Nelkowska Dominika Dorota. Importance of personal resources for the quality of life of patients with Irritable Bowel Syndrome (IBS). Journal of Education, Health and Sport. 2019;9(4):442-453. eISSN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.2648305
http://ojs.ukw.edu.pl/index.php/johs/article/view/6841
https://pbn.nauka.gov.pl/sedno-webapp/works/911697

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 28.03.2019. Revised: 30.03.2019. Accepted: 22.04.2019.

Importance of personal resources for the quality of life of patients with Irritable Bowel Syndrome (IBS)

Dominika Dorota Nelkowska

Master of psychology, PhD student
e-mail: domanela@gmail.com
ORCID: https://orcid.org/0000-0002-0857-9796

Affiliation:
Institute of Psychology, Kazimierz Wielki University
Jana Karola Chodkiewicza 30, 85-064 Bydgoszcz

Abstract

Introduction: The present study provided an analysis of the relationship between resiliency and quality of life in patients with Irritable Bowel Syndrome (IBS), discussing the missing issue of personal resources importance.

Purpose of work: Verification of the importance of resilience for the quality of life of patients with IBS.

Material and methods: The study analyzed a group of 60 persons (38 women and 22 men) of the age ranged from 32 to 61 years (M = 44.30, SD = 8.07). It was conducted within a group of 30 healthy participants and 30 participants who have been diagnosed with IBS. In order to examine the level of resiliency, the Resiliency *Assessment Scale* (*SPP-25*) was used, whereas the quality of life was assessed by World Health Organization Quality of Life Questionnaire (WHOQOL-BREF).

Results: There is a positive relationship between resilience and quality of life. People suffering from IBS are characterized by a lower level of resilience and quality of life than healthy people. The strongest differences among QOL domains were found for psychological health, social relationships and environment. All correlations were positive, taking greater values in the IBS group.

Conclusions: The level of resiliency in the IBS group is significantly lower than in the healthy group, which may result in insufficient self-regulation abilities. Difficulties in the field of psychological and social functioning contribute to a decrease in the quality of life of people

with IBS, more than somatic complaints, while being one of the causes of exacerbation of symptoms in the course of the disease. Reinforcement of personal resources can be considered as a form of treatment, supporting patient's psychophysical wellbeing.

Keywords: Irritable Bowel Syndrome; resiliency; quality of life; personal resources

INTRODUCTION

IRRITABLE BOWEL SYNDROME – MULTIFACTORIAL, PSYCHOSOMATIC AND CHRONIC DISORDER

Irritable Bowel Syndrome is described as a functional disorder (Hyland, 2011). The lack of psychopathology or structural changes in endoscopic examination makes the symptomatic characteristics the most important factor in the diagnostic process. The Rome criteria include recurrent abdominal pain occurring at least one day per week for the last three months, which is associated with two or more of the following: 1) defecation; 2) changes in the frequency of stool; 3) changes in the form or appearance of stool (Mulak, Smereka & Paradowski, 2016, p. 52). Primary reported symptoms include abdominal pain, bloating and diarrhea or constipation, but headache, muscle pain, fatigue, urological symptoms or painful intercourses are also frequent (Videlock & Chang, 2013). Moreover, patients with IBS often feel depressed, anxious and tense. They display cognitive, affective and behavioral reactions resulting from the fear of emerging symptoms from the digestive system, which was described as *gastrointestinal specific anxiety* (GSA) (Labus et al. 2007; as cited in Ljótsson et al., 2010). Patient's ailments and complaints cause even three time higher absence at work compared to healthy subjects and entail recurrent and prolonged doctors' appointments (Borys, Sulkowska & Guzek, 2011; Ljótsson et al., 2010). Previously conducted studies show that patients with IBS tend to have high levels of state and trait anxiety (Orzechowska et. al., 2010), visceral anxiety (Hazlett-Stevens, Craske, Mayer, Chang & Naliboff, 2003), somatization, depression and alexithymia (Hazlett-Stevens et al., 2003; Nicholl et al., 2008; Philips, Wright & Kent, 2013; Porcelli, De Carne & Leandro, 2017). They have insufficient emotional resistance and regulation (Orzechowska et. al., 2010), often suffer from comorbid anxiety disorders (e.g. *generalized anxiety disorder*) and other somatic or psychosomatic disorders (e.g. *gastroesophageal reflux disease, functional dyspepsia, chronic fatigue syndrome, fibromyalgia) (*Hazlett-Stevens et al., 2003; Videlock & Chang, 2013). Other studies also indicate high levels of agreeableness and conscientiousness, as well as high need for social support (Wrzesińska, Szczęsny & Kocur, 2006; Wrzesińska & Kocur, 2008). All these characteristics indicate inadequate self-regulatory abilities and difficulties in overcoming everyday hassles by patients with IBS.

