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SENSORY PROCESSING SENSITIVITY, MINDFULNESS, RESILIENCE AND HAPPINESS – EXPLORING RELATIONSHIPS

Abstract

Theoretical background: The study is grounded in Sensory Processing Sensitivity (SPS) theory which understand high sensitivity as a temperamental trait affecting how individuals perceive and process stimuli from the environment. This framework, alongside Kabat-Zinn's mindfulness theory and Richardson's resilience model, suggests potential interconnections between these psychological constructs in determining subjective well-being. The aim of the conducted research was to analyze the relationship between SPS, mindfulness, resilience, and happiness. This investigation is particularly relevant as understanding how these psychological resources interact could inform targeted interventions for enhancing well-being, especially among highly sensitive individuals who may experience environmental stimuli more intensely.

Method: The study included 222 participants (64 men and 158 women). The Short Form of the Five Faces Mindfulness Questionnaire (FFMQ-SF), the Brief Resilience Coping Scale (SPP-25), the Steen Happiness Index (SHI-PL), and the Highly Sensitive Person Scale (HSPS-10) were used.

Results: The obtained results indicate the existence of positive relationships between mindfulness and the general dimension of quality of life. It was demonstrated that higher levels of SPS and higher personal resilience are associated with increased feelings of happiness.

Conclusions: The findings suggest that mindfulness, SPS, and resilience are important psychological resources that contribute to subjective well-being. The positive correlation between these variables indicates potential pathways for interventions aimed at enhancing individuals' happiness. Future research should explore the mediating mechanisms between these variables and investigate how tailored mindfulness practices might benefit individuals with different levels of sensory processing sensitivity.

Keywords: *high sensitivity, sensory processing sensitivity, mindfulness, resilience, happiness*

Introduction

Sensory Processing Sensitivity (SPS) is a temperamental trait characterised by deeper processing of stimuli and greater reactivity to the environment, both positive and negative (Aron et al., 2012). This construct, developed and described by the Aron & Aron (1997), assumes a high prevalence of this trait in approximately 20% of the population (up to 30% in some sources, eg. Baryła-Matejczuk, Kata, et al., 2021; Pluess et al., 2018; Tillmann et al., 2021; Yano & Oishi, 2021). Highly Sensitive Person (HSP) is characterised by deep information processing, susceptibility to overstimulation and strong

emotional reactivity (Greven et al., 2019). Research into the relationship between SPS and psychosocial functioning points to the complex nature of this trait. On the one hand, high sensitivity can lead to difficulties in adapting to a demanding environment and increased vulnerability to stress (Lionetti et al., 2018). On the other hand, highly sensitive people also show an increased capacity to perceive subtleties and process experiences more deeply, which can be a potential source of personal development (Acevedo et al., 2014). Years of research conducted on the diathesis-stress concept (Belsky & Pluess, 2009; Jolicoeur-Martineau et al., 2017; Monroe & Simons, 1991; Rioux et al., 2016) indicated that a particular susceptibility, sensitivity (diathesis) to difficult conditions is associated with a number of psychological problems. And research conducted since the early 2000s on the concept of Ventage Sensitivity (de Villiers et al., 2018; Iimura & Kibe, 2020; Jolicoeur-Martineau et al., 2018; Pluess, 2017; Pluess & Belsky, 2013) point to the particular benefits of sensitivity. This article attempts to explore the issue in the context of both the potential benefits and challenges of heightened sensitivity. The variables analysed are those that relate to the ways in which people process, regulate and adapt to experiences. Sensory Processing Sensitivity (SPS) determines the depth and intensity of stimulus processing, mindfulness influences the conscious perception and acceptance of experiences, resilience determines the ability to adapt to difficulties, and happiness is partly the result of the effectiveness of these regulatory processes.

Mindfulness

Mindfulness is one of the primary practices used in the Buddhist tradition to still the mind and back to the present moment (Germer, et al., 2015). The most widely quoted definition of mindfulness is that proposed by Kabat-Zinn (1990), where mindfulness is defined as a special state of attention deliberately directed to the present moment, without judgement or evaluation. Mindfulness includes mechanisms such as sharpening and sustaining attention, improving emotion regulation and well-being, visualization, and deepening compassion towards others (Radoń, 2020). Awareness and mindfulness are elements of a broader concept of consciousness (Brown & Ryan, 2003).

Consciousness includes awareness and attention – inextricably linked elements (Westen, 1999). Mindfulness is a skill that allows to lower the level of reactivity to what is happening in the moment. Mindfulness is a specific attitude towards all experiences – pleasant, unpleasant and indifferent, so that the overall level of suffering decreases and the sense of well-being increases (Brown & Ryan, 2003). The systematic practice of mindfulness has a positive effect on the emergence of significant changes in cognitive, affective and behavioural processes and brain structure and function (Radoń, 2020).

Resilience

The concept of resilience attempts to explain the phenomenon of an individual functioning well despite unfavourable life conditions, adversity or traumatic events (Borucka, 2011). The concept aims to find the best way to prevent psychopathology and to actively support the positive psychosocial development of people at risk (Masten, 2007; Luthar & Brown, 2007). Authors of the construct (Block, Block, 1980), while conducting research on self-control and the need for social approval, introduced the concepts of *ego resiliency,* i.e. resilience and *ego control* (Oleś, Drat-Ruszczak, 2008). Term *resiliency* or *ego-resiliency* means a person's ability to adapt flexibly to everyday difficulties as well as traumatic events. It is a personality trait that allows a person to use his or her existing knowledge and adapt his or her cognitive patterns to overcome difficulties that arise (Letzring et al., 2005). Resilience considered as a set of characteristics and a relatively permanent disposition determine the process of flexible adaptation to constantly changing life events. Embrace ego-resilience as a personality trait relevant to the process of coping with traumatic events or events in everyday life. These traits are also defined as an individual's ability to be resilient, to self-repair, to face adversity, to detach from negative experiences and to adapt flexibly to life's ever-changing demands with the help of positive emotions (Block & Kremen 1996). Some of the key characteristics of resilient people include: the ability to make sacrifices for others, having key life skills such as making good decisions, being assertive, controlling desires and solving problems, being sociable, being able

to be a friend and establish positive relationships, having a sense of humour, being self-controlled, being autonomous and independent, having a positive attitude towards a personal future, being flexible, being able to learn, being self-motivated, being a master of something, having a sense of self-worth and confidence (Ostaszeswski, 2010). Ego-resilience can occur without the need for life's difficulties, as opposed to resilience, the condition for which is exposure to risk. Therefore, according to researchers, ego-resilience should not be related to the concept of resilience, according to which resilience manifests itself in an individual's behaviour but is not a feature of the individual, meaning that the individual may have some resilient behavioural patterns, not that the individual is resilient (Borucka & Ostaszewski, 2008).

