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Wsparcie społeczne i strategie radzenia sobie ze stresem u pacjentów z chorobą wrzodową

Social support and strategies of coping with stress in patients with ulcer disease

Streszczenie

Wstęp. Etiologię choroby wrzodowej od dawna wiązano z czynnikami psychogennymi. Po odkryciu znaczenia bakterii *Helicobacter pylori* w etiologii choroby wrzodowej osłabło zainteresowanie znaczeniem etiologicznym stresu i – szerzej – czynników psychicznych. Jednakże, dobrze udokumentowane badania wykazały, że różne aspekty stresu psychologicznego mogą nadal być ważnym czynnikiem przyczyniającym się do powstania tej choroby, na przykład poprzez zwiększenie podatności na zasiedlenie bakterią *H. pylori*.

Cel. Celem niniejszej pracy było zbadanie roli dwóch czynników związanych ze stresem – poczucia wsparcia społecznego i strategii radzenia sobie ze stresem – u pacjentów z chorobą wrzodową.

Materiał i metody. W badaniu wzięło udział 62 pacjentów z chorobą wrzodową i 102 osoby zdrowe. Pomiaru poziomu radzenia sobie ze stresem dokonano za pomocą Kwestionariusza Sposobów Radzenia Sobie ze Stresem S. Folkman, R. S. Lazarus, natomiast pomiaru wsparcia społecznego za pomocą Kwestionariusza Wsparcia Społecznego J. S. Norbeck.

Wyniki. U osób chorych wykazano nieznacznie wyższy poziom poczucia wsparcia społecznego aniżeli u osób zdrowych. Biorąc pod uwagę strategie radzenia sobie, pacjenci z chorobą wrzodową w porównaniu do grupy kontrolnej w mniejszym stopniu stosowali jedną strategię radzenia sobie – restrukturyzację poznawczą. Wsparcie społeczne okazało się skorelowane z niektórymi strategiami radzenia sobie u pacjentów, ale nie w grupie kontrolnej.

Wnioski. Wyższy poziom spostrzeganego wsparcia społecznego u osób z chorobą wrzodową może świadczyć o ich większym zapotrzebowaniu na wsparcie z powodu choroby. Wsparcie społeczne i strategie radzenia sobie korelują ze sobą u pacjentów z chorobą wrzodową, a relacje te są najprawdopodobniej dwukierunkowe.

Słowa kluczowe: stres, radzenie sobie, wsparcie społeczne, choroba wrzodowa.

Abstract

Introduction. The etiology of ulcer disease has long been associated with psychogenic factors. After discovering the role of *Helicobacter pylori* in development of ulcers, the interest in psychosomatic aspects of this disease decreased. However, well controlled studies showed that various facets of psychological stress may still be important factors contributing to this disease, for instance through facilitation of *H. pylori* infection.

Aim. The objective of this study was to explore the role of two stress-related factors – perceived social support and strategies of coping with stress – in patients with ulcer disease.

Material and methods. Sixty-two patients with ulcer disease and one hundred and two healthy controls took part in the study. They were assessed on a measure of coping with stress (Ways of Coping Questionnaire) and social support (Norbeck Social Support Questionnaire).

Results. The patients were found to report slightly higher levels of perceived social support than controls. Among coping strategies, patients differed significantly from controls in less frequent use of one coping strategy – cognitive restructuring. Social support was found to be related to certain coping strategies in the patients but not in the control group.

Conclusions. Higher levels of reported social support in patients with ulcer disease may be indicative of their greater need for this support due to the disease. Social support and coping strategies are related in patients with ulcer disease and these relationships are bidirectional.

Keywords: stress, coping, social support, ulcer disease.

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INTRODUCTION

Gastrointestinal disorders such as stomach ulcers or duodenal ulcers are classified as psychosomatic diseases. The term psychosomatic disease refers to all health disorders in which biophysical factors alongside psychosocial factors are involved.

As pointed out by Rymaszewska and Dudek, gastric ulcers may occur in patients whose personality and life experiences predispose to somatic reactions to stressful stimuli [1]. Schindler and Ramchandani also emphasize the significance of studies on the involvement of stress factors and coping with stress in peptic ulcer [2].

