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Illness appraisal mediates the relationship between gratitude and quality of life among cancer patients

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Abstract

Introduction: The level of gratitude may explain an increase in quality of life. Illness appraisal is a valid factor that modifies coping with stress of cancer. The aim of the research was to investigate the role of illness appraisal and gratitude for the quality of life of cancer patients. It was hypothesized that appraisal of the disease mediates the relationship between gratitude and quality of life in oncological patients with a moderating effect of gender.

Material and methods: The participants comprised 96 Polish cancer patients, with breast or prostate cancer, hospitalized during 5–7 weeks of radiotherapy, and aged 31–79 years. A gratitude questionnaire, the disease-related appraisals scale, and the sense of quality of life questionnaire were used.

Results: The appraisal of the disease in the category of harm was a variable mediating the relationship between the sense of gratitude in the all measured dimensions of quality of life: global, psychophysical, psychosocial, subjective and metaphysical. Mediation moderated by gender occurred in the relationship between gratitude and the metaphysical dimension of quality of life, and the appraisal of the disease as harm serves as a variable mediating this relationship.

Conclusions: The mediating variable in the relationship between gratitude and the metaphysical dimension of quality of life was the appraisal of illness as harm. The above mediation relationship turned out to be moderated by gender. The appraisal of the disease in the category of harm turned out to be a variable mediating the influence of gratitude on the metaphysical quality of life only in women.

Key words: quality of life, gratitude, illness appraisal, cancer.

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INTRODUCTION

Illness appraisal is a response to the stress reaction. According to the transactional stress theory of Lazarus *et al*. [1], as a result of the appearance of a stressor, we make a primary and secondary appraisal of the situation. Primary appraisal concerns the assessment of the sources of stress and its meaning, so a stressful situation can be assessed from different perspectives, as a threat, a challenge, or harm or loss. In secondary appraisal, the individual assesses the ability to cope with the situation and the resources that may support it. Also in cancer cases, the disease situation is cognitively appraised.

Quality of life is an interdisciplinary, complex concept understood from various theoretical perspectives, often studied in relation to somatic disease. Most often, it covers various domains, such as the physical, social, psychological or spiritual area [2].

The concept that includes the above dimensions is the personalistic-existential theory of Straś-Romanowska [3], which allows one to measure the subjective quality of life in the psychophysical, psychosocial, subjective and metaphysical areas.

In explaining adaptation to difficult life events, the concept of meaning that a person gives to his life and experiences is useful. Situational meaning can be defined as the significant perception that we attribute to situations [4]. This concept is similar to the cognitive appraisal of a difficult situation. Experiencing illness can result in spiritual growth, increase a sense of purpose, and facilitate setting new priorities and setting realistic goals. Moreover, the positive meaning given to difficult events may also result in new skills in coping with stress, attributing deeper values to life, a sense of coherence, better adaptation and higher well-being in the form of the presence of positive emotions. Persisting in the vision of neg-

ative life events promotes the feeling of negative emotions, such as anxiety, anger and sadness, as well as depression, hopelessness, loss of interests and decline in physical condition [5].

Research results [6] indicate that perceiving oneself as a person in a better situation than other sick people is positively associated with mental health, even if this belief is unrealistic and not supported from a medical point of view [4]. This justifies the role of disease appraisal in the relationship between gratitude and quality of life. Appraising illness as harm means treating random life events as injustice, misfortune and punishment, and is also associated with the lack of seeing the meaning in suffering.

Gratitude can be defined as an emotion, mood or trait, i.e. the tendency to respond with the emotion of gratitude in various life situations. Gratitude turns out to have a positive impact on a person's physical and mental health, relationships with people and well-being [7, 8].

Gratitude, as a positive emotion, can alleviate the physiological effects caused by negative emotions [9], probably also those related to the difficult situation of cancer. Due to the fact that gratitude has an impact on alleviating the emotional effects of stress, it could thus have an impact on modifying the appraisal of a stressful situation and promote a more positive appraisal of the disease. Particularly visible effects of gratitude on the appraisal of a stressful situation could occur in the sphere of psychophysical quality of life, related to biological functioning, due to mitigating the effects of negative emotions in the physiological aspect.

Research on stress and coping in women and men [10] indicates that women, compared to men, appraise stressful events as more negative and less controllable. The aspect of control over events indicates the relationship between the appraisal of a stressful situation and the sense of coherence, one of the components of which is controllability [11]. Gratitude may therefore play a protective role in women against negative appraisal of the disease situation and the feeling of lack of control over difficult events and, consequently, help achieve a higher quality of life.

The aim of the study was to determine whether gratitude, understood as a generalized tendency to recognize and respond with the emotion of gratitude to the kindness of others, affects the sense of quality of life in a holistic approach in cancer patients, through intervening variables such as the appraisal of the disease, and whether any possible mediation is moderated by gender.

Hypothesis: The appraisal of the disease is a variable mediating between the tendency to feel gratitude and the quality of life in patients, and the above mediation is moderated by gender.

Previous research has shown that the emotion of gratitude experienced after a traumatic event is associated with fewer and less severe post-traumatic stress disorder symptoms, when controlling for variables such as proactive coping, severity of the trauma, and time after the trauma [12]. People with higher levels of gratitude may focus more on the benefits rather than the negative aspects of trauma [13]. Appraisal of the disease is associated with the sense of quality of life. In a study of older women with chronic diseases, a more positive evaluation of the disease was associated with a higher perceived quality of life [14].

To some extent, there are also differences between women and men in terms of disease appraisal. In studies on the disease appraisal scale, differences in women and men were obtained in one of the types of appraisal. It was a perception of illness as harm. Significantly higher scores in this area were observed in men, which indicates that men are more willing to attribute a harmful role to the disease compared to women. In other types of disease appraisal, no significant differences were found between women and men [15].

MATERIAL AND METHODS

Participants

The research project was approved by the Ethics Committee of the Institute of Psychology of the Catholic University of Lublin. Ninety-six patients of the radiotherapy department were examined during 5–7 weeks of hospitalization. The respondents were aged 31–79 (M = 60.69; SD = 9.79), including 48 women (31–78 years, M = 57.44; SD = 10.45) and 48 men (44–79 years old, M = 63.94; SD = 7.93).

The subjects were diagnosed with breast cancer or prostate cancer. In most cases, the respondents completed the questionnaires themselves (58.8%), and the rest answered the questions read by the researcher.

Most of the respondents had secondary education, followed by vocational education. The respondents were most often married, more often men than women. Women were widowed more often than men. Most of the respondents were residents of villages or small towns with a population of less than 50,000. The vast majority of respondents (89.7%) lived with their family. Among women, 12.2% of respondents lived alone, and among men, 8.3% of respondents lived alone.

Research tools

Gratitude questionnaire

The gratitude questionnaire by McCullough *et al*. [16] adapted by Kossakowska *et al*. [17] measures

the tendency to experience gratitude (dispositional gratitude) according to the theory of McCullough *et al*. [16]. The scale consists of 6 statements rated on a 7-point scale (from "strongly disagree" to "strongly agree"). The internal consistency reliability (Cronbach's α) of the original version was 0.82. In the Polish version [17], confirmatory analysis of the data confirmed the relative goodness of fit of the Polish data to the original one-factor structure of the questionnaire. The reliability coefficient is satisfactory (0.72). In factor analysis, one factor in the above scale explained 44% of the total variance. Due to the small number of items, it is an economical tool to use.

