heatherton, Tice, 2000). The tendency to suppress emotions turns out to be a relatively constant feature of highly socialized people. Additionally, those who rigidly adhere to the applicable social norms. Moreover, unexpressed emotions, which are repeated and persistent for a long time, becomes the basis of many neurotic disorders and psychosomatic diseases (Everly, Rosenfeld, 1992).

In the psychological opinion, expressing emotions, including anger, anger and sadness, is very important. Successive disclosure of feelings, thoughts and experiences may lead to better therapeutic effects in the long term.

Taking into account the above-presented results of own research, can propose general conclusions useful in psychological practice. It should include:

- strengthen the strengths of customers and their sense of optimism, which is an important protective factor.
- organize meetings, talks in order to talk about emotions, in order to make people aware that it is an important and valuable aspect in a multi-faceted understanding.

- plan activities aimed at promoting knowledge about the control of emotions and the importance of this issue in the development of an individual in various life situations, both personal and professional.
- equip people professionally working with people in crisis with competences related to providing support to beneficiaries, family or others.
- despite the general principles of assistance, activities should be tailored to the needs of individual individuals and groups, the own study noticed differences in the level of the analyzed variables depending on gender, age or health condition.

CONFLICT OF INTEREST

None to declare

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ENDNOTES

- [^I] Coronavirus civic and local government service, <https://www.nist.gov.pl/serwis-obywatelsko-samorzadowy/koronawirus—sars-cov-2—w—polsce—dzialania-rzadu-rp-w-walce-z-epidemia,2057.html?mobile=1> [cited 27 January 2022].
- [^{II}] Unicef Poland, Information on domestic violence during the pandemic, <https://www.unicef.pl/Centrum-prasowe/Informacje-prasowe/UNICEF-Polska-alarmuje-Rosnie-skala-zjawiska-przemocy-domowej-wobec-dzieci> [cited 27 January 2022].
- [^{III}] Mental Health, WHO, <https://apps.who.int/iris/bitstream/handle/10665/331490/WHO-2019-nCoV-MentalHealth-2020.1-eng.pdf> [cited 27 January 2022].
- [^{IV}] In the case of teenagers, the consent of their parents or legal guardians has been granted.
- [^V] World Health Organization, <https://apps.who.int/iris/bitstream/handle/10665/331490/WHO-2019-nCoV-MentalHealth-2020.1-eng.pdf> [cited 27 June 2021].