RESILIENCY AS A PERSONAL RESOURCE

According to J. Block (Block & Kremen, 1996; Kaczmarek et al., 2011), the author of the concept, resiliency is a flexibility and ability to adjust one's level of impulse control to the circumstances. It is an individual capacity to modify own impulsivity and self-reflexivity depending on requirements of both traumatic and everyday situations (Ogińska-Bulik, Zadworna-Cieślak & Rogala, 2015). As stated by previous analyzes, resiliency is related to ego-control, hardiness and sense of coherence, as well as emotional balance, openness to new experiences, optimism, extroversion, sense of agency, amicability and emotional intelligence (Ogińska-Bulik & Juczyński, 2008; Goleman, 2005; Unchast, 1997, 1998; as cited in

Turkiewicz-Maligranda, 2014). People with high resiliency can effectively adapt to difficult situations thanks to the ability to evoke positive emotions and flexible, creative use of own resources. They also treat difficulties as a challenge, an opportunity to gain new experience or self-development (Juczyński, 2008; Turkiewicz-Maligranda, 2014). Therefore, resiliency can be treated as the superior personality resource relevant to health and quality of life. Previous studies confirm that notion, as they prove that resiliency prevents the negative effects of experienced work stress and symptoms of post-traumatic stress and helps in coping with chronic illness (Kaczmarek et al., 2011). Resiliency also fosters the emergence of positive changes in life, helps to gain hope and is conductive to launch adaptive coping strategies, especially those focused on problem-solving (Juczyński, 2009; Kaczmarek & Aleszczyk, 2013; Ogińska-Bulik et al., 2015). Resiliency is the opposite of inhibition, stiffness behavior, impulsiveness, as well as D personality type and is associated with flourishing, indicating optimal functioning, favoring mental and physical health (Fredrickson, 2001; Fredrickson & Losada, 2005; Juczyński, 2009). For these reasons it was decided to analyze the level of resiliency as a factor of importance in the course of IBS as low level of resiliency can reduce adaptive abilities and intensify the experienced stress and negative emotions, leading to an exacerbation of IBS symptoms.

QUALITY OF LIFE – A WAY OF HEALTH ASSESSMENT?

Quality of Life (QoL) is a construct which appears more and more often in contemporary research, although it is difficult to define this term unambiguously. Literature of the subject states that QoL is a multidimensional concept, referring to many areas of life, uniting material goods, sense of happiness, life goals, needs and desires, engagement in meaningful activities or satisfaction with life (Chrobak, 2009; Ogińska-Bulik & Juczyński, 2010; Heszen & Sęk, 2012). WHO defines Quality of Life as: "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHO, 1997, p. 1). There are many other broad definitions, however some common features can be identified: QoL is a complex construct, variable over time; it can be assessed by objective and subjective evaluation and it consists of several components: somatic state, mental/psychological well-being, social relations and physical fitness (Ostrzyżek, 2008). The significance of the relationship between quality of life and health is clearly outlined. The QoL assessment is becoming more important especially in chronic diseases with no associated mortality, such as IBS. In medicine however, the concept of HRQOL (Health-Related Quality of Life) was introduced, which refers to subjective assessment of one's life situation during illness and treatment (Turska & Skowron, 2009). HRQOL has limited extent compared to QoL, which provides a broader view of one's functioning estimation, including also those issues, which are not closely related to the disease/health situation. According to holistic model (e.g. Hyland, 2011; Heszen, 2013), salutogenesis (e.g. Antonovsky, 2005; Kirenko & Byra, 2011) and psychosomatic concepts (e.g. Dunbar, 1943, Alexander & French, 1948; as cited in Dolińska-Zygmunt, 2001; McDougall, 2014), many factors are important for health maintenance and disease formation, as well as further coping with one's situation and psychological and emotional factors are considered substantial. It should be noted that, although good health often contributes to higher quality of life, literature also provides reverse examples, as objective quality of life indicators not always translate directly into high or low quality of life (Fayers & Machin, 2007; Ostrzyżek, 2008; Ziarko, 2014). Moreover, objective and subjective assessments of quality of life are often dissimilar, what was supported by the studies of patients suffering from chronic diseases, including patients with psoriasis (Łoza et al., 2003; Chodkiewicz, 2005). Therefore, subjective assessment of quality of life should be broadly considered in the

