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Quality of life and emotional functioning in selected psychosomatic diseases

Jakość życia i funkcjonowanie emocjonalne w wybranych schorzeniach psychosomatycznych

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Data Interpretation
E Manuscript Preparation
F Literature Search
G Funds Collection

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Summary

Choroba i jej leczenie mogą wpływać na pacjenta nie tylko w wymiarze fizycznym ale także w psychicznym i społecznym. Jakość życia jest koncepcją globalną, do której należy włączyć działania psychiczne, socjalne, czynności fizyczne i korzystne aspekty dobrego samopoczucia, jak również negatywne spowodowane chorobą i niedołęstwem. Celem pracy jest ocena wzajemnych zależności pomiędzy funkcjonowaniem emocjonalnym i jakością życia wśród osób z rozpoznaniem choroby wieńcowej, nadciśnienia tętniczego, choroby wrzodowej żołądka lub dwunastnicy.

Badaniu poddano grupę 180 mężczyzn hospitalizowanych w okresie 1999–2002 w Szpitalu Uniwersyteckim Nr 2 im. Wojskowej Akademii Medycznej w Łodzi. W badaniu zastosowano Kwestionariusz Kontroli Emocjonalnej – J. Brzezińskiego oraz Test Jakości Życia SF-36.

Zastosowane w badaniu techniki psychometryczne pozwoliły na stwierdzenie istotnych statystycznie zależności pomiędzy poziomem jakości życia a pobudliwością emocjonalną, kontrolą ekspresji emocjonalnej, kontrolą sytuacji.

Poziom jakości życia osób z chorobami psychosomatycznymi jest istotnie niższy w porównaniu z osobami zdrowymi. Jakość życia pozostaje w istotnej zależności z funkcjonowaniem emocjonalnym badanych osób. Pomiędzy osobami chorymi nie ma istotnego zróżnicowania w zakresie funkcjonowania emocjonalnego. Jakość życia osób z chorobą wrzodową jest średnio nieco wyższa niż u osób z rozpoznaniem ze strony układu krążenia.

Słowa kluczowe: **jakość życia • emocje • choroby psychosomatyczne**

Summary

Background: Disease and its treatment may affect a patient not only in the physical, but also in the psychological and social spheres. Quality of life (QOL) is a global concept which should include mental and social actions, physical activities, and the beneficial aspects of a good physical and mental condition as well as negative ones caused by disease and infirmity. The aim of this study was to assess the relationships between emotional functioning and QOL among people diagnosed with coronary disease, hypertension, or gastric and/or duodenal ulcer.

Material/Methods: A group of 180 male patients hospitalized during 1999–2002 at the Military Medical Academy Hospital in Łódź was subjected to examinations. The Emotional Control Questionnaire by Brzeziński was applied together with the SF-36 Quality of Life Test. The psychometric techni-

ques used in the examinations allowed determining statistically significant relationships between QOL level and emotional excitability, emotional expression control, and situation control.

Results: 1) The QOL level of the psychosomatic patients was essentially lower compared with that of healthy people. 2) QOL was strictly related to the emotional functioning of the subjects. 3) There was no essential diversity in the range of emotional functioning among the patients. 4) QOL of the patients suffering from gastric ulcer was on average a little higher than that of patients with coronary disease.

Key words: **quality of life • emotions • psychosomatic disease**

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Introduction

Disease and its treatment may affect a patient not only in the physical, but also in the psychological and social spheres. We can imagine that every disease affects a person's biopsychosocial functioning to a greater or lesser degree. The World Health Organization defines health as a condition of the total physical and social condition, and not only as a lack of disease. This was the basis for "quality of life" (QOL) as defined by Till, McNeil, and Busch in 1984. These researchers assumed that QOL is a global concept which should include mental and social actions, physical activities, and the beneficial aspects of a good physical and mental condition as well as the negative aspects caused by disease and infirmity [6]. Gotay et al, on the other hand, think that quality of life means a good physical and mental condition, consisting of two elements: the ability to cope with everyday tasks (the biopsychosocial level) and the patient's satisfaction from his activities at all levels as well as control over the disease and symptoms connected with the treatment method being applied [2]. According to Jarema, state of health, social relations, the professional, family, and financial situation, as well as the possibility to influence one's own fate should also be taken into account when assessing a person's quality of life [3]. Many researchers state that no unanimity has yet been reached as to a definition of the concept of quality of life and it will be difficult to reach it. However, in practice the approach to this subject is pragmatic. This means that researchers try to define quality of life by measuring both elements referring to a disease and its treatment, which also add to the general quality of life [4].

