



# The meaning of resilience in adulthood

## Znaczenie odporności psychicznej w okresie dorosłości<sup>1</sup>

<https://doi.org/10.34766/fetr.v3i51.1089>

Agnieszka Franczok-Kuczmowska<sup>a</sup>

<sup>a</sup> *Agnieszka Franczok-Kuczmowska, PhD, <https://orcid.org/0000-0002-9426-5514>,  
Institute of Psychology, Pedagogical University of Cracow*

**Abstract:** This article presents an extensive description of resilience in adulthood in the modern world. Considering difficulties with defining resilience, the study discusses differences and similarities between the concepts of resilience and resiliency. I take into account broad definition of resilience referring to many scientific perspectives and conclude that resilience should be perceived as a dynamic process. The meta-analysis of the relations between the factors indicates the presence of many direct and indirect components related to resilience. However, only some of them are supported by scientific evidence. The article reviews publications on the importance of selected factors of resilience, especially in the context of adulthood and challenges of today's world. I accentuate the topic of mental health during the spread of SARS-CoV-2 virus and the consequences of the COVID pandemic in the context of worldwide population. The social-economic crisis accompanied by a high level of anxiety highlights the demand for resources that will serve as protective factors. The ongoing war in Ukraine also needs to be taken into consideration as it affects mental health of refugees, witnesses of the war as well as individuals who provide selfless help. This article explores the importance of resilience in adulthood in the context of health pointing to a negative relationship with negative mental health indicators, a positive relationship with positive mental health indicators, and a relationship between resilience and personality traits. What is more, I discuss the ability of emotional disengagement, patterns of physiological reactions and compare resilience to the somatic immune system. In the analysis, I draw on experimental studies of the relationship between immunity and cognitive functions to indicate the cognitive component, namely the cognitive resilience.

**Keywords:** resilience, resiliency, adulthood, global crisis, COVID-19 pandemic, mental health, cognitive resilience

**Abstrakt:** Niniejszy artykuł ma na celu przedstawienie szczegółowej charakterystyki odporności psychicznej w populacji dorosłych w dobie współczesności. Biorąc pod uwagę trudności definicyjne odporności psychicznej, uwzględnione zostały różnice i podobieństwa pomiędzy konceptami odporności [*resilience*] i przężności [*resiliency*] psychicznej. W artykule omówiona została szeroka definicja odporności, odwołująca się do wielu perspektyw naukowych, uwzględniająca wnioski o konceptualizacji odporności jako dynamicznego procesu. Metaanaliza powiązań czynników wskazuje na występowanie wielu czynników pośrednio i bezpośrednio związanych z konceptem odporności psychicznej, jednak tylko część odznacza się silnymi dowodami naukowymi. W artykule dokonano przeglądu piśmiennictwa z zakresu znaczenia wybranych czynników odporności psychicznej, zwłaszcza w kontekście dorosłości i wyzwań współczesności. W prezentowanych rozważaniach na szczególną uwagę zasługuje wątek zdrowia psychicznego w okresie rozpowszechnienia wirusa SARS-CoV-2, oraz następstw globalnej pandemii COVID w kontekście populacyjnym. Doświadczenie społecznego kryzysu gospodarczo-ekonomicznego, jak również towarzyszący społeczeństwu lęk, skłania do dalszego poszukiwania zasobów, które będą pełniły funkcję czynników ochronnych. Nie bez znaczenia pozostaje również aktualnie tocząca się wojna w Ukrainie, która odciska piętno na codziennym funkcjonowaniu psychicznym zarówno uchodźców, świadków, jak i jednostek niosących bezinteresowną pomoc. Artykuł ma celu omówienie znaczenia odporności psychicznej w dorosłości w kontekście zdrowia, wskazując na ujemny związek z negatywnymi wskaźnikami zdrowia psychicznego, dodatni związek z pozytywnymi wskaźnikami zdrowia psychicznego, czy powiązania odporności z cechami osobowości. W rozważaniach nad znaczeniem odporności omówiona została umiejętność odangażowywania emocjonalnego, wzorce reakcji fizjologicznych oraz porównanie odporności psychicznej do somatycznego układu odpornościowego. Celem niniejszego artykułu jest również wskazanie na poznawczą komponentę, mianowicie na odporność poznawczą. W tym zakresie omówiony został związek odporności z funkcjami poznawczymi na podstawie badań eksperymentalnych.

**Słowa kluczowe:** odporność psychiczna, przężność psychiczna, dorosłość, globalny kryzys, pandemia COVID-19, zdrowie psychiczne, odporność poznawcza

## Introduction

For several decades, mental health has been understood not only as the absence of pathology but more importantly as a broadly defined well-being (WHO,

1948, 2005; Heszen & Sęk, 2007). Resilience is a positive element associated with mental health of an individual (Zautra et al., 2010) as well as with its

<sup>1</sup> Artykuł w języku polskim: <https://www.stowarzyszeniefidesetratio.pl/fer/2022-3-Francz.pdf>

resource (Czabała & Kluczyńska, 2015). It works as a buffer and has a preventive effect in difficult situations that exceed the average level of coping. Resilience incorporates factors and mechanisms that determine the level of protection against unfavorable fate and also promotes health and reduces harm in aversive conditions (Davydov et al., 2010).