clinical practice, especially in the case of diagnosis and treatment of chronic diseases (Topór-Mądry, 2011). It is relevant in IBS evaluation due to its characteristics: unclear etiology, chronicity, recurrences and periodic aggravation of symptoms, the extent and variety of symptoms and treatment failure.

PURPOSE OF WORK

The main goal of the study was to determine if there is a relation between resiliency and quality of life and if so, how strong it is. The study also aimed to examine if there is a significant difference in resiliency level and quality of life level between patients with IBS and healthy individuals and if so, for which characteristics and domains the difference is the highest.

MATERIAL AND METHODS

The study was conducted in two cities in Poland (Bydgoszcz and Toruń) in time from December 2017 to April 2018, using target screening. In total, the study analyzed 60 persons (38 women and 22 men) between 32 to 61 years of age (M = 44.30, SD = 8.07). It was conducted within a group of 30 healthy participants (18 women and 12 men) without any chronic diseases (the control group) and 30 participants (20 women and 10 men) who have been diagnosed with IBS (the study group). Patients were qualified in the study group on the basis of symptomatic diagnosis. The enrollment was conducted in cooperation with gastroenterologists in gastroenterology clinics. Initially, it was planned to exclude those IBS participants, who declared presence of other chronic disorders. The collection of data revealed however that majority of them (70%, 21 of 30) marked the occurrence of other diseases (e.g. coronary disease, asthma, psoriasis, peptic ulcer disease, depression) and most of them are considered psychosomatic disorders. Therefore, it was decided to include those forms to the research.

Participants completed an imprint poll prepared for the study (sociodemographic data and questions about occurrence and duration of the IBS and any other disorders and number of hospitalizations in the last 5 years on account of chronic disorders). All individuals were informed about the goals and procedure. They gave their informed consent to participate voluntarily and anonymously in the study.

For the measurement of the resiliency, the Resiliency Assessment Scale (SPP-25) developed by Ogińska-Bulik & Juczyński (2008) was used. This questionnaire allows to determine the personality predispositions to deal with the negative aspects of the events experienced and indicates the level of self-regulation abilities. SPP-25 is a reliable and valid instrument in terms of partitive and general results. It provides a general level of resiliency (Cronbach's α = .93), as well as five respective factors (α = .70 – .77): (1) perseverance and determination, (2) openness to new experiences and sense of humor, (3) personal coping competence and tolerance of negative emotions, (4) tolerance for failure and treating life as a challenge, 5) optimistic attitude and abilities to mobilize oneself in difficult situations.
To measure quality of life, the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) was used. WHOQOL-BREF was developed from the WHOQOL-100 instrument to provide a shorter form of quality of life assessment (Skevington, Lotfy & O'Connell, 2004). The Polish version was developed by L. Wołowicka and K. Jaracz (2001). WHOQOL-BREF comprises 26 items, which measure 4 domains: physical health (α = .75), psychological health (α = .86), social relationship (α = .61) and environment (α = .79).

Relatively smaller value of Cronbach's α for social relationship domain may be due to the small number of questions on that scale (only three) and thus, such score is still sufficient.

RESULTS

The data were developed with IBM SPSS Statistics.
At first, variables were analyzed with descriptive statistics for the whole group of 60 persons (Table 1). The mean values for particular resiliency factors were in the range of 12.15 – 14.62; the highest on the first factor (perseverance and determination), while the lowest results on the fifth (optimistic attitude and abilities to mobilize oneself in difficult situations). The mean general resiliency level was $M = 67.65$, which indicates average level of resiliency, reaching 5th sten score (Ogińska-Bulik & Juczyński, 2008). The mean values for quality of life domains ranged from 12.35 to 13.86, wherein physical health ($M = 12.32$) and social relationships ($M = 12.44$) were rated lower than psychological health ($M = 13.84$) and environment ($M = 13.86$). Generally, the quality of life level should be considered as average. Normality was assessed with Shapiro-Wilk test, kurtosis and skewness values. Significant asymmetry was ultimately detected in case of duration of the IBS and number of hospitalizations, by referring to the rule of thumb (George & Mallery, 2010).

