



The role of social support in women's health and recovery processes

Iwona Malicka, Aleksandra Kozłowska, Marek Woźniewski, Joanna Rymaszewska & Joanna Szczepańska-Gieracha

To cite this article: Iwona Malicka, Aleksandra Kozłowska, Marek Woźniewski, Joanna Rymaszewska & Joanna Szczepańska-Gieracha (2016) The role of social support in women's health and recovery processes, *Psychology, Health & Medicine*, 21:1, 81-91, DOI: [10.1080/13548506.2015.1009378](https://doi.org/10.1080/13548506.2015.1009378)

To link to this article: <http://dx.doi.org/10.1080/13548506.2015.1009378>



Published online: 10 Feb 2015.



Submit your article to this journal [↗](#)



Article views: 46



View related articles [↗](#)



View Crossmark data [↗](#)

The role of social support in women's health and recovery processes

Iwona Malicka^{a*}, Aleksandra Kozłowska^a, Marek Woźniewski^a, Joanna Rymaszewska^b
and Joanna Szczepańska-Gieracha^a

^a*The Faculty of Physiotherapy, University of Physical Education in Wrocław, Wydział Fizjoterapii AWF Wrocław, al. I. J. Paderewskiego 35, 51 612 Wrocław, Poland;* ^b*Department of Psychiatry, Wrocław Medical University, Wrocław, Poland*

(Received 22 July 2014; accepted 15 January 2015)

The aim of this study was to assess the psychological state of women who have undergone surgery for breast cancer or cardiac surgery, including examination of the role of social support in both groups. The study included 48 women (mean age: 66.04 ± 8.3 years). They were divided into two groups according to diagnosis: 23 women (mean age: 69.2 ± 8.6 years) who underwent heart surgery (cardiac group, CG) and 25 women (mean age: 63.2 ± 7.0 years) treated for breast cancer and associated with the Women After Mastectomy Club (oncology group, OG). In addition to the assessment of socio-demographic variables, the following self-report questionnaires were administered: Satisfaction with Life Scale, Acceptance of Illness Scale, Beck Depression Inventory, Spielberger State-Trait Anxiety Inventory as well as Berlin Social Support Scale. In the CG, the severity of depressive symptoms was two times higher than in OG ($p = .003$). In both groups, there was a high percentage (80%) of women with severe symptoms of anxiety ($p = .37$). In both groups, the level of life satisfaction was similar ($p = .58$), but OG was characterized by a higher level of acceptance of the disease ($p = .003$). The correlation analysis showed that in both groups, social support was related differently to the parameters of emotional state. Women treated for breast cancer were in a better mental condition than women treated for heart disease. The support coming from other women in similar circumstances (Women After Mastectomy Club) seems to be more effective than the support coming from the patient's immediate environment. The results for social support ought to be interpreted not only through the prism of mean values of received support, but also with regard to the information on the sources of support.

Keywords: social support; women's mental health; breast cancer; heart disease

Introduction

In Poland, the main cause of death among women is cardiovascular diseases (55%) and cancers (22%) – especially breast cancer; together they represent more than 70% of all deaths. What is important is that these diseases are not only the most common causes of death, but also they are constantly on the rise (Majewicz & Marcinkowski, 2008). Similar numbers come up with all other countries. Moreover, in the public perception, the two health problems are a significant source of anxiety. When respondents were asked to identify their greatest health problem, 51% spontaneously identified cancer (breast cancer and cancer in general). The awareness of heart disease as the leading cause of death has been assessed at 46% (Mosca, Ferris, Fabunmi, & Robertson, 2004).

*Corresponding author. Email: iwona.malicka@awf.wroc.pl

These findings are consistent with other data (Green, Grant, Hill, Brizzolara, & Belmont, 2003; Lewis, Pignon, & Sheridan, 2002). Simultaneously, the progress in treatment of these diseases causes an emergence of new problems, which mainly affect quality of life (Skalski, 2006). Both cardiovascular diseases and cancers (particularly breast cancer) are classified as chronic diseases, and every diagnosis of a chronic illness entails many adverse consequences on the patients' psyche (Dudek, & Siwek, 2007).