Resilience has many definitions (Liu et al., 2020). It is a complex concept, multidimensional and dynamic in its nature (Southwick, Charney, 2012; Rutter, 2012). It can be understood as a dispositional property or a relatively fixed resource of an individual to cope with unfavorable life events [resiliency, ego-resiliency, personal resilience, psychological resilience] (Block & Block, 1980; Block & Kremen, 1996; Fredrickson, 2001; Klohnen, 1996; Uchnast, 1998, among others) inherently related to neurochemical pathways (Charney, 2004; Feder et al., 2011). Resilience can also be perceived as a process of overcoming negative life events [resilience, mental toughness] (Luthar et al., 2000; Waller, 2001) as well as a developmental outcome (Sikorska, 2016).

## 1. Problems with definition

Despite many proposals to separate terms *resilience* and *resiliency*, due to the ambiguity in terminology and proposed definitions, scientific literature written in English frequently uses the broad term of resilience that consists of two definitions that are differentiated in Polish (Chmitorz et al., 2018). What is more, definitions and measurement scales for both terms are often used alternately under the name of *resilience* (e.g., Helmreich et al., 2017; Cooper et al., 2013).

Ogińska-Bulik and Juczyński (2008), Polish scholars, take similar approach and propose a unifying understanding of resilience. Although their *Resilience Measurement Scale* SPP-25 refers to personality dispositions in the measurement factors, authors define *resilience* as a mechanism of self-regulation which “is universal and should protect an individual from the negative outcomes of experienced events, both traumatic and those from everyday life.” (Ogińska-Bulik & Juczyński, 2008,

p.52). The author of this article leans towards the second, broader perspective, opting for the unification, not the separation of the presented constructs.

Contemporary researchers pay great attention to the way we understand the term *resilience*, as there is no fixed definition or consensus on what exactly it is (Liu et al., 2020). Scholars have proposed that it should include the basic factors associated with resilience, namely, trigger factors related to difficult circumstances, outcomes, mechanisms, and factors promoting resilience (Fisher et al., 2018). Nevertheless, a unified definition of the term is needed (Chmitorz et al., 2018).

## 2. Definition

Taking into consideration a complete research on resilience, this construct could be defined as a trait, mechanism, and a process of self-regulation related to the sense of control. It is responsible for the ability to “self-repair” and recover after encountering difficulties or a threatening experience, thereby representing a type of mental flexibility. An individual is able to adapt to changing situations and stressors by perceiving surrounding stimuli as favorable and using available resources. Resilience is also a positive adaptation to changing life conditions and dealing with stress (Block & Block, 1980; Borucka, 2011; Borucka & Ostraszewski, 2012; Masten & Powell, 2003; Ogińska-Bulik & Juczyński, 2008; Sikorska, 2016; Tugade & Fredrickson, 2004).

The American Psychological Association (2012) defines resilience as a process of positive adaptation to unfavorable conditions, adversity, trauma, tragedy, danger, and to considerable sources of stress, such as problems in family and close relationships, serious health issues, problems in the workplace or financial stress. Mental resilience can also be defined as a set of personal attributes or skills used to cope with a stress level higher than average (Nadolska & Sęk, 2007). However, given the complexity and multidimensionality of resilience, personal attributes used in a certain sphere of life may turn out to be insufficient in others. (Southwick & Charney, 2012).

Davydov et al. (2010), on the basis of research on neuroscience, behavioral sciences and also from the individual, group and cultural levels, propose to consider psychological resilience as a complex and multidimensional system of forces interacting at those multiple levels. They conclude that interdisciplinary research is crucial to understand such a multidimensional phenomenon. Since resilience related to positive experiences can stem from positive and protective childhood experiences, a longitudinal approach is essential to understand mechanisms and factors that interact with it.

Another approach describes resilience in terms of mental health with regard to a stress charge (Chmitorz et al., 2018) or as using one's cognitive skills to effectively cope with stress (Greenberg, 2006). Due to its complexity, resilience is more than just a psychological trait or biological phenomenon, hence, it requires a multifaceted approach and an interdisciplinary approach (Southwick & Charney, 2012).

Resilience can be described on three levels: cognitive, emotional and behavioral (Ogińska-Bulik & Juczyński, 2008). The level of people's resilience is determined by how they cope with life events and hardships, how they process and cognitively elaborate on the acquired information, and what actions they take in response. Each sphere individually, as well as all of them together, interact with each other and are crucial in terms of measurement. More importantly, those three discussed areas are significant for interventions that lead to developing and strengthening resilience, thus improving functioning of an individual.