Disease-related appraisals scale

The disease-related appraisals scale by Janowski *et al*. [15] is a Polish questionnaire based on the primary assessment of a stressful situation according to the transactional stress theory of Lazarus *et al*. [1] approach to the perception of illness. The questionnaire contains 47 items, rated on a 5-point scale. There are 7 subscales:

- threat (disease disturbs balance and security, violates plans for the future, causes fear and anxiety about health and social position),
- benefit (secondary gains from the disease, justification towards others and oneself, release from duties and responsibilities), gives a sense of relief, an opportunity to escape from other problems, allows one to meet the need to receive feelings from others and care, motivation to obtain material benefits),
- obstacle/loss (the disease causes limitations in everyday life and functioning),
- challenge (the disease as a difficult situation, which must be overcome using available means, disease as an enemy, a fight is necessary, a life challenge, a test),
- harm (a random life event, injustice and harm, misfortune, punishment, lack of seeing the meaning in suffering),
- value (although not easy to understand, has a deeper meaning, an opportunity for development, appreciation of the value of life, revaluation of life),
- meaning (control scale: to what extent the disease is an important life event).

The psychometric properties of this tool are satisfactory. The reliability of individual subscales is in the range 0.64–0.87. Validity was assessed using exploratory factor analysis, as a result of which 7 factors were distinguished, explaining 52.02% of the variance, in accordance with the theoretical model of the method, which consists of 7 subscales.

Sense of quality of life questionnaire

The sense of life quality questionnaire by Straś-Romanowska *et al*. [18] was created on the basis of the personalistic-existential concept of the quality of life by Straś-Romanowska *et al*. [18]. It is used to measure the subjective and multidimensional level of life satisfaction and well-being and includes 60 items rated on a 4-point scale (I strongly disagree, I mostly disagree, I mostly agree, I strongly agree). The questionnaire measures 4 domains of quality of life:

- psychophysical (human biology, drives, physical appearance, temperament, vitality),
- psychosocial (social relationships, expectations of the environment, level of adaptation, establishing and maintaining emotional bonds, acceptance, self-worth),
- subjective (emphasizing one's individuality, independence, separation from the social background, taking responsibility for one's own choices and decisions, the possibility of self-fulfillment, being authentic, developing one's own interests),
- metaphysical (spirituality, realization of universal, timeless values, such as goodness, truth, beauty, religious experiences, giving life sense).

The psychometric properties of the scale are satisfactory. Reliability (absolute stability for the total score in adults) is 0.65. The measure of internal consistency reliability Cronbach's α is 0.92 for the entire test. Validity estimated as agreement between competent judges using Kendall's W coefficient is 0.58; 0.50; 0.67; 0.69 for individual subscales.

Study limitations

The presented research was conducted only in a correlation paradigm, not an experimental one, which does not allow one to ascertain a causal relationship between the variables. The analysis of structural equations allows one, to some extent, to make conclusions about the causes of the phenomena studied. However, the conclusions should also be verified in some longitudinal studies. Moreover, the problem of the generalization of the results arises. Due to the fact that the research was conducted in a group of breast or prostate cancer patients, the results of the study can be applied to patients treated only for these types of cancer and not cancer in general.

RESULTS

According to the data obtained (Table 1), patients most often assessed their disease in terms of threat and challenge. This means that they perceived the disease situation as a threat to their sense of security and a source of fear, but at the same time they noticed the need to fight the disease and cope with the challenge it brought. However, they were least

Table 1. Appraisal of the disease by cancer patients – mean, standard deviation for the entire group and in females and males; Student's t-test of the significance of differences

Parameters	Whole group, *N* = 96		Females, *n* = 48		Males, *n* = 48		Differences significance	
	M	SD	M	SD	M	SD	t (94)	*p*-value
Gratitude	31.08	5.92	32.65	5.83	29.52	5.64	2.67	0.032
Threat	28.09	8.36	28.21	8.67	27.98	8.13	0.13	0.894
Benefit	18.94	5.81	18.56	5.33	19.31	6.28	–0.63	0.530
Obstacle/loss	22.23	8.24	21.75	8.12	22.71	8.42	–0.57	0.572
Challenge	24.69	3.53	24.90	3.59	24.48	3.50	0.58	0.566
Harm	19.34	7.03	17.85	7.54	20.83	6.20	–2.11	0.041
Value	20.88	5.95	21.38	5.73	20.37	6.17	0.82	0.414
Importance	17.75	4.30	17.77	4.73	17.73	3.87	0.05	0.962
Psychophysical QoL	43.20	7.64	43.58	7.21	42.81	8.10	0.49	0.623
Psychosocial QoL	50.13	5.93	49.13	5.97	51.12	5.78	–1.67	0.099
Subjective QoL	48.61	5.55	48.29	5.95	48.94	5.17	–0.57	0.572
Metaphysical QoL	51.59	5.28	51.44	5.43	51.75	5.19	–0.29	0.774
Global QoL	193.53	19.92	192.44	20.23	194.62	19.75	–0.54	0.593

M – mean, QoL – quality of life, SD – standard deviation

likely to perceive their illness as a situation to which they gave some meaning and to look for meaning in what happened to them. Moreover, they rarely assessed their illness in terms of benefits and harm; that is, most often they did not connect their situation with possible benefits, and they did not see that harm had befallen them.

Compared to the results of studies on hospitalized patients [15], there were some differences in the obtained means. The assessment of the disease in the threat category in this study turned out to be lower than in the study of hospitalized patients by Janowski *et al*. [15] (M = 31.24; SD = 7.76). The average appraisal of the disease as a benefit in oncology patients turned out to be slightly higher than in patients treated in hospital (M = 17.15; SD = 6.03). In turn, patients treated for other somatic diseases appraised the disease in the category of obstacles/losses (M = 26.61; SD = 8.10) higher than patients suffering from cancer. Oncology patients were more likely to attribute the nature of a challenge to the disease than hospitalized patients. The results regarding the appraisal of illness as harm in oncology patients did not differ from those of patients staying in hospital (M = 19.50; SD = 7.70). Patients suffering from cancer assessed the disease in the value category slightly higher than hospitalized patients (M = 19.12; SD = 5.23). The appraisal of the disease in the category of importance in patients suffering from cancer was lower than in the patients treated in hospital (M = 19.61; SD = 4.95) in the study by Janowski *et al*. [15].

Men appraised the disease as harm more often than women, and the difference between the obtained means was statistically significant ($p < 0.05$). Women and men did not differ significantly in terms of other methods of assessing the disease. The obtained results regarding the differences between women and men in the assessment of illness as harm are consistent with the results of research on the illness appraisal scale [15]. In this study, men also scored higher in the assessment of illness as harm compared to women, and this was the only category of illness assessment in which there were differences due to the gender variable.

Calculations are presented below to analyze the relationship between the tendency to experience gratitude and the quality of life of people suffering from cancer, with the participation of the mediating variable in the form of the appraisal of the disease and gender as a moderator of the predicted mediation relationship. The models for each sphere of quality of life include three ways of assessing the disease: as harm, value and obstacle/loss.

In the proposed model of the impact of gratitude on the global sphere of quality of life mediated by the appraisal of the disease as harm, value and obstacle/loss, the comparison of the unconstrained model and the structural weights model ($\chi^2(7) = 8.35$; $p = 0.303$) indicates the absence of moderation. Due to the lack of moderation, a structural weight model was adopted, common for both genders. The fit coefficients of the adopted structural weights model turned out to be good[1]: CMIN (7) = 8.35; $p > 0.05$; CMIN/DF = 1.19; Tucker-Lewis index (TLI) = 0.95; comparative fit index (CFI) = 0.98; root mean square error of approximation (RMSEA) = 0.045 (LO90 = 0;

[1]CMIN – χ^2 minimum
CMIN/DF – ratio of χ^2 minimum and degrees of freedom

HI90 = 0.14). The model explained 41% of the variance in global quality of life in the group of women and 30% of the variance in the group of men.