Quality of life level may also be studied for cognitive aims in different environments, among both healthy people and patients. Disease and its treatment, besides influencing quality of life, affect a person's emotional functioning to an extremely strong degree. Depending on the type of disease, its location, and the therapeutic schemes applied, emotions may achieve primary significance. In spite of the fact that they can be included as an element of measuring QOL, authors seem to be more concerned by the interesting mutual influence of subjectively understood quality of life level and emotional functioning among psychosomatic patients with different disorders [1,5,7,8].

The aim of this study was to investigate quality of life level in the global dimension as well as in its other dimensions and emotional functioning among three patient groups: those with gastric and/or duodenal ulcer, ischemic heart disease (IHD), and hypertension.

Material and Methods

One hundred eighty patients took part in the study. They were divided into three groups consisting of 60 persons each (all males, mean age: 45.7 years) hospitalized because of gastric or duodenal ulcer, ischemic heart disease (IHD), or hypertension in the years 1999 to 2002 at the Military Medical Academy University Hospital No. 2 in Łódź. The control group contained 40 healthy men (mean age: 41.1 years). Average disease duration was 4.23 years. There were no other chronic diseases or addictions identified among the persons being examined.

In the examinations, clinical methods (observation and psychological interview) were used together with the following psychometric instruments:

The SF-36 Quality Of Life Test (11-question version), which allows QOL assessment of patients in the scope of: general health evaluation (SF-36-ass), physical efficiency evaluation (SF-36-pe), evaluation of change in health condition (SF-36-heal), evaluation of change in health condition in recent years (SF-36-heal-2), and social activity assessment (SF-36-sa). Rough results of the SF-36 test after calculations were subjected to transformation on a 10-degree sten scale in order to define QOL level. According to that scale, high results are from 7 to 10 stens and indicate a high QOL level, whereas low results are within the range

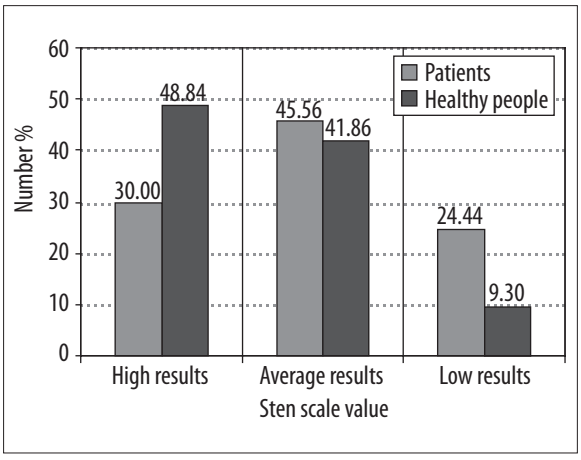

Figure 1. Population profile of quality of life of the subjects

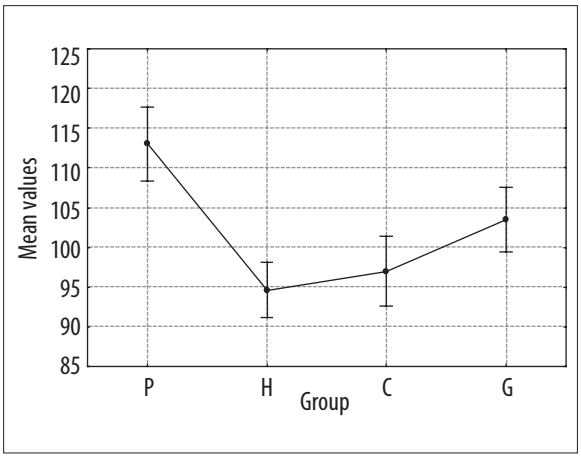

Figure 2. Graphs of means and 95%CI for the SF-36 Questionnaire (global results) in the groups. P – healthy; H – hypertension; C – coronary disease; G – gastrointestinal ulcer

Table 1. Mean values of the SF-36 scales for the study population

Patients with diagnosed:	Test scales of quality of life (SF-36) (Mean values/Standard Deviation)				
	General result	Health assessment	Physical efficiency	Health assessment (last year)	Social activity
Gastrointestinal ulcers	103.52/15.81 – 6 sten	15.55/1.76	7.12/2.15	3.12/0.78	6.92/1.92
Coronary disease	97.00/1.85 – 6 sten	15.08/2.40	6.60/2.40	2.87/0.95	6.23/2.08
Hypertension	94.63/13.56 – 5 sten	15.32/1.56	7.38/1.83	3.35/0.94	6.75/1.74
Healthy	113.05/14.52 – 7 sten	16.97/1.53	8.70/1.57	3.40/0.67	8.40/1.75

from 1 to 4 stens and indicate low QOL [6]. The Emotional Control Questionnaire (ECQ) by Brzeziński allows characterizing emotional functioning in five categories: emotional expression control (EC), emotional and rational motivation (ERM), emotional endurance (ER), situation control (SC), and emotional excitability (EE). In other words, it is a scale for measuring an individual's ability to control his external signs of experienced emotions, a kind of individual motivation, of steering one's own behavior, the ability to manage a currently developing emotional process and not disorganizing it, and the individual's ability to control emotogenic situations and their appropriate perception and interpretation. The scale also measures the general emotional excitability threshold. The results of this questionnaire are also expressed on a sten scale.