Happiness and mental well-being

Happiness is a multidimensional construct, encompassing both hedonistic (pleasure, contentment) and eudaimonic (meaning, sense of life, personal development) elements (cf. (Diener et al., 2003; Diener & Biswas-Diener, 2008; Seligman, 2004, 2006, 2012). In the literature, the construct of happiness is sometimes used interchangeably with the concept of well-being. Mental well-being is a broad concept and is defined as the cognitive and emotional appraisal of one's life, which includes both emotional reactions to events and cognitive judgements relating to satisfaction with life together with the experience of positive emotions and low levels of negative feelings (Diener et al., 2002). As mentioned above, mental wellbeing combines aspects of both hedonistic and eudaimonistic concepts. In the hedonist conception, wellbeing is understood as experiencing pleasure, as well as subjective satisfaction with life. In the eudaimonistic conception, on the other hand, well-being is not the subjective feeling of satisfaction with life, but only the feeling that accompanies self-realisation and a life in harmony with human nature (Ryff, 1989). Seligman (2005) uses the terms happiness and well-being as overarching terms to describe positive psychology. They range from positive feelings such as ecstasy, relief to positive actions without an emotional component, such as involvement. They are therefore applied to both feelings and actions (Seligamn, 2005). Mental well-being includes emotional reactions

to given events, but also cognitive evaluations and judgements about fulfilment and satisfaction (Diener, Lucas & Oishi, 2004). A term encompasses experiencing pleasant emotions, low levels of negative moods and high levels of life satisfaction (Diener et al., 2004, s. 35). Some researchers (cf. Cocker & Park, 2004), in line with the assumption that self-satisfaction is one of the most important components of life satisfaction, equate well-being with high self-esteem. Research conducted on this topic shows that feeling of happiness and self-satisfaction are separate phenomena. This is because happiness is associated with experiencing a high intensity of positive emotions and a strong orientation towards harmonious relationships with others. Self-esteem, in turn, is associated with low intensity of negative emotions and high achievement orientation (Furr, 2005, after: Trzebińska, 2012). In their reflections and research work, representatives of positive psychology seek answers to the question of the characteristics and sources of a good, happy life, both on an individual and group level. The answers they give show the occurrence of these trends (Czapiński, 2004, cf. Kashdan, Biswas-Diener & King, 2008; Seligman, 2005; Waterman, 2008). Seligman's work (2004, 2005) started a trend developing the idea of the good life, potential, human strengths, Aristotle's idea of eudaimonia.

However, according to Ilona Boniwell (2006), it was representatives of humanistic psychology, such as Maslow and Rogers, who were probably the first eudaimonists of the twentieth century. According to Carol D. Ryff (1989), the eudaimonic well-being model includes autonomy, control of the environment, personal development, positive relationships with others, purpose in life and self-acceptance. It also includes positive thinking about oneself, one's past and a sense of continuous growth and improvement of oneself as a person, a belief that life has purpose, meaning and significance. It involves experiencing a sense of efficacy in life, as well as a sense of self-determination. Also important for the development of this trend is *the self-determination theory (SDT)* developed by Edward L. Deci and Richard M. Ryan (2000). To these considerations should also be added the phenomenon known as *social well-being*, which is part of the eudaimonist tradition . It encapsulates the social tasks encountered by adults, including social integration, belonging, *social contribution*, social coherence, social actualisation and acceptance. This model extends the eudaimonic tradition from the intrapsychic sphere (e.g. Ryff, 1989)

to the interpersonal sphere (Keyes, 1998). As already stated, a hedonistic trend is also present in the study of well-being and happiness. According to its representatives, each person is the sole and final judge in his or her own life. He relies on personal, subjective feelings of pleasure – annoyance, fulfilment – unfulfilment, good – bad in his assessment. Thus, it can be said that the concept of well-being is reduced here to the experience of purely sensual pleasure, and the emphasis is on experiencing satisfaction rather than a sense of meaning (Czapiński, 2004). Hedonistic well-being boils down to experiencing pleasure, with the main aim being to enjoy pleasures of various kinds (physical and psychological), while avoiding pain, suffering, anxiety or discomfort. Happiness is about experiencing pleasure and having fun (Synnestvedt, 2006). Ed Diener (2009) proposed a model of hedonistic well-being consisting of positive and negative emotions as well as life satisfaction. Happiness, then, is the frequent experience of positive emotions, the infrequent experience of negative emotions and an overall evaluation of life as satisfying (Diener, 2009; por. Kashdan et al., 2008).

Researchers agree that mental wellbeing is moderately positive in most people, what brings many benefits for them (Cummins, 2010, Wojciszke, 2010a). High levels of mental well-being are associated with greater friendliness and better problem-solving, but also with overestimating one's impact on a situation, which can involve taking a lot of risks. In contrast, low levels of psychological wellbeing promote more accurate information processing, better risk preparedness, but also low motivation and, in extreme cases, depression (Cumins,2010, after: Growiec, 2015). In research on the relationship between social bonds and life satisfaction, it has been shown, among other things, that self-esteem is very important for an individual's mental well-being. Individuals with a positive self-image are characterised by higher mental well-being. Agreeable people are also more satisfied with their lives. Thus, people who care about having good relationships with other people and are willing to compromise turn out to be more satisfied with their own lives (Growiec, 2015).

Research to date

According to previous research (Aron & Aron, 1997), highly sensitive people may experience both more intense negative and positive emotions, which may affect their overall sense of happiness. Highly sensitive people are also more susceptible to environmental influences – a positive environment can significantly increase their wellbeing, while a negative one can drastically decrease it (biological susceptibility difference theory) (Aron et al., 2012; de Villiers et al., 2018; Lionetti et al., 2018).

Benham's (2006) research shows that highly sensitive people often experience sensory overload, which can lead to lower levels of happiness if they do not have appropriate coping strategies in place. Meta-analyses (e.g. (Sedlmeier et al., 2012)) confirm that mindfulness practices can directly increase happiness levels by reducing ruminations and increasing acceptance of experiences. In addition, research shows (Brown et al., 2007; Brown & Ryan, 2003; Teper et al., 2013), that mindfulness increases awareness of emotions and reduces their automatic processing, leading to more adaptive emotional responses. As research has shown Tugade & Fredrickson (Tugade & Fredrickson, 2004), resilience acts as a buffer against life's stresses, allowing individuals to maintain or recover more quickly from difficult experiences. Individuals with high resilience are more likely to use adaptive coping strategies, which translates into higher levels of happiness (Cohn et al., 2009; Smith et al., 2010). Research to date (Bakker & Moulding, 2012a, 2012b) also indicate that mindfulness practices may be particularly beneficial for highly sensitive people, helping them to harness the benefits of their sensitivity while reducing the negative aspects. In turn, resilience may be relevant to the relationship between sensitivity and happiness – highly sensitive people with high resilience may experience higher levels of happiness than those with low resilience (Kibe et al., 2020). Mindfulness practices may enhance psychological resilience, creating a cycle of mutual reinforcement that leads to increased well-being.

Material and methods

A total of 222 people (158 women and 64 men), aged between 19 and 68 years, took part in the study. The disproportionate gender distribution in the sample (71.2% women, 28.8% men) reflects the voluntary nature of recruitment and warrants discussion. This gender imbalance is consistent with patterns observed in psychological research on sensitivity and mindfulness, where female participants typically show higher engagement rates (cf. Aron & Aron, 1997; Lionetti et al., 2018). Several factors may have contributed to this disparity: (1) women demonstrate greater willingness to participate in studies concerning emotional processing and sensitivity (Pluess et al., 2018); (2) the topics of mindfulness and sensitivity may be perceived as more relevant by women due to sociocultural factors; (3) online recruitment methods may have inadvertently reached more female respondents. The largest percentage (38.3%) were married, 31.1% were in informal relationships, 26.1% were single, 3.6% were divorced/separated, 0.9% were widowed. At least 96.7% of the respondents had at least a secondary education (2.3% – basic vocational education, 34.7% – secondary education, 62.2% – tertiary education). More than half of the respondents (58.1%) were from towns with a population of less than 50 000 inhabitants and 31.1% of the respondents were from towns with a population of more than 150 000 inhabitants. In the study group, 73.4% of people declared that they do not practise mindfulness, 26.6% of respondents declared that they practise some kind of mindfulness, e.g. mindfulness exercises, meditation, breathing exercises, being consciously in the 'here and now'. Research to date indicates multidimensional links between mindfulness practice, personality resilience, mental well-being and sensitivity. The aim of the present study was to explore the relationships between the aforementioned variables.