Table 1. Basic descriptive statistics and normality tests of data distribution.

	M	***Mdn***	***SD***	***Sk.***	***Kurt.***	***Min***	***Max***	***W***	***p***
age	44.30	43.00	8.07	.38	-.92	32.00	61.00	.95	.013
duration of IBS	9.10	9.00	5.68	1.93	5.76	1.00	30.00	.82	< .001
number of hospitalizations	.57	.00	1.31	2.99	10.15	.00	6.00	.51	< .001
SPP-25									
perseverance and determination	14.62	15.00	2.99	-.40	-.21	8.00	20.00	.96	.034
openness to new experiences and sense of humor	14.12	15.00	3.15	-.50	-.46	6.00	20.00	.95	.018
personal coping competence and tolerance of negative emotions	13.15	13.50	3.27	-.66	1.12	2.00	20.00	.96	.051
tolerance for failure and treating life as a challenge	13.62	13.00	3.00	-.58	.59	5.00	20.00	.96	.039
optimistic attitude and abilities to mobilize oneself in difficult situations	12.15	12.00	3.23	-.32	.12	4.00	20.00	.98	.364
resiliency – general level	67.65	70.00	13.41	-.57	.69	29.00	100.00	0,97	.183
WHOQOL-BREF									
physical health	12.32	12.00	1.88	.25	0.10	8.57	17.14	.97	.156
psychological health	13.84	14.00	2.09	-.83	0.99	7.33	18.00	.95	.012
social relationship	12.44	13.33	2.08	-.08	-.32	8.00	17.33	.95	.014
environment	13.86	14.25	2.22	-.76	.35	8.00	17.50	.95	.013

M – mean; *Mdn* – median; *SD* – standard deviation; *Sk.* – skewness; *Kurt.* – kurtosis; *Min* – minimum; *Max* – maximum; *W* – The Shapiro-Wilk test; *p* – probablility value.

Table 2. Difference in resiliency between the control and the study group.

	control group (n = 30)		study group (n = 30)		*t*	*p*	95% *CI*		Cohen's *d*
	M	***SD***	***M***	***SD***			***LL***	***UL***	
1	15.17	2.67	14.07	3.24	1.44	.156	-.43	2.63	.37
2	14.93	2.59	13.30	3.48	2.07	.043	.05	3.22	.53
3	14.13	2.89	12.17	3.38	2.42	.019	.34	3.59	.63
4	14.63	2.59	12.60	3.07	2.77	.007	.56	3.50	.72
5	12.93	2.65	11.37	3.60	1.92	.060	-.07	3.20	.50
resiliency – general level	71.80	11.42	63.50	14.13	2.50	.015	1.66	14.94	.65

Note. 1 - perseverance and determination, 2 - openness to new experiences and sense of humor, 3 - personal coping competence and tolerance of negative emotions, 4 - tolerance for failure and treating life as a challenge, 5 - optimistic attitude and abilities to mobilize oneself in difficult situations; *n* – number of subjects; *M* - mean; *SD* – standard deviation; *t* – t test; *p* probability value; 95%*CI* – confidence interval for difference of means; *LL* and *UL* – lower and upper limit of confidence interval

Table 3. Difference in quality of life between the control and the study group.

	control group (n = 30)		study group (n = 30)		*t*	*p*	95% *CI*		Cohen's *d*
	M	***SD***	***M***	***SD***			***LL***	***UL***	
physical health	12.42	2.00	12.23	1.77	.39	.698	-.79	1.17	.10
psychological health	14.40	1.79	13.29	2.25	2.12	.039	.06	2.16	.55
social relationship	13.02	1.34	11.87	2.51	2.22	.031	.11	2.20	.57
environment	14.42	1.92	13.30	2.39	1.99	.051	-.01	2.24	.51

n – number of subjects; *M* - mean; *SD* – standard deviation; *t* – t test; *p* probability value; 95%*CI* – confidence interval for difference of means; *LL* and *UL* – lower and upper limit of confidence interval

In order to check if resiliency correlates with quality of life, Pearson's r correlation coefficient was tested for the control and the study group separately (Table 4 and Table 5). Analysis of the relationship between resiliency and quality of life in the healthy group show that almost all the variables are strongly or moderately related and all the correlations are positive. Particularly strong relations occur for psychological domain ($r \in <.56, .77>$, $p < .001$).