The coefficients of direct effects for the paths of the adopted structural weights model are presented in Table 2. The coefficients of direct effects shown in Table 2 are the same in both groups, due to the fact that there was no moderation by gender in the model.

Table 2 indicates what direct effects occurred in the adopted model that simultaneously took into account the mediators of the appraisal of the disease as a harm, value and obstacle/loss. Also the significance of the above coefficients of direct effects are included in Table 2. The relationship between gratitude and the appraisal of the disease as an obstacle/loss was not significant (B = –0.14; p = 0.278). However, the relationship between the assessment of the disease in the obstacle/loss category and the global quality of life turned out to be significant (B = –0.30; p = 0.012). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, the level of gratitude does not explain the assignment of a rating to the disease in the obstacle/loss category, but assigning a higher rating to the disease in the obstacle/loss category explains the decrease in the quality of life in the global sphere. The path of gratitude → appraisal of the disease as a value (B = 0.19) was not significant (p = 0.064) but may indicate an additional relationship between gratitude and the appraisal of the disease in the value category. The path: appraisal of the disease as a value à global quality of life was significant (B = 0.21; p = 0.009) and indicates a positive relationship between the appraisal of the disease as a value and the sense of quality of life in the global sphere. The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, a higher level of gratitude explains the increased assessment of the disease as a value, and assigning a higher rating to the disease in the value category explains the increase in the quality of life in the global sphere. There was a negative relationship between gratitude and the appraisal of the disease as a harm (B = –0.26) and it was a significant relationship (p = 0.011). There was also a negative relationship between the assessment of the disease in this category and the sense of quality of life in the global sphere (B = –0.20), though not significant (p = 0.080). The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the lower intensity of the appraisal of the disease as harm, and in turn, assigning an appraisal to the disease in the category of harm is associated with a sense of lower quality of life in the global sphere. Both the indirect effect (B = 0.13; p = 0.028) and the total effect (B = 0.36; p = 0.003) were significant, indicating the occurrence of mediation. The direct effect for the gratitude à global quality of life path was significant, which indicates that the mediation is partial (B = 0.22; p = 0.013). In the last step of the analysis, the significance of individual mediation paths was checked by building separate models for each potential mediator of disease appraisal. The indirect effect of the variable assessing the disease as harm turned out to be statistically significant (B = 0.07; p = 0.028). This means that the appraisal of the disease as a harm is a mediator of the relationship between gratitude and the quality of life in the global sphere, i.e. gratitude increases the global quality of life by reducing the intensity of the appraisal of the disease as a harm. The indirect effect of the variable assessing the disease as a value was borderline significant (B = 0.04; p = 0.051). Determining whether the appraisal of illness as a value is a mediator of the relationship between gratitude and global quality of life requires further research, because the obtained result does not allow us to clearly determine whether there is a mediating relationship in this case. The indirect effect of the variable assessing the disease as an obstacle/loss turned out to be statistically insignificant (B = –0.01; p = 0.719). This means that the appraisal of illness as an obstacle and loss does not function as a mediator in the relationship between gratitude and global quality of life.

To sum up, the mediator of the relationship between gratitude and global quality of life was the appraisal of the disease as a harm. This medi-

Table 2. Unstandardized coefficients for the paths of the structural weights model (gratitude – disease appraisal – global quality of life)

Paths in the structural weights model	Direct effect	*p*-value
Gratitude → obstacle/loss	–0.14	0.278
Gratitude → value	0.19	0.064
Gratitude → harm	**–0.26**	**0.011**
Gratitude → global QoL	**0.22**	**0.013**
Obstacle/loss → global QoL	**–0.30**	**0.012**
Value → global QoL	**0.21**	**0.009**
Harm → global QoL	–0.20	0.080
	Indirect effect	
Gratitude → global QoL	**0.13**	**0.028**
	Total effect	
Gratitude → global QoL	**0.36**	**0.003**

QoL – quality of life
In bold, statistically significant data at the p < 0.05 level

Table 3. Unstandardized coefficients for the paths of the structural weights model (gratitude – disease appraisal – psychophysical quality of life)

Paths in the structural weights model	Direct effect	*p*-value
Gratitude → obstacle/loss	–0.14	0,278
Gratitude → value	0.19	0.064
Gratitude → harm	**–0.26**	**0.011**
Gratitude → psychophysical QoL	0.09	0.363
Obstacle/loss à psychophysical QoL	**–0.51**	**0.002**
Value → psychophysical QoL	0.13	0.145
Harm → psychophysical QoL	–0.14	0.166
	Indirect effect	
Gratitude → psychophysical QoL	0.13	0.069
	Total effect	
Gratitude → psychophysical QoL	0.22	0.108

QoL – quality of life
In bold, statistically significant data at the p < 0.05 level

ation was not found to be moderated by gender. The obtained result means that a higher sense of gratitude explains the increase in the quality of life in the global dimension through a lower tendency to assess the disease as harm. Another mediator of this relationship may also be the appraisal of the disease as a value, but the obtained data do not clearly allow this variable to be considered a mediator of the above relationship. If subsequent studies obtained a significant indirect effect of the above relationship, it would mean that gratitude increases the quality of life in the global sphere by increasing the tendency to perceive the disease as a value.

Appraisal of the disease as a mediator of the relationship between gratitude and the psychophysical dimension of quality of life and gender as a moderator of the above relationship

The subject of the following analyses is the relationship between the tendency to feel gratitude and the psychophysical quality of life of patients, using the appraisal of the disease as a mediating variable and gender as a moderator of the above mediation relationship. In the proposed model of the impact of gratitude on the psychophysical sphere of quality of life mediated by the appraisal of the disease as harm, value and obstacle/loss, the comparison of the unrestricted model and the structural weights model ($\chi^2(7) = 4.10$; $p = 0.768$) indicates the absence of moderation. Due to the lack of moderation, a structural weight model was adopted, common for both genders. The fit coefficients of the adopted structural weights model turned out to be good: CMIN (7) = 4.10; $p > 0.05$; CMIN/DF = 0.59; TLI = 1.09; CFI = 1.00; RMSEA = 0.00 (LO90 = 0; HI90 = 0.09). The model explained 46% of the variance in psychophysical quality of life in the group of women and 41% of the variance in the group of men. The coefficients of direct effects for the paths of the adopted structural weights model are presented in Table 3. The coefficients of direct effects are the same for both groups, due to the fact that there was no moderation by gender in the model.

Table 3 indicates what direct effects occurred in the adopted model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, and the significance of the above coefficients of direct effects are included in Table 3.

The relationship between gratitude and the appraisal of the disease as an obstacle/loss was insignificant (B = –0.14; $p = 0.278$). However, the relationship between the appraisal of the disease in the obstacle/loss category and the psychophysical quality of life turned out to be significant (B = –0.51; $p = 0.002$). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, the level of gratitude does not explain the assignment of a rating to the disease in the obstacle/loss category, but assigning a higher rating to the disease in the obstacle/loss category explains the decrease in the quality of life in the psychophysical sphere.