The study used four survey instruments and a sociodemographic questionnaire. The questionnaire included questions on gender, age, marital status, education, place of residence and a supplementary question on whether the respondent practises any type of mindfulness.

Questionnaire HSPS-10 – original 27-question scale *Highly Sensitive Person Scale* by E. Aron and A. Aron (Aron & Aron, 1997), adapted by (Baryła-Matejczuk et al., 2021; Baryła-Matejczuk, Porzak, et al., 2022).

This is a shortened version of the questionnaire consisting of 10 items. The respondent answers on a 7-point Likert scale, where 1 means *absolutely not* and 7 means *definitely yes*. Scores are obtained on three subscales: Low Sensory Threshold (LST), known as sensitivity to subtle, external stimuli (example: *Are you disturbed by intense stimuli e.g. loud noises or chaos?*). Ease of excitation (EOE), known as the ease of being overwhelmed by internal and external stimuli (example: *Do you get frustrated when you have to do a lot of things at once?*). Aesthetic Sensitivity (AES), known as openness 'to' and enjoyment 'from' aesthetic experiences and positive stimuli/stimulation (example: *Do you deeply experience art or music?*). The sum of the scores of the three subscales gives an overall score on the HSPS-10 scale.

Five Facet Mindfulness Questionnaire: Short-Form (FFMQ-SF) adapted by Radoń, Rydzewska (2018). The questionnaire is used to measure the intensity of mindfulness, a specific state of attention resulting from constantly directing it, in a non-judgmental way, to what is happening in the present moment.

Questionnaire consists of 24 items, ratings for each questionnaire item are marked on a 5-point Likert scale, where 1 means (*Almost*) never and 5 means (*Almost*) always. Results are obtained on five subscales: Non-reactivity, Observing inner events, Acting mindfully in other words a conscious presence, Describing experiences and Self – compassion. The sum of the scores of the five subscales gives the scores on the Mindfulness scale. The reliability of the tool, measured in an age-, gender-, education-diverse group of 830 people, is 0.68-0.85.

Resilience Assessment Scale (SPP-25Scale – SPP-25 (Ogińska-Bulik, Juczyński, 2008). The scale contains 25 statements on the various personality characteristics that make up resilience, also equated with mental resilience. It is scored on a 5-point Likert scale, where 0 means *definitely not* and 4 means *definitely yes*.

In addition to the overall score, the scale allows the following 5 factors to be assessed: Perseverance and determination for action; Perseverance for new experiences and a sense of humour; Personal competence to cope and tolerance of negative emotions; Tolerance for failure and treating life as a challenge; Optimistic attitude towards life and ability to mobilise in difficult situations.

Results from a survey of 492 adults, diverse in terms of education, age, occupations represented, as well as health status and traumatic experiences, were used to analyse the reliability of the scale. Internal consistency was

determined by Cronbach's alpha (0.89 for the entire scale). The reliability of the five subscales ranges from 0.67 to 0.75.

Steen Happiness Index (SHI-PL) adapter by Kaczmarek, Stanko-Kaczmarek and Dombrowski (2010) is based on the theory of happiness, understood as the subjectively perceived fullness of life, which consists of: positive emotions (a pleasant life), optimal experience (a good life) and a meaningful life (a meaningful life). The tool consists of 20 groups of statements to which five possible answers from A to E are assigned, which vary according to the question (e.g. A. *I am displeased with myself.* B. *I am neither pleased nor displeased with myself—I am neutral.* C. *I am pleased with myself.* D. *I am very pleased with myself.* E. *I could not be any more pleased with myself).* The reliability of the Polish version of the SHI-PL scale is 0,88, with subscale reliability for positive emotions at 0,77, optimal experience at 0,70 and sense of life at 0,74.

The collected data were analysed statistically. Given the descriptive statistics of the variables studied, Spearman's rho correlations between the variables were calculated. The SPSS software was used for statistical analyses.

Results

First, a statistical description of all quantitative variables relevant to the study was made. Analysis of the data indicated the need for non-parametric Spearman's rho correlations (Table 1).

Table 1. *Descriptive statistics*

	N	Minimum	Maximum	Mean	Standard deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Standard Error	Statistic	Standard Error
Age	222	19	68	31,95	9,968	,532	,163	-,463	,325
Non-reactivity (NR)	222	5,00	25,00	15,1396	3,97200	,254	,163	-,153	,325
Observing (OB)	222	4,00	20,00	14,8333	3,52678	-,558	,163	-,211	,325
Acting mindfully (SD)	222	5,00	25,00	18,3649	3,89422	-,739	,163	,913	,325
Describing (OP)	222	11,00	23,00	17,4865	2,59608	-,342	,163	-,418	,325
Non-judgement (NS)	222	5,00	25,00	16,1261	3,90757	,021	,163	,012	,325
Low Sensory Threshold (LST)	222	2,00	14,00	8,7432	3,30252	-,060	,163	-,971	,325
Ease of excitation (EOE)	222	5,00	35,00	22,7207	6,91273	-,169	,163	-,733	,325
Aesthetic sensitivity (AES)	222	5,00	21,00	14,9279	3,92627	-,232	,163	-,519	,325
Positive Emotions Scale (SPE)	222	5,00	19,00	11,5856	2,72401	,018	,163	-,273	,325
Optimal Experience Scale (SOD)	222	8,00	34,00	21,5000	4,66599	-,210	,163	,032	,325
Sense of Meaning Scale (SPS)	222	8,00	30,00	19,0676	4,42227	-,086	,163	-,319	,325
shi_sum Overall Index SHI sum	222	24,00	78,00	52,1532	10,62925	-,082	,163	,050	,325
wdd Perseverance and determination in action	222	8,00	25,00	18,4550	3,69239	-,483	,163	-,105	,325
ond Openness to new experiences and a sense of humour	222	7,00	25,00	19,8018	3,33993	-1,209	,163	2,473	,325
kot Coping skills and tolerance of unpleasant emotions	222	6,00	25,00	18,0090	3,77416	-,654	,163	,586	,325
tnt Tolerance for failure and treating life as a challenge	222	8,00	25,00	18,8378	3,69062	-,688	,163	,259	,325
onz An optimistic attitude to life and the ability to mobilise in difficult situations	222	5,00	25,00	17,1577	4,10577	-,439	,163	-,018	,325
Valid N (listwise)	222								

Spearman's rho non-parametric correlation analyses were performed to analyse the relationship between mindfulness factors and levels of resilience, dimensions of happiness and levels of sensitivity. The results of these analyses are presented in Table 2.

The factor of Mindfulness (FFMQ-SF) Non-reactivity was found to significantly and moderately correlate with the factors of Resilience (SPP-25) such as Competence, Tolerance and Optimism, while it correlates less strongly with Perseverance and Openness. Non-reactivity significantly and moderately correlates with Quality of Life (SHI-PL) factors such as positive emotions and optimal experiences, while it correlates less strongly with sense of meaning. In addition, it significantly but weakly and inversely correlates with the sensitivity factor (HSPS-10) Ease of excitation, also inversely and very weakly correlates with Low Sensory Threshold.