Currently, more attention is paid to the role of *Helicobacter pylori* in the mechanisms of peptic ulcer development. The discovery of the critical significance of this bacterium for the etiology of ulcer disease resulted in a reduced interest in the significance of stress and – more broadly – psychological factors for etiology of peptic ulcers. However, the role of psychological factors in this disease can not be completely ignored, and the recurrence of symptoms is often associated with the way the patient experiences stressful situations [3]. Therefore, psychological stress continues to be regarded as a potentially important contributing factor in ulcer disease etiology.

In psychological research, disease related psychological problems are usually studied within the theory of stress and coping. The theory of psychological stress, as presented by Folkman, defines stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" [4,5]. An important insight from this theory is the observation that people differ in how they evaluate stressful situations and what strategies they use to control stress. These individual differences (e.g., effective vs. ineffective coping strategies) may be responsible for the fact that some people experience negative consequences of stress (e.g. illness), while others remain relatively unharmed by stress.

How effectively a person resolves the stressful situation depends heavily on strategies applied by a person to cope with stress [6]. According to Folkman [4], coping includes all cognitive and behavioral efforts aimed at managing external an/or internal demands appraised as taxing. The process of coping serves two main functions: first, the regulation of emotions (usually intense, mainly negative emotions) and second, dealing with the problem which was a source of stress (problem resolution, and if it is impossible, adapting to living in changed circumstances, for example after the death of a loved one). In different types of stressful situations, people may use both forms of coping, consecutively or even simultaneously [7,8].

The main importance in effective coping with stress is usually attributed to problem-oriented strategies (focused on the task), however, a positive role of emotion-oriented strategies is also emphasized, as the latter may also turn out to be adaptive. Emotion-oriented strategies may lead to increased arousal, making it possible to increase the mobilization of individuals to act [7].

Despite the important role is attributed to the processes of coping with stress in the psychological literature, only a few studies have attempted to evaluate the strategies or coping with stress in patients with peptic ulcer disease. Sharma et al. [9] conducted a study in patients with gastric and duodenal ulcers and assessed the impact of stressful life events, the level of anger, anxiety and preferred ways of coping (i.e., suppression of anger, acting out of anger, controlling anger) in 80 male patients compared with the control group of orthopedic patients. Their findings showed that patients with ulcer disease revealed a stronger negative effects of stressful life events, higher trait of anger, and higher trait of anxiety, greater suppression of anger, but weaker the direct expression of anger and weaker control of angry feelings than the control group. The factors that differentiated the two groups most were: high trait of anxiety, reduced anger control, the negative impact of life events and poor acting out of anger.

Social support is one of the factors determining how effectively a person copes with stress. Social support is broadly defined as an aspect of positive human interactions or helpful behaviours provided to people in difficult situations, facing problems, crises or stressful situations [2].

AIM

The issue of coping strategies and social support in patients with ulcer disease has been undertaken in this study. The aim of this study was to compare the strategies of coping with stress used by patients with gastric and duodenal ulcers with the strategies of coping used by healthy people. Additionally, the objective of this study was to assess the relationships between perceived social support and strategies of coping with stress within the samples of patients with ulcer disease and the control group.

MATERIAL AND METHODS

Participants

The study was conducted at the Department of Gastroenterology, Cardinal Stefan Wyszyński District Hospital in Lublin, Poland, in the years 2009 to 2010. The experimental group consisted of 62 patients who had been diagnosed with gastric ulcers (K25) or duodenum ulcers (K26) in accordance with the International Classification of Diseases (ICD-10) diagnostic criteria. Clinical data on the characteristics of the disease were obtained from medical records. The age of the patients ranged from 25 to 66 years. The sample consisted of 26 women and 36 men. Thirty-three participants were college graduates, 21 – high school graduates, and 8 had accomplished primary schools. Thirty subjects came from urban areas and 32 came from rural areas. All patients had previously been hospitalized due to ulcers and at the time of the study returned to the outpatient clinic for a standard control visit.

The control group consisted of 102 healthy subjects aged 22-71 years, including 60 women and 42 men. Forty control subjects had completed graduate education, 43 – completed high school and 19 – completed vocational schools. Fifty-six subjects from the control group lived in the city, and 56 – in the rural areas.