One of the most common mental disorders in oncology is depression and anxiety where occurrences of these symptoms are observed in 13–54% of patients (Burgess et al., 2005; Karakoyun-Celik et al., 2010; Winnie et al., 2010). In the case of cardiac patients, similar problems have been observed. The average annual incidence of depression is 9.3% (Lichtman, Bigger, & Blumenthal, 2008); however, this depends on the type of disease, for example, after coronary artery bypass graft, major depression occurs in 20%, and depressive symptoms in 32–43% of patients (Hawkes, Nowak, Bidstrup, & Speare, 2006). Both in the case of cancers and cardiac diseases, women have a higher severity of anxiety/depressive symptoms than men (Freitas et al., 2013).

In addition to these emotional factors occurring in both groups of disorders, there are other factors which play an important role in the recovery process and which constitute an important component in the quality of life assessment. The first is the acceptance of the disease, and the second is life satisfaction. The level of acceptance of the disease (AIS) is associated with adaptation to the course of treatment and rehabilitation; the greater the acceptance of illness, the better the adaptation and therefore less discomfort (Guzińska, Kupc, & Borys, 2007). Satisfaction with life in turn means well-being, which is an important element of health and one that is often identified with it. It is also believed to be a protective factor against poor health (Jachimowicz & Kostka, 2009). In assessing satisfaction with life, we compare our own situation with standards set by ourselves. Satisfaction is felt when the outcome of this comparison is at a satisfactory level (Diener, Emmons, Larson, & Griffin, 1985; Juczyński, 2001).

In people with a chronic illness, there is yet another important factor affecting the quality of life – social support. Low social support might be a psychosocial factor which contributes to the triggering of a disease. Meanwhile during convalescence, help from other people makes life easier and gives a sense of psychological comfort, and hence improves the quality of life (Mollaoğlu, Tuncay, & Fertelli, 2010; Requena, Lopez, & Oritz, 2009). It is believed that emotional support strongly affects our health (Berkman, Glass, Brissette, & Seeman, 2000; Melchiorre et al., 2013; Uchino, 2006). Studies have shown that in difficult life situations, such as during a severe somatic disease, more women than men seek social support (Bencova, Krajcovicova, Bella, & Krcmery, 2013, Ernstmann et al., 2009).

The aim of this study was to assess the psychological state of women who have undergone surgery for breast cancer or cardiac surgery, including examination of the role of social support in both groups. It was assumed that women treated for breast cancer, given the nature of oncological treatment (physical mutilation, adjuvant therapy), will be in a worse mental health than women treated for cardiac diseases.

Materials and methods

Study group

The studies were conducted at random, during a single visit to the cardiac rehabilitation center and at a meeting of women treated for breast cancer at the 'Women After

Mastectomy Club' Inclusion criteria for the study were the following: Female gender, age between 45 and 80, a period of at least one year since the diagnosis and commencement of treatment, written consent to take part in the study and the absence of co-morbidities in the form of mental, neurological and oncological illnesses (for the oncology group, absence of cancers other than breast cancer). Furthermore, in the oncology group, women with heart disease were excluded from the study, and in the cardiac group, women after cancer treatment were excluded as well.

The study included 48 women with a mean age of 66.04 (± 8.3 years). The subjects were divided into two groups according to clinical diagnosis. The first group consisted of 23 women who underwent heart surgery (cardiac group, CG). Mean age of this group was 69.2 years (± 8.6). These were patients of the Department of Cardiac Rehabilitation of the Lower Silesian Centre for Heart Diseases in Wroclaw. Seventeen women (74%) underwent an implantation of the coronary artery bypass graft, whereas six women (27%) underwent the coronary angioplasty (PTCA), replacement of the aortic valve, or mitral and tricuspid valve repair. The respondents were all undergoing cardiac rehabilitation, all were treated due to Ischemic Heart Disease, and the average time since diagnosis was 6.6 years (± 4.8).

The second group consisted of 25 women treated for breast cancer, all members of the 'Women After Mastectomy Club' in Wroclaw (group oncology, OG). The mean age was 63.2 years (± 7.0), and the average time since diagnosis was 7.5 years (± 6.2). A mastectomy was performed on 18 women (72%), and seven women had a breast-conserving surgery (28%). In this group, 80% of respondents underwent additional adjuvant therapy, 76% received radiotherapy, 46% received chemotherapy, and 40% hormonal therapy.

Table 1 presents the level of education, professional activity, and family situation in both study groups.

Methods

In addition to the assessment of socio-demographic variables, the following self-report questionnaires were administered:

- (1) Satisfaction with Life Scale (SWLS) by Diener et al. (1985) explores the subjective sense of life satisfaction based on a comparison of one's own situation with one's own established standards. If the result is satisfactory, its effect is a sense of satisfaction. Translation and adaptation of the scale to Polish was performed by Juczyński (2001).