Significant but weak relationships are found between the Resilience factor (SPP-25) Openness to new experiences and sense of humour and Tolerance of failure and treating life as a challenge. There are no statistically significant relationships for all Quality of Life (SHI-PL) factors. In contrast, Observation correlates significantly and strongly with the sensitivity factor (HSPS-10) Aesthetic sensitivity, while it correlates weakly with the factors Low Sensory Threshold and Ease of excitation.

Acting mindfully significantly and weakly correlates with all five factors of the Resilience (SPP-25). Acting mindfully significantly and moderately correlates with a Quality of Life factor (SHI-PL) such as the Optimal Experience Scale, while it correlates weakly with the Positive Emotions Scale and the Sense of Meaning Scale. Acting mindfully correlates significantly but weakly with the sensitivity factor (HSPS-10) Aesthetic Sensitivity.

Describing significantly but weakly correlates with all five factors of Resilience (SPP-25). Describing also significantly but weakly correlates with all three Quality of Life factors (SHI-PL). On the sensitivity scale (HSPS-10), Describing was found to be statistically significant although with a weak correlation only for Aesthetic Sensitivity.

Non-judgement significantly but weakly correlates with such Resilience factors (SPP-25) as Openness, Competence, Tolerance and Optimism. Non-judgement also significantly but weakly correlates with all Quality of

Life factors (SHI-PL). On the sensitivity scale (HSPS-10) Non-judgement correlates weakly and inversely with Ease of excitation.

In summary, all dimensions of Mindfulness correlated significantly and moderately or weakly with the dimensions of Resilience. All Mindfulness dimensions also significantly and moderately or weakly correlated with all Happiness dimensions and with the total score, only for the factor Observing the relationship was statistically insignificant. For the sensitivity dimensions, the results proved to be mixed, and so the Mindfulness factor Observing correlated significantly and strongly with Aesthetic Sensitivity, while it correlated less strongly with Low Sensory Threshold. and Ease of excitation. For the other Mindfulness dimensions, the results indicated weak or very weak and inverse correlations with sensitivity dimensions.

Table 2. *Non-parametric correlations (Spearman's NONPAR CORRrho) Non-parametric correlations (Spearman's rho) Mindfulness vs. Resilience, Quality of Life and Sensitivity*

		Resilience					Quality of Life				Sensitivity		
Mindfulness		Wdd	ond	kot	Tnt	ONZ	Spe	sod	Sps	shi_sum	lst	eoe	Aes
nr Non-reacting	Correlation	,307	,354	,512	,431	,469	,414	,444	,375	,457	-,196	-,311	,139
	Significance	,000	,000	,000	,000	,000	,000	,000	,000	,000	,003	,000	,038
	N	222	222	222	222	222	222	222	222	222	222	222	222
ob Observing	Correlation	,144	,298	,118	,242	,113	,059	,075	,106	,086	,346	,250	,675
	Significance	,031	,000	,080	,000	,092	,378	,267	,115	,201	,000	,000	,000
	N	222	222	222	222	222	222	222	222	222	222	222	222
sd Acting mindfully	Correlation	,322	,346	,319	,344	,273	,295	,436	,380	,420	-,008	-,170	,282
	Significance	,000	,000	,000	,000	,000	,000	,000	,000	,000	,907	,011	,000
	N	222	222	222	222	222	222	222	222	222	222	222	222
op Describing	Correlation	,238	,287	,218	,275	,207	,269	,312	,274	,311	-,108	-,157	,259
	Significance	,000	,000	,001	,000	,002	,000	,000	,000	,000	,107	,019	,000
	N	222	222	222	222	222	222	222	222	222	222	222	222
ns Non-judging	Correlation	,160	,225	,272	,254	,211	,382	,331	,384	,395	-,073	-,262	,090
	Significance	,017	,001	,000	,000	,002	,000	,000	,000	,000	,278	,000	,184
	N	222	222	222	222	222	222	222	222	222	222	222	222

Relationships between Resilience, Happiness and Sensitivity

Spearman's rho non-parametric correlation analyses were performed to analyse the relationships between resilience factors and happiness dimensions and sensitivity factors. The results of these analyses are presented in Table 3.

It was noted that the factor of Resilience (SPP-25) Perseverance and determination in action significantly and moderately correlates with Happiness (SHI-PL). In contrast, it correlates weakly and inversely with the factor of sensitivity (HSPS-10) Ease of excitation.

Openness to new experiences and a sense of humour correlate significantly and moderately with Quality of Life (SHI-PL). In contrast, it correlates significantly but less strongly with factor of sensitivity (HSPS-10) – Aesthetic Sensitivity.

Coping competence and tolerance of unpleasant emotions correlates significantly and strongly with Quality of Life (SHI-PL). In contrast, it correlates weakly and inversely with factor of sensitivity (HSPS-10) Ease of excitation, and correlates even more weakly and inversely with Low Sensory Threshold.

Tolerance to failure and treating life as a challenge significantly and moderately correlates with Quality of Life (SHI-PL). It correlates significantly but weakly with the factor of sensitivity (HSPS-10) Aesthetic Sensitivity, and weakly and inversely correlates with Ease of excitation.

An optimistic attitude towards life and the ability to mobilise in difficult situations correlates significantly and moderately with Quality of Life (SHI-PL). In contrast, it correlates weakly and inversely with the sensitivity factor (HSPS-10) Ease of excitation.

Table 3. *Non-parametric correlations (NONPAR CORR rho Spearman)*
Non-parametric correlations (Spearman's rho) Resilience versus Quality of Life and Sensitivity

		Quality of Life				Sensitivity		
Resilience		Spe	Sod	sns	shi_sum	lst	eoe	Aes
wdd Perseverance and determination in action	Correlation	,367	,139	,371	,480	-,062	-,243	,169
	Significance	,000	,038	,000	,000	,356	,000	,012
	N	222	222	222	222	222	222	222
ond Openness to new experiences and a sense of humour	Correlation	,457	,675	,487	,529	-,007	-,077	,391
	Significance	,000	,000	,000	,000	,920	,253	,000
	N	222	222	222	222	222	222	222
kot Coping skills and tolerance of unpleasant emotions	Correlation	,534	,282	,487	,600	-,193	-,366	,139
	Significance	,000	,000	,000	,000	,004	,000	,039
	N	222	222	222	222	222	222	222
tnt Tolerance for failure and treating life as a challenge	Correlation	,490	,259	,500	,574	-,058	-,225	,258
	Significance	,000	,000	,000	,000	,393	,001	,000
	N	222	222	222	222	222	222	222
onz Optimistic attitude to life and the ability to mobilise in difficult situations	Correlation	,511	,090	,430	,543	-,178	-,311	,131
	Significance	,000	,184	,000	,000	,008	,000	,051
	N	222	222	222	222	222	222	222

In summary, all dimensions of Resilience correlated significantly and moderately with the three dimensions of happiness and with the total score, only for Perseverance and Determination in action and for Optimistic attitude towards life the Optimal Experience Scale was statistically insignificant. For the sensitivity dimensions, the results proved to be mixed, and so the factors of Resilience Openness to new experiences and Tolerance of failure correlated significantly but weakly with Aesthetic Sensitivity. For the other Resilience dimensions, the results indicated weak or very weak and inverse correlations with the sensitivity dimensions.

Relationship between Happiness and Sensitivity

Spearman's rho non-parametric correlation analyses were performed to examine the relationships between happiness and sensitivity dimensions. The results of these analyses are presented in Table 4.