Chmitorz et al. (2018) state that currently resilience is viewed more often as an outcome-oriented or process-oriented construct and not as a personal trait. It is a dynamic process of adaptation. What is more, they assert that personality correlates, previously referred to as a resilient or tough personality (see Kobasa, 1982), are one of many risk or protective factors sustaining or restoring health. Therefore, the level of resilience is modifiable and lays the groundwork for psychological interventions. Ijntema et al. (2019) state that perceiving resilience only as a static entity is no longer legitimate; instead, resilience should be viewed as a dynamic process.

### **3. Meta-analysis of links between factors of psychological resilience**

In the scientific literature, there is plentiful of factors directly and indirectly related to the concept of resilience. However, as the systematic review of conducted studies shows, not all of them are supported by strong scientific evidence. Among the factors that recur in observational studies (cross-sectional or longitudinal) and are backed by strong evidence in research findings are: active coping (e.g. problem-solving, planning), self-efficacy, optimism or positive attributional style, social support, cognitive flexibility (e.g. positive reappraisal, acceptance of negative situations and emotions), religiousness, spirituality or religious coping, positive emotion or positive affect, hardiness, self-esteem, having meaning or purpose in life, and sense of coherence. Factors supported by moderate evidence in research include internal locus of control, flexible coping, hope, and humor. Whereas altruism is considered a factor with little scientific evidence (Helmreich et al., 2017).

### **4. Resilience in the contemporary world**

Resilience is not a new concept. Albeit, it was introduced in the 1950s, it has gained popularity in the last two decades. Heszen-Niejodek and Wrześniewski (2000) stress the dynamic development of psychological research on health and illness and state that this tendency is likely to continue. They list the following reasons behind this psychological trend: changes in the course of diseases and in the causes of death in the socio-civilizational context, belief that psychological factors have an influence on physical and mental health, which was proven repeatedly, and the specific nature of modern medicine which is more relevant and has more impact in social reception, but at the same time is a substantial source of stress among patients. Furthermore, in the 21st century, the direction of the patient-doctor relationship as well as aspirations of individuals to solve their own health problems has been changing. The economic factor and rising healthcare costs also have to be taken into consideration.

The interest in psychological resilience has its proponents and is often studied among groups at-risk or among populations experiencing difficult and even traumatic events. Research focuses mainly on populations exposed to difficult life events, disasters, war, post-traumatic stress or professional burnout. However, over the years, the issues of resilience gained more attention from popular science, especially its practical use- with many programs aiming at strengthening resilience in the lives of individuals.

With today's understanding of resilience shifting from a purely self-regulatory role to concept of the full health and well-being, social groups focused on raising their consciousness, self-development and pushing their own limits are getting more interested in psychological resilience (e.g. Hanson & Hanson, 2018; Hughes et al., 2019; Schiraldi, 2017).

## 5. Mental health in modern times

Society begins to understand the importance of emotions in human life and mental health in daily functioning. This tendency can be observed in the modern world changed by the global pandemic of the SARS-CoV-2 virus causing the COVID-19. Socio-economic crisis as well as the public fear (Shanahan et al., 2020) of getting infected and complications, prompts people to seek guidance and instruction on how to support their mental health (a growing number of popular science articles and radio programs on mental health and resilience proves that).

Despite the fact that the elderly are more likely to experience negative consequences of the virus, young people were also affected by the pandemic. Studies show that the experienced isolation and loneliness of the elderly can exacerbate their health problems (Grossman et al., 2021); however, younger generations are also subjected to negative mental health effects caused by the pandemic (Gambin et al, 2021; Killgore et al., 2020; Sokół-Szawłowska, 2021; Talarowska et al., 2021).

Pfefferbaum and North (2020) point out that the risk of contagion related to COVID-19 pandemic, the government imposing restrictions concerning public health affecting the freedom of individuals,

constantly increasing financial losses, and inconsistent and conflicting messages from the authorities lead to widespread emotional stress, compromised sense of security, confusion, emotional isolation, stigmatization and thus an increased risk of psychiatric disorders, especially symptoms of post-traumatic stress disorder (PTSD), anxiety, depressive and obsessive-compulsive symptoms or addiction (Chatterjee et al., 2020; Cullen et al., 2020; Fiorillo & Gorwood, 2020; Ornell et al., 2020; Pfefferbaum, & North, 2020; Shuja et al., 2020). From this perspective, public health is at risk on both individual and social side.

Hence the claims that the COVID-19 epidemic situation is accompanied by a global "parallel epidemic" related to mental health problems. It can be categorized in four groups: the general population, the population with pre-existing mental disorders or addictions, the population with increased risk of getting ill due to carrying help, and the population of individuals infected with COVID-19 (Vigo et al., 2020). In 2014, the socio-economic costs associated with mental health were already estimated to be enormous (Wynne et al., 2014). Meanwhile, the social and economic situation today continue to deteriorate and is yet to show its magnitude.