Table 1. Characteristics of studied women in terms of education, professional activity, and family situation.

Characteristics		CG (<i>n</i> = 23) (%)	OG (<i>n</i> = 25) (%)	χ^2 Pearson's	<i>p</i> -value
Education	Primary/occupational	43.5	40.0	.13	.93
	Secondary	34.8	40.0		
	Higher	21.7	20.0		
Professional activity	Pension	87.0	88.0	.11	.91
	Active	13.0	12.0		
Marital status	Single/widowed	69.6	60.0	.47	.48
	Married	30.4	40.0		
Children		95.6	92.0	.27	.60

- (2) Acceptance of Illness Scale (AIS) by Felton, Revenson, and Hinrichsen (1984) is used to measure the degree of acceptance of the disease. The greater the acceptance of illness, the better the adjustment and less psychological discomfort. Translation and adaptation of the scale to Polish was performed by Juczyński (2001).
- (3) Beck Depression Inventory (BDI) is a widespread and reliable research tool for assessing mood. The questionnaire contains 21 questions; the first 13 questions concern cognitive-affective symptoms (lowering of basic mood, pessimism, sense of failure, loss of life satisfaction, guilt, etc). The remaining questions relate to somatic symptoms accompanying mood disorders (sleep disturbances, fatigue, loss of appetite, weight loss, somatic complaints, loss of libido, body image distortion). Higher total scores indicate more severe depressive symptoms (Beck, 2006).
- (4) State-Trait Anxiety Inventory (STAI) is used to assess anxiety as a state and as a personality trait. This distinction allows for using two separate rating scales, each containing 20 questions: Anxiety understood as a state, denoted in the questionnaire by $X1$, contains statements relating to current mood (tension, nervousness, worrying, concerns, etc.), and anxiety understood as a personality trait, denoted by $X2$, describes how a person generally feels. The results of both scales range from 20 points (low anxiety) to 80 points (high anxiety) (Spielberger, Gorsach, Lushene, Vago, & Jacobs, 1983).
- (5) Berlin Social Support Scale (BSSS) is a set of tools to measure cognitive and behavioral dimensions of social support. This questionnaire contains four independent scales of social support: BSSS I – perceived available support. BSSS II – need for support, BSSS III – seeking of support, and BSSS IV – support currently received (Łuszczynska, Kowalska, Schwarzer, & Schulz, 2002; Schulz & Schwarzer, 2003).

Statistical analysis

The statistical analysis was performed using the Statistica software package. In the comparative analysis of both groups, a parametric Student's t -test for independent samples was used as well as Pearson's chi-square test (χ^2). In order to investigate the relationship of social support with mental state parameters, a linear Pearson's r correlation coefficient was determined.

Results

Comparison of studied groups

The percentage distribution of anxiety/depression disorders in both groups are shown in Table 2. In women with heart disease, the severity of depressive symptoms was found to be two times higher in both the somatic and emotional spectrum as compared to women treated for breast cancer. There were no significant differences in the level of anxiety. Analysis of the level of AIS and life satisfaction may point to a higher level of AIS in the OG group and may therefore suggest a better disease adaptation and less mental discomfort. The degree of SWLS was similar in both groups. The distribution of results for social support also did not differ significantly between the two groups (Table 3).

Table 2. The frequency of occurrence of depressive symptoms as well as the traits and state of anxiety in the group of women with heart disease (CG) and those treated for breast cancer (OG).

Covariates		CG (n = 23)	OG (n = 25)	χ^2 Pearson's	p-value
BDI	Minimal	39.1%	72.0%	8.93	0.03
	Mild	26.1%	24.0%		
	Moderate	21.7%	0.0%		
	Severe	13.1%	4.0%		
STAI (X1) ^a	Low	17.4	16.0	23.22	0.33
	High	82.6	84.0		
STAI (X2) ^a	Low	43.5	36.0	13.67	0.84
	High	56.5	64.0		

^aAccording to the STAI norm, high anxiety: X1 > 44; X2 > 46.

Table 3. Comparison of results of women with heart disease and women treated for breast cancer.