Psychological Testing

Norbeck Social Support Questionnaire (NSSQ) is a self-report instrument designed to measure certain functional and structural aspects of social support. The questionnaire was developed by Norbeck et al. [10] and consists of 8 questions asking about various aspects of support as obtained from other people. Respondents are asked to list first names or initials for each significant person in their lives who provides personal support to them. Then they indicate the type of relationship (e.g., spouse or partner, family members or relatives, friends etc.) for each person on this network list. Finally respondents use a 5-point rating scale to describe the amount of support available from each person on their network list for questions 1-8. The functional aspects of social support as measured by NSSQ include Affect (positive emotions experienced from others), Affirmation (confidence in others and approval from others) and Aid (tangible help from others accessible to the respondent). The summative index of these aspects of social support yields the Total Functional Score, indicative of the global functional support as perceived by the respondent. The structural aspects of social support measured by NSSQ include Duration of the Relationships (time over which the relationships are maintained), Frequency of Contact (frequency with which the person stays in touch with other people) and Amount of Loss (number of the relationships that have been lost over the last year). The authors of this instrument reported high reliability coefficients for the NSSQ. The test-retest correlations were: 0.89 for Affect, 0.88 for Affirmation, and 0.86 for Aid. Similar high correlations were found for the network properties, which were each 0.92 [10].

Ways of Coping Questionnaire (WCQ) was developed by Folkman and Lazarusa in 1985 [4]. The questionnaire consists of 67 items describing a range of behavioral and cognitive strategies which may be adopted by people in stressful situations. The respondent is asked to recall a stressful situation from the previous week, and then to fill in the questionnaire referring to the behaviors and thoughts generated during this situation. A 4-point Likert type scale is used for the response format. Higher scores indicate more frequent use of a given coping strategy.

We carried out factor analysis on the WCQ results from our participants. Four interpretable factors were extracted with eigenvalues higher than 1.0. We eliminated the items with factor loadings lower than 0.50. In this way we developed four subscales measuring four coping strategies which we labeled: Coping through active change, Cognitive restructuring, Passive helplessness, and Maturing. The reliability Cronbach's alpha coefficients were calculated for each subscale and are presented in Table 1.

TABLE 1. Psychometric characteristics of the WCQ subscales developed on the basis of factor analysis.

Subscales of WCQ	Number of items	Cronbach's alpha
Active change	8	0.78
Cognitive restructuring	9	0.78
Passive helplessness	6	0.72
Maturing	6	0.69

Statistical Analyses

The scores for the groups of patients and controls are presented as arithmetic means (M) and standard deviations (SD). To compare the scores of the patient and control groups Student's *t*-test was used, for the cases were the compared groups were not homogeneous, the Cochran-Cox correction was applied. To analyze the relationship between social support dimensions and strategies of coping with stress, Pearson's r correlation coefficients were calculated. Factor analysis was applied to analyze the scores from WCQ. The principle components method was applied with rotation with Keiser correction. Cronbach's alpha coefficients were calculated for the extracted subscales of the WCQ. The threshold for statistical significance was set at $p \leq 0.05$.

RESULTS

Patients and controls were compared on the scores obtained on the Norbeck Social Support Questionnaire (Table 2). No statistically significant differences between the groups were found. However, patients tended to report slightly higher ($P<0.1$) levels of support on three indices of social support: sense of being liked or loved (Question 1), positive emotions obtained from others (Affect), and tangible help from others (Question 6).

A statistically significant difference was found between the patients and healthy controls on one strategy of coping with stress – cognitive restructuring (Table 3). Patients reported significantly less frequent adoption of this strategy than healthy controls. No statistically significant differences were found between the groups on other analyzed coping strategies.

The correlation matrix between social support scores and coping strategies in the patients group (Table 4) showed that two coping strategies were related to aspects of social support: cognitive restructuring and passive helplessness. Both strategies were positively related to social support, indicating that higher social support tended to co-occur with more frequent use of these strategies. In particular, the sense of being respected and admired correlated significantly with cognitive restructuring. Also the sense of affirmation, particularly affirmation for one's actions, correlated positively with the strategy of cognitive restructuring. The same strategy was also correlated with total functional support, the mean time of maintaining contacts and the frequency of contacts.