The ongoing war in Ukraine is also a strong factor as it impacts the daily mental functioning of both refugees and individuals providing selfless aid. Mental health in times of war is compromised. A great demand for organizations providing psychological assistance, which we observe since the beginning of Russian invasion of Ukraine, highlights the necessity for extensive prophylaxis and prevention through developing protective factors.

## 6. The meaning of resilience in adulthood

Resilience plays an important role in many facets of a life of an individual, i.e., it has an impact on the emotional sphere, cognitive and social functioning, and somatic health. All of these areas are submitted for an extensive global research. Most of the research refers to childhood, or to the adults exposed to aversive or traumatic events (e.g. war veterans,

soldiers or professions more prone to occupational burnout), and to specific clinical groups (selected somatic diseases, such as cardiac patients, oncology patients, or those dealing with chronic pain, and psychiatric disorders, such as those suffering from affective disorders, anxiety, PTSD, or those affected by schizophrenic experiences).

The psychological resilience shows a strong relationship with mental health (e.g. Hartley, 2011; Hu et al., 2015; Gao et al., 2020; Zhang et al., 2017; Mortazavi & Yarolahi, 2015). It is negatively related to negative mental health indicators such as anxiety, depression, feelings of stress or negative emotionality, and positively related to positive factors such as optimism, life satisfaction, positive affect, self-efficacy, self-esteem or social support (Lee et al., 2013).

A meta-analysis of the relationship between the resilience and personality traits indicates that resilience is negatively related to neuroticism and positively related to extraversion and conscientiousness (Ogińska-Bulik & Juczyński, 2008), as well as to openness and agreeableness (Oshio et al., 2018). Similar relations exist between mental health and those traits (Ogińska-Bulik & Juczyński, 2008a).

Not only does resilience have an impact on the evaluation of stressful situations making an individual more resilient to stress, but it also protects from maladaptation (Ogińska-Bulik & Juczyński, 2008). As Farber and Rosendahl (2018) report in a systematic review and meta-analysis of studies conducted on a population of more than 15,000 somatically ill patients, there is a strong link between their resilience and mental health in the context of depressive symptoms, anxiety and distress.

Gloria and Steinhardt (2013) point out that resilience has a moderating effect on the relation between stress and symptoms of depression and anxiety. What is more, they state that positive emotions can enhance psychological resilience directly and indirectly through the mediating role of coping strategies, particularly adaptive coping. Resilience and mental health mediate the relationship between loneliness and mental and physical quality of life of the elderly (Gerino et al., 2017).

A number of studies shows a positive relation between higher levels of positive emotions in individuals and their higher resilience compared to people with lower levels of resilience as well as the ability of individuals with higher resilience to stimulate positive emotions (through play, witty remark or humor) as a way to cope with hardships of everyday life and adversity (Tugade & Fredrickson, 2004). The status of negative emotions, on the other hand, is not so clear-cut, although it is inferred that people with higher levels of resilience have lower levels of depression and anxiety (Bonanno et al., 2007).

Individuals with higher levels of resilience are characterized by a greater ability to emotionally disengage from both positive and negative emotions (Yi et al., 2020). Additionally, they tend to focus on more positive information (Isaacowitz, 2005). Individuals with higher resilience perceive and generate positive emotions with more ease than individuals with lowered levels of resilience that tend to notice the negative (Anthony & Jensen, 2006).

Davydov et al. (2010) compare the concept of resilience to the somatic immune system. In their view, such a comparison allows us to understand how potential threats can be modified or buffered and how psychological disorders can be prevented. Simultaneously, science can engage in a discussion about multidimensionality of protective barriers related to resilience, from adaptive to maladaptive reactivity, and the interplay between psychological, biological, and social interactions in order to develop an adaptive exchange between tolerance and vulnerability to stress.

Research by Lu, Wang and You (2016) point out the adaptive patterns of physiological responses to repetitive stress in individuals characterized by higher levels of subjectively assessed psychological resilience. They report that individuals characterized by high scores on the resilience scale present higher respiratory sinus arrhythmia (RSA), as well as a significant return to baseline RSA, heart rate, and systolic and diastolic blood pressure, compared to those characterized by lower scores on the resilience scale. When exposed to the repetition of stressful stimuli those individuals showed greater habituation of systolic and diastolic blood pressure through more significant reductions in both indices.

## 7. Resilience and cognitive functions

A cognitive resilience is a specific area of resilience defined as the ability to overcome the negative effects of failure or problems associated with the level of performance of cognitive functions. It is responsible for cognitive functions performed under stress such as attention, memory and decision-making. The efficiency of cognitive functions depends on many situational, emotionally-motivational or dispositional factors. Individual variables such as coping, sense of control, self-efficacy, level of optimism, level of anxiety, cognitive appraisal, level of expertise, affectivity, motivation, effort, social support and other personal characteristics play significant role (Staal et al., 2008).