In the IBS group also almost all resiliency factors correlate with particular quality of life domains. Only in one case (between physical health and perseverance and determination) the correlation result does not allow for a relationship to be established ($r = .34$, $p = .068$). In other cases the results are significant and correlations are positive. The strongest correlations occur between the general resiliency level and particular resiliency factors and environment. Similarly for the psychological domain, general resiliency and four of five factors correlate strongly ($r \in <.69, .78>$; $p < .001$). Social domain correlates moderately with most resiliency factors, while physical health correlates moderately or strongly.

It is worth noting that many relationships observed in the IBS group are stronger than in the healthy group, especially for the social domain and environment. For example, correlation between general resiliency and environment reaches $r = .79$ ($p < .001$), while in the healthy group the relationship was weaker $r = .46$ ($p < .011$).

Table 4. Correlation of resiliency and quality of life in the control group.

		physical health	psychological health	social relationship	environment
perseverance and determination	*r*	.44	.64	.30	.49
	significance	.016	< .001	.110	.006
openness to new experiences and sense of humor	*r*	.40	.69	.36	.47
	significance	.028	< .001	.047	.009
personal coping competence and tolerance of negative emotions	*r*	.46	.56	.27	.36
	significance	.010	.001	.145	.053
tolerance for failure and treating life as a challenge	*r*	.63	.70	.30	.46
	significance	< .001	< .001	.112	.010
optimistic attitude and abilities to mobilize oneself in difficult situations	*r*	.43	.70	.36	.18
	significance	.018	< .001	.054	.346
resiliency – general level	*r*	.55	.77	.37	.46
	significance	.002	< .001	.044	.011

Table 5. Correlation of resiliency and quality of life in the study group.

		physical health	psychological health	social relationship	environment
perseverance and determination	*r*	.34	.56	.50	.42
	significance	.068	.001	.005	.019
openness to new experiences and sense of humor	*r*	.41	.69	.46	.67
	significance	.023	< .001	.010	< .001
personal coping competence and tolerance of negative emotions	*r*	.64	.62	.48	.76
	significance	< 0.001	< .001	.007	< .001
tolerance for failure and treating life as a challenge	*r*	.54	.73	.51	.70
	significance	.002	< .001	.004	< .001
optimistic attitude and abilities to mobilize oneself in difficult situations	*r*	.62	.69	.40	.75
	significance	< 0.001	< .001	.029	< .001
resiliency – general level	*r*	.61	0.78	.55	.79
	significance	< .001	< 0.001	.001	< .001

In order to examine the IBS characteristics more profoundly, a few more analyzes were conducted. Because of very small numbers of the samples and asymmetry of data distribution, non – parametric test (Kendall's tau-b coefficient) was used to check if duration of the IBS, as well as individual history of hospitalization (measured by a number of completed hospital stays due to chronic disorders, including IBS and other given in the poll) can be relevant for

the quality of life. The results displayed in Table 6 show that the only statistically significant relationship occur between the number of hospitalizations and psychological domain (τ = -.35, p = .022). This correlation is moderately strong and negative, which means that the quality of life in the psychological domain decreases with the increase in the number of hospitalizations.

Table 6. Correlation of duration of the IBS and as individual history of hospitalization.

		duration of IBS	**number of hospitalizations**
physical health	Kendall's tau-b	-.14	-.14
	significance	.335	.376
psychological health	Kendall's tau-b	.07	-.35
	significance	.632	.022
social relationship	Kendall's tau-b	.10	-.21
	significance	.503	.183
environment	Kendall's tau-b	-.11	-.21
	significance	.430	.165

DISCUSSION

The results indicate that resiliency is important for the quality of life. In the vast majority of cases particular resiliency factors correlate with quality of life domains. All correlations are positive, so as the level of resilience increases, the quality of life also increases.