The path of gratitude à appraisal of the disease as a value (B = 0.19) turned out to be non-significant ($p = 0.064$) but may indicate an additional relationship between gratitude and the appraisal of the disease in the value category. The path: appraisal of the disease as a value à psychophysical quality of life was insignificant (B = 0.13; $p = 0.145$) and indicates a lack of relationship between the appraisal of the disease as a value and the sense of quality of life in the psychophysical sphere. The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the increased appraisal of the disease as a value, but assigning a higher rating to the disease in the value category does not explain the level of quality of life in the psychophysical sphere.

There was a negative relationship between gratitude and the appraisal of the disease as a harm (B = –0.26) and it was significant ($p = 0.011$), and the relationship between the appraisal of the disease in this category and the sense of quality of life in the psychophysical sphere turned out to be insignificant (B = –0 .14; $p = 0.166$). The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the lower appraisal of the disease as harm, but assigning the disease an appraisal in the harm category does not explain the level of quality of life in the psychophysical sphere.

The indirect effect (B = 0.13; $p = 0.069$) was beyond the accepted level of significance. The overall effect (B = 0.22; $p = 0.108$) was not significant. The data obtained do not clearly indicate the presence of mediation. The direct effect was insignificant, which indicates that possible mediation is complete (B = 0.09; $p = 0.363$) (Table 3).

In the last step of the analysis, the significance of individual mediation paths was checked by building separate models for each potential mediator of disease appraisal.

The indirect effect of the variable assessing the disease as harm turned out to be statistically significant (B = 0.083; $p = 0.023$). This means that the appraisal of the disease in terms of harm is a mediator of the relationship between gratitude and psychophysical quality of life. This means that gratitude increases the global quality of life by reducing the severity of the appraisal of illness as a harm.

The indirect effect of the variable assessing the disease as a value was below the assumed level of significance (B = 0.03; $p = 0.078$). Due to the fact that the indirect effect was below the assumed level of significance, the obtained results do not allow the assumption that the appraisal of the disease as a value is a mediator of the relationship between gratitude and psychophysical quality of life.

The indirect effect of the variable assessing the disease as an obstacle/loss turned out to be statistically insignificant (B = –0.02; $p = 0.730$). This means that the appraisal of the disease in the form of an obstacle/loss does not function as a variable mediating the relationship between gratitude and the psychophysical sphere of quality of life.

To sum up, the mediator of the relationship between gratitude and the psychophysical sphere of quality of life was the appraisal of the disease as a harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude makes it easier to achieve a higher quality of life in the psychophysical dimension thanks to a lower tendency to assess the disease in terms of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men.

Illness appraisal as a mediator of the relationship between gratitude and the psychosocial sphere of quality of life, taking into account the variable of gender as a moderator

The aim of the following analyses is to determine the relationship between the tendency to feel gratitude and the psychosocial sphere of patients' quality of life, using the appraisal of the disease as a mediating variable and gender as a moderator of the above mediation relationship.

In the proposed model of the impact of gratitude on the psychosocial sphere of quality of life mediated by the appraisal of the disease as harm, value and obstacle/loss, the comparison of the unconstrained model and the structural weights model ($\chi^2(7) = 8.66$; $p = 0.278$) indicates the absence of moderation. Due to the lack of moderation, a structural weight model was adopted, common for both genders.

Table 4. Unstandardized coefficients for the paths of the structural weights model (gratitude – disease appraisal – psychosocial quality of life)

Paths in the structural weights model	Direct effect	*p*-value
Gratitude → obstacle/loss	–0.14	0.278
Gratitude → value	0.19	0.064
Gratitude → harm	**–0.26**	**0.011**
Gratitude → psychosocial QoL	**0.22**	**0.024**
Obstacle/loss → psychosocial QoL	–0.15	0.228
Value → psychosocial QoL	0.16	0.108
Harm → psychosocial QoL	–0.17	0.188
	Indirect effect	
Gratitude → psychosocial QoL	**0.10**	**0.040**
	Total effect	
Gratitude → psychosocial QoL	**0.31**	**0.002**

QoL – quality of life
In bold, statistically significant data at the p < 0.05 level

The fit coefficients of the adopted structural weights model turned out to be good: CMIN (7) = 8.66; $p > 0.05$; CMIN/DF = 0.28; TLI = 0.93; CFI = 0.98; RMSEA = 0.05 (LO90 = 0; HI90 = 0.14). The model explained 23% of the variance in psychosocial quality of life in the group of women and 17% of the variance in the group of men.

The coefficients of direct effects for the paths of the adopted structural weights model are presented in Table. 4. The coefficients of direct effects are the same for both groups, due to the fact that there was no moderation by gender in the model.

Table 4 indicates what direct effects occurred in the adopted model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, and the significance of the above coefficients of direct effects are included in Table 4.

The relationship between gratitude and the appraisal of the disease as an obstacle/loss was insignificant

(B = –0.14; $p = 0.278$), as well as the relationship between the appraisal of the disease in the obstacle/loss category and the psychosocial quality of life (B = –0.15; $p = 0.228$). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, the level of gratitude does not explain the tendency to assign a rating to

the disease in the obstacle/loss category, nor does assigning a higher rating to the disease in the obstacle/loss category explain the level of quality of life in the psychosocial sphere.

The path of gratitude à appraisal of the disease as a value (B = 0.19) turned out to be non-significant (p = 0.064) but may indicate a possible additional relationship between gratitude and the appraisal of the disease in the value category. The path: appraisal of the disease as a value à psychosocial quality of life was insignificant (B = 0.16; p = 0.108) and indicates a lack of relationship between the appraisal of the disease as a value and the sense of quality of life in the psychosocial sphere. The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the increased appraisal of the disease as a value, but assigning a higher rating to the disease in the category of value does not explain the level of quality of life in the psychosocial sphere.

There was a negative relationship between gratitude and the appraisal of illness as harm (B = –0.26) and it was a significant relationship (p = 0.011), and the relationship between the appraisal of the disease in this category and the sense of quality of life in the psychosocial sphere turned out to be insignificant (B = –0.17; p = 0.188). The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the lower appraisal of the disease as harm, but assigning the disease an appraisal in the harm category does not explain the level of quality of life in the psychosocial sphere.

The indirect effect (B = 0.10; p = 0.040) was significant, as was the total effect (B = 0.31; p = 0.002), which indicated the presence of mediation. The direct effect was significant, indicating that the mediation is partial (B = 0.22; p = 0.024) (Table 4).

In the last step of the analysis, the significance of individual mediation paths was checked by building separate models for each potential mediator of the disease appraisal.

The indirect effect of the variable assessing the disease as harm turned out to be statistically significant (B = 0.05; p = 0.023). This means that harm mediates the relationship between gratitude and psychosocial quality of life. People with a greater tendency to experience gratitude scored lower in terms of assessing the disease as harm. However, the appraisal of the disease as a harm went hand in hand with a lower quality of life in the psychosocial sphere. This means that gratitude improves the quality of life in the psychosocial sphere by reducing the appraisal of illness as harm.

The indirect effect of the disease appraisal variable as a value was insignificant (B = 0.03; p = 0.101). The obtained result means that the appraisal of the disease as a value did not prove to be a mediator of the relationship between gratitude and the psychosocial sphere of quality of life. The indirect effect of the variable assessing the disease as an obstacle/loss turned out to be statistically insignificant (B = –0.07; p = 0.613). This means that this way of assessing the disease does not function as a mediator in the relationship between gratitude and the psychosocial sphere of quality of life.