Cognitive resilience depends on the ability to adapt to individual and internal factors (such as senses) as well as to external factors (such as a stressful stimuli or cultural expectations). It is also essential for maintaining health in adulthood, especially from a perspective of the life course and aging (Stine-Morrow & Chui, 2012).

Cognitive resilience is particularly important for executive functions (Staal et al., 2008). As Parsons et al. (2016) report, cognitive control or executive functions can be trained with cognitive tasks involving, for example, working memory, which, in turn, is related to reducing stress reactivity, dysphoria and anxiety. Moreover, computer programs aimed at training cognitive control have shown that it is possible to minimize depressive symptoms in every day-life (Motter et al., 2016). Therefore, it is possible and crucial to act upon cognitive resilience in a life of an individual through creating a properly oriented training and using learning mechanisms – especially when behavioral outcome can be measured (Staal et al., 2008).

A proposed model for information processing created after an attempt to conceptualize cognitive resilience incorporates such components as

situation, mapping system, errors in information processing and executive functions which influence adequate or inadequate response (Parsons et al., 2016). As research shows, attention control is positively correlated with resilience (Schäfer et al., 2015). Moreover, cognitive function training that does not involve emotion affects neuronal mechanisms reducing the amygdala's reactivity to negative information (Cohen et al., 2016).

Despite the fact that the level of resilience among patients diagnosed with schizophrenia, bipolar disorder, and the control group differs significantly, it is not moderated by changes in cognitive functions; however, they are observed to change in patients (through tests measuring verbal comprehension, executive functions, and working memory) (Deng et al., 2018). Also, resilience may be important for improving the neuronal network of the orbitofrontal cortex in patients with mild cognitive impairment (Son et al., 2019).

## Summary

In the modern times, the process of successfully overcoming negative life events appear to be crucial for maintaining mental health in adulthood. Resilience is a mechanism that has a buffering and preventive effect in difficult situations that exceed the average level of coping. Moreover, it incorporates factors and mechanisms that determine the level of protection against unfavorable fate and also serves to promote health and reduce damage in aversive conditions. It is a process of positive adaptation to unfavorable environmental conditions, substantial sources of stress, adversity, trauma, or tragedy. Resilience is a relevant factor in overcoming the negative effects of failure, or problems associated with the level of performance of cognitive functions. Thus, it seems necessary to introduce intervention programs to strengthen resilience on a populational level.