The study design was approved by the Bioethics Commission of the Medical University of Łódź (report no. RNN/40/04/KB of Feb. 10, 2004, and no. 171/01 of Dec. 18, 2001).

The results were subjected to statistical analysis using descriptive statistical methods, non-parametric and parametric statistics (chi-squared test, analysis of variance, a post-hoc test (Scheffe test), mean value difference *t* test, and Spearman's rank correlation coefficient. $p<0.05$ was regarded as the borderline of significance. The analyses were made using Statistica ver. 7.1 PL. The examined group consisted of patients hospitalized during the study. People in the control sample were selected randomly.

Results

The subjects' population profile is presented with reference to the variable quality of life in Figure 1.

As can be seen from the figure, a bit less than 1/3 (33.0%) of the patient population was characterized by a low quality of life level in the global dimension (SF-36-G). The profile of the control group is clearly different in the number of people characterized by a low QOL level. By dividing the subjects into healthy subjects and patients in the range of high and low results, the groups are different in a statistically significant way ($p<0.05$).

In Table 1 are the mean values of the SF-36 test results for all the measured scales for all the groups in the study.

As the table shows, there is a statistically significant difference between healthy subjects and patients only in global QOL ($t=5.375$, $p<0.001$). QOL levels on the remaining scales in the group of psychosomatic patients are not different in a statistically significant way from those of the control group. Mean results for the groups together with 95% confidence intervals (*95%CI*) are presented in Figure 2.

Table 2. Mean values of the Emotional Control Questionnaire of the population under study

Patients with diagnosed:	Scales (sten values/Standard Deviation)				
	EEC	ERM	ER	SC	EE
Gastrointestinal ulcers	3.97/1.83	5.22/1.72	5.02/1.94	6.27/2.36	8.40/1.06
Coronary disease	4.10/2.18	3.57/1.80	4.33/2.30	6.83/1.90	9.01/0.62
Hypertension	3.26/1.45	3.95/1.88	4.32/1.61	7.08/1.61	9.07/0.73
Healthy	5.85/1.64	6.50/1.92	5.05/2.05	6.07/2.15	5.67/1.98

EEC – emotional expression control; ERM – emotional and rational motivation; ER – emotional endurance; SC – situation control; EE – emotional excitability.

Table 3. Analysis of variance variables of the subjects: quality of life and emotional functioning of the male population under study, including and excluding the control group

Variable	Control group incl.		Control group excl.	
	F	p	F	p
SF-36-global result	13.636	0.0000	5.306	0.0058
SF-36-health assessment	11.278	0.0000	1.098	0.3357
SF-36-physical activity	8.726	0.0000	2.078	0.1283
SF-36- health assessment-last year	4.320	0.0055	4.286	0.0152
SF-36-social activity	10.973	0.0000	2.072	0.1289
Expression control	16.733	0.0000	3.528	0.0314
Emotional and rational control	25.678	0.0000	1.801	0.0000
Emotional endurance	2.291	0.0792	2.458	0.0885
Situation control	2.875	0.0370	2.677	0.0715
Emotional excitability	89.866	0.0000	12.089	0.0000

Mean values of the Emotional Control Questionnaire of the population are presented in Table 2.

The table unambiguously indicates that the majority of patients had high results on the emotional excitability scale and on the situation control scale. On the emotional expression scale, average and low results were predominant, apart from control group, whose mean results were within the average range. Mean values are expressed in stens. High results were also obtained on the situation control scale among the patients with circulatory system disorders. The gastric ulcer group had average results. Mean values of the emotional variable along with 95%CI are presented in Figure 3.

To determine differences in QOL and emotional functioning in the groups, one-factor variance analysis was applied. To confirm correlations between QOL and emotional functioning, the Pearson linear correlation coefficient was used. Variance analysis was applied in two models, i.e. with and without the control group, for all the variables under examination. The results of the analysis are presented in Table 3.