Covariates	CG (n = 23)		OG (n = 25)		t	p-value
	Mean	SD	Mean	SD		
BDI – emotional sub-scale	7.0	6.3	3.2	4.9	2.310	0.025
BDI – somatic sub-scale	8.2	4.0	4.3	3.6	3.514	0.001
BDI – total	15.1	9.2	7.5	7.8	3.102	0.003
STAI – by X1	51.0	7.7	49.3	4.8	0.906	0.370
STAI – by X2	48.9	6.8	48.7	5.0	0.111	0.912
AIS – acceptance of illness scale	25.6	9.0	33.2	7.4	3.182	0.003
SWLS – satisfaction with life scale	24.4	5.8	23.6	5.6	0.558	0.580
BSSS perceived available support	28.8	5.5	28.4	4.6	0.235	0.816
BSSS need for support	12.2	2.3	11.9	2.2	0.459	0.649
BSSS seeking of support	15.7	4.5	14.7	3.8	0.849	0.400
BSSS support currently received	50.6	3.8	47.8	7.4	1.661	0.103
BSSS – total	107.3	8.7	102.8	13.8	1.340	0.187

Statistically significant results ($p < 0.5$) are marked in bold.

The dependence of mental state parameters on the level of social support

In the cardiac group, a positive correlation was observed between the severity of depressive symptoms (in the emotional sub-scale BDI) and search for social support – as mood lowers, there seem to be a greater need for support. At the same time, there was a negative correlation between the levels of SWLS and both the search for support as well as the overall level of social support received (Table 4). A slightly different situation occurred in the OG. No statistically significant correlation between the severity of depression (BDI) and any other trait emerged. In contrast, a clear relationship was observed between the level of AIS with the level of perceived support, the support currently received, and the overall social support results. In contrast to women with heart disease, in the OG group, the trait that played a significant role was personality type. Women with a more anxious mindset may therefore require a greater need for support (Table 5).

Discussion

The problem of depression and anxiety in cardiovascular diseases or breast cancer has long been written about by numerous authors (Boehm, Cramer, Staroszynski, & Ostermann, 2014; Callari et al., 2013; Guo, 2015; De Jean, Giacomini, Vanstone, &

Table 4. Correlations between the parameters of mental state and the perceived social support in women with heart disease (CG, $n = 23$).

	BSSS perceived available support	BSSS need for support	BSSS seeking of support	BSSS support currently received	BSSS – total
BDI – emotional sub-scale	.255	.077	.413	.346	.227
BDI – somatic sub-scale	–.011	–.097	.264	–.199	.018
BDI –total	–.180	.011	.399	.152	.164
STAI – by X_1	.173	.105	.003	.208	.202
STAI – by X_2	.075	.264	.061	–.036	.085
AIS – acceptance of illness scale	.243	–.076	–.393	–.027	–.084
SWLS – satisfaction with life scale	–.163	–.209	–.533	.073	–.407

Statistically significant results ($p < 0.5$) are marked in bold.

Table 5. Correlations between the parameters of mental state and the perceived social support in women treated for breast cancer (OG, $n = 25$).

	BSSS perceived available support	BSSS need for support	BSSS seeking of support	BSSS support currently received	BSSS – total
BDI – emotional sub-scale	.09	–.09	–.23	.12	.02
BDI – somatic sub-scale	–.17	–.01	–.08	–.08	–.13
BDI –total	–.02	–.06	–.18	.04	–.05
STAI – by X_1	.190	–.102	–.043	.242	.164
STAI – by X_2	–.101	.370	.131	–.116	–.002
AIS – acceptance of illness scale	.483	.149	.240	.555	.545
SWLS – satisfaction with life scale	.222	.183	.255	.023	.184

Statistically significant results ($p < 0.5$) are marked in bold.

Brundisini, 2013; Lim, Devi, & Ang, 2011; Zainal, Nik-Jaafar, Baharudin, & Sabki, 2013). Whereas in the topic on life satisfaction, AIS or the role of social support is less frequently studied. In fact, there are no reports comparing mental state and the role of social support in both groups of women. Perhaps the overall clinical dissimilarity of these diseases constitutes a serious problem for researchers, one that is methodological in nature and which disqualifies the merits of tackling this type of research. However, looking from a societal point of view, undertaking such research seems justified. This research has compared selected aspects of mental functioning of two groups of patients – those surgically treated for heart disease and those surgically treated for breast cancer. All women respondents had both a number of common characteristics as well as many differences. The similarities include the following: Female gender, perimenopausal age, similar social and occupational background, as well as serious health problems, and similar time

from diagnosis. The differences are primarily the symptoms and implications of these diseases. In CG, the 'only' implication of surgical treatment is a scar in the sternum area and, perhaps in some cases, persistent cardiovascular complaints such as fatigability. In OG, the implications of treatment appear to be much more serious: First of all amputation of the breast and the associated 'half woman complex' (Przedziecki et al., 2013; Rowland et al., 2000), moreover complications of adjuvant therapy (radiotherapy, chemotherapy, and hormone therapy), and the stigma attached to cancer, which society still considers as a dangerous life-threatening disease.