Correlations between resiliency and quality of life in the IBS group are in almost all cases stronger than in the control group, exceeding the value of r = .70 by fivefold and thus indicating very strong relationships. These findings suggest that resiliency is more important for quality of life in group with IBS than healthy group. Notwithstanding, as difference significance tests show, people with IBS are characterized by lower levels of resiliency compared to healthy subjects. Those differences are considerable, the highest for: tolerance for failure and treating life as a challenge, personal coping competence and tolerance of negative emotions and the general resiliency level. Notable and significant difference occurs also for openness to new experiences and sense of humor. No significant difference was observed for perseverance and determination. Such a result is consistent with the findings of Wrzesińska et. al (2006) and Wrzesińska & Kocur (2008), who reported high level of conscientiousness and task – oriented coping style among IBS patients.

It should be noted that the only insignificant relationship between resiliency and quality of life in IBS group occurs between physical health and perseverance and determination. Therefore, it can be concluded that those characteristics (and the resulting behavior) are not crucial for IBS symptoms and ailments. All the remaining factors (especially personal coping competence and tolerance of negative emotions, as well as optimistic attitude and abilities to mobilize oneself in difficult situations) are relevant and may contribute to the improvement of patients' quality of life, including their physical health and somatic condition.

Difference significance tests revealed interesting results. It turns out that study and control groups differ significantly in all four quality of life domains, however the difference in physical health is inconsiderable. In other words, much bigger differences between healthy

and IBS group occur for psychological health, social relationship and environment than for physical health. It indicates that particular aspects of psychological and social functioning are more important issues for IBS patients than their somatic ailments in itself. Comparing to healthy subjects, patients with IBS have lower self-esteem, are less satisfied with their intimate life and sexual activity, experience unpleasant feelings and emotions (such as anxiety or sadness) more often and judge their appearance less favorably. Those results confirm the importance of the psyche-soma relationship and the consequent need of holistic and multidisciplinary approach to diagnosis and treatment. Other results also confirm that statement, as a higher number of hospitalizations reduces quality of life (only) in the psychological domain.

CONCLUSIONS

The current study aimed to investigate the role of resiliency for the quality of life of patients with IBS. The findings suggest that their resiliency level is significantly lower than in healthy subjects, which may result in insufficient self-regulation capabilities. According to the analysis, patients with IBS are determined and persistent, but they lack the ability to cope with stress, failures and unpleasant emotions. What is more, it is the difficulties in the field of psychological and social functioning that contribute to a decrease in the quality of life of people with IBS more than somatic ailments. These results are consistent with previous analyzes indicating a relatively high level of anxiety and distress in people with IBS, the presence of alexithymic traits in this group, significant role of aggression, low emotional immunity and difficulties in interpersonal relationships. At the same time, this characteristic corresponds to personality type D (stress personality), which is the opposite of resiliency (Ogińska-Bulik & Juczyński, 2008).

Although the pathogenetic model still dominates in clinical practice, the results of recent studies indicate the need to recognize psychological or emotional factors and to consider subjective data in diagnostic and therapeutic procedures. Numerous empirical reports regarding the mutual interactions of the psyche-soma relationship imply the necessity of in-depth analysis of many aspects of the patient's functioning. This is also confirmed by the current research. Interdisciplinary interactions in the diagnostic process should become an indispensable element of everyday clinical practice, especially in the case of functional disorders and disorders of unclear, multiform etiology. These include, among others, IBS. According to the results of the conducted research, treatment based on psychological interactions, including the support of personal resources, may prove to be an effective method of eliminating symptoms and improving the psychosocial quality of functioning in this group of patients.

REFERENCES

Antonovsky A. Rozwikłanie tajemnicy zdrowia. Jak radzić sobie ze stresem i nie zachorować. [Unraveling the mystery of health. How people manage stress and stay well]. Warszawa. Instytut Psychiatrii i Neurologii; 2005.
Block J, Kremen AM. IQ and Ego-Resiliency: Conceptual and Empirical Connections and Separateness. Journal of Personality and Social Psychology. 1996; 70: 349-361.
Borys B, Sulkowska A, Guzek M. Dlaczego pacjenci z zespołem jelita nadwrażliwego są „trudni”? Praktyczne aspekty rozważań psychologicznych. [Why are patients with irritable bowel syndrome "difficult"? Practical aspects of psychological deliberations]. Via Medica. 2011; 5(3): 247-250.