## Bibliography

- American Psychological Association (2012). *Building your resilience*. <https://www.apa.org/topics/resilience/building-your-resilience> (access: 3.10.2019).
- Anthony, E., Jenson, J. (2006). *Patterns of risk and resilience among urban youth: An ecological perspective*. Ph D. dissertation. Berlin: Springer.
- Block, J. H., Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. *Minnesota symposia on child psychology*, 13, 39-101.
- Block, J., Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, 70(2), 349-361.
- Bonanno, G. A., Galea, S., Bucchiarelli, A., Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology*, 75(5), 671-682.
- Borucka, A. (2011). Koncepcja resilience. Podstawowe założenia i nurty badań. W: W. Junik (red.), *Resilience. Teoria - badania - praktyka*, 11-28, Warszawa: Wydawnictwo Edukacyjne P ARPAMEDIA.
- Borucka, A., Ostaszewski, K. (2012). Czynniki i procesy resilience wśród dzieci krzywdzonych. *Dziecko Krzywdzone. Teoria, badania, praktyka*, 11(3), 7-26.
- Charney, D. S. (2004). Psychobiological mechanisms of resilience and vulnerability: implications for successful adaptation to extreme stress. *American Journal of Psychiatry*, 161(2), 195-216.
- Chatterjee, S. S., Malathesh Barikar, C., Mukherjee, A. (2020). Impact of COVID-19 pandemic on pre-existing mental health problems. *Asian Journal of Psychiatry*, 51, 102071.
- Chmitorz, A., Kunzler, A., Helmreich, I., Tüscher, O., Kalisch, R., Kubiak, T., Wessa, M., Lieb, K. (2018). Intervention studies to foster resilience—A systematic review and proposal for a resilience framework in future intervention studies. *Clinical Psychology Review*, 59, 78-100.
- Cohen, N., Margulies, D. S., Ashkenazi, S., Schaefer, A., Taubert, M., Henik, A., Villringer, A., Okon-Singer, H. (2016). Using executive control training to suppress amygdala reactivity to aversive information. *NeuroImage*, 125, 1022-1031.
- Cooper, C., Flint-Taylor, J., Pearn, M. (2013). *Building resilience for success: A resource for managers and organizations*. Londyn: Springer.
- Cullen, W., Gulati, G., Kelly, B. D. (2020). Mental health in the Covid-19 pandemic. *QJM: An International Journal of Medicine*, 113(5), 311-312.
- Czabała, J.C., Kluczyńska, S. (2015). *Poradnictwo psychologiczne*. Warszawa: Wydawnictwo Naukowe PWN.
- Davydov, D., Stewart, R., Ritchie, K., Chaudieu, I. (2010). Resilience and mental health. *Clinical Psychology Review*, 30(5), 479-95.
- Deng, M., Pan, Y., Zhou, L., Chen, X., Liu, C., Huang, X., Tao, H., Pu, W., Wu, G., Hu, H., He, Z., Xue, Z., Liu, Z., Rosenheck, R. (2018). Resilience and cognitive function in patients with schizophrenia and bipolar disorder, and healthy controls. *Frontiers in psychiatry*, 9, 279.
- Färber, F., Rosendahl, J. (2018). The association between resilience and mental health in the somatically ill: a systematic review and meta-analysis. *Deutsches Ärzteblatt International*, 115(38), 621-627.
- Feder, A., Charney, D. S., Collins, K. (2011). Neurobiology of resilience. W: S. M. Southwick, B. T. Litz, D. Charney, M. J. Friedman (red.), *Resilience and mental health: Challenges across the lifespan*, Cambridge: Cambridge University Press.
- Fiorillo, A., Gorwood, P. (2020). The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *European Psychiatry*, 63(1), 332.
- Fisher, D. M., Ragsdale, J. M., Fisher, E. C. (2018). The importance of definitional and temporal issues in the study of resilience. *Applied Psychology*, 68(4), 583-620.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218-226.
- Gambin, M., Sękowski, M., Woźniak-Prus, M., Pisula, E., Hansen, K., Kmita, G., Kubicka, K., Gorgol, J., Huflejt-Łukasik, M., Holas, P., Łyś, A. E., Wnuk, A., Oleksy, T., Szczepaniak, A., Cudo, A., Łojek, E., Bargiel-Matusiewicz, K. (2021). *Objawy depresji i lęku wśród Polaków w trakcie epidemii COVID-10. Raport z badań podłużnych*. [http://psych.uw.edu.pl/wp-content/uploads/sites/98/2021/01/Raport\\_objawy\\_depresji\\_leku\\_IV\\_fale.pdf](http://psych.uw.edu.pl/wp-content/uploads/sites/98/2021/01/Raport_objawy_depresji_leku_IV_fale.pdf) (access: 20.05.2021).
- Gao, T., Ding, X., Chai, J., Zhang, Z., Zhang, H., Kong, Y., Mei, S. (2017). The influence of resilience on mental health: The role of general well-being. *International journal of nursing practice*, 23(3), 125-135.
- Gerino, E., Rollè, L., Sechi, C., Brustia, P. (2017). Loneliness, resilience, mental health, and quality of life in old age: A structural equation model. *Frontiers in Psychology*, 8, 2003.
- Gloria, C. T., Steinhart, M. A. (2016). Relationships among positive emotions, coping, resilience and mental health. *Stress and Health*, 32(2), 145-156.
- Greenberg, M. T. (2006). Promoting resilience in children and youth: Preventive interventions and their interface with neuroscience. *Annals of the New York Academy of Sciences*, 1094(1), 139-150.
- Grossman, E. S., Hoffman, Y. S., Palgi, Y., Shrira, A. (2021). COVID-19 related loneliness and sleep problems in older adults: worries and resilience as potential moderators. *Personality and Individual Differences*, 168, 110371.
- Hanson, R., Hanson, F. (2018). *Resilient: How to grow an unshakable core of calm, strength, and happiness*. Nowy Jork: Harmony.
- Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. *Journal of American College Health*, 59(7), 596-604.
- Helmreich, I., Kunzler, A., Chmitorz, A., König, J., Binder, H., Wessa, M., Lieb, K. (2017). Psychological interventions for resilience enhancement in adults. *The Cochrane Database of Systematic Reviews*, (2), CD012527.
- Heszen, I., Sęk, H. (2007). *Psychologia zdrowia*. Warszawa: Wydawnictwo Naukowe PWN.
- Heszen-Niejodek I., Wrześniewski K. (2000). Udział psychologii w rozwiązywaniu problemów zdrowia somatycznego. W: J. Strelau (red.), *Psychologia. Podręcznik akademicki. Tom 3*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Hu, T., Zhang, D., Wang, J. (2015). A meta-analysis of the trait resiliency and mental health. *Personality and Individual Differences*, 76, 18-27.
- Hughes, R., Kinder, A., Cooper, C. L. (2019). Living with Depression. W: R. Hughes, A. Kinder, C. L. Cooper (red.), *The Wellbeing Workout* 139-143, Londyn: Palgrave Macmillan.
- Ijntema, R. C., Burger, Y. D., Schaufeli, W. B. (2019). Reviewing the labyrinth of psychological resilience: Establishing criteria for resilience-building programs. *Consulting Psychology Journal: Practice and Research*, 71(4), 288-304.
- Isaacowitz, D. M. (2005). The gaze of the optimist. *Personality and Social Psychology Bulletin*, 31, 407-415.
- Killgore, W. D. S., Taylor, E. C., Cloonan, S. A., Dailey, N. S. (2020). Psychological resilience during the COVID-19 lockdown. *Psychiatry Research*, 291, 113216.