The average score on the AIS in the cardiac group was 25.6 (± 9.0) points. These data are consistent with values obtain by patients suffering from illnesses such as renal failure, diabetes, or bronchial asthma. In these patients, the score of AIS ranged between 23 and 25 points (Niedzielski, Humeniuk, Błaziak, & Fedoruk, 2007). Similar data were presented by Heijmans et al. (2004) examining chronically ill patients with 10 different chronic illnesses. This fact could suggest that the level of acceptance of illness is not dependent on the disease entity and is similar for most chronic diseases. In our own research, however, there appears to be a negation of such a mindset, because the mean score of disease acceptance in the OG was 33.2 (± 7.4), which significantly distinguishes it from both the CG and studies of other authors. At the same time, this result is clearly correlated with the level of perceived social support. A similar relationship was not observed in the CG group. With regards to life satisfaction, the mean values in CG and OG are similar and amount to 24.4 (± 5.8) and 23.6 (± 5.6) points, respectively, which according to the SWLS scale represents an average value (Vassar, 2008).

Analyzing the results of social support, we can conclude that there were no significant differences between compared groups of women. Both the mean values and standard deviation of BSSS results were very similar and no significant differences were confirmed by statistical tests. The compared groups did not differ either in terms of the overall result of BSSS or any of its sub-scales. The correlation analysis, however, revealed that in both groups, social support was associated differently with the parameters of emotional state. In the CG, severe depressive symptoms were accompanied by a high level of social support sought and at the same time low level of satisfaction with life. The level of social support received in women with heart disease was probably not sufficient enough, and despite searching, they did not receive satisfaction in this area. On the other hand, the same or a very similar level of social support for the OG provided a strong enough incentive positively influencing the level of acceptance of disease. This is all more important, as mentioned earlier, that the treatment of breast cancer carries with it serious injury of the body (breast loss, effects of radiotherapy, half woman complex).

It seems, therefore, that it is not the level of social support itself that is important here, but rather the expectations of the female patients in this area and the source of support received. This view is shared by Tylka (2000); he claims that a lack of sufficient social support is a major cause of daily stress for patients with cardiovascular disease. Meanwhile, Swedish studies have shown that social support has stronger influence on the alleviation of cardiovascular risk in men than in women (Orth-Gomer et al., 2000). Women generally seek interpersonal contacts, but it is not always associated with the amount of support received – sometimes quite the opposite. Performing multiple social roles leads to being overworked and having more everyday stress (Orth-Gomes et al., 2000). The research performed in the group of patients with breast cancer also revealed that social relationships can have both positive and negative effects on the life expectancy of patients. Contacts with others may adversely affect the recovery process; all this depends on the amount and type of relationships with people (Kroenke, Michael, & Tindle, 2012).

A significant difference between the studied groups should be fully stressed here – women from the OG were associated with the Women After Mastectomy Club, which has existed in Wrocław for many years. Even if they do not participate in the club's meetings regularly, the mere fact of belonging to such an organization gives them huge psychological support. Confirmation of this link can be found in studies conducted with women still in a hospital ward after cancer surgery. It has been demonstrated that the risk of depression among women operated on due to breast cancer was two times smaller than in women operated on within the reproductive tract. In addition, women after breast surgery exhibited significantly higher values of constructive strategies to cope with the disease, such as a *fighting spirit and positive re-evaluation* (Malicka, Szczepańska, Anioł, Rymaszewska, & Woźniowski, 2009).

The Federation of Polish Women after Mastectomy Clubs 'Amazonki' is a nationwide association bringing together autonomous groups in nearly one hundred large and small towns; further a list of associations working for Amazonki is growing steadily (Adamczyk, 2000). The activities of these clubs in Poland are a phenomenon. No other organization that brings together patients with different somatic diseases can boast such a robust network of clubs and associations. Reflecting this imbalance is also the presence of breast cancer issues in the mass media. Many famous women are actively involved in the fight against breast cancer and even openly admit their personal struggle with this disease (Malicka et al., 2009). As a result, breast cancer is no longer a taboo, a shameful disease, one that should not be mentioned.