Chodkiewicz J. Psychologia zdrowia. Wybrane zagadnienia. [Psychology of health. Selected issues]. Łódź. Wydawnictwo AHE; 2005.
Chrobak M. Ocena jakości życia zależnej od stanu zdrowia. [The evaluation of health related quality of life]. Problemy pielęgniarstwa. 2009; 17(2): 123-127.
Dolińska-Zygmunt G. (Ed.). Podstawy psychologii zdrowia. [Basics of health psychology]. Wrocław. Wydawnictwo Uniwersytetu Wrocławskiego; 2001.
Fayers P, Machin D. Quality of Life: The Assessment, Analysis and Interpretation of Patient-Reported Outcomes. (2 ed.). Chichester. John Wiley & Sons; 2007.
Fredrickson BL. The role of positive emotions in Positive Psychology. The Broaden-and-Build Theory of Positive Emotions. American Psychologist. 2001; 56(3): 218-226.
Fredrickson, BL, Losada, MF. Positive Affect and the Complex Dynamics of Human Flourishing. American Psychologist. 2005; 60(7): 678-686.
George D, Mallery P. SPSS for Windows Step by Step: A Simple Guide and Reference 17.0 Update. 10th Edition. Boston. Allyn & Bacon; 2010.
Hazlett-Stevens H, Craske MG, Mayer EA, Chang L, Naliboff BD. Prevalence of irritable bowel syndrome among university students. The roles of worry, neuroticism, anxiety sensitivity and visceral anxiety. Journal of Psychosomatic Research. 2003; 55: 501-505.
Heszen I. Psychologia stresu. [Psychology of stress]. Warszawa. Wydawnictwo Naukowe PWN; 2013.
Heszen I, Sęk H. Psychologia zdrowia. [Health Psychology]. Warszawa: Wydawnictwo Naukowe PWN; 2012.
Hyland ME. The origins of health and disease. Cambridge: Cambridge University Press; 2011.
Juczyński Z. Pomnażanie i wzbogacanie zasobów własnego zdrowia. [Increasing and improving resources of own health]. Polskie Forum Psychologiczne, 2009; 14 (1): 17-32.
Kaczmarek Ł, Sęk H, Ziarko M. Sprężystość psychiczna i zmienne pośredniczące w jej wpływie na zdrowie. [Ego Resiliency and the mediators of its effect on health]. Przegląd Psychologiczny, 2011; 54(1): 29-46.
Kaczamarek Ł, Aleszczyk K. Mechanizm sprężystości psychicznej – model mediacji dwukrokowej z udziałem strategii radzenia sobie i pozytywnego afektu wśród artystów muzyków. [Mechanisms of resiliency a two-step mediation with active coping and positive affect among musicians]. Czasopismo Psychologiczne, 2013; 19: 67-72.
Kirenko J, Byra S. Zasoby osobiste w chorobach psychosomatycznych. [Personal resources in psychosomatic diseases]. Lublin. Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej; 2011.
Ljótsson B, Andréewitch S, Hedman E, Rück C, Andersson G, Lindefors N. Exposure and mindfulness based therapy for irritable bowel syndrome – an open pilot study. Journal of Behavior Therapy and Experimental Psychiatry, 2010; 41: 185-190.
Łoza K, Borzęcki A, Cielica W, Łoza B. Zaburzenia psychosomatyczne w przebiegu łuszczycy. [Psychosomatic disorders in the course of psoriasis vulgaris]. Nowa Medcyna, 2003; 120: 34-37.
McDougall J. Teatry ciała. Psychoanalityczne podejście do chorób psychosomatycznych. [Theaters Of The Body. A Psychoanalytic Approach to Psychosomatic Illness]. Warszawa: Oficyna Ingenium; 2014.
Mulak A, Smereka A, Paradowski L. Nowości i modyfikacje w Kryteriach Rzymskich IV. [Novelties and modifications in the Rome IV criteria]. Gastroenterologia Kliniczna, 2016; 8(2): 52–56.
Nicholl BI, Halder SL, Macfarlane GJ, Thompson DG, O'Brien S, Musleh M, McBeth J. Psychosocial risk markers for new onset irritable bowel syndrome – Results of a large prospective population-based study. Pain, 2008; 137(1): 147-155.

