

ORIGINAL ARTICLE

Types of reactions to malignant disease in view of V.E. Frankl philosophy

Mikołaj Majkowicz¹, Piotr Pankiewicz², Agata Zdun-Ryżewska¹, Magdalena Z. Podolska³

¹Department for Quality of Life Research, Medical University of Gdansk; ²Department of Psychiatry, Medical University of Gdansk;

³Department of Medical Diagnostics, NZOZ Meditest, Szczecin, Poland

Summary

Purpose: The purpose of this work was to find out whether there is interdependence between the patients' assessments of biological, psychological, psychosocial and spiritual levels.

Methods: 590 subjects, both ill and healthy, were examined by appropriate means and asked to consider their level of fear, depression (Hospital Anxiety and Depression Scale – Modification), aggression, quality of life (EORTC QLQ-C30 questionnaire), and the purpose and meaning of life (The “Purpose in Life Test” – PIL questionnaire).

Results: Three groups of patients were established with the help of statistical procedures. The first group encompassed the healthy subjects, whereas the second and third included those that were ill. Although the subjects estimated their level of physical fitness and general quality of life similarly, there were some essential differences in their

disease-associated reactions (i.e. the groups adjusted differently – the second group poorly and the third well). The majority of people suffering from cancer were well adapted to the early stages of the disease. As cancer progressed the percentage of those that adjusted poorly rose. However, even in the terminal stage some of the patients, about 1/3, still belonged to the group of those that were quite well adjusted. Established meaning of life, system of values, and personal religion were factors that helped to adapt.

Conclusions: There was no connection between the patients' assessments of their biological level and other (psychological, psychosocial, spiritual) levels. We can distinguish groups of patients that judge their physical condition similarly and still vary in the assessment of their emotional state or meaning of life.

Key words: cancer, existential, oncology, psychosocial, quality of life, spiritual

Introduction

As stated by Łuczak, “Malignant disease involves the entire area of personality, refers to multiple feelings of the human person as a whole, and to the somatic, psychosocial and spiritual area.” [1]. This statement has been included by Frankl and Popielski in the theory of human nature and is part of their philosophy [2-4].

For the most part, a sick person reacts to numerous symptoms directly, i.e. feels them directly and experiences their intensity. In such a case, we can talk about the sensual perception of ailments related to the disease at a biological level. In the case of neoplastic disease, this refers to ailments

that result from the condition itself and/or its treatment, e.g. pain [5], fatigue [6,7], nausea and vomiting [8], weight loss [9], eating and sleeping disorders, etc.

At a more complex level, the direct sensual feelings occur within a broader psychological context. Such feelings are accompanied by various emotions like fear, anxiety, dejection, and sometimes, irritation and anger [10-12]. These emotions may be associated with the course of the disease, its stage, and individual characteristics of a patient. Neoplastic disease has negative connotations in social awareness, and thus even a suspicion of cancer is reflected by increased levels of fear and anxiety [13]. Previous studies

regarding chronic conditions centered around somatic ailments, and therapeutic effects were analyzed mostly in terms of survival time. At present, however, also psychological status and quality of life of patients are considered as important therapeutic outcomes [14].

The sick person suffering from cancer faces a complicated situation that has an impact on personal contacts and interpersonal relations. In practice, a deterioration of interpersonal relations and formation of social gap around a patient can be observed in many cases. While most of the patient's friends will call and visit him/her shortly after the diagnosis, the frequency of such activities decreases with time, as they feel awkward asking such questions as "how are you?", "what is going on?" etc. Disease, death, or suffering represent intimate issues which can be easily ignored during the every day rush. This happens at a psychosocial level. Finally, malignant disease – especially at advanced stage – gives rise to the contemplation of the meaning of life and its purpose and corresponds to the noetic (spiritual) level [15]. In practice, this level refers to questions about the purpose of life, God, meaning of suffering, death, and future concerns. Until recently, this sphere was completely ignored at healthcare centers, and considered "private" and unrelated to the therapeutic process. However, its importance is appreciated nowadays, and spiritual factors are incorporated into a number of research programs [16,17].