Passive helplessness was correlated positively with affirmation obtained from others, including affirmation for one's actions and confidence in others. The time of maintaining the contacts was also correlated positively with this strategy of coping.

No statistically significant correlations were found between various aspects of social support and strategies of coping with stress in the control group (Table 5).

TABLE 2. Comparison of patients with ulcers disease and healthy controls on social support scores.

Social support	Group 1 Patients (N=62)		Group 2 Healthy controls (N=102)		Student's *t*-test	
	M	SD	M	SD	t	p
Q1. How much does this person make you feel liked or loved?	21.15	7.05	18.63	10.35	1.69	0.093
Q2. How much does this person make you feel respected or admired?	20.32	7.38	17.97	10.06	1.60	0.112
Affect	41.47	14.03	36.60	20.24	1.67	0.098
Q3. How much can you confide in this person?	21.50	7.29	19.46	10.31	1.36	0.175
Q4. How much does this person agree with or support your actions or thoughts?	19.65	7.05	17.55	9.67	1.48	0.140
Affirmation	41.15	14.03	37.01	19.70	1.44	0.151
Q5. If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?	22.50	7.74	20.06	10.94	1.54	0.126
Q 6. If you were confined to bed for several weeks, how much could this person help you?	21.32	8.01	18.73	10.38	1.69	0.093
Aid	43.82	15.48	38.78	21.00	1.64	0.104
Total Functional Support	126.44	42.62	112.39	60.26	1.61	0.110
Duration of Relationships	24.00	7.60	22.46	11.94	0.91	0.365
Frequency of Contact	23.27	7.47	21.19	10.65	1.35	0.178

TABLE 3. Comparison of patients with ulcer disease and healthy controls on strategies of coping with stress.

Coping strategies	Group 1 Patients (N=62)		Group 2 Healthy controls (N=102)		Student's *t*-test	
	M	SD	M	SD	t	p
Active change	13.84	3.99	13.89	5.42	-0.07	0.946
Cognitive restructuring	10.74	6.37	13.25	4.73	-2.89	0.004
Passive helplessness	7.53	3. 88	7.82	4.15	-0.45	0.656
Maturing	8.37	3.76	9.06	3.52	-1.18	0.239

TABLE 4. Correlation coefficients between social support and strategies of coping with stress in patients with ulcer disease.

	Active change	Cognitive restructuring	Passive helplessness	Maturing
Q1. How much does this person make you feel liked or loved?	0.16	0.22	0.17	0.02
Q2. How much does this person make you feel respected or admired?	0.16	0.26*	0.20	0.12
Affect	0.16	0.25	0.19	0.08
Q3. How much can you confide in this person?	0.15	0.25	0.25*	0.06
Q4. How much does this person agree with or support your actions or thoughts?	0.18	0.36**	0.28*	-0.02
Affirmation	0.17	0.31*	0.27*	0.02
Q5. If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?	0.17	0.20	0.23	-0.02
Q 6 If you were confined to bed for several weeks, how much could this person help you?	0.19	0.19	0.13	0.04
Aid	0.18	0.20	0.19	0.01
Total Functional Suport	0.17	0.26*	0.22	0.04
Duration of Relationships	0.19	0.34**	0.26*	0.04
Frequency of contact	0.16	0.28*	0.21	0.12

*p≤0.05 ** p≤0.01

TABLE 5. Correlation coefficients between social support and strategies of coping with stress in healthy controls.