The social situation of women with heart disease is continually neglected. Even though the authors in scientific reports emphasize that the lack of social support increases both the risk of coronary heart disease and is a factor in premature death due to coronary heart disease, organizations supporting this group of people are still lacking (Janevic et al., 2004). Furthermore, the same guidelines still apply in the rehabilitation of women and men. Most programs in the field of cardiac rehabilitation were established in the framework of the activities of men, and research on women is still a minority, yet the needs and preferences are different for both sexes within these two groups, and the motivations to undertake rehabilitation are also different (Cannistra, Balady, O'Malley, Weiner, & Ryan, 1992; Moore & Kremer, 1996). It seems, therefore, that in the CG, more attention should be paid to the psychosocial aspects of the disease, in terms of prevention, with particular emphasis placed on the needs of women, who are increasingly suffering from diseases related to the cardiovascular system.

A significant limitation of the research presented in this study was a relatively small study sample; this causes certain restrictions (i.e. the findings cannot be generalized to other ethnic or racial groups). In the future, these tests should be performed on a larger group of patients, allowing the use of more sophisticated statistical techniques, strengthening credibility of the conclusions, and reducing the risk of error. The current findings are based on a simple correlation analysis; therefore, the conclusions drawn here should be treated with caution, rather as a prelude to a further, in-depth discussion on the role of social support in the disease entities discussed in this study.

Conclusions

- (1) A high percentage of women with severe symptoms of anxiety were found in both groups (over 80%), but in the group of women treated for heart disease,

severity of depressive symptoms was found to be twice as high as compared to women treated for breast cancer.

- (2) Social support in both study groups was related differently to the parameters of emotional state. In the CG, severe depressive symptoms were accompanied by a high level of social support sought and at the same time low level of satisfaction with life. Meanwhile in the OG, a similar level of social support was positively influencing mood and the level of acceptance of disease.
- (3) The support coming from other women in similar circumstances (Women After Mastectomy Club) seems to be more effective than the support coming from the patient's immediate environment.
- (4) The results for social support ought to be interpreted not only through the prism of mean values of the received support, but also with regard to the information on the sources of support.

References

- Adamczyk, M. (2000). The role of self-help associations of patients with cancer [in Polish]. In K. de Walden (Ed.), *Psychooncology* (pp. 117–122). Krakow: Library of Psychiatry, Polish.
- Beck, A. T. (2006). *Depression: Causes and treatment*. Philadelphia, PA: University of Pennsylvania Press. ISBN 0-8122-1032-8.
- Bencova, V., Krajcovicova, I., Bella, V., & Krcmery, V. (2013). Psychosocial support needs of Slovak breast cancer survivors one and three years after breast conserving surgery. *Bratislavske Lekarske Listy*, 114, 96–99.
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science and Medicine*, 51, 843–857.
- Boehm, K., Cramer, H., Staroszynski, T., & Ostermann, T. (2014). Arts therapies for anxiety, depression, and quality of life in breast cancer patients: A systematic review and meta-analysis. *Evidence-Based Complementary and Alternative Medicine*, 2014, Article ID 103297, 9. Retrieved from <http://dx.doi.org/10.1155/2014/103297>
- Burgess, C., Cornelius, V., Love, S., Graham, J., Richards, M., & Ramirez, A. (2005). Depression and anxiety in women with early breast cancer: Five year observational cohort study. *British Medical Journal*, 330, 702.
- Callari, A., Mauri, M., Miniati, M., Moncino, M., Bracci, G., Dell'Osso, L., & Greco, C. (2013). Treatment of depression in patients with breast cancer: A critical review. *Tumori*, 99, 623–633.
- Cannistra, L. B., Balady, G. J., O'Malley, C. J., Weiner, D. A., & Ryan, T. J. (1992). Comparison of the clinical profile and outcome of women and men in cardiac rehabilitation. *The American Journal of Cardiology*, 69, 1274–1279.
- De Jean, D., Giacomini, M., Vanstone, M., & Brundisini, F. (2013). Patient experiences of depression and anxiety with chronic disease: A systematic review and qualitative meta-synthesis. *Ontario Health Technology Assessment Series*, 1;13(16), 1–33. eCollection.
- Diener, E., Emmons, R., Larsen, R., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75.
- Dudek, D., & Siwek, M. (2007). Depression in medical illness [in Polish]. *Psychiatria*, 4, 17–24.
- Ernstmann, N., Neumann, M., Ommen, O., Galushko, M., Wirtz, M., Voltz, R., ... Pfaff, H. (2009). Determinants and implications of cancer patients' psychosocial needs. *Supportive Care in Cancer*, 17, 1417–1423.
- Felton, B. J., Revenson, T. A., & Hinrichsen, G. A. (1984). Stress and coping in the explanation of psychological adjustment among chronically ill adults. *Social Science and Medicine*, 18, 889–898.
- Freitas, I. R., Castro, M., Sarmento, S. L., Moura, C., Viana, V., Areias, J. C., & Areias, M. E. G. (2013). A cohort study on psychosocial adjustment and psychopathology in adolescents and young adults with congenital heart disease. *BMJ Open*, 2013, e001138. doi:10.1136/bmjopen-2012-001138