The concept of V.E. Frankl, including spiritual (noetic) dimension, does not diminish the role of other dimensions of human existence. Nevertheless, the importance of such complementary terms as "meaning" and "value" is emphasized. Incompletely developed system of values or the lack thereof result in "existential emptiness" [18]. According to Frankl's philosophy, meaning has motivating value; each human being strives to find a meaning and achieve a purpose of his/her life. The meaning of life can be found not only in various achievements and activities but also in a way of suffering [19]. This latter aspect can be even considered a prerequisite of humanity. The Frankl's concept derives from clinical practice. Moreover, it has practical implication, allowing holistic attitude to a patient. The latter is no longer analyzed solely in terms of his/her pain, but also with regards to life situation, determinants of life quality and satisfaction with life, and potential modulators of these variables that can alleviate patient's suffering.

In this paper, the assumed dependent variables ("to be explained variables") are related to the

three reaction levels of a sick person.

For patients with a malignant disease, the resolution of the key issue and the attainment of an answer depend on the correlation in the assessments of their physical, psychic, and noetic (spiritual) areas.

The principal aim of this study was to identify potential universal patterns of response to neoplastic disease in the biological, psychosocial and spiritual sphere, namely to verify whether some subsets of cancer patients respond differently in the psychological sphere despite similar responses in the somatic sphere. Furthermore, to test whether the type of response is modulated by the stage of disease.

Methods

A total of 590 participants, including 466 sick and 124 healthy persons, took part in this study. The patient group included individuals aged between 18 and 85 years, with at least elementary education and established or suspected neoplastic disease. Definitive exclusion of cancer, malignancies of the central nervous system, impairment of physical, social or psychological functioning resulting from a non-malignant condition, and documented side effects of anticancer therapy disqualified from participation in the study. The latter exclusion criterion prevented affecting patients' responses by the side effects of a given treatment. The control group was comprised of physically and mentally capable healthy persons being free from any chronic conditions. Informed consent was obtained from all the subjects for the purposes of this study.

Subjects' general social and demographic characteristics are shown in Table 1. The general clinical characteristics of the studied sick persons are shown in Table 2. The numerical size of the groups at the respective stages of disease development, and also that of the selected control group, changed because healthy persons were selected in such a way as to correspond to the social and demographic characteristics of the sick persons.

The following methods were used in the study. 1) Cancer patients' quality of life was assessed with the EORTC QLQ-C30-questionnaire. This questionnaire is useful in the examination of cancer patients' quality of life regardless of diagnosis and tumor location. This instrument, developed by the EORTC Quality of Life Group, is the most popular, reliable and accurate tool for assessing the quality of life in cancer patients [20,21]. The survey was adapted in many countries in Europe and worldwide, among them in Poland. 2) The modified HADS-M-questionnaire (Hospital Anxiety and Depression Scale – Modification). This questionnaire, developed by Zigmond and Snaith [22], is intended for the screening of anxiety and depression in patients admitted to the hospital for any reason. The original

Table 1. Demographic characteristics of patients and healthy subjects

Characteristics	Patients (N=466) N (%)	Control group (N=124) N (%)	p-value
Sex			
Female	297 (63.7)	81 (65.3)	0.754
Male	169 (36.3)	43 (34.7)	
Age			
Female	M= 50.1 SD = 13.0	M= 46.1 SD = 14.4	0.000 ^α
Male	M= 54.1 SD = 13.7	M= 43.3 SD = 16.6	0.017 ^β
Group age (years)			
≤65	379 (81.3)	110 (88.7)	0.060 ^α
>65	87 (18.7)	14 (11.3)	
Education			
Elementary	207 (44.4)	25 (20.2)	0.000 ^α
Medium	170 (36.5)	63 (50.8)	
High	89 (19.1)	36 (29.0)	
Civil status			
Unmarried	79 (17.0)	37 (29.8)	0.061 ^α
Married	329 (70.6)	75 (60.5)	
Widow / Widower	58 (12.4)	12 (9.7)	
Occupational status			
Employed	172 (36.9)	85 (68.5)	0.000 ^α
Disability payments / pension	237 (50.9)	27 (21.8)	
Unemployed	57 (12.2)	12 (9.7)	