To sum up, the mediator of the relationship between gratitude and the psychosocial sphere of quality of life was the appraisal of the disease as a harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude makes it easier to achieve a higher quality of life in the psychosocial sphere thanks to a lower tendency to assess the disease in terms of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men.

Illness appraisal as a variable mediating between gratitude and subjective quality of life together with the gender variable as a moderator of the above relationship.

The following calculations were performed to analyze the relationship between the tendency to feel gratitude and the subjective sphere of patients' quality of life, using the appraisal of the disease as a mediating variable and gender as a moderator of the above mediation relationship.

In the proposed model of the impact of gratitude on the subjective sphere of quality of life mediated by the appraisal of the disease as harm, value and obstacle/loss, the comparison of the unrestricted model and the structural weights model ($\chi^2(7)$ = 6.86; p = 0.443) indicates the absence of moderation. Due to the lack of moderation, a structural weight model was adopted, common for both genders.

The fit coefficients of the adopted structural weights model turned out to be good: CMIN (7) = 6.86; p > 0.05; CMIN/DF = 0.98; TLI = 1.007; CFI = 1.00; RMSEA = 0.00 (LO90 = 0; HI90 = 0.13). The model explained 15% of the variance in subjective quality of life in the group of women and 12% of the variance in the group of men.

Table 5 indicates what direct effects occurred in the adopted model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, and the significance of the above coefficients of direct effects are included in Table 5.

The relationship between gratitude and the appraisal of the disease as an obstacle/loss was insignif-

icant (B = –0.14; p = 0.278), as was as the relationship between the appraisal of the disease in the obstacle/loss category and the subjective quality of life (B = –0.06; p = 0.652). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, the level of gratitude does not explain the assignment of a rating in the obstacle/loss category to the disease, nor does assigning a higher rating to the disease in the obstacle/loss category explain the level of quality of life in the subjective sphere.

The path of gratitude à appraisal of the disease as a value (B = 0.19) turned out to be non-significant (p = 0.064) but indicates a possible additional relationship between gratitude and the appraisal of the disease in the value category. The path: appraisal of the disease as a value à subjective quality of life was insignificant (B = 0.05; p = 0.523) and indicates a lack of relationship between the appraisal of the disease as a value and the sense of quality of life in the subjective sphere. The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the increased appraisal of the disease as a value, but assigning a higher rating to the disease in the value category does not explain the level of quality of life in the subjective sphere.

There was a negative relationship between gratitude and the appraisal of illness as harm (B = –0.26) and it was a significant relationship (p = 0.011), similarly to the relationship between the appraisal of the disease in this category and the sense of quality of life in the subjective sphere (B = –0.28; p = 0.011). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, a higher level of gratitude explains the lower appraisal of the disease as harm, and assigning the disease an appraisal in the harm category explains the decrease in the level of quality of life in the subjective sphere.

The indirect effect (B = 0.09; p = 0.040) was significant, while the total effect (B = 0.20; p = 0.20; p = 0.095) was not significant, which does not allow us to clearly state the presence of mediation. The direct effect was insignificant, indicating that any possible mediation is complete (B = 0.11; p = 0.252).

In the last step of the analysis, the significance of individual mediation paths was checked by building separate models for each potential mediator of disease appraisal.

The indirect effect of the variable assessing the disease as harm turned out to be statistically significant (B = 0.06; p = 0.022). This means that harm mediates the relationship between gratitude and psychosocial quality of life. People with higher gratitude had lower scores in the appraisal of illness as a harm, while higher scores in the appraisal of illness as a harm were associated with lower scores in subjective quality of life. This means that gratitude increases the subjective quality of life by reducing the appraisal of illness as harm.

Table 5. Unstandardized coefficients for the paths of the structural weights model (gratitude – disease appraisal – subjective quality of life)

Paths in the structural weights model	Direct effect	*p*-value
Gratitude → obstacle/loss	–0.14	0.278
Gratitude → value	0.19	0.064
Gratitude → harm	**–0.26**	**0.011**
Gratitude → subjective QoL	0.11	0.252
Obstacle/loss → subjective QoL	–0.06	0.652
Value → subjective QoL	0.05	0.523
Harm → subjective QoL	**–0.28**	**0.011**
	Indirect effect	
Gratitude → subjective QoL	**0.09**	**0.040**
	Total effect	
Gratitude → subjective QoL	0.20	0.095

QoL – quality of life
In bold, statistically significant data at the p < 0.05 level

The indirect effect of the disease appraisal variable as a value was insignificant (B = 0.02; p = 0.259). The appraisal of illness as a value did not prove to be a mediator of the relationship between gratitude and the subjective sphere of quality of life.

The indirect effect of the variable assessing the disease as an obstacle/loss turned out to be statistically insignificant (B = –0.01; p = 0.614). The appraisal of illness as an obstacle/loss is not a mediator of the relationship between gratitude and the subjective dimension of quality of life.

To sum up, the mediator of the relationship between gratitude and the subjective sphere of quality of life was the appraisal of the disease as a harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude facilitates achieving a higher quality of life in the subjective sphere by reducing the tendency to evaluate the disease in the category of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men.

Appraisal of illness as a mediator of the relationship between gratitude and the metaphysical sphere of quality of life, taking into account the variable of gender as a moderator

Calculations are presented below to analyze the relationship between gratitude and the meta-

Table 6. Comparison of individual models for each path with the structural weights model (gratitude – disease appraisal – metaphysical quality of life)

Models for the paths	χ2(1)	*p*-value
Gratitude → metaphysical QoL	1.50	0.221
Gratitude → harm	0.70	0.405
Gratitude → value	0.04	0.851
Gratitude → obstacle/loss	2.24	0.134
Harm → metaphysical QoL	9.51	0.002
Value → metaphysical QoL	3.56	0.059
Obstacle/loss à metaphysical QoL	1.34	0.246

QoL – quality of life

physical dimension of quality of life, with the participation of a mediating variable in the form of disease appraisal and gender as a moderator of the above mediation relationship.

In the first step of the analysis, it was checked whether there is moderation in the proposed model of the impact of gratitude on the metaphysical sphere of quality of life mediated by the appraisal of the disease as harm, value and obstacle/loss. The comparison of the unconstrained model and the structured weights model ($\chi^2(7) = 15.82$; $p = 0.027$) indicates the presence of moderation.

Then it was checked which paths were moderated by building models for each path and comparing each model for each path with the structural weights model (Table 6).

It turned out that releasing the harm à metaphysical quality of life path causes the model to fit the data significantly better ($\chi^2(1) = 9.51$; $p = 0.002$) than the structural weights model (Table 6). This means that there is moderation on this path.

The next step was to build the final model in which all paths are limited except the harm à metaphysical quality of life path, which was identified as moderated. The final model was compared with the unconstrained model ($\chi^2(6) = 6.31$; $p = 0.390$). The nonsignificant result of this comparison indicates that the final model does not fit the data worse than the unconstrained model. Therefore, the final model was accepted as the correct one.

The fit coefficients of the final model turned out to be good: CMIN (6) = 6.31; $p > 0.05$; CMIN/DF = 1.05; TLI = 0.988; CFI = 0.996; RMSEA 0.02 (LO90 = 0; HI90 = 0.14). The model explained 43% of the variance in metaphysical quality of life in the group of women and 29% of the variance in the group of men.

Below, graphical models are presented separately for women and men, showing the coefficients of direct effects. Due to the fact that mediation was moderated by gender, the coefficients of direct effects differ in the groups of women and men.