It was noted that the Quality of Life factor (SHI-PL) Positive Emotions Scale correlates weakly and inversely with the sensitivity factor (HSPS-10) Ease of excitation. For Low Sensory Threshold and for Aesthetic Sensitivity, the result was found to be statistically insignificant.

The Optimal Experience Scale correlates weakly and inversely with Ease of excitation. In contrast, the result was found to be statistically insignificant for Low Sensory Threshold and for Aesthetic Sensitivity.

Sense of Meaning Scale correlates weakly and inversely with Ease of excitation, and for Low Sensory Threshold and for Aesthetic Sensitivity, the results also proved to be statistically insignificant.

Overall, the Combined Index of Quality of Life was only found to be statistically significant for Ease of excitation. This is a weak and inverse correlation.

In summary, all Happiness dimensions correlated significantly but weakly and inversely with the sensitivity factor Ease of excitation. The correlations with the other sensitivity factors Low Sensory Threshold and Aesthetic Sensitivity were found to be statistically insignificant.

Table 4. *Non-parametric correlations (NONPAR CORR rho Spearman)*
Non-parametric correlations (Spearman's rho) Quality of life versus Sensitivity

Happiness (quality of life)		lst Low Sensory Threshold	eoe Ease of excitation	aes Aesthetic Sensitivity
spe Positive Emotions Scale	Correlation Coefficient	-,141	-,267	,111
	Two-tailed Significance	,035	,000	,099
sod Optimal Experience Scale	Correlation Coefficient	-,114	-,376	,098
	Two-tailed Significance	,089	,000	,144
sps Sense of Meaning Scale	Correlation Coefficient	-,148	-,297	,115
	Two-tailed Significance	,028	,000	,087
shi_sum Overal index	Correlation Coefficient	-,148	-,362	,110
	Two-tailed Significance	,027	,000	,102

Discussion

The practice of mindfulness facilitates acceptance of inevitable life changes and enables individuals to cope with the complexities of human existence. Through mindfulness, individuals develop awareness that excessive worry about social comparisons or prolonged rumination about the future or past does not contribute to happiness (Kabat-Zinn, 2003). Mindfulness practice enables the identification of negative thought patterns before they become amplified, initiating a process of regaining control over one's life while deepening the capacity to experience profound emotions (Williams & Penman, 2014).

The research conducted for this study confirmed a significant relationship between mindfulness and well-being, defined as happiness among the participants. This indicates that mindfulness practice is associated with subjectively experienced happiness. Considering previous research described in the theoretical section regarding the impact of mindfulness on human well-being, this result confirms the thesis that individuals practicing any form of mindfulness experience greater life satisfaction (Davidson et al., 2003; Fredrickson et al., 2008).

Among the examined participants, mindfulness factors such as non-reactivity, conscious action, describing, and non-judging significantly correlated with high declared sense of happiness. Only the observing dimension proved to be statistically non-significant. These findings align with the Five Facet Mindfulness Questionnaire (FFMQ) framework, which conceptualizes mindfulness as a multifaceted construct (Baer et al., 2006).

Simultaneously, the relationship between personality resilience and sense of happiness was confirmed. All dimensions of resilience significantly correlated with three dimensions of happiness: the Positive Emotions Scale, the Optimal Experience Scale, and the Sense of Meaning Scale. Coping competencies and tolerance of unpleasant emotions showed the strongest correlation with high sense of happiness. Other resilience factors such as persistence and determination in action, openness to new experiences and sense of humor, tolerance for failures and treating life as a challenge, as well as optimistic attitude toward life and ability to mobilize in difficult situations also significantly but moderately correlated with declared sense of happiness.

This confirms the assumption that possessing a high level of resilience is significantly associated with human psychological well-being (Connor & Davidson, 2003; Luthar et al., 2000). Analyzing the results, it can also be stated that resilience has significant importance for the sense of happiness. Resilience dimensions also significantly, though weakly, correlated with sensitivity dimensions. The higher the sensitivity in examined participants and simultaneously the higher the level of resilience, the higher sense of happiness the participants declared.

Davidson and Kabat-Zinn (2003) analyzed the impact of mindfulness practice on the emotional thermostats of a group of laboratory workers. After eight weeks of mindfulness meditation practice, participants became happier, less anxious, more energetic and engaged in work, and their brain activation coefficient shifted to the left hemisphere. Participants were also exposed to depressive music and sad memories. Instead of fighting sadness, the participants perceived it as something to engage with and befriend. Meditation increased overall happiness levels and decreased stress levels (Davidson et al., 2003).

In other studies, Sarah Lazar from Massachusetts General Hospital discovered that in people who meditated for several years, these positive changes affected the physical structure of the brain. The emotional thermostat becomes thoroughly reset and changes for the better. Over time, the probability of experiencing greater happiness increases (Lazar et al., 2005).

Other proven benefits of meditation were presented by Professor Barbara Fredrickson and colleagues from the University of North Carolina. They demonstrated that meditation focusing on loving-kindness for oneself and others evokes positive emotions that lead to a greater sense of joy in life. After nine weeks of training, meditating individuals developed a stronger sense of purpose and experienced less isolation and alienation (Fredrickson et al., 2008).

Research conducted at the University Medical Center in Groningen, Netherlands, showed that mood and well-being improvement is directly related to becoming aware of daily, routine activities, paying attention to ordinary experiences, and acting in a less automatic manner. Better mood is also associated with accepting thoughts and emotions without criticism and learning openness to painful emotions (Schroevers & Brandsma, 2010).

Kirk Brown and Richard Ryan (2003) discovered that more mindful individuals engage in more autonomous activities. They do not engage in activities to appear better in others' eyes or even to feel better about themselves. More mindful people tend to do what is truly valuable to them or what they simply enjoy (Brown & Ryan, 2003).

Practical implications, limitations and future research directions

Recent research indicates the possibility of synergistic effects of the studied variables on the sense of happiness. Interventions combining mindfulness and resilience development may be particularly effective in improving the well-being of highly sensitive individuals, helping them better utilize their unique traits and abilities while simultaneously reducing potential negative consequences of high sensitivity (Acevedo et al., 2018).

The findings suggest several practical applications 1) therapeutic interventions, mindfulness-based interventions (MBIs) could be specifically tailored for highly sensitive individuals, incorporating resilience-building components to maximize therapeutic outcomes (Goyal et al., 2014); 2) educational programs: development of psychoeducational programs that help highly sensitive individuals understand their trait and learn adaptive coping strategies through mindfulness and resilience training; 3) workplace applications, e.g. organizations could implement mindfulness programs specifically designed to support highly sensitive employees, potentially improving job satisfaction and reducing burnout (Mesmer-Magnus et al., 2017).

Several limitations must be acknowledged in the current study. First, the primary limitation of this research is the cross-sectional nature of the statistical analyses, which are restricted to correlational analyses. While these provide inspiration for further research, they limit the ability to draw conclusions about the direction of the demonstrated relationships. Second, the correlational design prevents establishment of causal relationships between variables. Longitudinal studies would be necessary to determine whether mindfulness and resilience predict happiness over time or vice versa.

Third, the generalizability of findings is significantly limited by sample characteristics, including demographic factors, cultural background, level of education, and particularly gender distribution (71.2% women, 28.8% men). The results may be more representative of female experiences with SPS, mindfulness, and resilience than male experiences. Given evidence of potential gender differences in emotional processing, expression, and social conditioning around sensitivity (Aron & Aron, 1997), our findings should be generalized to the broader population with caution. The overrepresentation of women may reflect broader sociocultural patterns wherein sensitivity and emotional awareness are more accepted and explored by women. This self-selection bias suggests that male participants who volunteered may represent a specific subgroup more open to discussing sensitivity-related topics, potentially limiting generalizability even within the male population. Forth, the reliance on self-report questionnaires may introduce response bias and social desirability effects, potentially affecting the validity of the findings. Fifth, the non-significant finding for the observing facet of mindfulness may reflect limitations in the measurement instrument rather than a true absence of relationship.