M: statistical mean, SD: standard deviation. ^α: chi-square (2-sided), ^β: t-test (2-sided)

Table 2. Disease characteristics

Characteristics	Patients, N	%
Duration of disease (months)		
≤ 3	157	33.7
4-6	93	20.0
7-12	88	18.9
13-36	68	14.6
≥37	60	12.8
Stages of disease		
I (diagnostic phase treatment)	82	17.6
II (primary treatment)	192	41.2
III (next treatment)	109	23.4
IV (terminal phase)	83	17.8
Character of cancerous lesion		
Primary tumor	194	42.7
Regional extension of the primary tumor	89	19.1
Metastases	122	26.2
Hematological malignancies	56	12.0

version of this instrument proved highly reliable and accurate. It was translated and adapted to Polish conditions [23]; the Polish adaptation follows the structure of the original instrument, but contains two additional items forming the separate scale of aggression. 3) The "Purpose in Life Test" (PIL) questionnaire that assesses the patient's feelings in terms of the purpose and meaning of life. This instrument was developed by Crumbaugh and Maholick in 1960s [24,25]. It is based on a theoretical framework of Frankl's concept of existential frustration, and operational definition of the meaning and purpose of life. The outcomes of the scale include satisfaction from meaningful, successful and

purposeful life, concerns about the meaning of life, or resignation and despair due to lack of the life meaning.

Statistics

The statistical analysis was carried out using the STATISTICA PL software package (licensed by the Medical University of Gdansk). The results were presented as arithmetic means and their standard deviations. The results were compared using the Student's t-test and Chi-square test. Statistical significance was set at $p < 0.05$. Homogeneous groups of patients were identified on the basis of cluster analysis. Using this method, without any predefined classification and in a purely empirical way, one can identify the groups of the examined subjects being similar with regard to their responses to questions included in a given survey. Thus, in this method, the role of the researcher is limited to defining the number of clusters.

Results

As determined by tests performed several times, the optimal manner of arranging the participants was to divide them into three groups. The subjects were allocated to groups, the general characteristics of which are shown in Table 3, based on the assumption of three-way grouping and following eight-time repetition of computer-based assessment.

The patients allocated to group I assessed their situation as the most advantageous and

Table 3. Characteristics of the groups

Level	Variables	Groups		
		1 (N=351)	2 (N=94)	3 (N=145)
Biological	Global quality of life	+	--	-
	Physical discomfort	-	+	+
	Physical functioning	++	--	-
	Role functioning	++	--	-
	Cognitive functioning	++	+	++
Psycho-social	Social functioning	++	-	++
	Emotional functioning	+	-	+
	Anxiety *	-	+	-
	Depression *	-	+	-
	Aggression *	-	+	-
Noetic (spiritual)	Feeling of purpose and meaning of life **	110	95	100

Explanation (method of coding of results - originally expressed on a 100 point scale):

-- Results in the range 0-25 points (very bad result)

- Results in the range 26-50 points (bad result)

+ Results in the range 51-75 points (good result)

++ Results in the range 76-100 points (very good result)

* The level was classified according to the standards: - within the standard, + borderline state and pathology

** Arithmetic average of the total result of the PIL questionnaire

rated their global quality of life as “good”. The level of discomfort in the physical area was low and both the physical and role functioning were rated as “very good”. Moreover, these participants assessed their cognitive and social functioning in the psychosocial area as “very good” and the emotional functioning as “good”. Their scores of anxiety, depression, and aggression were within the norm. In terms of the noetic (spiritual) area, it was found that the average PIL questionnaire score of patients from this group was quite high (up to 110 points). The global quality of life was assessed as “good”.

Group II included patients who assessed their situation as “bad” in each separate area, as well as when considering the global quality of life. The subjects assigned to this group shared the following characteristics: their assessment of global quality of life was “very bad”, there was a substantial increase in physical discomfort, assessment of the social and emotional functioning was “bad”, the scores of the anxiety, depression and aggression scales were increased, and the overall feeling of the purpose and meaning of life was rated as “fairly low” (95 points).