- Klohn, E. C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of Personality and Social Psychology*, 70(5), 1067-1079.
- Kobasa, S. C. (1982). The hardy personality: Toward a social psychology of stress and health. *Social psychology of health and illness*, 4, 3-32.
- Konstytucja Światowej Organizacji Zdrowia. Porozumienie zawarte przez Rządy reprezentowane na Międzynarodowej Konferencji Zdrowia i Protokół dotyczący Międzynarodowego Urzędu Higieny Publicznej, podpisane w Nowym Jorku dnia 22 lipca 1946 r., Dz.U. 1948 nr 61 poz. 477. <http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu19480610477> (access: 20.05.2021).
- Lee, J. H., Nam, S. K., Kim, A. R., Kim, B., Lee, M. Y., Lee, S. M. (2013). Resilience: a meta-analytic approach. *Journal of Counseling & Development*, 91(3), 269-279.
- Liu, J.J., Ein, N., Gervasio, J., Battaion, M., Reed, M., Vickers, K. (2020). Comprehensive meta-analysis of resilience interventions. *Clinical Psychology Review*, 82, 101919.
- Luthar, S. S., Cicchetti, D., Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543-562.
- Maercker, A., Zhang, X.C., Gao, Z., Kochetkov, Y., Lu, S., Sang, Z., Yang, S., Schneider, S., Margraf, J. (2015). Personal value orientations as mediated predictors of mental health: A three-culture study of Chinese, Russian, and German university students. *International Journal of Clinical and Health Psychology : IJCHP*, 15, 8-17.
- Masten, A. S. (2014). *Ordinary magic: Resilience in development*. Nowy Jork: Guilford Press.
- Masten, A. S., Powell, J. L., (2003). A resilience framework for research, policy, and practice. *Resilience and vulnerability: Adaptation in the context of childhood adversities*, <https://doi.org/10.1017/CBO9780511615788>
- Mortazavi, N. S., Yarollahi, N. A. (2015). Meta-analysis of the relationship between resilience and mental health. *Journal of Fundamentals of Mental Health*, 17(3), 103-108.
- Motter, J. N., Pimontel, M. A., Rindskopf, D., Devanand, D. P., Doraiswamy, P. M., Sneed, J. R. (2016). Computerized cognitive training and functional recovery in major depressive disorder: A meta analysis. *Journal of Affective Disorders*, 189, 184-191.
- Nadolska K., Sęk H. (2007). Społeczny kontekst odkrywania wiedzy o zasobach odpornościowych, czyli czym jest resilience i jak ono funkcjonuje. W: Ł. Kaczmarek, A. Słysz (red.), *Blżej serca – zdrowie i emocje*, 13-37, Poznań: Wydawnictwo UAM.
- Ogińska-Bulik, N., Juczyński, Z. (2008). Skala Pomiaru Prężności (SPP-25). *Nowiny Psychologiczne*, 3, 39-56.
- Ornell, F., Schuch, J. B., Sordi, A. O., Kessler, F. H. P. (2020). "Pandemic fear" and COVID-19: mental health burden and strategies. *Brazilian Journal of Psychiatry*, 42(3), 232-235.
- Oshio, A., Taku, K., Hirano, M., Saeed, G. (2018). Resilience and Big Five personality traits: A meta-analysis. *Personality and Individual Differences*, 127, 54-60.
- Parsons, S., Kruijt, A. W., Fox, E. (2016). A cognitive model of psychological resilience. *Journal of Experimental Psychopathology*, 7(3), 296-310.
- Pfefferbaum, B., North, C. S. (2020). Mental health and the Covid-19 pandemic. *New England Journal of Medicine*, 383(6), 510-512.
- Rutten, B. P., Hammels, C., Geschwind, N., Menne-Lothmann, C., Pishva, E., Schruers, K., van der Hove, D., Kenis, G., van Os, J., Wichers, M. (2013). Resilience in mental health: linking psychological and neurobiological perspectives. *Acta Psychiatrica Scandinavica*, 128(1), 3-20.
- Rutter M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24(2), 335-344.
- Schäfer, J., Wittchen, H. U., Höfler, M., Heinrich, A., Zimmermann, P., Siegel, S., Schönfeld, S. (2015). Is trait resilience characterized by specific patterns of attentional bias to emotional stimuli and attentional control? *Journal of Behavior Therapy and Experimental Psychiatry*, 48, 133-139.