Future studies should prioritize achieving gender balance in samples and explicitly investigate whether gender moderates the relationships between SPS, mindfulness, resilience, and happiness. Future research also should pay particular attention to the potential role of mindfulness and resilience as moderators in the relationship between SPS and quality of life. In psychological research, these variables are often analyzed together in the context of well-being models, stress coping, and personal development. They may create both protective and risk developmental pathways, depending on their configuration and environmental context (Boyce & Ellis, 2005). Long-term intervention studies are needed to more precisely explain the mechanisms underlying these relationships and establish temporal precedence. Future research should also examine whether mindfulness and resilience mediate or moderate the relationship between sensory processing sensitivity and various outcomes. Randomized controlled trials testing the effectiveness of integrated mindfulness-resilience interventions for highly sensitive individuals could also be incorporated.

Quality of life, as a multidimensional construct encompassing physical, psychological, and social aspects of functioning (World Health Organization, 1995), represents an important indicator of adaptive functioning. Understanding how sensitivity, mindfulness, and personality resilience may influence quality of life could be crucial for developing effective interventions supporting highly sensitive individuals.

Conclusions

This study contributes to the growing understanding of the complex relationships between SPS, mindfulness, personality resilience, and happiness. The findings support the potential for developing targeted interventions that leverage the synergistic effects of mindfulness and resilience training for highly sensitive individuals. However, the limitations of the current research highlight the need for more rigorous, longitudinal studies to establish causal relationships and develop evidence-based interventions.

The implications extend beyond individual well-being to broader applications in clinical practice, education, and organizational settings. As our understanding of these relationships deepens, we can better support individuals with high sensory processing sensitivity in achieving optimal well-being and life satisfaction.

References

Acevedo, B. P., Aron, E. N., Aron, A., Sangster, M. D., Collins, N., & Brown, L. L. (2014). The highly sensitive brain: An fMRI study of sensory processing sensitivity and response to others' emotions. Brain and Behavior, 4(4), 580–594. DOI: 10.1002/brb3.242.

Acevedo, B., Aron, E., Pospos, S., & Jessen, D. (2018). The functional highly sensitive brain: a review of the brain circuits underlying sensory processing sensitivity and seemingly related disorders. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, *373*(1744), 20170161. https://doi.org/10.1098/rstb.2017.0161

Aron, E., Aron, A. (1997). Sensory-processing sensitivity and its relation to introversion and Emotionality. *Journal of Personality and Social Psychology*, 73(2), 345-368. DOI: 10.1037/0022-3514.73.2.345.

Aron, E., Aron, A., Jagiellowicz, J. (2012). Sensory-processing sensitivity: A review in the light of the evolution of biological responsivity. *Personality and Social Psychology Review*, 16, 262-282. DOI:10.1177/1088868311434213.

Aron, E.N. (2020). *Wysoko wrażliwi: Jak funkcjonować w świecie, który nas przytłacza.* Łódź: JK Wydawnictwo.

Astin, J. (1997). Stress reduction through Mindfulness Meditation. *Psychotheraphy and Psychosomatics*. 66(2), 97-106.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). *Using self-report assessment methods to explore facets of mindfulness*. Assessment, *13*(1), 27–45. https://doi.org/10.1177/1073191105283504

Bakker, K., & Moulding, R. (2012). Sensory-processing sensitivity, dispositional mindfulness and negative psychological symptoms. *Personality and Individual Differences, 53*(3), 341–346. https://doi.org/10.1016/j.paid.2012.04.006

Baryła-Matejczuk, M. (2019). Pomiar wysokiej wrażliwości – przegląd dostępnych narzędzi i sposobów pomiaru wrażliwości przetwarzania sensorycznego (ang. Sensory Processing Sensitivity) u dzieci i u osób dorosłych. W: Z.B. Gaś (red.), *Profilaktyka zachowań ryzykownych w teorii i praktyce* (s. 91-104). Lublin: Innovatio Press Wydawnictwo Naukowe Wyższej Szkoły Ekonomii i Innowacji.

Baryła-Matejczuk, M., Kata, G., Poleszak, W. (2021). Wrażliwość środowiskowa a inteligencje wielorakie uczniów szkół podstawowych. Badania z wykorzystaniem polskiej wersji skali Highly Sensitive Child (HSC).*Annales Universitatis Mariae Curie-Skłodowska. Sectio J, Paedagogia-Psychologia*, 34(2), 43-64. DOI: 10.17951/j.2021.34.2.43-64.

Baryła-Matejczuk, M., Porzak, R., & Poleszak, W. (2022). *HSPS-10—Short Version of the Highly Sensitive Person Scale for Students Aged 12–25 Years*. International Journal of Environmental Research and Public Health, *19*(23), 15775. https://doi.org/10.3390/ijerph192315775

Belsky, J.,Pluess, M (2009). Beyond diathesis stress: Differential susceptibility to environmental influences. *Psychological Bulletin*, 135(6), 885-908. DOI: 10.1037/a0017376.

Block, J. H., Block, J. (1980). The role of ego-control and ego –resiliency in the origination of behawior. W: W. A. Collings (red.), *The Minnesota Symposia on Child Psychology* (39-101). NJ:Hillsdale, Erlbaum.

Block, J., Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, 70, 349-361.

Borucka, A. (2011). Koncepcja resilience. Podstawowe założenia i nurty badań. W: W. Junik (red.), *Resilience* (s. 11-28). Warszawa: Wydawnictwo Naukowe Parpamedia.

Borucka, A., Ostaszewski, K. (2008). *Koncepcja resilience. Kluczowe pojęcia i wybrane zagadnienia. Medycyna Wieku Rozwojowego*, XII, 2 część I, 587-597.

Boyce, W. T., & Ellis, B. J. (2005). Biological sensitivity to context: I. An evolutionary--developmental theory of the origins and functions of stress reactivity. *Development and psychopathology*, *17*(2), 271–301. https://doi.org/10.1017/s0954579405050145

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical Foundations and Evidence for Its Salutary Effects. *Psychological Inquiry, 18*(4), 211–237.

Brown, K., Ryan, R. (2003). *The benefits of being present: Mindfulness and its role in psychological well-being. Journal of Personality and Social Psychology*, 84(4), 822-848.

Charney, D. S. (2004). Psychobiological mechanisms of resilience and vulnerability: implications fof successful adaptation to extreme stress. *American Journal of Psychiatry*, 161,195-216.

Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A., & Conway, A. M. (2009). Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion, 9*(3), 361–368. https://doi.org/10.1037/a0015952

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Craig, A. D., *Human feelings: Why are some more aware than others?*, *Trends in Cognitive Sciences*, nr 6/2004, s. 239-241.

Craik, F.M., Lockhart, R.S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, 11(6), 671-684.

Crocker, J., & Park, L. E. (2004). The Costly Pursuit of Self-Esteem. *Psychological Bulletin, 130*(3), 392–414. https://doi.org/10.1037/0033-2909.130.3.392

Cummins, R. A. (2010). Subjective wellbeing, homeostatically protected mood and depression: A synthesis. *Journal of Happiness Studies, 11*, 1-17

Czapiński, J. (2004). Spotkanie dwóch tradycji: hedonizmu i eudajmonizmu. W: J. Czapiński (red.), Psychologia pozytywna. Nauka o szczęściu, zdrowiu, sile i cnotach człowieka (s. 13–17). Warszawa: PWN.