Ogińska-Bulik N, Juczyński Z. Skala pomiaru prężności SPP-25. [Resiliency measurement scale SPP-25]. Nowiny Psychologiczne, 2008; 3: 39-56.
Ogińska-Bulik N, Juczyński Z. Osobowość, stres a zdrowie. [Personality, stress and health]. Warszawa. Difin; 2010.
Ogińska-Bulik N, Zadworna-Cieślak M, Rogala E. Rola zasobów osobistych w podejmowaniu zachowań zdrowotnych przez osoby w wieku senioralnym. [Role of personal resources in prediction of health behaviors in seniors]. Problemy Higieny i Epidemiologii, 2015; 96(3): 570-577.
Orzechowska A, Harasiuk A, Talarowska M, Zboralski K, Chojnacki J, Florkowski A. Ocena wybranych czynników psychologicznych u pacjentów z zespołem jelita nadwrażliwego i z chorobą refluksową przełyku. [Assessment of selected psychological factors in patients with irritable bowel syndrome or gastroesopheagal reflux disease]. Postępy Psychiatrii i Neurologii, 2010; 19(2): 115-119.
Ostrzyżek A. Jakość życia w chorobach przewlekłych. [Quality of life in chronic diseases]. Problemy Higieny i Epidemiologii, 2008; 89 (4): 467-470.
Philips K, Wright B, Kent S. (2013). Psychosocial predictors of irritable bowel syndrome diagnosis and symptom severity. Journal of Psychosomatic Research, 2013; 75: 467-474.
Porcelli P, De Carne M, Leandro G. The role of alexithymia and gastrointestinal-specific anxiety as predictors of treatment outcome in irritable bowel syndrome. Comprehensive Psychiatry, 2017; 73: 127-135.
Skevington SM, Lotfy M, O'Connell KA. WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Quality of Life Research, 2004; 13(2): 299-310.
Topór-Mądry R. Choroby przewlekłe. Obciążenie, jakość życia i konsekwencje ekonomiczne. [Chronic diseases. Burden, quality of life and economic consequences]. Zdrowie Publiczne i Zarządzanie, 2011; 9(1): 25-49.
Turkiewicz-Maligranda A. Prężność osobowa jako osobowościowy zasób zdrowotny. [Resilience as the Personality Resource of Health]. Pielęgniarstwo i Zdowie Publiczne, 2014; 4(2): 173–176
Turska W, Skowron A. Metodyka oceny jakości życia. [Methodics of quality of life assessment]. Farmakoekonomika, 2009; 65(8): 572-580.
Videlock EJ, Chang L. Zespół jelita nadwrażliwego. [Irritable Bowel Syndrome]. In Talley NJ, Kane SV, Wallace MB, (Ed.). Jelito cienkie, jelito grube, trzustka. [Small and Large Intestine and Pancreas]. Wrocław. Elsevier Urban & Partner; 2013: 437-447.
Wołowicka L, Jaracz K. Wybrane problemy metodologii badań jakości życia związanego ze stanem zdrowia. [Selected problems of the methodology of researching the quality of life related to health]. In: Wołowicka L, (Ed.). Jakość życia w naukach medycznych. [Quality of life in medical sciences]. Poznań. Wydawnictwo Uczelniane Akademii Medycznej im. Karola Marcinkowskiego; 2001: 231-305.
World Health Organization. Division of Mental Health and Prevention of Substance Abuse. WHOQOL: measuring quality of life. Geneva. World Health Organization; 1997.
World Gastroenterology Organisation. Global Guidelines. Irritable Bowel Syndrome: a global perspective; 2015.
Wrzesińska MA, Kocur J. Ocena poziomu wybranych cech osobowości i stylów radzenia sobie ze stresem u pacjentów z dyspepsją czynnościową i zespołem jelita nadwrażliwego. [The assessment of personality traits and coping style level among the patients with functional dyspepsia and irritable bowel syndrome]. Psychiatria Polska, 2008; 42 (5): 709-717.
Wrzesińska MA, Szczęsny D, Kocur J. Ocena znaczenia wybranych czynników psychobiologicznych w powstawaniu i przebiegu zespołu jelita nadwrażliwego. [Assessment

of the role of selected psychobiological factors in the onset and course of irritable bowel syndrome]. Postępy Psychiatrii i Neurologii, 2006; 15(2): 71-76.
Ziarko M. Zmaganie się ze stresem choroby przewlekłej. [Coping with chronic illness]. Poznań. Wydawnictwo Naukowe Wydziału Nauk Społecznych; 2014.