Group III consisted of patients who assessed their global quality of life as “bad”. In the physical area, similarly to group II, they experienced a considerable increase in physical discomfort and evaluated their physical functioning (efficiency) and role functioning (ability to carry out work) as “bad”. Although the patients from this group assessed their physical level similar to patients from group II, they evaluated their physical and social status in a completely different way. They also possessed a better attitude in terms of the

meaning of life than the patients from group II.

Generally, judging from the results obtained in the study, we can say that group I included patients who assessed themselves as doing well in all categories. However, groups II and III are more noteworthy, because while the patients from these groups assessed their physical status as “bad”, their reaction to the disease was quite different in respect to the emotional aspect of the situation. In other words, they were in the similar physical situation but reacted differently. Were these results to be interpreted in stress categories, one could say that the patients from groups II and III experienced “physical” stress, because their “bad” assessments related to the physical status in the sense of somatic complaints and physical efficiency. These subjects varied, however, in their “psychological” stress. Group II patients experienced symptoms of psychological stress like increased levels of anxiety, depression, and aggression. They also considered themselves inferior in regards to the meaning of life in comparison to the other two groups.

Although group III patients showed poor physical functioning and an overall low efficiency, emotionally they were much better adapted. The levels of negative emotions and emotional functioning were comparable to the top results of group I.

In summary, group I included the participants showing a high quality of life, good physical efficiency, and good emotional adaptation. The other two groups included patients with decreased physical functioning that varied, however, in the level of emotional adaptation. In contrast to group III patients, group II patients were poorly adapt-

Table 4. Groups and stages of disease

Stage	Group 1 N (%)	Group 2 N (%)	Group 3 N (%)	Total N (%)
I	66 (80.49)	5 (6.10)	11 (13.41)	82 (100)
II	125 (65.10)	12 (6.25)	55 (28.65)	192 (100)
III	50 (45.87)	17 (15.60)	42 (38.53)	109 (100)
IV	1 (1.20)	60 (72.29)	22 (26.51)	83 (100)
Healthy persons / control group	109 (87.90)	0 (0.00)	15 (12.10)	124 (100)
Total	351 (59.49)	94 (15.93)	145 (24.58)	590 (100)

χ^2 , $p < 0.0001$

ed emotionally. Moreover, patients from group III exhibited a higher level of functioning in regards to the meaning of life. The results presented herein allow to conclude that cancer patients' assessments, concerning various aspects of their existence, are not equivalent.

The relationship between the group affiliation and the stage of disease is shown in Table 4. In this study, reference to the control group fulfills the function of "authentication" of results. In this matter, the assumption is that subjects from the control group would assess themselves as doing "well" or "very well" in all areas and, thus, they would be found to be the clear majority of group I.

Table 4 shows the results for the healthy participants and the four stages of disease. As can be seen from the Table, 87.9% of healthy persons can be placed within group I (the "best" one). However, it is worth noticing that not a single person from this group was assigned to group II (the "worst" one). This is in accordance to our expectations and it confirms, in a sense, the relevance of the classification. The remaining subjects were distributed into the two other groups. The percentage of subjects in group I (the "best") at subsequent stages of the disease, beginning with the diagnostic and ending with the terminal disease stage, decreased continuously. Moreover, over 80% of the patients in the diagnostic stage were within this group. Following the first treatment, this percentage decreased to 65.1% of all patients (sick persons) in this category, and after subsequent treatment to 45.9%. In contrast, in the terminal stage this percentage decreased to one person, i.e. 1.2% of the participants.

A distinct trend, differing from that observed in group I, can be observed in group II. For group I, the percentage of persons decreased as the disease progressed, whereas in group II the number of patients increased as the disease developed. In the first two stages, a little over 6% could be found in each group. Among the patients who were in this stage when a subsequent treatment for re-

lapse was needed, the percentage of patients in this group increased to 15.6%. However, in the terminal stage the percentage of patients in this group increased to 72.3%. All the other patients at this stage of the disease (except one person) could be found in group III (the group of the "better adapted"). From the statistical point of view, the relationship between the stage of disease development and the group affiliation of the subjects was highly significant ($p < 0.001$).