Daniels, S., Piechowski. M. (2009).*Embracing intensity: Overexcitability, sensitivity and the developmental potential of the gifted*, [w:] S. Daniels, M. Piechowski (red.), *Living with intensity. Understanding the sensitivity, excitability, ald emotional development of gifted children, adolescents, and adults*. Scottsdale: Great Potential Press.

Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., … & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65(4), 564-570.

de Villiers, B., Lionetti, F., & Pluess, M. (2018). Vantage sensitivity: a framework for individual differences in response to psychological intervention. *Social psychiatry and psychiatric epidemiology*, *53*(6), 545–554. https://doi.org/10.1007/s00127-017-1471-0

Diener, E. (2009). Subjective well-being. In E. Diener (Ed.), *The science of well-being: The collected works of Ed Diener* (pp. 11–58). Springer Science + Business Media. https://doi.org/10.1007/978-90-481-2350-6_2

Diener, E., & Biswas-Diener, R. (2008). *Happiness: Unlocking the mysteries of psychological wealth.* Blackwell Publishing. https://doi.org/10.1002/9781444305159

Diener, E., Lucas, R.E., Oishi, S. (2004). Dobrostan psychiczny. Nauka o szczęściu i zadowoleniu z życia. W: J. Czapiński (red.), Psychologia pozytywna: nauka o szczęściu, zdrowiu, sile i cnotach człowieka (s. 35–50). Warszawa: Wydawnictwo Naukowe PWN.

Diener, E., Lukas, R.E., Oishi, S. (2002). Subiective well-being. The science of happiness and life satisfaction. W: C.R. Snyder, S.J. Lopez (red.), *Handbook of positive psychology* (s. 63-73). New York: Oxford University Press.

Falewicz, A. (2016). *Prężność osobowości i jej rola w procesach radzenia sobie ze stresem*, 23, 263-275. DOI: 10.18276/skk2016.23-17.

Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, 95(5), 1045-1062.

Gąsior, K (2014). *Prężność rodzinna – nowe wyzwanie dla profilaktyki*. Resocjalizacja Polska (Polish Journal of Social Rehabilitation) 6,79-88.

Germer, Ch.K., Siegel, R.D, Fulton, P.R. (2015). *Uważność i psychoterapia*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., Berger, Z., Sleicher, D., Maron, D. D., Shihab, H. M., Ranasinghe, P. D., Linn, S., Saha, S., Bass, E. B., & Haythornthwaite, J. A. (2014). Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. *JAMA internal medicine*, *174*(3), 357–368. https://doi.org/10.1001/jamainternmed.2013.13018

Greven, C.U., Lionetti, F., Booth, C., Aron, E.N., Fox, E., …, Homberg, J. (2019). Sensory processing sensitivity in the context of Environmental Sensitivity: A critical review and development of research agenda. *Neuroscience and Biobehavioral Reviews*, 98, 287-305. DOI: https://doi.org/10.1016/j.neubiorev.2019.01.009

Growiec, K. (2015). *Ile szczęścia dają nam inni ludzie? Więzi społeczne a dobrostan psychiczny*. Warszawa: PWN.

Heszen, I., Sęk, H. (2007). *Psychologia zdrowia*. Warszawa: PWN.

Hofmann, S., Grossman, P., Hinton, D. (2011). *Loving-kindness and compassion meditation: Potential for psychological interventions*. *Clinical Psychology Review*, 31, 1126-1132.

Horkheimer, M. (1987). *Społeczna funkcja filozofii. Wybór pism*. Warszawa: PIW.

Iimura, S., & Kibe, C. (2020). Highly Sensitive Adolescent Benefits in Positive School Transitions: Evidence for Vantage Sensitivity in Japanese High-Schoolers. Developmental Psychology, 56(8), 1565–1581. DOI: 10.1037/dev0000991

Junik, W. (2011). Zjawisko rezyliencji – wybrane problemy metodologiczne. W: W. Junik (red.), *Resilience*. Warszawa: Wydawnictwo Edukacyjne Parpamedia.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10*(2), 144-156.

Kabzińska, I. (2017). *Nadwrażliwi – kulturowi odmieńcy*, „Etnografia Polska, t. LXI, 2017, z. 1-2 PL ISSN 0071-1861.

Kashdan, T. B., & Steger, M. F. (Eds.). (2008). Designing positive psychology: Taking stock and moving forward. Oxford University Press.

Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: the costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, *3*(4), 219–233. https://doi.org/10.1080/17439760802303044

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly, 61*(2), 121–140. https://doi.org/10.2307/2787065

Kibe, C., Suzuki, M., Hirano, M., Boniwell, I. (2020) Sensory processing sensitivity and culturally modified resilience education: Differential susceptibility in Japanese adolescents. PLoS ONE 15(9): e0239002. https://doi.org/10.1371/journal.pone.0239002

Konaszewski, K., Kwadrans, Ł (2018). *Zasoby osobiste młodzieży nieprzystosowanej społecznie. Uwarunkowania środowiskowe.* Kraków: Oficyna Wydawnicza Impuls.

Konaszewski, K., Kwadrans, Ł. (2017). Prężność psychiczna a wsparcie społeczne w grupie młodzieży nieprzystosowanej. Badania pilotażowe. *Resocjalizacja Polska*, (13), 163-173.

Lafraire, J., Rioux, C., Giboreau, A., & Picard, D. (2016). Food rejections in children: Cognitive and social/environmental factors involved in food neophobia and picky/fussy eating behavior. *Appetite*, *96*, 347–357. https://doi.org/10.1016/j.appet.2015.09.008

Lazar, S. W., Kerr, C. E., Wasserman, R. H., Gray, J. R., Greve, D. N., Treadway, M. T., McGarvey, M., Quinn, B. T., Dusek, J. A., Benson, H., Rauch, S. L., Moore, C. I., & Fischl, B. (2005). Meditation experience is associated with increased cortical thickness. *Neuroreport*, *16*(17), 1893–1897. https://doi.org/10.1097/01.wnr.0000186598.66243.19

Letzring, T., Block, J., Funder, D. (2005). Ego-control and ego-resiliency: Generalization of a self-report scales based on personality descriptions from acquaintances, clinicans and self. *Journal of Research in Personality*, 39(4), 395-422.

Lionetti, F., Aron, A., Aron, E. N., Burns, G. L., Jagiellowicz, J., & Pluess, M. (2018). Dandelions, tulips and orchids: Evidence for the existence of low-sensitive, medium-sensitive and high-sensitive individuals. Translational Psychiatry, 8(1), 24. DOI: 10.1038/ s41398-017-0090-6.

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. https://doi.org/10.1111/1467-8624.00164

Luthar, S., Brown, J.P. (2007). *Maximizing resilience through diverse levels of inquiry: prevailing paradigms, possibilities and priorities for the future. Development and Psychopathology* 19, 931-955.

Luthar, S., Cicchetti, D., Becker, B. (2000). The construct of resilience: critical evaluation and guidelines for future work. *Child Development*, 71, 543-562.

Markowski, M.P. (2013). *Polityka wrażliwości*. Kraków: Universitas.

Masten, A.S (2004). *Regulatory processes, risk, and resilience in adolescent development*. *Annals of the New York Academy of Sciences*, Vol. 1021, 310-319.