Table 6 indicates what direct effects occurred in the adopted model, which simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss separately for women and men, and the significance of the above coefficients of direct effects are included in Table 6.

In women, as in the group of men, the relationship between gratitude and the appraisal of the disease as an obstacle/loss was insignificant (B = –0.14; $p = 0.278$), as was the relationship between the assessment of the disease as an obstacle/loss and the metaphysical quality of life (B = –0.17; $p = 0.110$). The obtained result indicates that in the model that simultaneously takes into account the mediators of assessing the disease as harm, value and obstacle/loss, the level of gratitude does not explain the assignment of a rating in the obstacle/loss category to the disease, nor does assigning a higher rating to the disease in the obstacle/loss category explain the level of quality of life in the metaphysical sphere, either in women or in men.

In the group of women, as in the group of men, the path of gratitude à evaluation of the disease as a value (B = 0.19) turned out to be non-significant ($p = 0.064$) but may indicate an additional relationship between gratitude and the appraisal of the disease in the category of values. The path: appraisal of the disease as a value à metaphysical quality of life was significant (B = 0.36; $p = 0.002$) and indicates a positive relationship between the appraisal of the disease as a value and the sense of quality of life in the metaphysical sphere. The obtained result indicates that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the increase in the appraisal of the disease as a value, and assigning a higher rating to the disease in the category of value explains the increase in the level of quality of life in the metaphysical sphere, the same for women and men.

In women and men there was a negative relationship between gratitude and the appraisal of illness as harm (B = –0.26) and it was significant ($p = 0.011$). In the group of women, the relationship between the appraisal of the disease in the category of harm and the sense of quality of life in the metaphysical sphere turned out to be insignificant (B = –0.17; $p = 0.194$). However, in the group of men, the relationship between the appraisal of the disease in this category and the sense of quality of life in the metaphysical sphere turned out to be significant (B = 0.39; $p = 0.019$). The obtained results indicate that in the model that simultaneously takes into account the mediators of the appraisal of the disease as harm, value and obstacle/loss, a higher level of gratitude explains the lower appraisal of the disease as harm, and assigning an appraisal to the disease in the catego-

Table 7. Unstandardized coefficients for the paths of the final model (gratitude – disease appraisal– metaphysical quality of life)

Paths (final model)	Effects in females		Effects in males	
	Direct effect			
	B	*p*-value	B	*p*-value
Gratitude → obstacle/loss	–0.14	0.278	–0.14	0.278
Gratitude → value	0.19	0.064	0.19	0.064
Gratitude → harm	**–0.26**	**0.011**	**–0.26**	**0.011**
Gratitude → metaphysical QoL	**0.33**	**0.001**	**0.33**	**0.001**
Obstacle/loss → metaphysical QoL	–0.17	0.110	–0.17	0.110
Value → metaphysical QoL	**0.36**	**0.002**	**0.36**	**0.002**
Harm → metaphysical QoL	–0.17	0.194	0.39	0.019
	Indirect effect			
Gratitude → metaphysical QoL	**0.13**	**0.019**	–0.01	0.954
	Total effect			
Gratitude → metaphysical QoL	**0.47**	**0.001**	**0.32**	**0.004**

QoL – quality of life
In bold, statistically significant data at the p < 0.05 level

ry of harm explains the lower level of quality of life in the metaphysical sphere, but only in the group of men. In women, a higher level of gratitude was associated with a lower appraisal of the disease as harm, but assigning a harm rating to the disease was not associated with the level of quality of life in the metaphysical sphere.

Table 7 shows a comparison of the obtained direct, indirect and total effects for individual paths in the adopted final model, in groups distinguished by gender.

Based on the value of the indirect effect in the final model, it was found that there was a mediating effect in the group of women (B = 0.13; p = 0.019), while in men it was insignificant (B = –0.01; p = 0.954). The direct effect of gratitude on the quality of life in both groups was significant, which indicates that mediation in the group of women is partial (B = 0.33; p = 0.001). The total effect turned out to be significant both in the group of women (B = 0.47; p = 0.001) and in the group of men (B = 0.32; p = 0.004).

In the last step of the analysis, the significance of individual mediation paths was checked based on separate models for each potential mediator in the group of women in which mediation occurred. The indirect effect of the variable assessing the disease as harm turned out to be statistically significant (B = 0.06; p = 0.028). This means that harm is a mediator of the relationship between gratitude and metaphysical quality of life in women.

The indirect effect of the variable assessing the disease as a value in women turned out to be statistically insignificant (B = 0.07; p = 0.081). This means that value does not act as a variable mediating the relationship between gratitude and the metaphysical sphere of quality of life.

Moreover, the indirect effect of the variable assessing the disease as an obstacle/loss turned out to be statistically insignificant in the group of women (B = –0.006; p = 0.630). The assessment of illness as an obstacle/loss did not prove to be a mediator of the relationship between gratitude and the metaphysical dimension of quality of life.

To sum up, the mediator of the relationship between gratitude and the metaphysical quality of life was the appraisal of illness as harm. Mediation turned out to be moderated by gender. Harm turned out to be a mediating variable between the impact of gratitude on the quality of life only in women. This means that gratitude improves the quality of life in the metaphysical area by reducing the tendency to perceive illness as harm, and the above relationship occurs only in women.

To sum up, the appraisal of illness as harm turned out to be a mediator of the relationship between gratitude and the global, psychophysical, psychosocial, subjective and metaphysical sphere of quality of life. This mediation was not found to be moderated by gender. The obtained results mean that a higher sense of gratitude increases the quality of life in all dimensions through a lower tendency to assess the disease as harm. Only in the case of the metaphysical sphere of quality of life did the above mediation relationship turn out to be moderated by gender. The appraisal of the disease in the category of harm turned out to be a variable mediating the relationship between gratitude and quality of life only in women. This means that gratitude improves the quality of life in the metaphysical dimension by reducing the tendency to perceive illness as harm only in women.

DISCUSSION

The appraisal of the disease in the category of harm was a variable mediating the relationship between the sense of gratitude and all measured dimensions of quality of life: global, psychophysical, psychosocial, subjective and metaphysical. Mediation moderated by gender occurred in the relationship between gratitude and the metaphysical dimension of quality of life, and the appraisal of the disease as harm serves as a variable mediating this relationship. This means that the appraisal of the disease in terms of harm is a mediator of the relationship between gratitude and the metaphysical sphere of quality of life only in women.

The ways of appraising the disease that were simultaneously related to gratitude and the spheres of quality of life included appraisal in the categories of harm, value and obstacle/loss. The mediator of the relationship between gratitude and the quality of life of cancer patients turned out to be the appraisal of the disease as a harm, i.e. a random life event perceived as injustice, misfortune, punishment, as something that causes a lack of sense in suffering. Only in the case of the metaphysical sphere was the above relationship moderated by gender. The obtained results confirm the hypothesis about the relationship between gratitude and quality of life, with the appraisal of the disease as a mediator of this relationship and gender as a moderator of the above-mentioned mediation relationship.

The mediator of the relationship between gratitude and global quality of life was the appraisal of illness as harm. This mediation was not found to be moderated by gender. A higher sense of gratitude makes it easier to achieve a higher quality of life in the global dimension through a lower tendency to appraise the disease as a harm. The obtained data confirm the hypothesis that the relationship between gratitude and global quality of life is mediated by the appraisal of the disease. The part of the hypothesis regarding the mediation of this relationship moderated by gender was not confirmed.