	Active change	Cognitive restructuring	Passive helplessness	Maturing
Q1. How much does this person make you feel liked or loved?	-0.00	-0.01	0.07	-0.04
Q2. How much does this person make you feel respected or admired?	-0.01	-0.00	0.05	-0.04
Affect	-0.01	-0.01	0.06	-0.04
Q3. How much can you confide in this person?	-0.03	-0.01	0.06	-0.08
Q4. How much does this person agree with or support your actions or thoughts?	-0.03	-0.01	0.05	-0.05
Affirmation	-0.03	-0.01	0.05	-0.07
Q5. If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?	-0.02	0.01	0.06	-0.05
Q 6 If you were confined to bed for several weeks, how much could this person help you?	0.00	0.00	0.03	0.02
Aid	-0.01	0.01	0.05	-0.02
Total Functional Support	-0.01	-0.04	0.05	-0.04
Duration of Relationships	-0.05	-0.04	0.08	-0.04
Frequency of contacts	-0.03	-0.01	0.13	0.01

DISCUSSION

Social support and coping strategies are believed to be important factors determining the outcomes of stressful encounters [4]. It has been emphasized that social support may have particularly beneficial effects on health-related outcomes in people who are under stress [11]. In our study we aimed at evaluation of social support levels and strategies of coping with stress in patients with ulcer disease. When patients with ulcer disease were compared with healthy controls on social support dimensions, it was found out that these groups did not differ statistically significantly on any of social support indices. It is of note, however, that patients scored slightly higher than controls ($p<0.1$) on the sense of being liked or loved, general affect received from other people, and potential tangible aid from others. Patients may report higher levels of social support than healthy controls, as their life situation is changed by the disease and they are need for more support than healthy individuals.

Our patients with peptic ulcers scored significantly lower than control subjects on one of the coping strategies, namely cognitive restructuring. No statistically significant differences were found between these groups on the remaining coping strategies. This finding may suggest that patients with peptic ulcers make less frequent use of cognitive restructuring when coping with stress. This may be of particular importance in the light of the data indicating that stress may contribute to the etiology and recurrence of peptic ulcers. For instance, Choung and Talley [12] distinguish a type of ulcer disease related to stress and suggest that in many cases gastric damage may be attributed to chronic or acute stress. Aoyama et al. [13] reported an increase in the incidence of stress-related ulcers after major stressful life events, showing that both biological (H. Pylori, NSAID) may interact to contribute to the etiology of peptic ulcers. Experimental research in animal models of ulcer disease showed that psychological stress enhances the colonization of the stomach by *Helicobacter pylori* in mice. Our findings show that the effects of stress on the gastric mucosa can be mediated by differences in coping strategies, as revealed by patients with peptic ulcers.

Our findings suggest that strategies of coping with stress were related to social support in patients with ulcer disease but not in the control group. This finding seems of particular importance, since it suggests that in healthy individual support may be of little importance with reference to health outcomes, however, its role may increase in people with a disease. In our patients, two coping strategies – cognitive restructuring and passive helplessness – were found to be related to aspects of social support. It is of interest, however, that these qualitatively different strategies both showed positive correlations with social support. This may in fact reflect two different processes or directions of the relationships between social support and coping with stress. On the one hand, those with higher social support may be more encouraged to use constructive and effective coping strategies, for instance cognitive restructuring. Additionally, social support may act as a factor contributing to mental changes (changes in the way the individual perceives the stressful situation) through persuasion, affection and affirmation from others. This explanation could account for the positive relationship between social support and the strategy of cognitive restructuring. On the other hand, those patients who seem to be most helpless in coping with stress may attract more social support from others. This may in turn enhance their passive helplessness, by providing them with secondary emotional profits. This could explain the positive relationship between social support and the strategy of passive helplessness.

It should be emphasized that the literature on social support and coping with stress specifically in patients with ulcer disease is very limited, which makes it difficult to compare our findings with those of other authors. However, the results of similar studies in patients with other diseases generally seem to corroborate our findings confirming positive influence of social support on various aspects of patients' functioning. For instance, studies carried out in patients with cardiac diseases showed that perceived social support was moderately associated with relatively better self-reported medication and dietary adherence, and other aspects of self-

care such as daily weighing [14]. In another study among cardiovascular patients, family support was also shown to yield improved outcomes and lower patient hospital readmission [15].

In conclusion, our findings suggest that patients with ulcer disease report similar or slightly higher levels of social support than healthy individuals. Social support levels are related to the strategies used to cope with stress in patients but not in healthy subjects. Generally, our findings also suggest that the relationships between social support and coping strategies in patients with peptic ulcers are most likely bidirectional.

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