Masten, A.S. (2001). *Ordinary magic. American Psychologist*, Vol. 56, Number 3, 227-238.

Masten, A.S., Obradović, J. (2008). *Resilience in developing system: Progress and promise as the fourth waves rises. Development and Psychopathology* 19,921-930.

Mesmer-Magnus, J., Manapragada, A., Viswesvaran, C., & Allen, J. W. (2017). *Trait mindfulness at work: A meta-analysis of the personal and professional correlates of trait mindfulness*. Human Performance, *30*(2-3), 79–98. https://doi.org/10.1080/08959285.2017.1307842

Monroe, S. M., & Simons, A. D. (1991). Diathesis-stress theories in the context of life stress research: Implications for the depressive disorders. *Psychological Bulletin, 110*(3), 406–425. https://doi.org/10.1037/0033-2909.110.3.406

Moore, A., Gruber, T., Derose, J., Malinowski, P. (2012). Regular brief mindfulness meditation practice improves electrophysiological markers of attention control. *Frontiers in Human Neuroscience*. 6,ArtID18.

Moorjani, A (2021), *Sensitive is the New Strong. The Power of Empaths In an Increasingly Harsh World*. Hodder & Stoughton.

Ogińska-Bulik, N., & Juczyński, Z. (2008). Pomiar prężności–narzędzie do badania pozytywnych zasobów osobistych. *Nowiny Psychologiczne*, *3*, 67–76.

Oleś, P., Drat-Ruszczak, K. (2008). *Osobowość*. W: J. Strelau, D. Doliński (red.), Psychologia, t. 1 (rozdz. 8, 651-764). Gdańsk: GWP.

Ostaszewski, K. (2008). *Czynniki ryzyka i czynniki chroniące w zachowaniach ryzykownych dzieci i młodzieży*. W: J. Mazur i wsp. *Czynniki chroniące młodzież 15-letnią przed podejmowaniem zachowań ryzykownych*. Instytut Matki i Dziecka. Zakład Ochrony i Promocji Zdrowia Dzieci i Młodzieży, Warszawa, 19-46.

Ostaszewski, K. (2010). *Badania warszawskich gimnazjalistów*. Koncepcja i metoda. W: Okulicz-Kozaryn, K., Ostaszesski, K. (red.) (2010). *Promocja zdrowia psychicznego badania i działania w Polsce*. Część II. Instytut Psychiatrii i Neurologii, Warszawa.

Paśniewska-Kuć, Z. (2014). *W obronie nadwrażliwych. Przesłanie dla psychologów*. Warszawa: Wydawnictwo Dispicio.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* Oxford University Press; American Psychological Association.

Pluess, M., & Belsky, J. (2013). Vantage sensitivity: Individual differences in response to positive experiences. Psychological Bulletin, 139(4), 901–916. DOI: 10.1037/a0030196.

Pluess, M., Assary, E., Lionetti, F., Lester, K.J, Krapohl, E., Aron, E.N., Aron, A. (2017). Environmental Sensitivity in Children: Development of the Highly Sensitive Child Scale and Identification of Sensitivity Groups. *Developmental Psychology*, 54(1), 51-70, DOI: 10.1037/dev0000406.

Radoń, S. (2020). Uważność i jej pomiar. W: J. Cieciuch (red.), *Studia Psychologica: Theoria et Praxis*, 20(1), 5-19. https://doi.10.21697/sp.2020.20.1.03

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological wellbeing. *Journal of Personality an Social Psychology*, 57, 1069-1081.

Salzberg, S. (2011). *Real happiness: The power of meditation*. New York: Work-man.

Sand, I. (2016). *Wrażliwość dar czy przekleństwo?*, Warszawa: Laurum.

Sedlmeier, P., Eberth, J. (2012). The effects of mindfulness meditation: A meta-analisis. *Mindfulness 3(3*), 174-189.

Seligman, M. (2012). Flourish: A Visionary New Understanding of Happiness and Well-Being. New York: Atria Books.

Seligman, M. E. P. (2011). *Flourish. A visionary new understanding of happiness and well-being*. New York: Free Press.

Seligman, M. E. P., Rashid, T., & Parks, A. C. (2006). Positive psychotherapy. *American Psychologist, 61*(8), 774–788. https://doi.org/10.1037/0003-066X.61.8.774

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive Psychology Progress: Empirical Validation of Interventions. *American Psychologist, 60*(5), 410–421. https://doi.org/10.1037/0003-066X.60.5.410

Shroevers, M. J., Brandsma, R., *Is learning mindfulness associated with improved affect after mindfulness-based cognitive therapy?*, *Britisch Journal of Psychology*, nr 101/2010, s.95-107.

Smith, A. (with Jones, J., & Kurlbaum, J.) (2010). Winning the H Factor: The Secrets of Happy Schools. London: Continuum.

Synnestvedt, A. (2006). *Out in the Air: The Cultural Heritage Site as an Arena for Archaeology, Health, Pedagogy and Fun*. Current Swedish Archaeology, *14*(1), 67–85. https://doi.org/10.37718/CSA.2006.04

Szpunar, M. (2018). *(Nie) potrzebna wrażliwość*. Kraków: Instytut Dziennikarstwa, Mediów i Komunikacji Społecznej Uniwersytetu Jagiellońskiego.

Tang, Y. Y., Lu, Q., Geng, X., Stein, E. A., Yang, Y., & Posner, M. I. (2010). Short-term meditation induces white matter changes in the anterior cingulate. *Proceedings of the National Academy of Sciences of the United States of America*, *107*(35), 15649–15652. https://doi.org/10.1073/pnas.1011043107

Tang, YY., Hölzel, B. & Posner, M. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience, 16*, 213–225. doi.org/10.1038/nrn3916

Teper, R., Segal, Z. V., & Inzlicht, M. (2013). Meditation, mindfulness and executive control: the importance of emotional acceptance and brain-based performance monitoring. *Social Cognitive and Affective Neuroscience*, *8*(1), 85–92.

Tillmann, T., Bertrams, A., El Matany, K., & Lionetti, F. (2021). Replication of the existence of three sensitivity groups in a sample of German adolescents. European Journal of Developmental Psychology, 18(1), 131–143. DOI: 10.1080/17405629.2020.1763791.

Trzebińska, E. (2012). *Psychologia pozytywna*. Łośgraf.

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.

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. https://doi.org/10.1037/0022-3514.86.2.320

Waterman, A. S. (2008). Reconsidering happiness: A eudaimonist's perspective. *The Journal of Positive Psychology, 3*(4), 234–252. https://doi.org/10.1080/17439760802303002

Westen, D. (1999). *Psychology: Mind, brain and culture* (wyd. 2). New York: Wiley.

Williams, M., Penman, D. (2014). *Mindfulness. Trening uważności*. Warszawa: Samo Sedno.

Wojciszke, J. (2010a). Sprawczość i wspólnotowość: Podstawowe wymiary spostrzegania społecznego. Psychologia Społeczna, 5(2), 1-14.

World Health Organization. (1995). The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. Social Science & Medicine, 41(10), 1403-1409. doi.org/10.1016/0277-9536(95)00112-K

Yano, K., & Oishi, K. (2021). Replication of the three sensitivity groups and investigation of their characteristics in japanese samples. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues.* Advance online publication. https://doi.org/10.1007/s12144-021-01537-6

Zeff, T. (2008). *Być nadwrażliwym i przetrwać*. Warszawa: Jacek Santorski & Co Agencja Wydawnicza.