- Green, J. S., Grant, M., Hill, K. L., Brizzolara, J., & Belmont, B. (2003). Heart disease risk perception in college men and women. *Journal of American College Health, 51*, 207–211.
- Guo, P. (2015). Preoperative education interventions to reduce anxiety and improve recovery among cardiac surgery patients: A review of randomised controlled trials. *Journal of Clinical Nursing, 24*, 34–46. doi:10.1111/jocn.12618
- Guzińska, K., Kupc, A., & Borys, B. (2007). Stress resistance resources in the recovery process of patients with ischemic heart disease. *Psychiatria, 4*, 144–152.
- Hawkes, A., Nowak, M., Bidstrup, B., & Speare, R. (2006). Outcomes of coronary artery bypass graft surgery. *Vascular Health and Risk Management, 2*, 477–484.
- Heijmans, M., Rijken, M., Foets, M., de Ridder, D., Schreurs, K., & Bensing, J. (2004). The stress of being chronically ill: From disease-specific to task-specific aspects. *Journal of Behavioral Medicine, 27*, 255–271.
- Jachimowicz, V., & Kostka, T. (2009). Satisfaction with life of elderly women [in Polish]. *Gin Prakt, 3*, 27–32.
- Janevic, M. R., Janz, N. K., Dodge, J. A., Wang, Y., Lin, X., & Clark, N. M. (2004). Longitudinal effects of social support on the health and functioning of older women with heart disease. *The International Journal of Aging and Human Development, 59*, 153–175.
- Juczyński, Z. (2001). *Measurement tools in promotion and health psychology. Laboratory of Psychological Tests [in Polish]*. Warszawa: PTP
- Karakoyun-Celik, O., Gorken, I., Sahin, S., Orcin, E., Alanyali, H., & Kinay, M. (2010). Depression and anxiety levels in woman under follow-up for breast cancer: Relationship to coping with cancer and quality of life. *Medical Oncology, 27*, 108–113.
- Kroenke, C. H., Michael, Y., & Tindle, H. (2012). Social networks, social support and burden in relationships, and mortality after breast cancer diagnosis. *Breast Cancer Research and Treatment, 133*, 375–385.
- Lewis, C. L., Pignone, M., & Sheridan, S. (2002). Premenopausal women's risk perceptions: Breast cancer compared to colon cancer and heart disease. *Journal of General Internal Medicine, 17*, 249.
- Lichtman, J., Bigger, J., & Blumenthal, J. (2008). Depression and coronary heart disease: Recommendations for screening, referral, and treatment: A science advisory from the American heart association prevention committee of the council on cardiovascular nursing, council on clinical cardiology, council on epidemiology and prevention, and interdisciplinary council on quality of care and outcomes research: Endorsed by the American Psychiatric Association. *Circulation, 118*, 1768–1775.
- Lim, C. C., Devi, M. K., & Ang, E. (2011). Anxiety in women with breast cancer undergoing treatment: A systematic review. *International Journal of Evidence-Based Healthcare, 9*, 215–235.
- Łuszczynska, A., Kowalska, M., Schwarzer, R., & Schulz U. (2002). *Berlin Social Support Scales (BSSS)* - Freie Universität Berlin: Health Psychology.
- Majewicz, A., & Marcinkowski, J. (2008). Epidemiology of cardiovascular diseases. Why in Poland there is such a low interest in existing prophylactic programs? [in Polish]. *Probl Hig Epidemiol, 89*, 322–325.
- Malicka, I., Szczepańska, J., Anioł, K., Rymaszewska, J., & Woźniewski, M. (2009). Mood disorders and mental adjustment to cancer in women after mastectomy and uterine cancer [in Polish]. *Współczesna Onkologia, 13*, 41–46.
- Melchiorre, M. G., Chiatti, C., Lamura, G., Torres-Gonzales, F., Stankunas, M., Lindert, J., ... Soares, J. F. (2013). Social support, socio-economic status, health and abuse among older people in seven European countries. *Plos One, 8*(1), e54856
- Mollaoglu, M., Tuncay, F. Ö., & Fertelli, T. K. (2010). Mobility disability and life satisfaction in elderly people. *Archives of Gerontology and Geriatrics, 51*, e115–e119.
- Moore, S. M., & Kremer, F. M. (1996). Women's and men's preferences for cardiac rehabilitation program features. *Journal of Cardiopulmonary Rehabilitation, 16*, 163–168.
- Mosca, L., Ferris, A., Fabunmi, R., & Robertson, R. M. (2004). Tracking women's awareness of heart disease: An American Heart Association National Study. *Circulation, 109*, 573–579.
- Niedzielski, A., Humeniuk, E., Błaziak, P., & Fedoruk, D. (2007). The level of approval in selected chronic diseases. *Wiadomości Lekarskie, 60*, 224–227.
- Omodeo, O., Fiabane, E., Giorgi, I., Grandis, C., Gualco, A., & Ceresa, M. (2013). Psychological needs and mental health in women aged > or = 65 years after cardiac surgery: An exploratory study. *Monaldi Archives for Chest Disease, 80*, 35–41.