Research on the differences in the appraisal of stressful situations by men and women is not clear. Experimental studies involving the same stressor in all subjects showed no differences between men and women in assessing stressful situations, although there were differences in coping strategies [19]. The above result may explain the lack of differences between women and men in the relationship between gratitude and the global sphere of quality of life with the participation of the appraisal of the disease as a mediating variable.

In studies on the appraisal of the disease depending on gender, it turned out that men are more willing to attribute a harmful role to the disease compared to women [15]. Perhaps a greater tendency to experience gratitude eliminates this difference in the appraisal of illness as harm and favors formulating a more positive appraisal of a difficult situation, regardless of gender.

The mediator of the relationship between gratitude and the psychophysical sphere of quality of life was the appraisal of the disease as a harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude facilitates achieving a higher quality of life in the psychophysical dimension by reducing the tendency to evaluate the disease in the category of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men. The obtained data confirm the hypothesis about the mediation of the relationship between gratitude and psychophysical quality of life by the appraisal of the disease. The part of the hypothesis regarding the moderating nature of the gender variable on the above mediation relationship was not confirmed.

A negative appraisal of a difficult situation is associated with a decline in physical condition [5], which is an important element of the psychophysical sphere of quality of life. Therefore, a lower intensity of appraising the disease as a harm may be conducive to achieving a higher quality of life in the psychophysical dimension by counteracting the deterioration of the condition by appraising the disease.

The lack of differences between women and men in terms of the relationship between gratitude and the psychophysical sphere of quality of life, with the participation of the appraisal of the disease as harm as a mediator, indicates that a more positive appraisal of the disease is equally conducive to achieving a higher psychophysical quality of life in women and men. The lack of rebellion towards a difficult situation and the lack of feeling of injustice made it easier to achieve a higher psychophysical quality of life thanks to higher gratitude. Perhaps the above relationship does not depend on specific appraisals of the disease, such as harm, threat, or challenge, given by the sick person, and only concerns the positive or negative meaning assigned to the disease.

The mediator of the relationship between gratitude and the psychosocial sphere of quality of life was the appraisal of illness as harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude makes it easier to achieve a higher quality of life in the psychosocial sphere by reducing the tendency to appraise the disease in terms of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men. The obtained data confirm the hypothesis about the mediation of the relationship between

gratitude and psychosocial quality of life by the appraisal of the disease. The part of the hypothesis regarding the moderating nature of the gender variable in the above mediation relationship was not confirmed.

A higher level of gratitude may contribute to a lower appraisal of the disease as a harm and, consequently, to a higher quality of life in the psychosocial dimension because a more positive appraisal of the disease may increase involvement in social activities. The lack of feeling of harm due to the disease may cause the patient to appraise the disease as having a lesser impact on everyday life than a person assessing the disease higher in the harm category, which may contribute to limiting social life or maintaining social relationships at the current or higher level and benefiting from it. Research on people who have experienced trauma indicates that a higher level of gratitude may promote concentration on the benefits, and not only the negative aspects of the trauma [13], which may mean that a greater tendency to experience gratitude leads to a more positive appraisal of a difficult situation, e.g. appreciating the support received and social relationships that proved helpful in coping with a difficult situation. The above relationship may explain the role of disease appraisal in the relationship between gratitude and the psychosocial sphere of quality of life.

The lack of differences between women and men in terms of the relationship between gratitude and the psychosocial sphere of quality of life, with the participation of the appraisal of the disease as harm as a mediator, indicates that a more positive appraisal of the disease is equally conducive to achieving a higher psychosocial quality of life in women and men. A higher level of gratitude resulted in the lack of rebellion towards a difficult situation and the feeling of harm and injustice, which made it easier to achieve a higher quality of life in the psychosocial sphere. The above relationship may not depend on specific evaluations of the disease, such as an obstacle, threat, or challenge given by the sick person, but may only concern the positive or negative meaning assigned to the disease.

The mediator of the relationship between gratitude and the subjective sphere of quality of life was the appraisal of the disease as a harm. This mediation was not found to be moderated by gender. The obtained result means that the tendency to experience gratitude makes it easier to achieve a higher quality of life in the subjective sphere thanks to a lower tendency to evaluate the disease in the category of harm. Gender was not a moderator of the above relationship, so the obtained relationship occurs in both women and men. The obtained data confirm the hypothesis about the mediation of the relationship between gratitude and subjective quality of life by the appraisal of the disease. The part of the hypothesis regarding the moderating nature of the gender variable on the above mediation relationship was not confirmed.

Higher gratitude may promote concentration on the benefits, and not only the negative aspects of the trauma [13], which may mean that greater gratitude prompts a more positive appraisal of a difficult situation, e.g. by paying attention to internal resources that could have been strengthened thanks to effectively coping with a difficult situation, such as self-efficacy and sense of control. The above relationship may explain the role of illness appraisal in the relationship between gratitude and the subjective sphere of quality of life.

The relationship between setting priorities and setting realistic goals with a more positive meaning given to the disease [5] may explain why there was a negative relationship between the appraisal of the disease as a harm and the subjective sphere of quality of life. The results obtained in the examined patients indicate that the less the disease is assessed in terms of harm, the higher is their quality of life in the subjective aspect. A more positive appraisal of the disease may facilitate the formulation of new goals and thus improve the quality of life in the subjective area that relates to a person's self-fulfillment and autonomy.

The relationship between gratitude and the subjective sphere of quality of life was mediated by the variable of assessing the disease as a harm, regardless of gender. This means that a more positive appraisal of the disease, which coincides with a greater tendency to experience gratitude, contributes to increasing the quality of life in the subjective area in both women and men. It is possible that there were no gender differences in the above mediation due to the fact that the low intensity of assessing the disease as a harm contributed to increasing the subjective quality of life in other aspects of the quality of life in women and others in men, although in both sexes there was a positive effect of disease appraisal on quality of life.

Another mediator of the relationship between gratitude and the subjective sphere of quality of life may be the appraisal of illness as a value, i.e. a situation that is not easy to understand, but has a deeper meaning, as an opportunity for development and appreciation of the value of life by revaluing life. However, the obtained data do not clearly allow this variable to be considered a mediator of the above relationship, which indicates the need to conduct further research in this area. Research in this area could be carried out using a different method of measuring the appraisal of illness as a value, in order to verify the mediating role of the assessment of illness as

a value in the relationship between gratitude and the subjective sphere of quality of life.

A greater tendency to experience gratitude may promote focusing on the positive, and not only the negative, aspects of trauma [13], which may mean that a higher level of gratitude encourages a more positive appraisal of a difficult situation, e.g. by seeing meaning and value in difficulties. The above relationship may explain the role of illness appraisal in the relationship between gratitude and the metaphysical dimension of quality of life.

The results of research on the relationship between the disease and spiritual growth and the sense of meaning in life [5] explain the negative relationships between the appraisal of the disease in the category of harm and the quality of life. A lower intensity of appraisal of the disease as harm means a more positive assessment of the disease. A positive appraisal of the disease in terms of challenge and value has been shown to be associated with intrinsic religiosity and spiritual orientation in people struggling with chronic pain [20]. A lower sense of harm turned out to be related to the metaphysical sphere of quality of life, which justifies the link between the positive meaning attributed to the difficult situation of the disease and the increase in the sense of meaning and spiritual development, important components of the metaphysical sphere of quality of life.