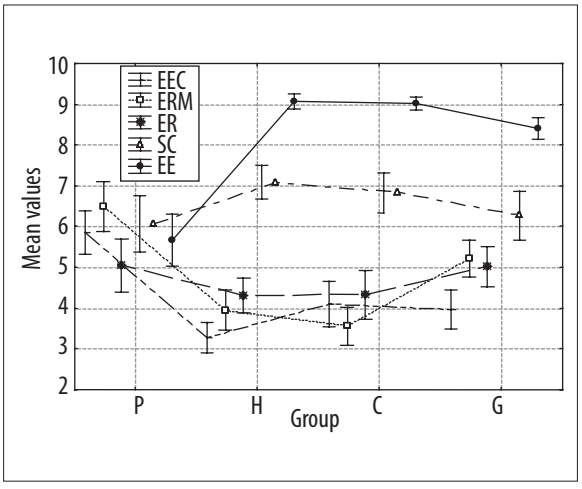

Figure 3. Graphs of means and 95%CI of the particular scales of the Emotional Control Questionnaire in the groups. EEC – emotional expression control; ERM – emotional and rational motivation; ER – emotional endurance; SC – situation control; EE – emotional excitability; P – healthy; H – hypertension; C – coronary disease; G – gastrointestinal ulcer

Table 4. Correlation between emotional functioning and quality of life level in the groups under study (Spearman's rang correlation coefficient)

Emotional Control Questionnaire	Examined groups			
	Healthy	Coronary disease	Hypertension	Gastrointestinal ulcers
EC	–0.11	0.32**	0.20	0.24
ERM	0.38**	0.11	0.21	0.11
ER	0.25	0.50***	0.31**	0.45***
SC	–0.004	–0.27*	–0.52***	–0.59***
EE	0.003	–0.19	–0.36**	–0.37**

EEC – emotional expression control; ERM – emotional and rational motivation; ER – emotional endurance; SC – situation control; EE – emotional excitability. * $p<0.05$; ** $p<0.01$; *** $p<0.001$.

The results in this table show that the groups are different in a statistically significant way in nearly all the variables of both the QOL test and the Emotional Control Questionnaire. The only exception is the variable of emotional endurance, whose result turned out to be statistically insignificant. Excluding the control group resulted in a remarkable diversity in the patient group in variance analysis in the variables QOL-global, QOL-social activity, emotional expression control, emotional and rational motivation, and emotional excitability.

In order to determine which of the compared populations is responsible for causing these differences, a post hoc test (Scheffer's test) was used. Based on this test it was found that significant differences in the variables mentioned exist mainly between the control group and patient group. In the second model (without the control group) it was found that the main difference concerned the gastric ulcer and hypertension groups as well as the ischemic group. Groups with circulatory system disorders do not differ in a statistically relevant degree.

To find dependencies between functioning and quality of life level in the examined groups, Spearman rang correlation was applied and is presented in Table 4.

In this table, a moderately high correlation coefficient with statistical significance ($p<0.01$) was obtained only on the emotional and rational scale. Other correlation coefficients were not statistically significant. Coefficients for the scales of expression control, situation control (inverse relationship), and emotional endurance were statistically significant in the coronary disease patients. The results are moderately low with the exception of the emotional endurance scale ($r=0.50$). A similar coefficient arrangement is found in the hypertension patients, the only difference being that the result is not significant on the emotional endurance scale, whereas the correlation is statistically typical and negative on the emotional excitability scale. Among the gastric ulcer patients, statistically significant coefficients appeared on the scales of emotional endurance, situation control, and emotional excitability.

Discussion

Analyzing the obtained results one should state that the quality of life level can, to a remarkable degree, help in the psychosocial characterization of a patient population. Moreover, emotional functioning is a variable which, in a perfect way, explains the mutual dependencies in understanding the risk factors affecting psychosomatic diseases and, at the same time, it complements studies on quality of life. With regard to the three patient groups it can be stated that, generally, lower quality of life level was characteristic of the patients with diagnosed circulatory system disorders in comparison with the gastric and/or duodenal ulcer patients. However, in comparison with healthy people, all patients declared essentially lower quality of life levels. There was also a relationship between quality of life level and emotional functioning in all patients.

Based on the performed study, and taking the variables into account, the patients can be characterized as people whose emotional expression control and emotional endurance increases together with higher life quality. The lower the quality of life, the greater the sense of situation control and high emotional excitability. In other words, in comparison with healthy people, gastric and/or duodenal ulcer patients are characterized by greater emotional excitability, they overcontrol situations, and also demonstrate less control over emotional expression and emotional endurance. As for emotional functioning, the patients with circulatory system disorders, compared with the gastric ulcer patients, did not reveal remarkable differences, except that differences are a little clearer in the range of situation control and emotional endurance.

Conclusions

1. Quality of life level of psychosomatic male patients was significantly lower than in healthy males.
2. There was a significant relationship between QOL and emotional functioning in the male subjects.
3. There was no significant difference in the range of emotional functioning among the patients.
4. The QOL of the male patients with gastric ulcer disease was, on average, a little higher than that of patients with circulatory system disorders.

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