Groups II and III included the subjects that were better (group III) or worse (group II) adapted to the disease. The analysis did not include group I because it encompassed the subjects that were best adapted in the general sense, i.e. in each of the investigated areas the assessments were "good" or "fairly good". Furthermore, the control group subjects were not taken into account. In the "poorly adapted" group, the distinction between the area related to the efficiency and that related to emotions is noteworthy. These persons, whose physical state and efficiency were comparable, differed in respect to their emotional state and the level of feeling of the meaning of life.

Discussion

The performed cluster analysis allowed the separation of three groups. The persons belonging to a given group were comparable, whereas those belonging to other groups differed in respect to the variables investigated in this study. The first group included the "healthiest" subjects, which is to be understood literally. The persons who were included in this group originated most often (over 85%) from the control group; the others were also "healthy" in respect to assessments of all three examined areas (physical, psychological, and noetic) and also in respect to the global quality of life.

The two other groups included, for the most part, sick subjects. The more advanced the disease was, the more sick were the persons classified to these groups. The second and third groups showed

some differences and similarities in regards to the reaction to the disease. Subjects from groups II and III were similar in physical efficiency, level of physical discomfort, and global quality of life; however, clear and essential differences were found in the areas of emotional reactions, social relations, and also in the area of feeling of the meaning of life.

The degree of progression of the disease has an impact on different emotional reactions. This, however, did not explain the phenomenon found in our study completely. Assuming that "bad" psychological reaction is an indicator of poor adaptation and, vice versa, "good" psychological reaction (without an increased level of negative emotions) is an indicator of "good" emotional adaptation to the disease, and, based on the performed analyses, one can state that the majority of sick persons (approximately 2/3) would adapt quite well to the early disease stages. However, as the disease progressed the percentage of those that were poorly adapted increased. Nevertheless, even at an advanced stage of disease, as in the case of terminal patients, a fraction of them (roughly 1/3) still belonged to the group of the emotionally "fairly well" adapted patients. These patients were within the norm in respect to the level of feeling of the meaning of life (other studies confirm that quality of life may still be "good" even given that death is inevitable) [26,27]. As per our analyses, an established feeling of the meaning of life, system of values, and also religious outlook on life favored adaptation to difficult life situations, as confirmed by many authors [28-32]. Other authors reported a strong link between factors referred to as "spiritual well-being" and the quality of life [33,34].

There are numerous publications discussing the role of adaptation in relation to disease. According to the stress theory, a very emotional reaction is initiated when the diagnosis is delivered to the patient [35-38]. However, patients are expected to cope better with the new situation as time passes [39-43]. Nevertheless, the analyses presented in this study show that this process is more sophisticated. One group of patients

in the last, terminal stage of disease achieved a certain degree of adaptation to the actual state. This group's reaction was quite calm, however, it concerned only about 1/3 of them. The other patients did not adapt themselves to the situation in a satisfactory manner during the disease course and reacted with chronic stress or disadaptation syndrome. In general, stating that, as time elapses, the adaptation becomes better applies to less dynamic situations. If a stressful situation (e.g. loss of a close person, or a traumatic experience) is more stable, one can expect that the adaptation process is under way. It can be seen as a reduction in negative emotions after a certain amount of time. However, as it has been mentioned in the theoretical part of the paper, progression of symptoms within a relatively short period of time is often seen in malignant disease. The manner in which the patient perceives the changes in his/her own health disturbs the adaptation process and, in effect, the emotional state of many patients deteriorates as well. Moreover, in many cases we noticed considerable variability in regards to negative emotions.

Conclusions

In conclusion, this study showed that there is no concurrence between the assessments of the biological level (physical state) and other levels of human existence. An assessment of the emotional state and the feeling of the meaning of life do not correspond to the evaluation of the physical state. It is possible to detect groups of patients who vary in the emotional reactions to the disease and the level of feeling of the meaning of life while assessing their own physical state in a very similar manner. We believe that our study can assist in obtaining more comprehensive information regarding patient's condition and building a better patient-doctor relationship [44].

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