Appraisal of illness as harm acted as a mediator of the gratitude relationship with the metaphysical dimension of quality of life only in women. No other type of illness appraisal acted as a mediator between gratitude and metaphysical quality of life in men, which means that illness appraisal mediates the above relationship only in women. This would mean that the level of gratitude contributes to how patients assess the stressful situation of the disease (positively or negatively), and the type of appraisal contributes to the level of quality of life in the metaphysical sphere only in women. This means that in men, a positive or negative appraisal of the disease has no significance for the level of quality of life in the metaphysical sphere. A more positive appraisal of the disease, thanks to higher gratitude, may contribute to treating the difficult situation of the disease as meaningful, which may increase the quality of life in the metaphysical dimension. Research on the differences between women and men in the appraisal of the disease indicates that higher scores in the appraisal of the disease as a harm occur in men, which indicates that men are more inclined to attribute a harmful role to the disease compared to women [15]. This explains the differences between women and men in terms of the mediation of the relationship between gratitude and the metaphysical sphere of quality of life.

CONCLUSIONS

To sum up, the mediator of the relationship between gratitude and quality of life was the appraisal of the disease as a harm. A greater tendency to experience gratitude contributed to the fact that the disease was less perceived as harm, i.e. a random life event, injustice, misfortune, punishment that causes a lack of sense in suffering. This, in turn, contributed to a sense of higher quality of life in the global, psychophysical, psychosocial, subjective and metaphysical dimensions. The mediation of the relationship between gratitude and the global, psychophysical, psychosocial and subjective spheres of quality of life was not moderated by gender. Appraisal of illness as harm mediated the relationship between gratitude and metaphysical quality of life, and this mediation was found to be moderated by gender.

Perceiving the disease as a harm was a variable mediating the relationship between gratitude and the quality of life in the metaphysical dimension only in women. This means that viewing illness as a punishment and injustice occurred in women with a lower tendency to experience gratitude and contributed to a lower quality of life in the metaphysical sphere.

The other methods of appraising the disease did not act as mediating variables in the relationship between gratitude and quality of life. The appraisal of the disease as a threat, i.e. disturbing the state of balance and security, violating plans for the future, arousing fear and anxiety about health and social position, was not a mediator of the examined relationship. Perceiving the situation as a benefit, that is, bringing secondary benefits from the disease, constituting an excuse towards others and oneself, an opportunity to be released from duties and responsibilities, bringing a sense of relief, as well as being an opportunity to escape from other problems, allowing one to meet the need to receive feelings from others and concern, as well as being a motive for obtaining material benefits, was not a mediator of the examined relationship. Seeing benefits in the current situation seems to be related to gratitude understood as the tendency to appreciate good things in life. However, the benefit of illness in this view is rather maladaptive, as it is a kind of escape from responsibility. Rather, gratitude could be linked to perceiving the benefits of illness as an opportunity to develop and overcome one's weaknesses. The perception of the disease as causing limitations in everyday life and functioning, loss of opportunities, plans, hopes and the need to give up what brought satisfaction and joy, i.e. obstacles/losses, did not function as a mediator of the relationship between gratitude and quality of life. This type of appraisal of the disease

has some similarities with coping with the disease consisting in the feeling of helplessness and hopelessness, which was a mediator of the relationship between gratitude and quality of life. This similarity has to do with the lack of hope for the situation to improve. Perhaps the fact that an obstacle/loss is not a mediator of the examined relationship is due to the fact that the feeling of helplessness has more to do with the emotion of sadness, and the appraisal of the disease as an obstacle has more to do with anger. Helplessness/hopelessness appears to be related to depression, which manifests itself in a negative view of oneself, the world, and the future [21]. The feeling of gratitude is associated with a lower severity of depression [7], but there is no evidence of a relationship between gratitude and the emotion of anger, which may appear due to the appraisal of the situation as an obstacle to the implementation of one's goals. The challenge, i.e. the appraisal of the disease as a difficult situation and as an enemy that must be defeated using available means, as well as the need to fight or pass a test, was also not a mediating variable of the examined relationship.

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REFERENCES

1. Lazarus RS, Folkman S. Stress, appraisal and coping. Springer, New York 1984.
2. Straś-Romanowska M. Los człowieka jako problem psychologiczny. Podstawy teoretyczne. Wydawnictwo Uniwersytetu Wrocławskiego, Wrocław 1992.
3. Wolanin A. Selected variables related to the quality of life in cancer. humanities and social sciences. Res J 2021; 28: 101-112.
4. Chojnacka-Szawłowska G. Psychologiczne aspekty przewlekłych chorób somatycznych. Vizja Press & It, Warszawa 2012.
5. Skaggs BG, Barron CR. Searching for meaning in negative events: concept analysis. J Adv Nurs 2006; 53: 559-570.
6. Russell CS, White MB, White CP. Why me? Why now? Why multiple sclerosis? Making meaning and perceived quality of life in a Midwestern sample of patients with multiple sclerosis. Families Systems Health 2006; 24: 65.
7. Enmons RA, McCullough ME. Counting blessings versus burdens: an experimental investigation of gratitude and subjective well-being in daily life. J Personal Social Psychol 2003; 84: 377-389.
8. Wolanin A. Wdzięczność a dobrostan człowieka – zależności i mechanizmy. Pol Forum Psychol 2020; 25: 406-416.
9. Fredrickson BL, Mancuso RA, Branigan C, Tugade MM. The undoing effect of positive emotions. Motivation Emotion 2000; 24: 237-258.
10. Matud MP. Gender differences in stress and coping styles. Personal Individual Differenc 2004; 37: 1401-1415.
11. Antonovsky A. The structure and properties of the sense of coherence scale. Soc Sci Med 1993; 36: 725-733.
12. Vernon LL, Dillon JM, Steiner ARW. Proactive coping, gratitude, and posttraumatic stress disorder in college women. Anxiety Stress Coping 2009; 22: 117-127.
13. Vernon LL. Relationships among proactive coping, posttrauma gratitude, and psychopathology in a traumatized college sample. J Aggression Maltreat Trauma 2012; 21: 4-130.
14. Nesbitt BJ, Heidrich SM. Sense of coherence and illness appraisal in older women's quality of life. Res Nurs Health 2000; 23: 25-34.
15. Janowski K, Steuden S, Kuryłowicz J, Nieśpiałowska-Steuden M. The disease-related appraisals scale. A tool to measure subjective perception of the disease situation. In: Janowski K, Steuden S (ed.). Biopsychosocial aspects of health and disease T. 1. Centrum Psychoedukacji i Pomocy Psychologicznej, Lublin 2009, 108-125.
16. McCullough MC, Emmons RA, Tsang JA. The grateful disposition: a conceptual and empirical topography. J Personal Social Psychol 2002; 82: 112-127.
17. Kossakowska M, Kwiatek P. Polska adaptacja kwestionariusza do badania wdzięczności GQ-6. Prz Psychol 2014; 56.
18. Straś-Romanowska M, Oleszkowicz A, Frąckowiak T. Kwestionariusz poczucia jakości życia. Instytut Psychologii Uniwersytetu Wrocławskiego, Wrocław 2004.
19. Ptacek JT, Smith RE, Dodge KL. Gender differences in coping with stress: when stressor and appraisals do not differ. Personal Social Psychol Bulletin 1994; 20: 421-430.
20. Büssing A, Michalsen A, Balzat HJ, et al. Are spirituality and religiosity resources for patients with chronic pain conditions? Pain Med 2009; 10: 327-339.
21. Beck AT, Steer RA, Brown GK. Beck depression inventory. Harcourt Brace Jovanovich, New York 1987.