- Schiraldi, G. R. (2017). *The Resilience Workbook: Essential Skills to Recover From Stress, Trauma, and Adversity*. Oakland: New Harbinger Publications.
- Shanahan, L., Steinhoff, A., Bechtiger, L., Murray, A. L., Nivette, A., Hepp, U., Ribeaud, D., Eisner, M. (2020). Emotional distress in young adults during the COVID-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study. *Psychological medicine*, 1-10.
- Shuja, H. K., Aqeel, M., Jaffar, A., Ahmed, A. (2020). COVID-19 pandemic and impending global mental health implications. *Psychiatria Danubina*, 32(1), 32-35.
- Sikorska, I. (2016). *Odporność psychiczna w okresie dzieciństwa*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
- Sokół-Szawłowska, M. (2021). Wpływ kwarantanny na zdrowie psychiczne podczas pandemii COVID-19. *Psychiatria*, 18(1), 57-62.
- Son, S. J., Park, B., Choi, J. W., Roh, H. W., Kim, N. R., Sin, J. E., Kim, H., Lim, H. K., Hong, C. H. (2019). Psychological Resilience Enhances the Orbitofrontal Network in the Elderly With Mild Cognitive Impairment. *Frontiers in Psychiatry*, 10, 615.
- Southwick, S. M., Charney, D. S. (2012). *Resilience : The Science of Mastering Life's Greatest Challenges*. Cambridge: Cambridge University Press.
- Staal, M. A., Bolton, A. E., Yaroush, R. A., Bourne Jr, L. E. (2008). Cognitive performance and resilience to stress. *Biobehavioral resilience to stress*, <http://dx.doi.org/10.13140/2.1.4498.6240>
- Stine-Morrow, E. A., Chui, H. (2012). Cognitive resilience in adulthood. *Annual Review of Gerontology and Geriatrics*, 32(1), 93-114.
- Talarowska, M., Chodkiewicz, J., Nawrocka, N., Miniszewska, J. *Zdrowie psychiczne a epidemia SARS-COV-2-badania polskie*. [https://www.researchgate.net/profile/Monika-Talarowska/publication/342845107\\_Mental\\_health\\_and\\_the\\_epidemic\\_SARS-COV-2\\_-\\_risk\\_factors\\_Polish\\_research\\_Zdrowie\\_psychiczne\\_a\\_epidemia\\_SARS-COV-2\\_-\\_badania\\_polskie/links/5f087659a6fdcc4ca45bcf88/Mental-health-and-the-epidemic-SARS-COV-2-risk-factors-Polish-research-Zdrowie-psychiczne-a-epidemia-SARS-COV-2-badania-polskie.pdf](https://www.researchgate.net/profile/Monika-Talarowska/publication/342845107_Mental_health_and_the_epidemic_SARS-COV-2_-_risk_factors_Polish_research_Zdrowie_psychiczne_a_epidemia_SARS-COV-2_-_badania_polskie/links/5f087659a6fdcc4ca45bcf88/Mental-health-and-the-epidemic-SARS-COV-2-risk-factors-Polish-research-Zdrowie-psychiczne-a-epidemia-SARS-COV-2-badania-polskie.pdf) (access: 20.05.2021).
- Tugade, M. M., Fredrickson, B. L. (2004). Resilient Individuals Use Positive Emotions to Bounce Back From Negative Emotional Experiences. *Journal of Personality and Social Psychology*, 86(2), 320-333.
- Uchnast, Z. (1998). Prężność osobowa a egzystencjalne wymiary wartościowania. *Roczniki Psychologiczne*, 1(1), 7-27.
- Vigo, D., Patten, S., Pajer, K., Krausz, M., Taylor, S., Rush, B., Raviola, G., Saxena, S., Thornicroft, G., Yatham, L. N. (2020). Mental health of communities during the COVID-19 pandemic. *The Canadian Journal of Psychiatry*, 1-7.
- Waller, M. A. (2001). Resilience in ecosystemic context: Evolution of the concept. *American Journal of Orthopsychiatry*, 71(3), 290-297.
- Wynne, R., De Broeck, V., Leka, S., Houtman, I., McDaid, D. (2014). *Promoting mental health in the workplace. Guidelines for implementing the comprehensive approach*. Luxembourg: Publications Office of the European Union.
- Yi, F., Li, X., Song, X., Zhu, L. (2020). The underlying mechanisms of psychological resilience on emotional experience: Attention-bias or emotion disengagement. *Frontiers in Psychology*, 11, 1993.
- Zautra, A. J., Hall, J. S., Murray, K. E. (2010). Resilience: A new definition of health for people and communities. In: J. W. Reich, A. J. Zautra, J. S. Hall (eds.), *Handbook of adult resilience* 3-29, Nowy York, NY: Guilford Press.