- Orth-Gomér, K., Wamala, S. P., Horsten, M., Schenck-Gustafsson, K., Schneiderman, N., & Mittleman, M. A. (2000). Marital stress worsens prognosis in women with coronary heart disease: The Stockholm female coronary risk study. *The Journal of the American Medical Association*, *284*, 3008–3014.
- Przezdziecki, A., Sherman, K. A., Baillie, A., Taylor, A., Foley, E., & Stalgis-Bilinski, K. (2013). My changed body: Breast cancer, body image, distress and self-compassion. *Psycho-Oncology*, *22*, 1872–1879.
- Requena, C., Lopez, V., & Ortiz, T. (2009). Satisfaction with life related to functionality in active elderly people. *Actas Esp Psiquiatr*, *37*, 61–67.
- Rowland, J. H., Desmond, K. A., Meyerowitz, B. E., Belin, T. R., Wyatt, G. E., & Ganz, P. A. (2000). Role of breast reconstructive surgery in physical and emotional outcomes among breast cancer survivors. *Journal of the National Cancer Institute*, *92*, 1422–1429.
- Schulz, U., & Schwarzer, R. (2003). Soziale Unterstützung bei der Krankheitsbewältigung: Die Berliner Social Support Skalen (BSSS) [Social support in coping with illness, the Berlin Social Support Scales (BSSS)]. *Diagnostica*, *49*, 73–82.
- Skalski, M. (2006). Sleep disorders in cancer patients [in Polish]. *Onkologia w Praktyce Klinicznej*, *2*, 32–39.
- Spielberger, C. D., Gorsach, R. L., Lushene, P. R., Vago, P. R., & Jacobs, A. G. (1983). *Manual for the State-Trait Anxiety Inventory (Form Y)*. Palo Alto: Consulting Psychologists Press.
- Tylka, J. (2000). The specificity of psychological problems in women with coronary artery disease [in Polish]. *Kardiologia Polska*, *52*, III-36–36.
- Uchino, B. (2006). Social support and health: A review of physiological processes potentially underlying links to disease outcomes. *Journal of Behavioral Medicine*, *29*, 377–387.
- Vassar, M. (2008). A note on the score reliability for the satisfaction with life scale: An RG study. *Soc Indisc Res*, *86*, 47–57.
- Winnie, K. W., Marsh, G., Ling, W. M., Leung, F. Y., Lo, J. C. K., Yeung, M., & George, K. H. (2010). Anxiety, depression and quality of life among Chinese breast cancer patients during adjuvant therapy. *European Journal of Oncology Nursing*, *14*, 17–22.
- Zainal, N. Z., Nik-Jaafar, N. R., Baharudin, A., Sabki, Z. A., & Ng, C. G. (2013). Prevalence of depression in breast cancer survivors: A systematic review of observational studies. *Asian Pacific Journal of Cancer Prevention*, *14*, 2649–2656.